The National Emergency Medicine Programme

A strategy to improve safety, quality, access and value in Emergency Medicine in Ireland

The National Emergency Medicine Programme

A strategy to improve safety, quality, access and value

in Emergency Medicine in Ireland

Clinical Strategy and Programmes Directorate, Health Service Executive

Irish Committee for Emergency Medicine Training

Irish Association for Emergency Medicine

National Board for Ireland of the College of Emergency Medicine

Office of the Nursing and Midwifery Services Director, Health Service Executive

Quality and Patient Safety Directorate, Health Service Executive

Therapy Professions Committee

June 2012

Overview and Key Recommendations

Emergency Medicine Programme Report:

Appendices:

Introduction

The overarching aim of the Emergency Medicine Programme (EMP) is to improve the safety and quality of care and reduce waiting times for patients in Emergency Departments (EDs) throughout the country. The Programme is the most comprehensive and ambitious strategic plan for emergency care ever undertaken in Ireland.

Patients should receive the same high standard of treatment irrespective of when or where they seek emergency care and they should not experience excessive waiting times in EDs. The safety and quality of patient care must be the primary focus of the Programme. The timeliness of care is an important component of quality and research has demonstrated that prolonged ED waits are associated with poorer outcomes for patients. Also, patient satisfaction surveys have identified prolonged waiting times as a major reason for patient dissatisfaction with ED services. Many patients, their families and ED staff members have expressed concerns regarding the delays endured by patients in EDs. Most people in Ireland are familiar with the work of EDs, either through their own experience or that of a family member. We all have a vested interest in ensuring that our emergency care system is safe, effective and efficient.

The term "Emergency Care" (EC) includes all emergency medicine services, pre-hospital care, EDs and the initial stages of hospital-based management of patients who present in need of emergency or urgent care. It also includes ED Clinical Decision Units (CDUs) which are inpatient services led by Consultants in Emergency Medicine. Voluntary organisations and General Practitioners (GPs) who provide immediate care for communities are also contributors to emergency care. Our aim must be to provide seamless high quality emergency care through systems that are characterised by effectiveness, efficiency, accountability, sustainability, resilience and high levels of staff morale.

The Emergency Medicine Programme Approach

The Programme is led by a multidisciplinary working group that includes Consultants in Emergency Medicine, Emergency Nurses, representatives of Pre-hospital Care and the Therapy Professions. It is supported by the Irish Committee for Emergency Medicine Training, the Irish Association for Emergency Medicine, the National Board for Ireland of the College of Emergency Medicine, the Office of the Nursing and Midwifery Services Director, the Therapies Professions Committee and

the Clinical Strategy and Programmes Directorate (CSPD) of the Health Service Executive (HSE). The Programme working group is also supported by an advisory group drawn from the relevant training bodies and other stakeholders, a Nurse Reference Group and a Primary Care consultation group. The involvement of patient advocacy group representatives is crucial to the development of the Programme's work. The implementation of Clinical Programmes across a range of specialties has opened up new channels of communication between clinical specialties, services and interest groups. The collaboration that has occurred to date, and that is planned for the future, offers an unprecedented opportunity for the development of truly integrated systems of patient care.

Consultation workshops involving ED staff from all regions of the country allowed the Programme to draw upon the immense expertise and experience of care providers and ED multidisciplinary team members. ED staff have demonstrated their enthusiastic support for the service improvements envisaged by the Programme. A survey of current ED staffing, skill-mix and infrastructure was undertaken to provide a base-line for the future development of Emergency Medicine (EM) services.

The EMP working group wishes to thank all those who contributed to the development of the Programme, those who participated in the Programme's Best Practice Workshops and broad range of consultation meetings and the many clinicians from outside of the working group who prepared material for the Programme report. A full list of Programme contributors is available as an appendix to this document. As ever, strong team-work was at the heart of this Emergency Medicine endeavour.

The individual efforts and teamwork of emergency care staff members, health care managers, the HSE (and future structures) and the Department of Health will determine how effectively and how quickly improvements can be achieved in the quality, safety, accessibility and cost-effectiveness of emergency care. The EMP now looks to these groups to support and implement the Programme plan across the country. We have a collective responsibility to provide our patients and our communities with high quality care. We look forward to working together to achieve this.

Emergency Medicine Programme Aims and Objectives

The aim of the EMP is to improve the safety and quality of care and reduce waiting times for patients in Emergency Departments (EDs) and it will achieve this through the following objectives:

Develop models of care to improve patient access to high quality emergency care:

- Define a National Emergency Care System comprising networks of EDs fully integrated with pre-hospital and hospital-based services, ensuring a standardised approach to the delivery of high quality emergency care;

- Increase patient access to Consultant-provided care through increased Consultant numbers and expanded hours of Consultant presence in EDs;

- Develop roles for nurses including Staff Nurses, Clinical Nurse Specialists and Advanced Nurse Practitioners, for Therapy Professionals, Medical Social Workers and other members of the multidisciplinary team;

- Implement new clinical governance structures and processes to ensure clear authority, accountability and responsibility across the emergency care system;

- Integrate implementation of the EMP with all relevant programmes, particularly Acute Medicine, Surgery, Critical Care, Paediatrics, Medicine for the Elderly and Diagnostic Imaging.

Ensure continuous quality improvement across the emergency care system:

- Introduce national Key Performance Indicators (KPIs) for clinical quality and process efficiency;

- Agree national process measures and standard ED data sets;

- Implement the 6-hour standard for ED attendances so that 95% of patients are admitted or discharged within six hours of attending an ED;

- Improve the efficiency of ED processes including triage, assessment, patient streaming etc.;

- Implement national clinical guidelines for the top 20 emergency conditions and associated clinical KPIs;

- Roll-out the development of, and optimise the work of, Clinical Decision Units;

- Disseminate existing good practice, identified through regional workshops;

- Collaborate with the HSE Emergency Planning Unit to develop a national Hospital Major Emergency Plan Template;

- Develop new roles for GPs in EDs and enhance links with Primary Care.

Maximise value in Emergency Care:

- Enhance senior staffing and improve the quality and timeliness of care to reduce admission rates and decrease length of stay for inpatients referred from ED - these benefits will be complementary to those achieved through other national programmes;

- Standardise care to assist in reducing variance in ED patient costs previously identified in the *Comptroller and Auditor General Special Report, Emergency Departments,* November 2009;

- Support the development of cost-measurement and resource allocation systems to enable the cost-effectiveness of emergency care to be measured and improved.

An Overview of the Emergency Medicine Programme

This is a broad, ambitious, systems-wide programme that needs to reach a wide audience and a multiplicity of stakeholders in order to achieve its aims.

This section aims to introduce the Programme's work and outlines a high level summary of the Programme's key recommendations.

The Emergency Medicine Programme Report

The Report aims to:

- provide a greater understanding of the scope and purpose of Emergency Medicine (EM);
- be a resource for those charged with the development, management and delivery of EM;
- identify and disseminate current best practice in EM;
- make key recommendations for service improvement and quality measures;
- provide a framework for the long-term development of EM in Ireland.

The report represents the best efforts of the EMP working group to establish a strategic plan for Irish EM now and for the future. Elements of this work will become obsolete unless the report is reviewed and updated in keeping with national and international developments in EM and in healthcare in general. The EMP recommends that a National Emergency Care System should be developed and that a National Emergency Care System Steering Group should be established to oversee this system. Its responsibilities should include *inter alia* ongoing review of the Programme's implementation. The EMP also recommends that the EMP Report should be available in electronic format to patients and healthcare providers.

The Emergency Medicine Programme Implementation Plan

A detailed implementation plan is being developed, based on the recommendations outlined in the EMP Report and the implementation plans for related national programmes. The Programme Implementation Plan will outline strategic and operations-level actions for the EMP working group, healthcare managers and service providers to achieve the Programme's aims. Implementation plans to support the immediate adoption of the Programme's recommendations at local level will be presented as "EMP First Steps for Emergency Medicine". The Clinical Strategy and Programmes Directorate, the EMP working group and regional EMP leads will provide ongoing support for implementation of the EMP plan.

There will be collaborative implementation of the Emergency Medicine, Acute Medicine, Surgery, Critical Care, Paediatrics, Medicine for the Elderly and other national clinical programmes to maximise the clinical effectiveness of these programmes and to advance the integration of the major acute specialties involved in the care of patients who are admitted through EDs.

The active participation of emergency care staff will be key to the successful implementation of the EMP. The EMP working group, advisory group, Regional leads, the Directors of Nursing and the Nursing Advisory Group will play a prominent role in the dissemination of the EMP approach and implementation of its recommendations across the hospital system.

The EMP Plan will include implementation actions that:

- are ED-based initiatives that are cost-neutral and deliverable through the reorganisation of existing work practices;
- include areas where the focussed allocation of resources is needed to enable and support crucial service improvements (e.g. ICT development);
- have elements that require inter-specialty and/or interagency planning and development at national level.

Web-based resources

Information for patients and healthcare providers regarding the EMP will be available on a dedicated website.

Executive Summary and Key Recommendations:

Models of Care

- The report describes what Emergency Medicine is and how emergency care services should be organised to ensure the optimal provision of high quality emergency care in all regions of the country. The Programme recommends new models of care to be delivered through a National Emergency Care System (NECS) and networks of EDs. Paediatric emergency care must be integrated within this system with due attention paid to the particular needs of children. The new models of care will be more effective if they involve close collaboration between pre-hospital and ED-based care within networks. Emergency Medicine is a relatively new and rapidly evolving specialty. The Programme clarifies what exactly Emergency Medicine is. It then defines what an Emergency Department is.

- Emergency Care Networks (ECNs) will include:
    - 24/7 Emergency Departments (EDs);
    - Local Injury Units (LIUs) where patients with non-life-threatening or limb-threatening injuries can receive care;
    - the potential role of Local Emergency Units (LEUs) providing daytime-only emergency services may be considered on a limited number of sites.

- The EMP will lead a consultation process to determine the optimal hours of opening for LEUs and LIUs from the perspectives of safety, quality, access and cost-effectiveness.

- The NECS requires multidisciplinary teams working in EDs and across the pre-hospital, community and hospital specialty interfaces.

- New clinical governance structures and practices are advocated to drive improvement in the quality, efficiency and cost-effectiveness of patient care across the NECS. This will involve clearly defined authority, accountability and responsibility for all members of the emergency care team.

Quality and Access

- The Programme recommends standardised, evidence-based processes for patient assessment in all EDs, with an emphasis on effective patient streaming and minimisation of delays for patients.

- National clinical guidelines will be developed and implemented for the top 20 high-risk and high-volume conditions and the Programme will also implement clinical guidelines developed

by the other national clinical programmes. A broad range of clinical guidelines will be developed on an ongoing basis.

- Key performance indicators have been developed to measure and improve the quality of patient care in our EDs.

- Standardised processes have been defined for ED and LIU patient care to enhance understanding of emergency care processes and serve as templates for local service development.

- Process measures have been standardised and a suite of measures developed to enable ED teams to monitor activity and comply with the 6-hour ED standard.

Value in Emergency Care

- *The Comptroller and Auditor General Special Report, Emergency Departments,* November 2009 estimated that the direct cost of ED care in 2008 was €196 million for the group of 33 hospitals studied for the report, before taking account of overheads. It criticised current systems of cost capture in EDs. It emphasised that ED care is a critical component of acute hospital care. Optimising ED care will therefore contribute to reductions in the overall costs of acute hospital care. The report also questioned the level of variance in the stated costs of care between units. This variance will be reduced through implementation of the Programme's recommendations.

- The EMP advocates the introduction of Casemix and acuity measures to optimise resource allocation against service demand, clinical activity and the complexity of care delivered in each ED.

- Resource stewardship will be a key governance function within each ED and network.

- Savings will be delivered through reductions in admission rates and inpatient lengths of stay. These outcomes will be achieved through a combination of improvements implemented by the EMP and by related acute care programmes (e.g. the Acute Medicine and Medicine for the Elderly programmes).

Key Recommendations from the EMP Report

Chapter 1

What is Emergency Medicine?

- There should be a clear understanding of the scope and role of Emergency Medicine and EDs throughout the healthcare system.
- An ED is a physical space in which most EM care is delivered but EM is a system of care.
- EDs should focus primarily on core EM work while also ensuring that other essential work such as training and clinical audit is supported.
- ED resources should not be used for the provision of non-EM work and any such work should be redirected to more appropriate care settings.
- Specialist centres should be identified and developed to provide EM research and pre-hospital support.
- The term Emergency Department should only be applied to hospital facilities that provide 24/7 access for undifferentiated emergency and urgent presentations across the entire spectrum of medical, surgical, trauma and behavioural conditions.
- EDs must be staffed by full-time Consultants in EM and must operate under the governance of EM.

Chapter 2

The Organisation of Emergency Care

- A National Emergency Care System (NECS) should be developed under the direction of a National Emergency Care System Steering Group.
- Standardised definitions, nomenclature and signage for EDs and other emergency care units that have been developed by the EMP should be applied nationally.
- A single emergency care information system should be developed for use across the NECS.
- Emergency Care Networks (ECNs) should be established. These will be formed by a number of collaborating emergency units, closely aligned with local pre-hospital and primary care services and operating within a shared governance framework. The role of each unit within the network will be defined.

- Effective operational links with pre-hospital services will be established in each network and ambulance service representatives will participate in ECN operational meetings.

- The EMP provides guidance for risk mitigation during the transition phases of ECN development and emphasises the need for effective communication with service users regarding the development of ECNs.

- National protocols will be developed for patient access to emergency care for high-acuity and high-complexity conditions (e.g. reperfusion for stroke, acute coronary syndrome and major trauma) within networks.

- The potential need for the development of a limited number of "supra-regional" EDs (termed Type A1 EDs) should be determined. These EDs would have all supporting specialties on site and provide the highest levels of acuity and complexity of emergency medical and trauma care.

Chapter 3

Governance in Emergency Care

- A National Emergency Care System Steering Group should be established.

- A governance hierarchy should be established with a National Emergency Care System Coordinating Forum ensuring implementation of the strategic recommendations of the NECS Steering Group and driving implementation of the EMP plan. It will oversee the work of ECN Operational Groups.

- Each ED will have monthly Clinical Operational Group meetings and contribute to ECN Operational Groups.

- Governance activity across the NECS must be adequately resourced. This includes clinical audit, guideline implementation, measurement of KPIs and related governance meetings.

- There should be clarity of roles, responsibilities and accountability for all members of the EM Multidisciplinary team.

Chapter 4

Patient Participation in Emergency Care

- Emergency care (EC) should be provided in a patient-centred fashion in keeping with the HIQA *Draft National Standards for Safer Better Healthcare*, 2010.
- A survey tool will be designed to measure patients' experiences of EC.
- ED predictors of lower quality of care ratings must be addressed. These include infrastructural, communication and process of care issues.
- Patients will be encouraged to become partners in the delivery of high-quality emergency care through patient representation at national and network level in the NECS.

Chapter 5

Paediatric Emergency Medicine

- The importance of Paediatric Emergency Medicine (PEM) within a National Emergency Care System and the Irish healthcare system in general should be recognised and PEM should be developed through collaboration between the specialties of EM and Paediatrics.
- Consultant staffing in PEM will be increased both in the dedicated Paediatric EDs (PEDs) in Dublin and through the appointment of Consultants in PEM i.e. Consultants with subspecialty training in PEM to regional units. All 24/7 EDs in which children are treated should appoint at least one such Consultant.
- Each Emergency Care Network (ECN) should have a lead clinician for PEM.
- The EMP will develop workforce models to ensure that there are appropriate levels of paediatric-trained nurses, therapists and social workers with paediatric experience in all ECNs.
- The EMP will develop guidance on ED infrastructure to facilitate the provision of child- and family-friendly care. Child- and family-friendly care is an innovative approach to the planning, delivery and evaluation of health care of children that is grounded in a mutually beneficial partnership between patients, families and health care professionals.
- Observation medicine (via Clinical Decision Units) should be developed as a priority area in PEM.
- Training pathways for specialists in PEM need to be formally established.

- ED information systems must include the specific needs of PEM.

- Child protection should be a fundamental concern of ECNs and robust systems of support to protect children should be in place.

Chapter 6

Pre-hospital Care

- The EMP will work with the National Ambulance Service, the Pre-hospital Emergency Care Council and the National Transport Medicine Programme to support pre-hospital services including:
  - the development of a tiered patient transfer service;
  - the provision of online medical support for advanced paramedics;
  - the development of a national model for helicopter emergency medical services/aeromedical transport and
  - the development of alternative models of dealing with 999 calls that remove the need for emergency ambulance dispatch or ED attendance.

- The EMP will support the development of paramedic and advanced paramedic roles within the NECS.

- A National Ambulance Patient Handover KPI will be implemented by the EMP and will require that handover of the clinical care of patients from ambulance services to ED clinical staff happens within 20 minutes of ambulance arrival at the ED.

- Pre-hospital care medical support staffing should be included in future workforce planning for EM and Intensive Care Medicine.

Major Emergency Planning

- A standardised national approach to Major Emergency Planning at hospital and network level will be developed through collaboration between the EMP and the HSE Emergency Planning Unit.

Chapter 7

Trauma Care

- An inter-disciplinary National Trauma Group will be established by the EMP in collaboration with relevant trauma specialties to advise the HSE/Department of Health (DoH) on policy development, funding, system performance, quality management and research in trauma care.
- Trauma networks will be established on the basis of ECNs and the NECS, with a small number of Major Trauma Centres receiving trauma from smaller hospitals. Paediatric trauma services will be specifically considered within these networks.
- The EMP will contribute to the development of a system for trauma patient retrieval in conjunction with the Critical Care and Transport Medicine Programmes.
- The trauma-receiving status of all acute hospitals will be defined.
- There will be standardised protocols for trauma access and guidelines for clinical care.
- A national Trauma Audit for Ireland should be funded and implemented across all trauma-receiving hospitals in 2013.

Chapter 8

Emergency Medicine Clinical Decision Units

- CDUs should be developed in all 24/7 EDs.
- The EMP will recommend Standardised Operating Procedures for CDUs to ensure the equitable provision of evidence-based, high-quality CDU care throughout the NECS.
- CDU care should be audited and CDU effectiveness should be monitored through ED Clinical Operational meetings.

Chapter 9

Emergency Department Infrastructure

- The EMP will make recommendations for ECN unit infrastructure such that the physical infrastructure of EDs and all ECN units is improved to provide safe clinical environments for patients and staff.
- There should be audio-visual separation of children in general EDs; ideally this should also be provided for older people.

Chapter 10

Information and Communications Technology

- The ICT needs of the NECS should be identified and addressed as a matter of urgency.
- There should be secure electronic transfer and sharing of patient care data between all units in an ECN.
- All NECS units should have electronic patient tracking systems.
- Emergency Department Information Systems (EDIS) should include a full electronic patient record with e-prescribing for all units in the NECS.
- Every ED clinician should have basic computer literacy.
- The EMP will ensure that every ECN unit has web-based access to EMP-recommended online decision support tools and educational materials.

Chapter 11

Clinical Guidelines

- The EMP will develop a suite of clinical practice guidelines for the NECS based on best practice in clinical guideline development.
- Guidelines will be developed for the top 20 EM conditions.
- Clinical Key Performance Indicators relating to EMP clinical practice guidelines will be introduced across the NECS.

- The EMP will co-develop and implement guidelines in collaboration with other national programmes.

Chapter 12

Key Specialty and Service Interfaces

General Practice

- The EMP will work with the DoH, the HSE, the ICGP and other Primary Care organisations to develop new and sustainable roles for GPs who may wish to work on a sessional basis in EDs and other ECN units.
- The EMP will explore the potential for collaborative service and training development between Emergency Medicine, Pre-hospital Care and Primary Care, with the aim of improving the quality of patient care across this interface.

Acute Medicine

- The key interface between EM and Acute Medicine (AM) will be developed to ensure the provision of high-quality patient care for patients accessing both services.
- There will be coordinated implementation of the EMP and AMP, along with the other Acute Access group of National Programmes.
- There must be clinical justice in the delivery of services across both specialty areas.
- AMUs/AMAUs and EDs should not compete for resources.
- There should be planning for routine and surge capacity across the ED/AMU/AMAU interface to prevent overcrowding.
- The Acute Floor concept that sites the ED, Critical Care facilities, Diagnostic Imaging and acute speciality assessment areas in proximity to each other should be realised in future acute hospital infrastructure development.
- There is potential for shared training between EM and AM for all healthcare professions.
- The EMP will work with the Acute Medicine Programme to promote shared academic activity between EM and Acute Medicine.

Surgical Specialties

- Timely, senior on-site general and orthopaedic surgical support is needed for all EDs*.

- There should be clear protocols to ensure equitable access to networked or centralised surgical sub-specialty services.

- Clinical guidelines should be developed to improve the quality of care and ensure the appropriate use of Diagnostic Imaging in surgical presentations.

- Surgical assessment units should be developed as part of the Acute Floor.

  *Previous regionalisation of Orthopaedic services leaves some 24/7 EDs with off-site support only. This issue will be examined in the future review of the provision of emergency trauma services within ECNs.

Critical Care

- All EM patients who require ICU admission should be admitted to an ICU bed within six hours of ED arrival.

- Shared clinical guidelines and protocols should be used in the care of patients across the EM/Critical Care interface and the quality of care should be audited and continuously improved.

- There should be standardisation of Critical Care equipment across each hospital, ICU and ED resuscitation room, with Pre-hospital Care and at regional and national level, as appropriate.

- Training and professional development collaboration between EM and Critical Care should be enhanced.

The Emergency Care of Older Patients

The EMP recommends that a new paradigm of care is developed for older patients within ECNs. It will support and nurture the development of Geriatric EM throughout all networks and improve care to this increasingly complex group of patients. The EMP will implement the following proposals:

- Closer collaboration with the Primary Care, Medicine for the Elderly and Acute Medicine Programmes in providing education and training in core geriatric competencies and recognition of atypical presentations within EDs.

- Improve the integration of Geriatric Care at the hospital/community/public health nursing/General Practice interface with safe hospital avoidance and timely discharge.

- Establish specific early detection and screening tools for rapid detection of 'at risk' older patients.

- Establish national Geriatric EM quality standards and evidence-based practice.

- Establish a safe ED physical environment and one that encourages retention of independent function.

- Fast-track admissions of older patients to inpatient beds.
- Implement polypharmacy review and controls with specific pharmacist review of older patients' medications in the ED.
- Support investment in Geriatric EM research and audit.

Psychiatry

- Dedicated services are needed for patients who present to EDs due to mental illness.
- Patients with mental ill-health who present when they are medically ill must have equitable access to EM and other acute specialty services.
- Liaison Psychiatry services and on-call Psychiatry services, including services for children and families, must be resourced to provide emergency mental health care in the ED to those who need it.
- All patients who present with self-harm should have a bio-psychosocial assessment by a suitably trained mental health professional prior to their discharge.
- All ED patients must have 24/7 access to Medical Social Work services, whether provided on-site or on a regional basis.
- Guidelines, policies, procedures and care pathways will be developed in relation to mental health issues in the ED setting.

Diagnostic Imaging

- Access to Diagnostic Imaging is critical to providing high-quality, efficient emergency care services and avoiding unnecessary hospital admissions.
- There should be equitable access to Diagnostic Imaging across ECNs.
- All ECN units should have access to Digital Imaging and shared Picture Archiving Systems.
- There should be standardised clinical protocols for the appropriate use of Diagnostic Imaging in emergency care.
- Diagnostic Imaging services should be co-located on the Acute Floor with EM, Acute Medicine and other acute care specialties.

Emergency Diagnostics and Laboratory Medicine

- All ECN units should have service level agreements with specialties providing this diagnostic support to ensure optimal patient access.

- Emergency diagnostics should be routinely available from 08:00 to 20:00 seven days a week and emergency on-call services must be responsive to service need.

- There should be regular audit of service access and quality within the ECN governance framework.

- The EMP recommends a maximum turnaround time of two hours for all EM laboratory tests and other emergency diagnostic investigations.

- There should be electronic ordering and review of laboratory and other diagnostic test results.

- The EMP will develop standard order sets for laboratory tests to facilitate fast-tracking of laboratory tests and optimal resource utilisation.

- Patient access to diagnostic tests and response times will be monitored by ECN Clinical Operational Groups.

- The use of Point-of-Care testing is a component of clinical laboratory support to ECNs and must comply with national best practice guidelines.

- Transfusion practice and the use of blood products should be audited in each ED.

Infection Prevention and Control

- The EM and Health Care Acquired Infection (HCAI) programmes will collaborate to improve infection prevention and control and reduce risks associated with HCAI in the ED setting.

- All EDs should have adequate infrastructure for infection prevention and control.

- All ED staff should have mandatory infection prevention and control induction training before commencing employment.

- All patients will undergo screening at Triage for the prevention of HCAI and cross-infection in the ED.

Chapter 13

The Emergency Medicine Team and Workforce Planning

- There will be ongoing comprehensive workforce planning for EM, including all components of the multidisciplinary team and supporting services, because appropriate staffing of the ED is the single most important factor in providing a prompt, timely and clinically effective service to patients.

- Standardised staffing models will be developed to ensure the equitable and appropriate staffing of all EDs and ECN units.

Chapter 14

Emergency Nursing

- The EMP recommends that its definition of Emergency Nursing is adopted across the National Emergency Care System.
- The EMP recommends that the Emergency Nursing Competency Framework (See Appendix 13) which underpins the minimum competencies expected of an emergency nurse working across the NECS is adopted nationwide.
- The Programme recommends standardising nursing roles and job descriptions across the NECS. Workforce planning and the use of an appropriate patient dependency and acuity measurement tools will support the standardisation of staffing levels, grade and skill mix which match with each type of emergency service throughout the system.
- The EMP recommends that a cohesive national strategy be adopted to facilitate postgraduate education and continuing professional development specific to emergency nursing. A minimum level of education at Postgraduate Diploma in Specialist nursing will support the career development of the entire nursing team.
- Each ECN should implement competency skills development and specific in-service education that is focused on enhanced nursing roles.

Chapter 15

The Role of the Consultant in Emergency Medicine and Specialty Training

- There needs to be a phased and sustained enhancement of Consultant staffing levels in EM to achieve levels comparable to international norms.
- Enhanced Consultant in EM staffing levels will support expanded hours of Consultant working and, in parallel with an expansion of the normal working day in other hospital specialties and supporting services, will improve the quality, access and cost-effectiveness of patient care in ECNs.

- The spectrum of work undertaken by Consultants in EM needs to be recognised and resourced.
- EM needs to become an attractive and sustainable career choice for Irish medical graduates.

Chapter 16

The Roles of the Therapy Professions and Medical Social Workers in Emergency Care

Physiotherapy

- Physiotherapy-provided soft tissue review clinics will be established in ECNs.
- Workforce planning for Physiotherapy services in ECNs will be undertaken by the EMP in conjunction with the HSE, relevant directorates, the Therapy Professions Committee and Physiotherapy representatives.
- All ECN patients should have appropriate access to physiotherapy services in respiratory care, neuro-rehabilitation and musculoskeletal therapy.

Occupational Therapy

- All ED patients should have access to Occupational Therapy, including functional assessment, hand therapy and customised splinting services.
- Referral protocols to Occupational Therapy services should be introduced to all EDs.
- There should be integration of services and budgets across the community/ED interface.
- There should be appropriate workforce planning for Occupational Therapy across ECNs.
- The educational needs of Occupational Therapists in the ED setting should be supported.
- Documentation and patient information leaflets should be standardised.

Speech and Language Therapy

- All ECN patients should have appropriate access to Speech and Language Therapy Services.
- Speech and Language Therapy Staff should be involved in the education of ECN staff on the identification of swallowing and communication difficulties.

Clinical Nutrition/Dietetics

- The availability of dietetic services to EDs should be increased to enhance awareness of nutrition related issues, increase referral rates to the service and promote early, appropriate nutrition intervention.

- Adequate resources should be provided to ensure the needs of patients requiring nutrition intervention are met in an appropriate setting following discharge from the ED.

- The scope of practice in Clinical Nutrition and Dietetics in the ED should be extended to include PEG tube replacement.

Podiatry

- All ECN patients and particularly those with Diabetic Foot Disease should have appropriate access to Podiatry services.

Orthoptics

- All ECN patients should have appropriate access to Orthoptic services.

- Access to Orthoptic services should be considered in the organisation of trauma care.

Medical Social Work

- Medical Social Work services should be established throughout ECNs, staffed by a senior Medical Social Worker or highly experienced main grade staff member with access to immediate senior support.

- Medical Social Worker staffing levels should facilitate extended hours of service and at a minimum, an emergency on call MSW service should be available to ED patients. A facility for non-urgent out-of-hours referrals should be in place, ensuring that all patients receive a social work service regardless of the time of their presentation.

- Medical Social Worker expertise should be utilised within ED policy development and review, where appropriate. This includes future policy development in order to establish consistent policies across ECNs in areas such as elder protection, domestic violence identification and intervention, homelessness etc.

Chapter 17

Academic Emergency Medicine and Emergency Nursing Education, Professional Development and Academic Activity

Academic Emergency Medicine

- All ECNs should be linked to a University Medical School.
- Designated centres should lead on EC research across ECNs and at national level.
- The EMP will work with all stakeholders to enhance undergraduate teaching in EM, based on the International Federation for Emergency Medicine Curriculum for Undergraduate Training in EM.

Emergency Nursing Education, Professional Development and Academic Activity

- Undergraduate nursing degree programmes should include ED secondments.
- Undergraduate nursing programmes should provide nurses with the theoretical and clinical skill sets required to work in an ED environment.
- The EMP recognises the high levels of postgraduate training among Emergency nurses and will support the ongoing postgraduate training of Emergency nurses within Emergency Care Networks (ECNs).
- The EMP will support Advanced Nurse Practitioner/Clinical Nurse Specialist clinical audit and research activity through ED governance structures and the academic links established for all Emergency Care Networks.

Chapter 18

A Systems Improvement Approach to Emergency Care

- Systems improvement approaches from industry have been proven to be effective in improving the quality and timeliness of care in EDs and should be used as tools to support quality improvement in the Irish EC setting.
- Existing good practice identified through Best Practice Workshops will be shared with all EDs.

Chapter 19

The Patient Pathway in Emergency Care

- Key Performance Indicators are necessary to drive quality improvement in EC. The key access KPIs are:
    - Episodes of EM care should be completed within 6 hours;
    - Ambulance-borne patients should be handed over to EM staff within 20 minutes;
    - Fewer than 5% of patients should leave an ED before completion of treatment.
- A 3:2:1 approach should be adopted for patients who are referred for admission: three hours for completion of EM assessment, a maximum of two hours for assessment by admitting teams and one hour for transfer to a hospital bed.
- ED Information Systems should be developed to facilitate measurement of ED processing times and support the delivery of high quality care.
- Patient registration should take place before or at the same time as triage.
- Patients should be able to access treatment cubicles on arrival and bedside triage and registration should be provided.
- There should be standardisation of a minimum dataset for patient registration.
- The Manchester Triage System is the recommended triage system for the NECS.
- An Irish Children's Triage System will be developed.
- EMP Clinical Guidelines for Pain Management in the ED will direct pain assessment at triage.
- Rapid Assessment & Treatment (RAT) protocols should be implemented in EDs to improve the timeliness and quality of care.
- Patient streaming and fast-tracking systems should be implemented to improve ED efficiency.
- Research should be undertaken to determine the most cost-effective models of patient streaming and fast-tracking in this healthcare system.
- Clinical decision-making in EM will be enhanced through increased awareness, training and the dissemination of decision-making support including patient care algorithms, clinical guidelines and care pathways.
- All patients who need it should have access to care provided by the Therapy Professions and Social Workers. Multidisciplinary assessment is particularly valuable in supporting the safe discharge of patients with complex care needs.

- Protocols should be developed in all hospitals to allow patients who are referred for admission to be transferred directly to an inpatient bed for review by the admitting team, whenever a bed is available.

- All referred patients should be examined by a senior decision-maker from an on-call team within one hour of referral if not sooner, depending on clinical acuity. This is consistent with the standard set by the Acute Medicine Programme. Assessments should be completed within two hours of referral.

- The clinical risks associated with patient hand-over and referral should be recognised and addressed through protocols and training.

- Duplication of clinical documentation around the referral process should be avoided. A general protocol will be developed to govern inter-specialty documentation.

- Practice with regard to referral for admission or consultation should be monitored at departmental level. This will include the number of patients referred for admission subsequently discharged by on-call teams and the proportion of patients referred for consultation that are subsequently admitted.

- Condition-specific or inter-specialty care pathways should be developed to support the direct referral of patients to rapid access clinics from ED without the direct involvement of specialty teams.

- Standard pathways of care should be used in all ECN Local Injury Units.

Chapter 20

Review Clinics

- Review clinic work should be recorded, monitored and audited.
- Alternative pathways of care should be developed to minimise the requirement for EM review clinics.
- Multidisciplinary teams can effectively contribute to EM review activity.

Chapter 21

Patients with Particular EM Care Needs

Specific recommendations will be implemented to ensure that patients who have particular or complex emergency care needs receive high quality care whenever they need it. The needs of Children, Adolescents and the Elderly are outlined in the relevant sections of this report.

Palliative care

- The EMP and Palliative Care Programme will work together to ensure that patients with life-limiting conditions and their families can easily access a level of palliative care that is appropriate to their needs.
- Clinical Guidelines and care protocols will be developed to support the delivery of high quality palliative care for patients who present to EDs.

Recommendations are also made with regards to the care of the following groups:

- People who frequently attend EDs;
- Homeless people;
- Patients with complex psychosocial problems;
- People with alcohol dependency problems and substance abuse;
- Bereaved persons;
- Adolescent patients;
- Pregnant women;
- People with intellectual disability;
- People with physical disability;
- Patients who present due to alleged sexual assault;
- People with language or communication problems.

Chapter 22

Emergency Medicine Programme Measures and Value in Emergency Care

- The Programme will introduce a comprehensive suite of measures and Key Performance Indicators for Emergency Care. These will include access and quality of care KPIs.
- The EMP will advance the development of cost-measurement and resource allocation systems to enable the cost-effectiveness of emergency care to be measured and improved.
- The EMP will standardise care to assist in reducing the variance in ED patient costs identified in the *Comptroller and Auditor General Special Report, Emergency Departments,* November 2009.
- The EMP will develop activity definitions and acuity and casemix measures to enable benchmarking of ED workloads and appropriate resource allocation.

Chapter 23

Programme Outcomes

- Defined outcome measures for the effectiveness of implementation of the Emergency Medicine Programme will be monitored.

Who Benefits from the Emergency Medicine Programme?

The overall benefits of the programme are listed in the following table:

Emergency Medicine Patients	• Patients assessed and discharged or admitted within six hours of arrival in an ED. • Patients' experiences of emergency care measured and considered in the development of services. • Patients receiving the same high standards of emergency care wherever they access services because all EDs and ECN units are part of a single National Emergency Care System. • The most up to date, evidence-based treatments being available to patients through the use of National Clinical Guidelines and protocols. • ECN services being continuously measured and improved to protect patient safety and the quality of care they receive. • The EMP promoting patient self-care whenever possible.
Pre-hospital Care	• Better integration of pre-hospital and ED-based emergency services at national, regional and network level improving the quality of patient care across this vital interface. • National access protocols standardising patient transfer to EDs. • Enhanced Transport Medicine Services driving improvements in pre-hospital care.
GPs	• Enhanced working relationships between ED staff and GPs, with structured liaison between ECNs and local Primary Care Teams. • Improved communication with GPs by Consultants in EM and other ED staff. • GPs having access to alternative appropriate pathways of care to ED referral through the Acute Medicine, Surgery, Paediatrics and Medicine for the Elderly Programmes and the chronic disease national clinical programmes. • New structures introduced to facilitate GPs who may wish to work on a sessional basis in EDs.

Nurses and Directors of Nursing	• Standardised, evidence-based care pathways and protocols developed to ensure that every patient receives the most appropriate care.
	• Nurses working in an environment that provides dignified care for their patients with no patient to be cared for on a trolley for an extended period.
	• Nurses having expanded roles in the delivery of emergency care, according to EM-specific competencies developed in accordance with the guidance of the National Council for the Professional Development of Nurses and Midwives and the Department of Health.
	• The role of Advanced Nurse Practitioners (ANPs) in EM expanded and more ANP-provided patient care through enhanced staffing levels in ECNs.
	• The Director of Nursing is part of the leadership team responsible for ensuring the effective implementation of the EMP.
Hospital Doctors	• Enhanced Consultant in EM staffing providing better patient care and increased levels of supervision for doctors in training.
	• Rapid access to inpatient admission, specialty consultation and relevant outpatient services.
	• Structured weekend work in accordance with the Consultant Contract 2008, with parallel increased availability of support staff and acute specialty services to optimise the effectiveness of the Consultant in EM presence in the ED.
Therapy Professionals	• Therapy professionals able to assess and treat patients in an appropriate setting, affording the patient respect and dignity.
	• No patient to be cared for on a trolley for an extended period.
	• Standardised evidence-based care pathways for therapy care.
	• A combined document/generic therapy screening tool developed and implemented to enhance the seamless transfer of care between provider sites.
	• Therapists having an expanded role in the delivery of patient care, including therapist involvement in review clinics and therapist-provided clinics.
	• Protocols enhancing interdisciplinary referral within care pathways.

	• The expansion of service provision in line with defined service needs to be addressed e.g. extended hours and weekend service. • The therapy professions working together and with the multidisciplinary EC team to build capacity in the integrated health care system to deliver this model e.g. staff grade rotation between provider sites, outreach and inreach services.
Hospital Pharmacists	• Clinical pharmacists playing a key role in service delivery in EDs and Clinical Decision Units (CDUs) with every 24/7 ED having access to clinical pharmacy support. • Clinical pharmacists providing medicines reconciliation immediately on patient arrival or as soon after as possible. • Clinical pharmacy reviewing and advising if admission is medication/toxicity related or if there are medication issues. • Patient specific medicines to be dispensed from the pharmacy. • The new career path currently being developed for hospital pharmacists encompassing EM. • The expansion of service provision in line with defined service needs to be addressed e.g. extended hours and weekend service.
Department of Health	• The EMP facilitating measures undertaken by the Department of Health to improve the safety, quality and timeliness of unscheduled care. • Enhanced quality of patient care, ease of access and cost savings.
HIQA	• The Programme assisting HIQA in the standardisation of the quality and safety of emergency care. • Improvements in the quality and safety of patient care, ease of access, cost savings and improved clinical governance.
The Clinical Indemnity Scheme	• Improvements in the quality and safety of patient care leading to a reduction in the numbers of adverse events giving rise to claims.

HSE/Hospital Management	• The General Manager/CEO, Director of Nursing, Clinical Director, Clinical Services Manager forming the leadership team responsible for ensuring the effective implementation of the Programme. • The Programme ensuring the standardisation of quality, safety and access to care and the identification and correction of variations in the delivery of services. • The EMP providing a framework for roll-out of enhanced ICT systems.
Public Representatives	• The Programme definitively establishing the role of EDs and other units within the National Emergency Care System. • Patient experience enhanced through implementation of the 6-hour ED standard. • Equity of access to emergency services, through enhanced integration of pre-hospital and ED services, national access protocols and retrieval systems.

Chapter One

1. What is Emergency Medicine?

1.1   Introduction

Emergency Medicine (EM) provides an essential service for patients and communities and fulfils a unique and crucial remit within the national healthcare system. EM patients are people who believe that they have an injury or illness that could place their health in jeopardy or lead to an impairment of their quality of life[1] and that EM care will remove or reduce this risk. Emergency Departments (EDs) provide continuous access to EM for patients.

1.2   International Definition for Emergency Medicine

Emergency medicine is a medical specialty — a field of practice based on the knowledge and skills required for the prevention, diagnosis and management of acute and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioral disorders. It further encompasses an understanding of the development of pre-hospital and in-hospital emergency medical systems and the skills necessary for this development.

This is the definition of EM used worldwide. It was developed by the International Federation for Emergency Medicine[2], an organisation comprised of 41 National EM representative bodies, including Ireland. The World Health Organisation describes EM as "a global discipline that provides secondary disease prevention and is also a tool for primary prevention. It is an integrated system of emergency care consisting of access to EM care; provision of EM care in the community and during transportation of patients; and provision of care at the receiving facility or hospital emergency department".[3]

1.3 The History of the Specialty

Emergency Medicine is well established as a specialty in the United Kingdom, North America, Australasia and parts of South East Asia. A full training programme has been developed in the Republic of South Africa in the last few years and it is developing as a specialty in the Indian sub-continent, many countries in Europe and the Middle East. It has been recognised as a separate medical specialty in Ireland since 2000. By international standards there has only been a small number of Consultants in Emergency Medicine appointed, primarily to larger departments in Ireland over the last 30 years.

The structure and practice of Emergency Medicine in Ireland has, until the last decade, closely paralleled that of the United Kingdom. The establishment of the NHS in 1948 was followed during the 1950s by the realisation that the hospital "Casualty" Department was often the portal of entry for the sickest and most seriously injured patients in the hospital. The 1960s saw the appointment of the first Casualty Surgeons, the title reflecting the fact that the nature of the emergency treatment delivered was predominantly of a surgical nature.

Developments in organ support, thrombolysis, reperfusion therapy, the management of sepsis, pre-hospital care and the increasing survival and return to the community of patients with multiple complex medical conditions has meant that the emergency management of "medical" conditions now forms a major part of the practice of emergency physicians.

The Irish Association for Emergency Medicine (formerly the Irish Accident & Emergency Association) celebrated its 21st year in existence at the Annual Scientific Meeting of the Association in October 2010. Specialty training in EM is overseen by the Irish Committee for Emergency Medicine Training under the governance of the Royal College of Surgeons in Ireland and representation from the Royal College of Physicians of Ireland. The College of Emergency Medicine UK, of which the National Board for Ireland is one of four national boards, provides guidance on best practice and service delivery in EM and directs the postgraduate examinations for doctors training to become EM specialists. EM nurses are represented by the Emergency Nurses section of the Irish Nurses and Midwives Organisation and may be affiliated to the Faculty of Emergency Nursing (UK).

Emergency nursing has also developed into a distinct specialist area of nursing practice. Post graduate education programmes are now widely available for nurses wishing to pursue a career in

emergency nursing. These courses comply with Requirements and Standards for Post-Registration Education as specified by An Bord Altranais (Nursing Board) and have been developed in partnership between third level institutions and service providers, based on service needs of the partner organisations. In addition to postgraduate education programmes, a range of short courses support emergency nurses' continuing professional and competency development.

1.4   Current Problems in Irish Emergency Departments

Emergency Departments (EDs) in Ireland have been repeatedly reported by the various media for well over a decade to be in "crisis". Usually, the reason for the use of the term "crisis" is the numbers of inpatient boarders (i.e. patients who have been judged to need emergency hospital admission but are kept waiting on a trolley until a bed becomes available) or the experience of individual patients as inpatient boarders.

Many of the discussions suggesting solutions become distracted by the notion that diverting or attempting to attract away from the ED the 70-80% of patients who attend and are discharged from it will somehow reduce the numbers of inpatient boarders awaiting beds. Notwithstanding this idea, it is well established that the accumulation of inpatient boarders in the ED is merely the most immediate and visible sign of system-wide problems. There is a growing body of evidence to show that the provision of alternative access points for patients who self-present to EDs is not associated with a reduction in ED attendances over time[4] and may be confusing for patients.[5, 6]

Whilst such discussion goes on, the business of assessing and treating the patients who account for almost 1.2 million attendances to EDs in Ireland each year carries on. This care is delivered by EM team members, often in cramped and inappropriate areas, because of the need for inpatient boarders to be cared for in the clinical areas that were designed for the management of new ED patients.

The National Clinical Programmes that are being developed by the Directorate of Clinical Strategy and Programmes (DCSP) will reduce the number of inpatient boarders by various means, including reducing the length of hospital stays for patients. The increase in numbers of Consultants in Emergency Medicine recommended in this programme will contribute to the reduction in inpatient boarders by reducing the numbers of ED patients who are referred for hospital admission. The range of initiatives included in this programme will result in an overall improvement in the quality

and timeliness of care delivered. It is likely to be difficult for patients, their families and ED staff experiencing the current problems to envisage the type of timely, high-quality emergency care that this programme aims to implement in every ED in Ireland.

1.5   Key Concepts in Emergency Medicine

1.5.1   To Do the Most for the Most

Emergency Care is always accessible for patients and there is no limit to the potential number of patients who may present to any ED at one time. EDs need to be adequately resourced to provide unscheduled care and to have adequate capacity to deal with unpredictable surges in demand. In the situation of demand outstripping the available resource, a system of prioritisation, termed triage, is used to identify patients who most need immediate care and those who will not be significantly disadvantaged by longer waiting times for care. This reflects the concept of 'clinical justice' which aims to ensure that patients receive care appropriate to their need and in a timely fashion.[7]

1.5.2   The Patient Dictates the Emergency

Patients attend EDs if they believe that their symptoms require emergency care. It is only after an appropriate clinical assessment that the true or relative emergency status of a patient's presenting problem can be determined. Many factors, ranging from the psychological status of the patient to the results of complex clinical investigations, influence the determination of the patient's true need for emergency care. Judgements as to the appropriateness of an individual patient's attendance at an ED are best avoided. Service users should be advised to contact Primary Care for advice if they are uncertain whether or not to attend an ED.

Most people who come to EDs are stressed or anxious and many are frightened. Their attendance may have been prompted by an unexpected critical life event, such as major injury, the unexpected death of a loved-one or a sudden deterioration in a longstanding medical condition. Some patients who are brought to EDs may be uncooperative due to intoxication, dementia or brain injury. Others may be aggressive, purposefully deceptive or dangerous.[7] To provide optimal clinical care for all, EM staff need to observe an attitude of unconditional non-judgmental positive regard for their patients. This has been identified as model behaviour in EM clinicians.[8]

1.5.3   Undifferentiated Care

EM is not defined by a collection of symptoms, pre-existing medical illness, surgical or psychosocial conditions. A key component of EM practice is the differentiation of a patient's presenting problems or symptoms into a working diagnosis to determine their subsequent care needs. The challenges inherent in this work may be overlooked by other service providers who take this sorting for granted or become involved in patient care only after this process has occurred.[9] Historically, this work has not been quantified, measured or quality assured within the Irish health system.

1.5.4   'Can Do' versus 'Should Do'

EM provides essential healthcare for people who may have difficulty accessing other services. It is crucial for the effectiveness of emergency care systems that appropriate alternatives, such as Primary Care and social care, are available and attractive to patients who would be better served by those services. EDs are also prone to excessive and avoidable demand when alternative access points to hospital-based care, such as rapid access outpatient clinics, are not available for GP patients. Other examples of ED "misuse" include ED staff providing the ongoing non-emergency care of patients admitted by or accepted by other specialties or undertaking non-emergency complex clinical investigations for Primary Care patients at their GP's request to circumvent inadequate imaging access for Primary Care. An EM service is a finite resource, with a minute-by-minute balance to be achieved between resource availability and demand. In order to provide the best possible quality of emergency care, resources must be directed at the highest priority core EM work i.e. the timely initial assessment of new EM patients. This is the work that EM should focus on.

1.6   Benefits of EM to the Health System

1.6.1   "Supra-specialist" versus "Specialist Generalist"

The many advances in knowledge, evidence base, technology, reliability and reproducibility (and increasing audit and scrutiny) of medical practice over the last 50 years have been associated with increasing specialisation of medical practitioners. This is intuitively a good thing, when the patient's condition allows time for them to benefit from the opinion, experience and wisdom of their GP followed by that of as many specialists and investigations as is necessary for optimum diagnosis and management of their condition.

Often, a real or apparent new emergency problem develops in a patient that necessitates their unscheduled attendance at a hospital. The initial care of these patients should be delivered by or under the direction of doctors who can assess, stabilise and decide the best "next step" in the management of their real or apparent emergency, in a sequence and manner that is in keeping with current best practice, involves the minimum number of diagnostic and therapeutic steps to reach this point, whilst judiciously avoiding actions that are not immediately necessary and where the risk/benefit ratio is questionable until the diagnosis becomes more clear. This assessment and initial management often has to occur long before the patient has been "differentiated" or diagnosed with a condition appropriate to any particular specialty. **This is the raison d'être for Emergency Medicine**.

Consultants in EM provide emergency care that is unlimited by boundaries such as patient age, gender, a particular disease, body organs involved or the type of therapy required. They are generalists with highly specialised skills and, as such, play a highly integrated role in the health care system.[10] The fully trained specialist in EM has a broad training and experience in the diagnosis and management of emergencies in all types of clinical conditions but not necessarily in the detailed extended management of the same conditions, which is the province of the relevant specialist. The EM specialist will, if necessary, involve one or more relevant specialists as soon as necessary. However, he/she will be ready to intervene with time-critical interventions, where appropriate, if circumstances mandate this. They are comfortable with making critical decisions with regard to the patient's best interests before all desirable data is available.

1.7   A System of Patient Care

EM is delivered by highly trained teams of nurses, doctors, allied health professionals and non-clinical staff who work in a coordinated way. The aptitude and training of emergency teams to look for or to impose priority and order in apparent chaos is key to their clinical and operational effectiveness. The clinical prioritisation of patient care according to Airway, Breathing and Circulation problems on which much of EM practice is based has been adapted for use across a broad range of medical practice and has been promoted through EM's involvement in resuscitation training.

The ED is the physical space in which most EM care is delivered but EM is about more than what happens in an ED – it is a system of care. Many EM teams contribute to patient care in the pre-hospital setting and sometimes in-hospital areas also with outreach services or the rotation of staff across related specialties such as Acute Medicine and Critical Care. EM specialists may undertake additional training to be dual qualified in EM and Critical Care or Acute Medicine.

The systematic approach of EM is intrinsic to Major Emergency Planning for hospitals and EDs and along with Pre-hospital care (PHC) are the key components of the health system's preparedness for, and response to, a major disaster. There is also potential for EDs to contribute to disease surveillance and other public health roles.

1.8   Teaching and Training other Healthcare Practitioners

The concentration of patients with a broad spectrum of medical conditions in EDs and the specialty's systematic approach to care delivery are particular reasons that doctors in EM have been to the fore in the introduction, development and delivery of various Advanced Life Support Courses in Ireland. These courses teach the prioritised assessment and management of different emergency conditions, with particular emphasis on interspecialty and interdisciplinary teamwork and recognising when and where to seek assistance.

EM provides essential training for doctors in training to be GPs, Physicians, Surgeons and Paediatricians as well as EM specialists. Nurses, Paramedics and Allied Health professionals also receive essential training in EM.

The use of high-fidelity simulators to teach and practice the management of all manner of emergency presentations, including the very rare ones, is increasing. EM is working closely with the specialty of Anaesthesia to embed their use into the training and continuing professional development of health professionals involved in the delivery of emergency care during the initial presentation of critically unwell patients.

1.9   Development of Ambulatory Care in EM

Emergency Medicine has been one of the main drivers of care pathways and alternatives to admission e.g. outpatient management of DVT, home IV antibiotic therapy, CDU management of chest pain, Lone Acute Severe Headache, toxicology patients not requiring high-dependency care, observation medicine in paediatrics and several other conditions. There is an increasing evidence base to demonstrate the safety and efficiency of these practices that provide an appropriate "exit strategy" for the patient from the ED.[4]

1.10   Prioritising EM Work

It is important to define and prioritise the core components of EM practice, given the breadth and complexity of the specialty. A clear understanding of core EM activity is essential for quality improvement, as this will form a basis for the development of explicit service goals and the appropriate allocation of resources.

The most important component of EM work is the prioritised evaluation and treatment of patients with time-critical healthcare needs.

1.11   Core EM Activities

A. The prioritised evaluation and treatment of patients with time-critical and emergency health care needs.	
Who?	The entire EM team, including clinical and support staff
What?	This involves life-saving and limb-saving treatment, the provision of timely pain relief and the psychological care of patients and their families. MTS Triage Category 1, 2 and 3 would be included in this work-stream.
When?	All of the time. All other activity is subservient to this in terms of priority and supporting clinical activities may have to be deferred in response to the unpredictable requirement to deliver this service.
Where?	All EDs

B. The prioritised evaluation and treatment of patients with problems that are not immediately life-threatening or limb-threatening but which require emergency care to protect or restore the patient's wellbeing or to prevent avoidable disability.	
Who?	The entire EM team, including clinical and support staff
What?	This includes the entire spectrum of emergency care including medical, surgical and psychosocial presentations. Some MTS Triage Category 3 and all Category 4 and 5 presentations would be included in this work-stream.
When?	All of the time
Where?	All EDs

C. Essential supporting activities for clinical care and governance in EM	
Who?	The entire EM team participates in this work, which is led by Consultants, Senior Nurses and ED Managers.
What?	Resource management, staff development, risk management, governance activity including clinical audit for the ED and Emergency Care Network.
When?	On a scheduled basis. It is essential that appropriate staff time and other resources are allocated to these essential activities.
Where?	In all EDs and Emergency Care Networks (ECNs)

Table 1.1: Core EM activities (A-C)

D. Education, training and continuing professional development in EM	
Who?	The entire EM team participates in this work, which is led by Consultants and Senior Nurses. The ED setting provides training for future GPs, Physicians, Paediatricians and Surgeons in addition to EM specialists. Paramedics, nurses, therapy professionals and medical social workers also undergo training in EM.
What?	Teaching may be formal or situational
When?	On a scheduled basis. It is essential that appropriate staff time and other resources are allocated to these essential activities.
Where?	In all EDs and Emergency Care Networks (ECNs)

E. Major Emergency planning	
Who?	The entire ED team, including clinical and support staff
What?	Planning and responses
When?	Constant preparedness
Where?	All units and services in an ECN

Table 1.1 continued: Core EM activities (D-E)

1.12   Valuable non-core EM Activities

A. Clinical Decision Unit*	
Who?	The ED team allocated to CDU work, including clinical and support staff
What?	Condition-specific, evidence based inpatient care provided by Consultants in Emergency Medicine. Research has proven CDU care to be high-quality and cost-effective.
When?	All of the time
Where?	All EDs should have access to CDU care. This requires development in some hospitals.
*CDU: A Clinical Decision Unit is an inpatient facility adjacent to the ED managed by Consultants in Emergency Medicine. CDUs may also include Chest Pain Assessment Units and have been previously termed ED Observation Wards in some hospitals. The purpose of a CDU is to make safe, economical and timely clinical decisions on patients who present to the ED with specific emergency conditions whose length of stay is likely to be no longer than 6 – 24 hours duration.	

B. Review clinic work	
Who?	Consultants in EM or their delegates, Nurses, Therapy Professionals, Support staff
What?	Some ED patients may require a single or small number of scheduled clinical review episodes of care (see Chapter 20).
When?	During periods of relatively low demand from core activity. The requirement for review clinics will diminish as EM with increased Consultant involvement in direct patient care.
Where?	Not all EDs provide formal review clinics (see Chapter 20).

C. Contributing to National Agencies and organisations relating to EM Service Development and Training	
Who?	Consultants in EM and senior Nurse Managers
What?	HSE service development work. Training Committee Work for Colleges. Liaison with various EM relevant agencies.
When?	On an episodic or scheduled basis
Where?	Outside the ED

Table 1.2: Valuable non-core EM activities

1.13   Important EM activities Facilitated through Specialist Centres

A. Research	
Who?	Led by clinicians and nurses with particular interest, training and resources to undertake research, with the support of the entire ED team
What?	Research may include clinical, laboratory-based or service development work. It may involve other related specialties. It is vital to the future improvement of patient care in EM.
When?	Scheduled
Where?	All ECN units have a role to play in EM research but research activity will be led and promoted through academic centres.

B. Medical Support for Pre-hospital Care	
Who?	Senior EM doctors with additional training in Pre-hospital Care
What?	On-line medical support. On-site Medical interventions. Involvement in Retrieval services.
When	Continuous service
Where?	All EDs have a role to play in providing support for the National Ambulance Service (NAS) but the provision of high-level support will be concentrated at specialised and appropriately resourced centres.

Table 1.3: Important EM activities facilitated through specialist centres

1.14   What is the definition of an Emergency Department?

1.14.1   Emergency Department

An Emergency Department (ED) is a dedicated area in a hospital that is organised and administered to provide continuous access to Emergency Medicine (EM) services for patients and communities.[11] EDs provide 24/7 access for undifferentiated emergency and urgent presentations across the entire spectrum of medical, surgical, trauma and behavioural conditions.[2] EDs operate under the clinical governance of Consultants in EM. They are staffed by appropriately trained doctors, nurses and multidisciplinary healthcare provider teams. EDs require the on-site presence of core supporting specialties and services and must have seamless access to regional medical and surgical specialties and more complex diagnostic imaging facilities within an Emergency Care Network (see below).

The EMP has developed a national model for the delivery of Emergency Medicine in EDs. It also requires that all EDs are part of, and contribute to, Emergency Care Networks (ECNs) i.e. coordinated systems of care that include: Pre-hospital care, EDs, other emergency units, supporting acute hospital services and have links with Primary Care and voluntary emergency care providers. The term General ED describes an ED at which children and adults are seen and treated. There are also EDs that see exclusively Paediatric or Adult patients in the Irish healthcare system.

1.14.2   Emergency Care Network Units

The EMP recommends that facilities at hospitals that do not provide 24/7 undifferentiated access to the entire spectrum of emergency presentations should not be called Emergency Departments but should be referred to as ECN Units. This includes both those units that provide undifferentiated access on a less than 24-hour basis (ECN Local Emergency Units) and those units that provide care to defined patient groups e.g. non-life-threatening or limb-threatening injury (ECN Local Injury Units). These units also come under the governance of Consultants in Emergency Medicine through the ECN. Further details of these ECN Local Emergency Units are provided in Chapter 2. Single specialty emergency units, such as emergency ophthalmology services, should also be termed emergency units and not Emergency Departments. All EDs, ECN units and single specialty emergency units should be linked within ECNs and the National Emergency Care System.

Recommendations:

- There should be a clear understanding of the scope and role of Emergency Medicine and EDs throughout the healthcare system.

- An ED is a physical space in which most EM care is delivered but EM is a system of care.

- EDs should focus on core EM work while also ensuring that other essential work such as training and clinical audit is supported.

- ED resources should not be used for the provision of non-EM clinical work and any such clinical work should be redirected to more appropriate care settings.

- Specialist centres should be identified and developed to provide EM research and pre-hospital support.

- The term Emergency Department should only be applied to hospital facilities that provide 24/7 access for undifferentiated emergency and urgent presentations across the entire spectrum of medical, surgical, trauma and behavioural conditions.

- EDs must be staffed by full-time Consultants in EM and operate under the governance of EM.

Chapter Two

2. The Organisation of Emergency Care

2.1   A National System of Emergency Care

The programme proposes the re-organisation of emergency services in Ireland based on the concept of a National Emergency Care System (NECS). A well coordinated system of care will facilitate the provision of high-quality patient care that is standardised across the country and easily accessible for all service users, irrespective of when or where they access emergency care. The NECS should be characterised by high levels of efficiency, effectiveness, accountability, sustainability, high staff morale and system resilience.

We recommend that the system should be comprised of a number of Emergency Care Networks (ECNs), each of which includes a number of collaborating emergency units, closely aligned with local pre-hospital services (Figure 2.1). The ECN would function within the framework of the HSE regional structures. We present a range of options for the hospital-based sites of care within Emergency Care Networks (ECNs), namely Emergency Departments, Local Emergency Units and Local Injury Units.
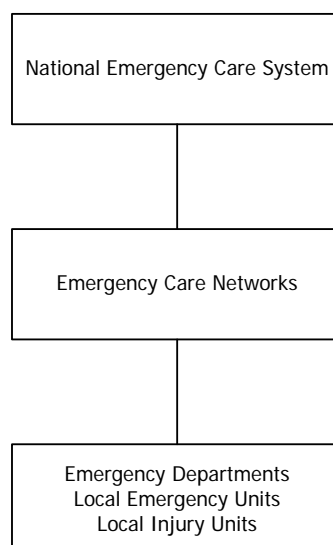
Figure 2.1: Structure of the National Emergency Care System

2.2 Emergency Care Networks

The core components of ECNs are:

- Pre-hospital care: including a Helicopter Emergency Medical Service (HEMS), ambulance transport, pre-hospital medical support and the work of Paramedics and Advanced Paramedics.

- Emergency Medicine: including Emergency Departments (EDs), Clinical Decision Units (CDUs), Paediatric Emergency Medicine (PEM) and multidisciplinary Emergency Medicine (EM) teams.

- Acute Hospitals and supporting specialties.

ECNs should also include:

- Community level emergency care: first responders, voluntary groups etc.

- Primary Care: GPs refer patients whom they identify as having emergency conditions to EDs. Some GPs provide support to pre-hospital care as Immediate Care Doctors. GPs who may work within ECN units according to agreed governance structures. GPs also provide care for injured patients, particularly in rural and remote areas. GP Co-ops play an important role in this matrix.

- Transfer to definitive care, including retrieval services.

2.3   Evidence and Opinion Informing Emergency Care Networks and Models of Care

2.3.1   Introduction

The proposal for an Irish National Emergency Care System and its composite networks is based primarily on the expertise and shared opinions of the EMP working group and is also informed by the views of the programme advisory group and a broad range of stakeholders.

The members of the EMP working and advisory groups have accumulated decades of experience in EM and have worked in many emergency systems, including those of the UK, Australia, Canada and the US. The programme groups include Consultants in Emergency Medicine with sub-specialty interests in Pre-hospital Care, Paediatric Emergency Medicine, Toxicology, Anaesthesia and Academic Emergency Medicine.

There is little high-quality international research on which to base the design of emergency care systems. Accurately describing or comparing emergency systems from different countries is difficult, because each country's system is complicated, multi-factorial and, in many ways, is a unique entity.[1] Emergency systems evolve on the basis of historical, political, social, economic and geographical factors. They are profoundly influenced by the healthcare systems and in particular the healthcare funding structures in which they operate. The level of development of Primary Care within a health system also impacts on EM services. Although Irish Emergency Medicine has developed along the lines of the Anglo-American model (which includes the US, UK, Canada, Australia, New Zealand, Hong Kong and Singapore), direct comparisons between the emergency systems of these countries remain difficult and research findings may not be generalisable, because of the unique characteristics of the health systems underpinning emergency care in each country. In addition, there are no internationally accepted definitions of terms such as urgent care centres, local emergency units and walk-in centres and the terms can mean different things in different healthcare systems.

Notwithstanding this, we have identified a number of key findings from recent EM health systems research and recommendations from national health system planning reports and reviews, which provide evidence or expert opinion at least, to inform the development of our proposed models of care. This literature also highlights key issues that should be considered in implementing service change or re-organising of systems of emergency care.

2.3.2   Networks and the Organisation of Emergency Services

A report of the Institute of Medicine Committee on the Future of Emergency Care in the United States published in 2006[2] recommended the development of coordinated, regionalised, and accountable emergency and trauma care systems. It recognised the disadvantages of fragmented systems of care and advised that professional organisations should convene a panel of individuals with multidisciplinary expertise to develop evidence-based categorisation systems for emergency medical services, Emergency Departments and Trauma Centres based on adult and paediatric service capabilities. In Ireland, the 2002 *Report of the Committee on Accident & Emergency Services*, produced by Comhairle na nOspidéal[3] recommended the creation of networks of EDs.

The concept of networks for emergency care has been most effectively developed in trauma systems in the US and other countries. Trauma care has been delivered through tiered networks of EDs since the 1970s in the US and trauma systems are also well established in Australia. The implementation of trauma networks is underway in England.[4] Broader networks have been advocated to include the entire spectrum of emergency care.

> *"..under the auspices of a whole system emergency care service, the opportunity exists to develop a more patient-focussed service maximizing new diagnostic and therapeutic approaches. This will require a multi-professional approach with the loss of traditional boundaries of care".*
>
> Bell D, Mason S. *Secondary care and changing the face of emergency care*. EMJ 2010:27:189-190.

The term network has been applied to many different structures and collaborations in EM, including, for example, research networks (the USA), networks for emergency care improvement and innovation (Victoria, Australia) and neural networks for clinical decision support. In England, the term Emergency Care Network refers to the alignment of a broad range of organisations beyond those obviously associated with Emergency Medicine.[5]

If an emergency care system is truly patient-focused, it must be made as easy as possible for patients to find the services they need. Experience in the UK highlights the potential to complicate patient access through having too many alternatives to ED-based care. There has been no reduction in ED attendances in England as a result of the proliferation of alternatives such as walk-in centres, urgent care centres and telephone advice services.[6] Patient choice has increased but also, it seems, patient confusion around service access.[7]

"...while there have been improvements in the range and responsiveness of many urgent and emergency care services, there are still significant areas of concern. These include:

- *A rising demand for services.*
- *Patients attending A&E* (sic) who could have been treated nearer to home.*
- *A lack of public awareness of some services and confusion over how to access the right service for their needs.*
- *Variable access to high-quality specialist services.*
- *Problems getting services to work together well."*

NHS Next Stage Review: Our NHS Our Future, 2008.

* The term A&E Department was superseded by Emergency Department in Ireland in 2000 and in the UK in 2006.

The NHS experience also emphasises the core roles of Emergency Medicine and Primary Care and the risks of service fragmentation:

"*Most people understand the role of their local GP and A&E* (sic) Department, but many are either less aware of, or less confident in using the range of new services designed as an alternative. Some people also report that it can also be difficult to navigate between services."*

Not Just a Matter of Time. A review of urgent and emergency care services in England. Commission for Healthcare Audit and Inspection, 2008.

If we are to enhance and not complicate patient access, it is important that the function of each unit within an ECN is obvious to service uses. Service providers and planners also need to be clear as to the core function of each element within a network.

"Role delineation for every hospital is essential. Too many are expected to provide a broad array of quality services. Each hospital should be an invaluable asset in a "networked" system, offering services based on its ability to guarantee quality and safety, and the

overall needs of the network. We need to follow other countries and sub-classify our Emergency Departments, re-designating some as acute care centres, with their capabilities and limitations clearly explained to the public."

Editorial opinion. John M Dwyer. *Fixing the problems that beset the Australian hospital system.* MJA 2008; 189(4):220-221.

2.3.3 Classifications of Emergency Departments in the UK

Comparisons of ED classification and configuration between our neighbouring nations reveal varying structures and approaches.

Northern Ireland: There were 731,009 ED attendances in Northern Ireland in 2010/11 and a 5.6% increase in new attendances was noted since 2006/07.[8] Northern Ireland "Emergency Care Departments" (ECDs) are classified as[9]:

Type 1 Emergency Care Department: a consultant-led service with designated accommodation for the reception of emergency care patients, providing both emergency medicine and emergency surgical services on a round the clock basis.

Type 2 Emergency Care Department: a consultant-led service with designated accommodation for the reception of emergency care patients but which does not provide both emergency medicine and emergency surgical services and/or has time-limited opening hours.

Type 3 Emergency Care Department: a minor injury unit with designated accommodation for the reception of patients with a minor injury and/or illness. It may be doctor-led or nurse-led. A defining characteristic of this service is that it treats at least minor injuries and/or illnesses and can be routinely accessed without appointment.

The Northern Ireland population of 1,789,000 is served by ten Type 1 ECDs, four Type 2 ECDs and six Type 3 ECDs.

Scotland: There were 1.52 million ED attendances in Scotland in 2008/09 with a 20% overall admission rate.[10] There are no national definitions of an "emergency" or an "Emergency Department" in Scotland. The *Report of the Auditor General for Scotland on Emergency Departments* 2010[10] states that "the distinction between the role of EDs and Minor Injury Units is not always clear, making it difficult for staff and the ambulance service to know where to bring patients". The report also described difficulties for patients in trying to identify where to access services. The report indicates that there are 33 EDs and 61 Minor Injury Units in Scotland. Eleven of the EDs are 24/7 Consultant-led departments with trauma, acute medicine, acute surgery and

tertiary services and 13 are 24/7 Consultant-led EDs without tertiary services. The remainder has lesser levels of acute specialty support. Service reconfiguration is in progress in some areas.

England: There were 20.5 million ED attendances in England in the 12 months to 31st March 2010.[11] Emergency units are broadly stratified into:

Type 1:   a Consultant-led 24-hour service with full resuscitation facilities and designated accommodation for the reception of ED patients;

Type 2:   a Consultant-led single specialty service (e.g. Ophthalmology);

Type 3:   a doctor-led or nurse-led service, treating at least minor injuries and illnesses.

The NHS introduced their Emergency Care Networks as part of the Reforming Emergency Care agenda around 2001.[5] Each network's objective was to give patients access to high-quality emergency and follow-up care, delivered at the time they need it "by the professionals with the right skills". The networks included primary care trusts, acute trusts, ambulance trusts, social services, mental health trusts, user representatives, strategic health authorities, community paediatric services, dental services, education authorities, care homes and the voluntary sector, intermediate care, local councils, other ambulance services, minor injury units and walk-in centres, NHS Direct, older people's champions, other networks/collaborative leads, out-of-hours providers, pharmacy, and police. The networks have since been criticised for their lack of effectiveness. This was attributed to their being too broadly defined and problems with how they were implemented.[7,12]

2.3.4   The Centralisation of Services

The development of networks provides an opportunity to centralise services. However, the overall approach to be taken in any such reorganisation should be to centralise only those services for which a benefit can be demonstrated, while providing as much care as can be provided safely as conveniently as possible for patients. There is evidence to support the centralisation of some, but not all, aspects of emergency care.

The benefits of centralised care for Major Trauma are generally accepted, as significant improvements in patient mortality and morbidity have been demonstrated internationally:

"Benefits to the whole injured population will derive from an Inclusive Trauma System (ITS) that provides for the needs of all injured patients in its region by moving patients to the hospital best able to provide suitable care, freeing resources at other units."

Regional Networks for Major Trauma. NHS Clinical Advisory Groups Report. September 2010

"The risk of death is significantly lower when care is provided in a trauma center (sic) than in a non–trauma center".... "after adjustments for differences in the casemix, the overall risk of death was 25% lower when care was provided at a trauma center than when it was provided at a non-trauma center".

MacKenzie EJ, Rivara FP, Jurkovich GJ. *A National Evaluation of the Effect of Trauma-Center Care on Mortality*. N Engl J Med 2006; 354:366-378. Of note, this paper compared trauma outcomes in urban and suburban settings in the USA.

"Institution of a specialist trauma service and performance improvement programme was associated with significant improvements in outcomes that exceeded national variations."

R. A. Davenport, N Tai et al. *A Major Trauma Centre is a specialty hospital not a hospital of specialties.* British Journal of Surgery 2010; 97:109–117.

The centralisation of trauma enables skills retention among clinicians, which is crucial to ensuring the provision of high-quality patient care:

"Care of Major Trauma... is a minor element of Emergency Department work equating to less than 0.2 per cent of total activity, rendering many hospital staff unable to maintain optimal skills in trauma care."

Regional Networks for Major Trauma. NHS Clinical Advisory Groups Report. September 2010.

This Report also highlights that the development of trauma systems is not a quick fix.

"The benefits of Trauma Systems may take 3 years or more to be realised and depend upon an interactive process of needs analysis, service organisation and quality improvement."

Regional Networks for Major Trauma. NHS Clinical Advisory Groups Report, Sept. 2010.

Centralisation has also been advocated for certain high-acuity, high-risk surgical conditions, such as aortic aneurysm. Centralised models are being considered in Stroke and Vascular Surgery services.[13]

However, the benefits of centralised care cannot be assumed to extend to all components of acute care. A carefully considered, flexible, integrated and monitored approach is advised.

"Although there is evidence to suggest that the centralisation of services to deal with complex or specialised work provides better outcomes for patients, evidence for centralisation of non-complex and high-volume cases does not exist."

"No single model of provision will suit all localities and the principles need to be sufficiently flexible to adapt to local needs."

"Reorganisation should provide cost-effective services that make best use of existing resources. It should not be aimed at saving money. Wherever possible reorganisation should be evidence-based."

"Re-organisation is about using some of our hospitals in better ways, not closing them. Patients should have good access to emergency care but for some serious acute conditions they and their relatives may have to travel further."

Provision of Acute General Hospital Services. Medical Royal Colleges, London, 1998.

Some of the challenges inherent in service reorganisation have been well described for Scotland:

"First, there is an argument that people should travel for services because there is a clinical benefit to be gained. Second, there is an argument that resource constraints (including the availability of trained workforce) mean that we can only provide high-quality services in fewer locations. In looking at the first set of issues, there are three concepts that need to be considered:
- *Volume of work*
- *Continuing medical education*
- *Toleration of risk*

In this first set of considerations issues of clinical risk have been relatively clear, if somewhat obscured by the absence of hard data. But we know there is a trade-off between volume and outcome. We know that for a number of procedures the risk of mortality outweighs the benefits of access. What we do not yet know is where we draw the lines. Issues are much less clear around the second set of factors. That is where a patient's need to travel for care is not linked to any clear evidence of clinical benefit but rather to resource or workforce constraints."

A National Framework for Service Change in the NHS in Scotland, 2005.

Patient safety must be the primary concern and thereafter what is deliverable in term of quality of care must be balanced against patient access and cost. This is not easily achieved and there are no quick solutions.

The College of Emergency Medicine's guidance on ED configuration for England states that:

- *"Where small/medium EDs are geographically close (within 10 km), a more coherent emergency service may be possible by amalgamation.*
- *Between 10-20 km the local health communities will have to make a judgment on the balance of risk of having ill patients travel further against the benefits of centralisation.*
- *Where the next nearest ED is more than 20 km away there is a strong argument for retaining an emergency service.*
- *Any change in organisation should be on the basis of an assessment of the balance of risk with proper planning on how medical admissions will be managed."*

The Way Ahead 2008-2010 Strategic Guidance for Emergency Medicine in the United Kingdom and the Republic of Ireland.

This is not to suggest that there should be an ED every 20 km across the UK and Ireland. The statement reflects evidence from a study[14] that suggested an adverse association between distance travelled and clinical outcome for a group of patients with emergency conditions. The study was based on UK data from 1997-2001 that preceded recent improvements in pre-hospital and ED-based care. The authors acknowledged that their study included only the most ill patients and those at greatest risk of dying and that their findings could not be applied to the majority of patients who need ambulance transport to an ED. They recommend caution in generalising research findings from one emergency system to another. The Way Ahead document recognises the challenges inherent in providing high-quality care to remote and rural populations in Scotland, Wales and Ireland. It defers to the Irish Association for Emergency Medicine position statement on the reconfiguration and regionalisation of emergency services in Ireland.[15]

The Commission for Rural Communities UK described the challenges of providing emergency care in rural areas:

"Emergency services have difficulties meeting response times in rural areas and this can have serious health consequences, for example delays in administering thrombolysis, defibrillation and treating abdominal aortic aneurysm. Consequently, prognosis can be poor, resulting in mortality or poor health outcomes. Factors influencing access to

healthcare in rural areas may include: travel, staff recruitment and retention, access to CPD, equipment and resources, delivering care at a distance and cross border or the edge effect (i.e. where it may be easier to access services in a nearby area, outside the designated structure)."

"*For A&E departments (sic) and urgent care centres, our work with patients highlighted convenience and accessibility of location (including availability of public transport and parking) as important issues, particularly for patients who lived in rural areas.*"

NHS Next Stage Review: Our NHS Our Future, 2007.

The NHS Scotland Implementation Group report *Emergency and Urgent Response to Remote and Rural Communities, Strategic Options Framework*, October 2009[16] states:

"People living in remote and rural areas have no less a right to effective high-quality care in emergency situations than urban residents. The provision of an effective emergency and urgent response service also has wider implications for a community than achieving good clinical outcomes. Having such a service makes communities feel 'safer' and the staff providing the service contribute to the wider economy and sustainability of remote communities."

The Scottish Audit Report[10] also noted that strategy for England was difficult to apply in Scotland:

"*The College of Emergency Medicine has recommended staffing levels for Emergency Departments in England, but these are not easily applied to Scotland given the lower numbers of attendances and the rural geography.*"

The reconfiguration of emergency services in urban areas also involves risks. A large study in Canada demonstrated that hospital restructuring was associated with increased ED overcrowding, even after controlling for utilisation and patient demographics. The paper recommends that:

"Restructuring should proceed slowly to allow time for monitoring of its effects and modification of the process, because the impact of incremental reductions in hospital resources may be magnified as maximum operating capacity is approached."

Schull MJ et al. *Emergency Department Overcrowding following systematic hospital restructuring: trends at twenty hospitals over ten years.* Acad Em Med, 2001. Vol 8. Number 11:1037-1043.

A recommendation regarding the reconfiguration of urban EDs in Australia is also noteworthy, albeit that the current locations of Irish urban EDs are largely due to historical rather than planning factors.

> *"Poor urban planning has seen the development of smaller hospitals in close proximity to each other. These should act as a single hospital on split sites, offering excellence at each site, but not duplication. Even some of our "principal referral hospitals" could benefit from such an approach. Instituting and, in some cases, improving inter-hospital transport will be an essential ingredient of such an integrated hospital system."*

Editorial John M Dwyer. *Fixing the problems that beset the Australian hospital system*. MJA 2008; 189 (4): 220-221.

Thus the challenges inherent in organising emergency services for rural and urban communities are recognised internationally. We will undoubtedly need to develop solutions for Ireland to maximise patient safety and achieve an acceptable balance between the forces at play in organising emergency services. These include patient safety, quality of care, patient access, community and patient expectations, cost-effectiveness and sustainability.

Further research is undoubtedly required and this should focus on the performance of the entire system of care, not just its component parts.

> *"… the optimum configuration of local and specialist emergency care centres for an effective and efficient emergency care system is unclear. Research is needed to investigate the benefits of different system configurations rather than the effectiveness of different services."*

Nichol J et al. *The relationship between distance to hospital and patient mortality in emergencies: an observational study*. EMJ 2007; 24:665-668

Change is inevitable in our emergency services, whether planned or not. In the absence of high-quality research evidence, the following guiding principles for service reconfiguration are recommended:

> *"Although there are no solutions, there are principles that can be agreed. Firstly, the whole exercise is about trading access, quality and cost. Each area will have its own geography, existing services, problems, tradeoffs and values, making a universal solution impossible. Local decision makers must be free to create their own solutions. Secondly, services should be delivered as close to home as is compatible with not compromising quality or generating unreasonable costs. Thirdly, that those planning services should think about the entire system not just one part of it…… Fourthly, no Consultant should be single-handed, which relates to the fifth principle – that it doesn't make sense for hospitals serving only 150,000 to try to provide all acute services... and the sixth principle must be to think differently. The seventh principle must be to encourage research and evaluation. The eighth principle must be to consult the public on the unavoidable trade offs."*

Editorial opinion. *Reconfiguring acute hospital services: No easy answers, but there are principles we should follow*. Richard Smith, editor BMJ 1999; 319:797-8.

Finding the best way to organise emergency services will not be easy for communities or health service providers. Success is most likely to be achieved through a collaborative and congruent approach across potential boundaries, be they geographical, political or those traditionally existing between medical specialties, healthcare professions and within health care systems. We therefore need to develop a National Emergency Care System designed to achieve the best possible outcomes for our patients and communities.

2.4   Operational Aspects of Emergency Care Networks

- A key principle underpinning Emergency Care Networks (ECNs) will be the provision of as much emergency care as can be safely provided as close as possible to where patients live, thus maximising patient convenience while ensuring equitable access to the highest quality and safest possible care.

- ECNs will be configured to provide efficient, effective and sustainable operational and governance structures, reflect geographical and socio-economic factors and meet patient care needs in the communities they serve. Networks should be of a size that are fit for purpose and should be able to function as linked units within HSE regions and the national emergency system framework. There is likely to be more than one ECN within each HSE region.

- Networks may include rural and urban populations or exist in predominately urban settings (e.g. in the Dublin area). Some networks will be required to provide care in remote and rural settings.

- Local networks will be integrated to ensure that care delivery is well coordinated across potential watershed areas between networks.

- Each network will comprise a number of Emergency Departments and other emergency units. A senior Consultant will undertake the role of Coordinator for Emergency Medicine for each ECN and provide clinical governance oversight for the network.

- ECN EDs will be developed according to Emergency Medicine Programme (EMP) templates for the different types of department and each network will be based around a designated lead ED.

- National protocols will determine the most appropriate access pathways for high-acuity and complexity conditions within networks e.g. reperfusion for stroke, acute coronary syndrome and trauma.

- Networks will have well structured protocols and transfer systems in place to ensure that all patients have equitable access to complex, high-acuity levels of care, particularly when patients need to access emergency care which is beyond the capability of their local network.

- A single emergency care information system should operate across the National Emergency Care System into which the information systems of all networked EDs and other units should be linked. ICT systems must be connected within networks and with regional and supra-regional specialty centres (e.g. direct electronic transfer of images to Neurosurgery must be possible from all network units).

- Staff allocation and recruitment for EM multidisciplinary teams will be coordinated across networks.

- Clinical governance structures will be developed to integrate clinical audit and quality improvement across pre-hospital care, all EDs and other units within a network and relevant hospital specialties.

- Each network and the units within it will be linked to an academic centre.

- There will inevitably be a lag phase between the introduction of ECNs and the achievement of measurable benefits and improved patient outcomes. For example, research evidence suggests that trauma networks may take three years to demonstrate benefits.

2.5　　　Requirements for the Development of ECNs are Likely to Include:

- Service user acceptance of new models of emergency care.
- HSE, DoH support for the emergency care network concept and its component parts.
- Development of adequate capacity, particularly at high-volume centres.
- A process to mitigate and monitor risk during the transition phase.
- Analysis of service demand across the network.
- Improved infrastructure in the medium-term, with the redevelopment of or construction of EDs to comply with contemporary national and international standards for physical infrastructure and to provide safe clinical environments for patients and staff.

- Development of network ICT systems.
- Development of governance arrangements, protocols and policies.
- Implementation of Key Performance Indicators across the networks.
- Development and co-ordination of services contributing to the network:
  - Emergency Medicine staffing and skill-mix;
  - Paediatric Emergency Medicine;
  - the Ambulance Service;
  - Academic Emergency Medicine: clinical, translational and healthcare systems research;
  - supporting hospital specialties.
- Resourcing of staffing, training and network skill-mix.

2.6   Types of Emergency Departments and Emergency Units in Emergency Care Networks

The EMP proposes three levels of emergency units to deliver hospital-based emergency care in the National Emergency Care System:

Type A: These will be 24-hour Emergency Departments.

Type B: Local Emergency Units, within an Emergency Care Network, providing limited hours' emergency care.

Type C: Local Injury Units, within an Emergency Care Network, providing care for non-life-threatening or limb-threatening injuries, for limited hours' of patient access.

These models of units should be applied in the same manner in all regions with the same hours of opening for each type of unit, where feasible. There is a clear link between the type of ED that can be located in any hospital and the Clinical Strategy and Programmes Directorate designation of that hospital (Table 2.1).

A number of units will be linked to form networks and the number and designation of units within each network will depend on existing ED and acute hospital infrastructure, available resources (including staffing), local, regional and geographical factors.

2.6.1   Hours of opening of Local Emergency and Local Injury Units

The programme recommends that all LEUs and LIUs (Type B and C units) should open at 08:00 hours. This may enable patients to attend before work. It will also give staff time to prepare work areas and to undertake mandatory training and essential governance activity before they become too busy seeing patients. All Type B and C units need to be staffed for two hours after the time of closing to patients to allow for the completion of the care of patients who have attended just before closing time. Staff working hours after 20:00 are more expensive as daytime rates for nursing, radiography and administrative staff apply up to 20:00 hours. It would also be necessary to provide on-call Consultant in EM cover for Type B units from 20:00 to 22:00 should these units remain open to the public beyond 18:00. This is likely to be problematic as Consultants can only be on-call for one site at a time. The EMP will work with relevant stakeholders to determine the optimal hours of service for Type B and Type C units.

2.6.2   Signage for the NECS and ECN units

Signage should be standardised across the NECS. All signage for Emergency Medicine should be written in white on a red background. Road signs for hospitals should indicate the level and hours of opening of on-site ECN services. Signage at hospitals should reinforce the concept that all EDs, LEUs and LIUs are linked in ECNs. Illustrative examples are provided in Appendix 2.

2.7   An Overview of Type A units

The capability of Type A units will depend on the supporting specialties available on-site and the role the unit fulfils within local and regional healthcare systems.   They may be further sub-classified according to the level of on-site specialty support and key interdependencies.

Type A1:   This level of ED will serve local, regional and potentially national populations and will be based at a hospital that can accept the highest complexity and acuity emergency presentations. It will be supported by <u>the complete range</u> of on-site specialties of relevance to EM. These hospitals have the potential to be developed into Major Trauma Centres. Type A1 EDs will be in DCSP Model 4 hospitals.

Type A2:   These EDs will have all core specialties and the <u>majority</u> of other supporting specialties on-site and will serve local, network and HSE regional populations. Most current large EDs are the equivalent of Type A2 units. Type A2 EDs will be in DCSP Model 3 or 4 hospitals.

Type A3:   This type of ED will be located in a DCSP Model 3 hospital that has been determined to require a 24/7 emergency service, because of its relative geographical remoteness or because of prolonged travel times to the nearest alternative EDs. The unit will serve local and regional populations. It will have core supporting specialties on-site.

2.8   An overview of Type B – Local Emergency Units

This type of emergency unit represents a significant change in the way EM services and EDs are currently configured. It aims to provide unscheduled emergency care for lower acuity patients as conveniently as possible, while ensuring patient safety and equitable standards of care within the network. They will be located in DCSP Model 3 hospitals.

The establishment of such units must be recognised to carry inherent risks that are outlined in this document. These units also present particular challenges in terms of senior medical staffing at weekends. It should not be assumed that re-designation of an ED to a restricted hours unit will result in significant budgetary savings in terms of ED spending.

A key driver behind the proposal of these units is that they may allow for a quantum of emergency care to be provided at sites that are convenient for patients. In addition, they may maintain capacity in the system in the medium term and prevent central Type A EDs from being dangerously overcrowded until such time as increased capacity can be provided at the central sites and ambulance service capacity can be enhanced to support more patient transfers. It will also be important for systems to be developed to support patient repatriation after the immediate phase of the acute care episode, if emergency patient access to inpatient bed capacity at central network units is to be maintained.

Type B units are not called Emergency Departments, as this would imply to patients that the units are the same as Type A departments. The key differences, which must be clearly communicated to patients, are that:

(a) Local Emergency Units are only open from 08:00-20:00 (or 08:00-18:00) seven days a week.

(b) Patients are more likely to be transferred from Local Emergency Units because they need higher acuity care than the unit can deliver than they would be if they first attended a Type A ED.

Local Emergency Units (LEUs) are likely to be bypassed by ambulance services for high-acuity or complex care, such as coronary reperfusion, stroke thrombolysis and major trauma, in accordance with national protocols.

LEUs will be open to new patients from 08:00-20:00 (or 18:00) followed by two hours of ongoing clinical work for the completion of patient care. The unit will be staffed until 22:00 (or 20:00) hours.

At present, the barriers to longer hours of opening include:
- Inadequate numbers of Consultants in Emergency Medicine
- NCHD staffing shortages
- Costs associated with nursing and other staff working after 20:00hrs.

Consultant staffing at LEUs should be equivalent to that at Type A EDs because these units will accept unselected emergency cases during their hours of opening. This is essential for the

provision of safe and equitable standards of care across the ECN. There will be a continuous Consultant in Emergency Medicine presence during weekdays from 08:00hrs to 20:00hrs. Consultant staffing at weekends will be equivalent to that provided at Type A units within the network. This will consist initially of a Consultant presence on a sessional basis on weekend days and public holidays with a Consultant on call for the remaining hours during which patients are in the unit. With expanded Consultant staffing across networks, weekend staffing will increase from a sessional commitment to a continuous presence at weekends. This weekend staffing requirement means that Consultant staffing for LEUs should be derived from a pool of no fewer than ten Consultants in EM covering Type A, B and C units in a network. In addition to Consultant cover, there will be a senior clinical decision maker in EM in the unit at all times. A senior clinical decision maker in EM is a Consultant, a Specialist Registrar, a Staff Grade or a Registrar in Emergency Medicine who has been considered to have an appropriate level of clinical competency to fulfil this role.

Given the requirements for Consultant staffing and other resources to maintain safe EM services at Type B units and the requirement for a phased and planned introduction of these units, it is uncertain at this time whether or not Type B units are sustainable in the longer term. Nonetheless, this type of unit deserves consideration as to its feasibility, its potential value within ECNs and at specific locations in current HSE regions and its potential role as a transition phase in the longer-term development of a particular unit in a network.

Local Emergency Units (Type B) are further sub-classified according to whether they provide emergency care to rural and urban or only urban catchment populations. The distance between LEUs and their associated ED (Type A unit) will influence workforce planning, access protocols and patient flow between units. An arbitrary cut off of 30 minutes travel time between EDs and Type B units is proposed to differentiate between Type B1 and B2 units.

- Type B1 describes units situated in towns within rural geographical areas with relatively long travel times to the nearest Type A units. These units will provide care to local urban and surrounding rural communities.

- Type B2 describes units situated in urban areas with travel times of less than 30 minutes to a networked Type A unit. Thirty minutes is an arbitrary cut off time for classification purposes.

2.9   An Overview of Type C – Local Injury Units

This unit aims to provide unscheduled emergency care for patients with non-life threatening or limb threatening injuries, as conveniently as possible, while ensuring patient safety and equitable standards of care within the ECN. These units will be open to new patients from 0800-20:00 hrs (or 18:00hrs) followed by two hours of ongoing clinical work for the completion of patient care. They will be located in DCSP Model 2 hospitals.

2.10   Types of Emergency Care Network Units and DCSP Generic Hospital Models

The relationship between the types of Emergency Care Units and the HSE Directorate of Clinical Strategy and Programmes Generic Hospital Models is outlined in Table 2.1.

Type	Description	Hours of Access	Hospital Model
A1	**Emergency Department** All supporting specialties on site	24/7	4
A2	**Emergency Department** Majority of supporting specialties on site	24/7	3 or 4
A3	**Emergency Department** Geographical need and core specialties on site	24/7	3
B1	**Local Emergency Unit** Limited access hours unit in a rural area	08:00-20:00 or 08:00-18:00	3
B2	**Local Emergency Unit** Limited access hours unit in an urban area	08:00-20:00 or 08:00-18:00	3
C	**Local Injury Unit** Limited hours access for patients with non-life or limb threatening injuries	08:00-20:00 or 08:00-18:00	2

Table 2.1: Types of Emergency Unit corresponding to each Generic Hospital Model

2.11   The Sub-classification of Emergency Departments

2.11.1   *Type A1: Emergency Care Network Emergency Department*

This type of ED will be in a hospital that can accept the highest complexity and acuity emergency presentations and will be supported by the complete range of on-site specialties of relevance to EM. It will have the capability of providing care to large numbers of patients with the highest complexity levels of emergency conditions. Patients will benefit most if these units attract adequate numbers of complex cases to ensure that staff retain the skills required to provide high-quality care at this level. Given the case volumes required to optimise the quality of care, it is likely that there would be only be two, or possibly and at most, three such departments in the country (not including a Type A1 Paediatric ED which is conceived to be part of the projected National Paediatric Hospital). These departments would operate within a framework of ECNs and enhanced pre-hospital care, including retrieval and HEMS (Helicopter Emergency Medical Service) to ensure equitable patient access and to maximise the cost-effectiveness of these high-level services.

2.11.1.1 *Infrastructure*

- A Type A1 ED will be located in a DCSP Generic Model 4 hospital, supported on-site by the complete range of specialties relevant to EM.
- The ED will serve local, regional and potentially national populations.
- There will be full 24/7 ED and a 24-hour CDU.
- PEM will be available on-site.
- The department will play the a lead role in:
  - o   a national trauma system;
  - o   national systems of pre-hospital care, including HEMS;
  - o   national retrieval systems.

2.11.1.2 *Access*

- The ED will provide emergency care to its local catchment area population and provide all the services available at a Type A2 unit, with an extended remit within its network and the national emergency care system.
- It will be the ultimate destination of patients transferred from other EDs in the network or HSE region for escalating levels of care.

2.11.1.3 Workforce issues

- Extended hours Consultant in EM presence will be required for Type A1 EDs to fulfill their potential to provide the highest quality, complexity and efficiency of EM within a national system of emergency care.

- Trauma centre designation would require the 24/7 presence of a Consultant in Emergency Medicine or a suitably qualified Lead Consultant for Trauma.

- All grades of NCHD staff, including Specialist Registrars (SpRs) will be based at this ED and will rotate across the network.

- There will be 24-hour EM middle grade cover for the ED (i.e. SpRs and Registrars).

- Paramedics/Advanced Paramedics could be based at this unit and might be activated for retrieval/patient transport from this base.

- Enhanced nursing skill-mix and staffing levels will be needed to manage the complexity and volume of cases at this unit.

- ANPs will work within this unit and ANP training would be provided across the network from this unit.

- Nursing skill-mix and staffing numbers must be adequate for this unit.

- There will be a full range of appropriate therapy and medical social worker services for this unit.

- Administrative staff: there will be dedicated administrative support for reception and clinical areas 24/7. There will also be an adequately staffed ED administration office that will link with all network units.

2.11.1.4 Benefits that can be achieved through the implementation of Type A1 units

for patients:

- Patients in Ireland would have access to the highest possible standards of emergency care that would compare favourably with international best practice. This would be achieved through the development of Type A1 EDs within the framework of a national emergency care system.
- Access to the highest acuity and complexity care would be expedited through retrieval and HEMS.

For hospitals and communities:

- The hospitals with a Type A1 ED would provide the highest level of emergency care nationally.
- The unit would serve as a focus for emergency care research.

For emergency care staff:

- Staff training would be enhanced due to concentration of the most complex care provision at this unit.
- Staff training would benefit from the clinical expertise, leadership and situational teaching that longer hours of Consultant in EM presence in the department would bring to the team.

For the Ambulance service:

- The transfer of patients for high-level care would be organised within a national framework.
- There would be new training and professional development opportunities for ambulance staff involved in retrieval and transfer associated with this unit.
- Paramedic/Advanced Paramedic staff could be linked to the ED for training and CPD purposes.

2.11.1.5   On-Site Specialties required for a Type A1 ED

Specialty	Service Level Required
Critical Care	Highest level Critical Care Unit
Diagnostic Imaging	24/7 immediate access to XR, US, MRI, X-ray and CT co-located within ED Interventional Radiology capability within 60 mins
General Surgery	Senior trainee on-site and Consultant available within 30 mins for Major Trauma
Orthopaedics	Senior trainee on-site and Consultant available within 30 mins for Major Trauma
Neurosurgery	Senior trainee on-site and Consultant available within 30 mins for Major Trauma
Vascular Surgery	Consultant available within 30 mins for Major Trauma
Cardiothoracic Surgery	Consultant available within 30 mins for Major Trauma
Urology	On-site specialty, with on-call cover
Ear, Nose and Throat Surgery	On-site specialty, with on-call cover
Ophthalmology	On-site specialty, with on-call cover
Plastic, Hand & Burns Surgery	On-site specialty, with on-call cover
Maxillo-facial Surgery	On-site specialty, with on-call cover
Paediatric Medicine	Core on-site specialty (except Dublin where the National Paediatric Hospital will have a Type A1 ED)
Acute Medicine	There will be an AMU/AMAU on site (core specialty)
Cardiology	Specialty on-call, Interventional, CCU
Medicine for the Elderly	Routine services and Orthogeriatrics
Obstetrics and Gynaecology	Senior trainee on-site and Consultant available within 30 mins (pending O&G programme recommendations)
Pain Management	On-site specialty, with on-call cover through critical care
Mental health	On-site middle grade presence and Consultant support 24/7
Laboratory Medicine	Stat-lab Haematology, Biochemistry, Blood Transfusion on-site
Trauma specialties as per *Regional Networks for Major Trauma, NHS Advisory Group Report,* September 2010. Core specialties for EM determined by the College of Emergency Medicine: *Seven Key Specialties for Emergency Medicine* in *The Way Ahead 2008-2012. Strategy and Guidance for Emergency Medicine in the United Kingdom and the Republic of Ireland,* December 2008.	

Table 2.2: On-site specialties required for a Type A1 ED

2.11.1.6 Risks in the implementation of Type A1 EDs

- Inadequate investment and resources to meet the department's needs and its requirement to provide support and staffing across the ECN.

- Insufficient Consultant in Emergency Medicine staffing.

- Inappropriate designation of EDs to this type, without the required infrastructure and systems of care.

- Failure to provide the appropriate governance, quality improvement and audit resources.

- Failure to provide adequate inpatient access.

- Failure to protect hospital capacity, through inadequate bed management across the hospital system.

- Underdevelopment of critical care and other required specialties on-site.

- Failure to enhance Pre-hospital Care in conjunction with implementation of this model.

- Failure to appreciate the time required for the development and maturation of this system of care.

2.11.2   Type A2: Emergency Care Network Emergency Department

This is the model that will apply to most EDs in future. These EDs will provide the greatest proportion of emergency care throughout the country.

2.11.2.1 Infrastructure

- Type A2 EDs will be located in DCSP Generic Model 3 or 4 hospitals.

- The Type A2 ED hospital will have all core specialties and the majority of other supporting specialties on site.

- The ED will serve local, network and HSE regional populations.

- The EMP recommends that no Type A2 ED should be developed to see more than 80,000 new patients per year.

- There may be one or more Type A2 EDs in a network but one such unit will be designated the lead ED for the network. The lead ED will provide clinical governance to the network, through a Network Coordinator for EM.

- There will be a 24-hour Clinical Decision Unit on-site.

- Patients with unselected undifferentiated emergency problems will self present or will be brought by ambulance to this unit.

- This ED will provide direct supervisory or clinical governance support for other units. It will be under the clinical governance of the Network Coordinator for EM.

- The lead or hub Type A2 ED in a network will provide medical support for pre-hospital care within the network, which may include remote medical advice, on-site medical response teams, HEMS support, training for paramedics/advanced paramedics and a key role in major incident responses for the network.

- The ED should be developed to comply with accepted standards for designated trauma units within a trauma system.

2.11.2.2 Access

- This will be a 24/7 ED.

- The ambulance service will bring unselected patients to Type A2 EDs, though specific national protocols may determine that patients with selected time-critical conditions are brought directly to Type A1 units or specialist centres.

- Unstable or higher acuity patients, whose care needs cannot be met at this unit will be transferred according to national protocols and by appropriate means to a designated networked DCSP Type 4 hospital.

- Paediatric patients (i.e. aged under 16 years) will attend all Type A2 units (with the exception of some Dublin EDs) and paediatric patients may be admitted to a CDU under the care of Consultants in Emergency Medicine and/or the on-site Paediatricians, according to network protocols. There will be at least one Consultant with sub-specialty training in PEM among the department's staff and one Consultant in PEM will undertake the role of lead PEM clinician for the network (unless that role is undertaken by a Consultant in a networked Type A1 unit).

- Suitable patients may be admitted directly as inpatients under the care of hospital specialty Consultants, according to agreed inter-specialty protocols.

- Patients will be streamed according to their care needs (e.g. an ANP-provided injury stream).

2.11.2.3 Workforce issues

- Consultant in EM staffing levels should be such that it is feasible and sustainable to provide a Consultant presence in the ED from 08:00-20:00hrs on weekdays with a sessional commitment at weekends. Increased Consultant staffing levels would potentially allow a 12-hour presence at weekends also. Additional Consultant whole time equivalents (WTEs) would

be needed to fulfill this ED's commitment to providing Consultant staffing for networked units (i.e. Type B1, B2 or supervision of Type C units). There needs to be adequate Consultant numbers to provide additional duties and roles such as the network Coordinator for EM and supporting the network teaching and training activities, which will be based in the lead Type A unit for each network.

- There will be 24/7 Consultant in EM on-call cover for this ED.

- All grades of NCHD staff, including Specialist Registrars (SpRs) will be based at this ED and will rotate across the network.

- There will be 24-hour EM middle grade cover for the ED.

- ANPs will work within this unit and ANP training will be provided across the network from the lead Type A unit.

- Nursing skill-mix and staffing numbers must be adequate for this unit.

- There will be a full range of appropriate therapy and Medical Social Worker services for this unit.

- Administrative staff: there will be dedicated administrative support for reception and clinical areas 24/7. There will also be an adequately staffed ED administrative office, linked to the network centre.

- Paramedic/advanced paramedic staff may be based within this unit for skills retention and education and may be tasked to provide pre-hospital care or retrieval from this unit.

2.11.2.4 Key interdependencies for Type A2 EDs

Specialty	Interdependency
Critical Care*	Critical Care on-site (core specialty)
Acute Medicine*	There will be an AMAU on-site (core specialty).
General Surgery*	Senior trainee on-site and Consultant available within 30 mins
Diagnostic Imaging*	24/7 immediate access to plain XR in a co-located, dedicated suite. Immediate 24/7 access to CT and US. Emergency MRI and Interventional Radiology access 24/7 within the HSE region via protocolised transfer/retrieval.
Mental health	Must have on-site middle grade presence and Consultant support 24/7
Orthopaedics*	Senior trainee on-site and Consultant available on-call
Paediatric Medicine*	Core on-site specialty (Dublin excepted)
Cardiology	Specialty on-call, CCU
Medicine for the Elderly	Routine services and Orthogeriatrics
Laboratory Medicine*	Stat-lab Haematology, Biochemistry, Blood Transfusion on-site
Obstetrics & Gynaecology	Senior trainee on-site and Consultant available within 30 mins (pending O&G programme recommendations)
Vascular Surgery	On-site or emergency on-call service
Plastic Surgery	Emergency on-call service
Ear, Nose & Throat Surgery	Emergency on-call service
Ophthalmology	Emergency on-call service
Urology	Emergency on-call service
* Core specialties for EM determined by the College of Emergency Medicine: *Seven Key Specialties for Emergency Medicine* in *The Way Ahead 2008-2012. Strategy and Guidance for Emergency Medicine in the United Kingdom and the Republic of Ireland, December 2008.*	

Table 2.3: Key interdependencies for Type A2 EDs

2.11.2.5 Benefits that can be achieved through the development of Type A2 units

for patients:

- All patients within a network will have access to the same high standards of care, based on shared protocols, the rotation of clinical staff and clinical governance arrangements.
- Direct ambulance transfer to units providing the highest levels of complex emergency care will expedite patient access to that care.
- The quality of care that can be provided will improve due to increased hours of Consultant presence in Type A2 units.

For hospitals and communities:

- The hospital will provide continuous emergency care for the community it serves.
- Surge capacity within the network may be managed through the re-direction of appropriate patients to other networked units, according to national protocols.

For emergency care staff:

- Staff will have enhanced access to training and CPD.
- All clinical staff will benefit from working with the enhanced clinical expertise, leadership and teaching that Consultants in EM can bring to the team.
- Clinical governance and administrative functions will be centralised as much as possible to the lead Type A unit for the network. This should bring efficiencies and maximise clinician time available for direct patient care.

For the Ambulance service:

- There will be national protocols directing the transfer and retrieval of patients to and from this ED.
- Paramedic/advanced paramedic staff will be linked to the ED for training and CPD purposes.

2.11.2.6 Risks in the implementation of Type A2 units

- The development of the network is dependent on enhanced ambulance service capacity.
- The development of the network and efficiency of the A2 units will be compromised by inadequate access to inpatient capacity and ED overcrowding.
- Inadequate Consultant staffing could curtail the development of these units and restrict the level of support that can be provided to linked units.
- NCHD staffing shortages could affect these units.

- Failure to coordinate the development of key supporting specialties would undermine the development and operational effectiveness of these units.

2.11.3   Type A3: Emergency Care Network Emergency Department

2.11.3.1 Infrastructure

- This ED will be located in a DCSP Model 3 hospital that has been determined to require a 24/7 emergency service because of its relative geographical remoteness or because of prolonged travel times to the nearest alternative EDs. The unit will serve local and regional populations.

- There may be more than one Type A3 ED in a network.

- This ED will not provide direct supervisory or clinical governance Coordinator for EM support for other units. It will be under the clinical governance of the ECN.

- The unit will contribute to the network pre-hospital system, in collaboration with other networked EDs.

- There will be a 24-hour Clinical Decision Unit on-site.

2.11.3.2 Access

- The ambulance service will bring unselected patients to Type A3 EDs, though specific national protocols may determine that patients with selected time-critical conditions are brought directly to Type A1 or A2 units or specialist centres.

- Unstable or higher acuity patients whose care needs cannot be met at this unit will be transferred according to national protocols and by appropriate means to a designated networked Type A1 or A2 unit.

- Paediatric patients (i.e. aged under 16 years) will attend and paediatric patients may be admitted to CDU under the care of Consultants in EM or the on-site Paediatricians, according to network protocols. The ECN Coordinator for EM and the PEM Lead Clinician, in conjunction with local staff, will develop protocols and procedures to ensure the safe management of children who access care at these units and all clinical staff will be trained in paediatric life support and the recognition of non-accidental injury. These units will be integrated into local and national PEM networks. Paediatric patients requiring inpatient care will be admitted under the care of on-site Paediatric teams or will be transferred as per protocol, if their care

needs cannot be met at this hospital. There will be one Consultant in EM on staff who will have subspecialty training in PEM.

- Suitable patients may be admitted directly as inpatients under the care of hospital specialty Consultants, according to agreed inter-specialty protocols.

- Patients will be streamed according to their care needs (e.g. ANP-provided injury care).

2.11.3.3 Key interdependencies for Type A3 EDs

Specialty	Interdependency
Acute Medicine	There will be an AMAU on site (core specialty).
Critical Care	There will be a critical care unit (core specialty).
General Surgery	On-site surgical capability 24/7 (core specialty)
Paediatric Medicine	Core on-site specialty
Orthopaedics	Core on-site specialty
Diagnostic Imaging	On-site immediate access to all plain X-rays, in a co-located dedicated suite. Ultrasound access from 08:00 to 20:00hrs weekdays and on-call thereafter and at weekends. Emergency CT within 30 mins of request with real-time hot-reporting of images through networked systems and linkage to relevant centre (e.g. neurosurgical centre). Emergency MRI access 24/7 within the HSE region via protocolised transfer/retrieval.
Mental health	On-site middle grade presence and Consultant support 24/7
Obstetrics & Gynaecology	Senior trainee on-site and Consultant available within 30 mins (pending O&G programme recommendations)
Laboratory Medicine	Stat-lab Haematology, Biochemistry, Blood Transfusion on-site (core sp)
Core specialties determined by the College of Emergency Medicine: *Seven Key Specialties for Emergency Medicine* in *The Way Ahead 2008-2012. Strategy and Guidance for Emergency Medicine in the United Kingdom and the Republic of Ireland,* December 2008.	

Table 2.4: Key interdependencies for Type A3 EDs

2.11.3.4 Workforce issues

- Consultants in EM: staffing levels will be developed to provide Consultant in EM on-call cover for the ED at all times. There will, ideally, be a continuous Consultant in EM presence during weekdays from 08:00hrs to 20:00hrs. With expanded Consultant staffing across networks, weekend staffing will increase from a sessional commitment to a continuous presence at

weekends. There will be one Consultant in EM on staff who will have subspecialty training in PEM.

- Medical staff may be allocated to work across an A3 ED and other units within an ECN (e.g. a Type A3 ED may be linked to a Type C unit within a network).

- All grades of NCHD staff, including Specialist Registrars (SpRs) will be based at this ED and will rotate across the network.

- There will be 24-hour EM middle grade cover for the ED.

- There will be adequate nursing skill mix and staffing levels (see workforce planning section).

- ANPs will work in this ED and may rotate to linked Type C units.

- There will be an appropriate range of therapy and Medical Social Worker services for this unit.

- Paramedic/advanced paramedic staff may be rostered to this ED for skills-retention and CPD.

- Administrative staff: there will be dedicated administrative support for reception and clinical areas 24/7. There will also be an adequately staffed ED administrative office, which will link to the network centre.

- CPD and education will be provided at the central Type A unit and through e-learning and other linked supports. Some training will be provided locally in the Type A3 unit and staff will rotate to the network centre for some components of mandatory training, education and CPD.

2.11.3.5 Benefits that can be achieved through the implementation of Type A3 units for patients:

- Patients will receive the same standards of care across the network. The adverse effects of geographical factors will be minimised due to shared protocols, staffing and clinical governance arrangements.

- Direct ambulance transfer to units providing the highest levels of complex emergency care will expedite patient access to that care. Patients will not be delayed at Type A3 units, awaiting acceptance by specialty teams in other hospitals.

- Unscheduled, local ED access is assured on a 24/7 basis.

- The quality of care that can be provided will improve due to increased Consultant presence and on-call cover for the EDs.

For hospitals and communities:

- The hospital provides out-of-hours emergency care for the community it serves.
- Other EDs within the region are protected from the increased demand that would be caused by redirection of large volumes of patients if the ED were closed.

For emergency care staff:

- Staff will have enhanced access to training and CPD.
- Staff will benefit from working with the enhanced clinical expertise, leadership and teaching that Consultants in EM can bring to the team.

For the Ambulance service:

- The provision of 24/7 ED care at this site will minimise the requirement for prolonged patient transfers.
- Paramedic/advanced paramedic staff will be linked to the ED for training and CPD purposes.

2.11.3.6 Risks in the implementation of Type A3 units

- Dependent on enhanced ambulance service capacity.
- Inadequate access to inpatient capacity and ED overcrowding.
- Inadequate Consultant staffing curtailing progression to optimal levels of quality of care.
- NCHD staffing shortages.
- Underdevelopment or removal of key supporting specialty services from hospitals will not allow Type A3 ED services to be sustained.

2.12 The Sub-classification of Local Emergency Units

2.12.1 Type B Units: Local Emergency Units

These Local Emergency Units (LEUs) will provide day-time emergency services, in collaboration with linked 24/7 (Type A) EDs. They may be located in rural geographic areas (Type B1 LEUs) or in urban areas (Type B2 LEUs).

2.12.2   Infrastructure for Local Emergency Units

- Type B units will be located in DCSP Model 3 hospitals.

- All Type B units will be linked to a lead Type A ED within a network.

- Units will operate under the clinical governance of the ECN Coordinator for EM and clinical governance structures will be based at the network centre.

- There will be a 12-hour CDU on-site, supervised by Consultants in EM.

- On-site administrative support will be required during the hours of opening of Type B units, to provide patient reception, clinical support and office-based administrative functions.

2.12.2.1   Infrastructure issues specific to rural Local Emergency Units (Type B1)

The co-location of Primary Care Co-ops on the same hospital site as Type B1 Local Emergency Units should be considered so that people who inadvertently attend the hospital to seek emergency care when the emergency unit is closed will still have immediate access to medical care. Expanded GP roles in injury care would allow some of this care-need to be met on-site and would reduce the requirement for out-of-hours travel to the network centre. Telemedicine may contribute to clinical care in Type B1 units.

2.12.2.2   Infrastructure issues specific to urban Local Emergency Units (Type B2)

LEUs in urban areas (Type B2 LEUs) linked to Type A units should be considered equivalent to providing a single ED service on split-site with the LEU operating during daytime hours only. These units will assist 24 hour EDs in meeting the emergency care needs of local populations and will protect EDs designated to be lead centres from the unmanageable patient volumes that would ensue if the departments in these hospitals were closed. This is particularly important given the inadequate physical infrastructure of many EDs and current levels of ED overcrowding. The proximity of Type B2 LEUs will allow suitable patients to be re-directed from central EDs to the B2 units, to deal with surge capacity or to access specialised pathways of care. Patient transfer between the units should be facilitated.

2.12.3   Access issues for all Local Emergency Units (Type B)

- The units will be open for limited hours' patient access only, followed by two hours of ongoing clinical work for the completion of patient care.

- The ambulance service will bring selected patients to Type B units, according to national protocols.

- Specific protocols may require patients with time-critical conditions to be brought directly to Type A1 or A2 EDs.

- Unstable or higher acuity patients will be transferred according to national protocols and by appropriate means to the designated networked ED.

- Paediatric patients (i.e. aged under 16 years) may attend according to network protocols. The Network Coordinator for EM and the PEM Lead Clinician will develop protocols and procedures to ensure the safe management of children who access care at Type B1 units. All clinical staff in units accepting children will be trained in paediatric life support and the recognition of non-accidental injury. These units will be integrated into regional and national PEM networks. Paediatric patients may be admitted to a CDU under the care of Consultants in EM or the on-site Paediatricians. Paediatric patients requiring inpatient care will be admitted under the care of on-site Paediatric teams or will be transferred as soon as required to the designated network paediatric unit.

- Suitable patients may be admitted directly as inpatients under the care of hospital specialty Consultants, according to agreed inter-specialty protocols.

2.12.4   Key Interdependencies for all LEUs (Type B units)

Specialty	Interdependency
Acute Medicine	There will be an AMAU on site.
Critical Care	There will be a critical care facility on site, with transfer/retrieval arrangements according to national protocols.
General Surgery	On-site surgical capability for the control of haemorrhage, for the hours of operation of the unit
Diagnostic Imaging	On-site immediate access to plain X-rays, Ultrasound and CT from 08:00hrs to 20:00hrs seven days a week (or plain X-rays to 22:00hrs, depending on hours of opening). Reporting of images through network.
Primary Care	Role for GPs working in ECN LEUs. Potential benefits for LEU development in partnership with the local General Practice community.
Trauma	Access according to ambulance protocols with major trauma to bypass. Self-presenting trauma accepted.
Mental health	Must have on-site middle grade presence and Consultant support
Paediatrics	Shared care with Paediatrics if on-site
Laboratory Medicine	Stat-lab Haematology, Biochemistry, Blood Transfusion on-site

Table 2.5: Key interdependencies for all Type B units

2.12.5   Workforce Issues

- Consultants in EM: Consultant staffing at weekends will be equivalent to that provided at Type A units within the network. This will consist initially of a Consultant presence on a sessional basis on weekend days, with a Consultant on call for the remaining hours during which patients are in the unit. With expanded Consultant staffing across networks, weekend staffing will increase from a sessional commitment to a continuous presence at weekends.

- All grades of NCHD staff will rotate across the network to staff these units, including Specialist Registrars (SpRs) in EM. There will be a senior clinical decision maker in EM in the unit at all times.

- GPs who wish to do so may contribute to the medical staffing of these units.

- Nursing staff are likely to be based at Type B units but rotate to the network centre for CPD and education purposes.

- ANPs will rotate from Type B units at which they will be based to the network centre.

- There will be an appropriate range of therapy and Medical Social worker services for this unit.

- Administrative staff: dedicated administrative support will be required for reception and clinical areas for the duration of hours of opening of the unit.

- CPD and education will be provided at the central ED and through e-learning and other linked supports. All staff will rotate from Type B units to the network centre for mandatory training, education and CPD.

- Paramedic/advanced paramedic staff may be rostered to work in these units and could also be linked to out-of-hours GP co-ops.

2.12.5.1 Workforce issues specific to rural Local Emergency Units

All LEU staff:

- Customised staffing arrangements will need to be developed for these units as travel distances from other centres may preclude or reduce the acceptability of routine staff rotation from Type A units, except for educational and CPD purposes.

Consultant in EM staffing:

- Many of the EDs that could potentially become Type B1 units have only single-handed Consultant in EM staffing at present and do not therefore provide 24-hour Consultant in EM on-call cover. In these units, out-of-hours emergency care has been largely delivered by NCHDs with on-call cover from non-EM teams. This practice does not compare favourably with international standards and is not sustainable for future services.

- Existing single-handed Consultant staff may opt to be primarily based at the Type B1 unit, but will be supported by Consultants rotating across the network to provide the extended hours of Consultant presence. Consultant rotation will also ensure Consultants in Type B1 units have cover to attend CPD and clinical governance meetings at the network centre. Consultants based at B1 units will be expected to contribute to on-call rosters at the network Type A units, but this commitment should be structured in such a way as to cause minimal life-style disruption.

- The Type B1 unit, though providing reduced hours of EM cover, optimises patient safety by ensuring that NCHDs working in Type B1 units have the same level of Consultant supervision as occurs in larger units. Providing this standard of care will require enhanced Consultant staffing across the network, particularly to ensure Consultant presence in all units at weekends.

- There will be particular difficulty in providing Consultant staffing for B1 units, until such time as Consultant staffing reaches improved levels nationally.

2.12.5.2 Workforce issues specific to urban Local Emergency Units

- Medical staff will rotate to Type B2 LEUs from networked Type A2 and A1 units to staff these units. There is potential for existing Consultants to remain based at these units for most of their clinical sessions, though it is expected that in the longer term, all should rotate through the networked units. All Consultants will attend clinical governance and CPD meetings at the lead network unit. All network Consultants will provide on-call cover for the Type A units in the network.

- All grades of NCHD staff will rotate across the network to staff these units, including SpRs in EM. There will be a senior clinical decision maker in EM in the unit at all times.

- Nursing staff may be drawn from existing staff who may opt to remain based at these units, despite the relatively short travel times between units. Some nurses may wish to rotate between units depending on work practices or life-style considerations.

- Workforce issues relating to therapy and Medical Social Worker staffing for these units must be addressed.

2.12.6   Benefits that Can be Achieved through the Implementation of Type B units for Patients:

- Patients will receive the same standards of care across the network, due to shared protocols, staffing and clinical governance arrangements.

- Direct ambulance transfer to units providing the highest levels of complex emergency care will expedite patient access to that care.   Patients will not be delayed in Type B units awaiting acceptance by specialty teams in other hospitals.

- Unscheduled, local ED access is assured for the considerable number of patients who present during daytime hours with problems that are more complex than minor injuries thus reducing the requirement for people to travel for care.

- The quality of care that can be provided will improve due to increased Consultant presence in these units.

For hospitals and communities:

- The type of unit provides a future for emergency care in units that would be considered unlikely to attract adequate medical staffing to sustain out-of-hours emergency services.

- Existing ED infrastructure will continue to be used for the benefit of patients.

- The units will be open during the times when most ED attendances occur.

- The direct on-site admission of suitable patients will ensure maximum use of hospital inpatient capacity.

- Central larger EDs will be protected from increased demand that would be caused by redirection of large volumes of less acutely ill patients, if Type B units were not maintained.

For emergency care staff:

- Staff can continue to engage in Emergency Medicine without transferring to other hospitals.

- Staff will have enhanced access to training and CPD through networked educational structures.

For the Ambulance service:

- As much care as possible will be delivered locally, reducing the volume of avoidable transfers.

- Paramedic/advanced paramedic staff will be linked to Type B units for training and CPD purposes.

2.12.7   Risks in the Implementation of Type B units

- Dependent on enhanced ambulance service capacity, particularly in rural areas.

- Risks around unit closure time for patients with serious illness who inadvertently self-present. Actions to mitigate:
  - community information to reduce potential attendances;
  - protocols to govern closing times;
  - proposed co-location of Primary Care Co-ops.

- Premature migration of hospitals to Type B units, without the provision of adequate capacity at central units to accommodate increased out-of-hours attendance volumes. Actions to mitigate:
  - adequate planning;
  - increased effective capacity at Type A EDs.

- Inadequate Consultant staffing in the network will preclude Consultant supervision of NCHD staff at weekends or may slow progression to this level of care.

- Inadequate NCHD staffing for Type B units. Implementation of these units is contingent on having safe levels of staffing.

- Removal of key dependent specialty services from hospitals will not allow Type B services to be sustained (e.g. surgery for control of haemorrhage).

- Inadequate provision of Primary Care out-of-hours services.

- Failure to repatriate patients who have completed episodes of more complex care at DCSP Model 4 and Model 3 hospitals to Model 2 hospitals, resulting in access block at the Type A1/A2 ED for patients who need to be transferred there from Type B LEUs.

- Patients may migrate to the central Type A EDs of their own accord if they perceive them to be better units. Patient demand for the network Type B unit would need to be monitored and the future of the unit reconsidered should demand decline.

2.13   Type C: Emergency Care Network Local Injury Units

The Local Injury Unit (LIU) aims to provide unscheduled emergency care for patients with non-life-threatening or limb-threatening injuries as conveniently as possible, while ensuring patient safety and equitable standards of care within the emergency care network.

2.13.1   Infrastructure

- Type C Local Injury Units will be located in DCSP Model 2 hospitals.
- All LIUs will be linked to a lead Type A ED within a network and there may be one or more LIU within a network.
- Units will operate under the clinical governance of the ECN Coordinator for EM who will be a Consultant in EM.
- There will be no Clinical Decision Unit on-site.
- Administrative functions will be centralised within the network and only the direct patient contact administrative function (i.e. reception) will be based at Type C units.
- Telemedicine may contribute to clinical care in Type C units.

2.13.2   Access

- The unit will be open to new patients for limited hours' access, followed by two hours of ongoing clinical work for the completion of patient care.
- Patients with non-life-threatening or non-limb-threatening injuries may self present or be referred by GPs. Lists of conditions suitable and unsuitable for care in an LIU are provided in Appendix 3 of this document.
- Patients should not be transported by ambulance to these units.
- Patients whose care needs cannot be met at these units will be transferred directly to a networked ED.
- Certain paediatric patients (i.e. aged over 5 years and under 16 years) may attend, according to network protocols. The ECN Coordinator in EM and the PEM Lead Clinician will develop protocols and procedures to ensure the safe management of children who access care at LIUs. All clinical staff in units accepting children will be trained in paediatric life support and in the recognition of non-accidental injury. These units will be integrated into regional and national PEM networks.

- There must be appropriate pathways to ensure patient access to Medical Social Worker and therapy services when required.

2.13.3   Key Interdependencies for Local Injury (Type C) Units

Specialty	Interdependency
Acute Medicine	There will be an MAU on site.
Critical Care	There will be no critical care facility on site.
General Surgery	No requirement for on-site emergency surgical capability but surgical consultation may be required on occasions and straightforward surgical therapy, if appropriate, may be carried out locally.
Diagnostic Imaging	On-site immediate access to plain X-rays, ultrasound and CT from 08:00 to 20:00hrs (or plain X-rays until 22:00hrs depending on hours of opening), seven days a week. Reporting of images through network.
Primary Care	Role for GPs working in ECN LIUs. Potential benefits for LIU development in partnership with the local General Practice community.

Table 2.6: Key interdependencies for Type C units

2.13.4   Workforce Issues for Local Injury Units

- LIUs will be under the governance of a Consultant in EM from the lead ED in the network. There will be, at a minimum, two half-day sessions of Consultant presence in any week, provided by one or more Consultants. Network Consultant staffing arrangements will include this commitment to LIUs.
- NCHDs, primarily middle-grade doctors will contribute to patient care and a middle-grade doctor will be present on site at all times. Medical staff may rotate to networked EDs, according to local arrangements.
- The recruitment and clinical supervision of medical staff working in LIUs will come under the governance of the Network Coordinator for EM.
- Teams of ANPs will provide most of the clinical care in these units and will work within the network clinical governance structures. Experienced ANPs will be needed to work in these units as there will not be a Consultant in EM on-site at all times.
- Nursing staff will provide a supporting role for ANP and medical staff.

- Administrative staff: dedicated administrative staffing for patient reception and registration will be required for the duration of the hours of opening of the unit, seven days a week.

- Staff will rotate through networked units for education and CPD. CPD and education will be provided within the ECN and through e-learning and other linked supports. All staff will rotate from the LIU to the network centre for mandatory training, education and CPD.

- Workforce issues relating to therapy staffing for these units will be addressed.

- There are potential benefits to these units being developed in partnership with the local General Practice community. In addition, there is an opportunity for GPs who wish to do so to work in Local Injury Units. The governance, training and work practice details will be developed in consultation with the relevant stakeholders.

2.13.5   Patients whose Care Needs Cannot be Met at a Local Injury Unit

Protocols need to be in place to:

- Direct the initial assessment and transfer of patients whose care needs cannot be met at the LIU.

- Allow for the provision of basic medical/nursing assessment and appropriate treatment of a patient who attends the hospital out-of-hours. This protocol should be developed in conjunction with GP out-of-hours services.

2.13.6   Benefits that Can be Achieved through the Implementation of Local Injury Units

For patients:

- Patients will receive the same standards of injury care across the network, due to shared protocols, staffing and clinical governance arrangements.

- Patients will not have to travel to larger units for injury care.

- Patients will avoid delays that might be experienced in larger EDs.

- Unscheduled, local ED access is assured for patients with injuries that are non-life-threatening and non-limb-threatening.

For hospitals and communities:

- The model secures future involvement in the provision of emergency services for smaller hospitals.

- Existing ED infrastructure will continue to be used for the benefit of patients.

- The units will be open during the times when most ED attendances occur.

- Central larger EDs will be protected from the increased demand that would be caused by redirection of patients with injury if all services were centralised.

For emergency care staff:

- Staff can continue to engage in a component of Emergency Medicine without transferring to centralised units due to complete centralisation of services.

- Staff will have enhanced access to training and CPD through rotation within a network.

- Trainees in EM and ANP candidates may gain experience in injury care.

For the Ambulance service:

- More acute injury care delivered locally, thus reducing the need for patient transfers.

2.13.7 Risks in the Implementation of Local Injury Units

- Risks of patients with more complex problems attending. Actions to mitigate:
    - community information regarding suitable presentations;
    - all staff trained in resuscitation;
    - protocols in place for safe transfer.
- Risks around unit closure time for patients. Actions to mitigate:
    - community information to reduce potential attendances;
    - protocols in place to govern closing times.
- Premature migration of hospitals to LIUs without the provision of adequate capacity at central units to accommodate increased out-of-hours attendance volumes. Actions to mitigate:
    - adequate planning;
    - provision of increased effective capacity at networked EDs.
- Inadequate ANP staffing in the network will require that NCHD staff provide a greater proportion of patient care in the initial stages of unit development. There will thus be a dependency on NCHD staffing.

Recommendations:

- A National Emergency Care System (NECS) should be developed under the direction of a National Emergency Care System Steering Group.

- Standardised definitions, nomenclature and signage for EDs and other emergency care units that have been developed by the EMP should be applied nationally.

- A single emergency care information system should be developed for use across the NECS.

- Emergency Care Networks (ECNs) should be established. These will be formed by a number of collaborating emergency units closely aligned with local pre-hospital and primary care services and operating within a shared governance framework. The role of each unit within the network will be defined.

- Effective operational links with pre-hospital services will be established in each network and ambulance service representatives will participate in ECN operational meetings.

- The EMP provides guidance for risk mitigation during the transition phases of ECN development and emphasises the need for effective communication with service users regarding the development of ECNs.

- National protocols will be developed for patient access to emergency care for high-acuity and high-complexity conditions within networks e.g. reperfusion for stroke, acute coronary syndrome and major trauma.

- The potential need for the development of a limited number of supra-regional EDs (termed Type A1 EDs) should be determined. These EDs would have all supporting specialties on site and provide the highest levels of acuity and complexity of emergency medical and trauma care.

Chapter Three

3. Clinical Governance in the National Emergency Care System

3.1 General Principles

Governance across the National Emergency Care System will be organised and delivered in accordance with the recommendations of the Health Information and Quality Authority *Draft National Standards for Patient Care*[1], the HSE guidance *Achieving Excellence in Clinical Governance, Towards a Culture of Accountability 2010* [2] and the guidance of the HSE Quality and Patient Safety Directorate.[3] Clinical governance is defined as corporate accountability for clinical performance.[3] It is likely to be most effective in EDs with "a working environment which is open and participative, where ideas and good practice are shared (and) where education and research are valued".[4] Governance is also more likely to be effective if the extraneous barriers to good patient care are removed (e.g. ED overcrowding, staffing deficiencies) and services are provided in a safe and appropriate built environment.

3.2 Governance Structures

The intention of the EMP is to ensure that, irrespective of where an individual patient accesses the National Emergency Care System, he or she will receive a predictable and a consistently high level of clinical care. Achieving this requires adequate governance at national and ECN level.

The following governance structure is recommended (Figure 3.1).

```
┌─────────────────────────────┐
│                             │
│         National            │
│   Emergency Care System     │
│       Steering Group        │
│                             │
└─────────────────────────────┘
              ↕
┌─────────────────────────────┐
│                             │
│         National            │
│   Emergency Care System     │
│     Coordinating Forum      │
│                             │
└─────────────────────────────┘
              ↕
┌─────────────────────────────┐
│                             │
│   Emergency Care Network     │
│  Clinical Operational Groups │
│                             │
└─────────────────────────────┘
              ↕
┌─────────────────────────────┐
│                             │
│    Emergency Department      │
│        and ECN unit          │
│  Clinical Operational Groups │
│                             │
└─────────────────────────────┘
```

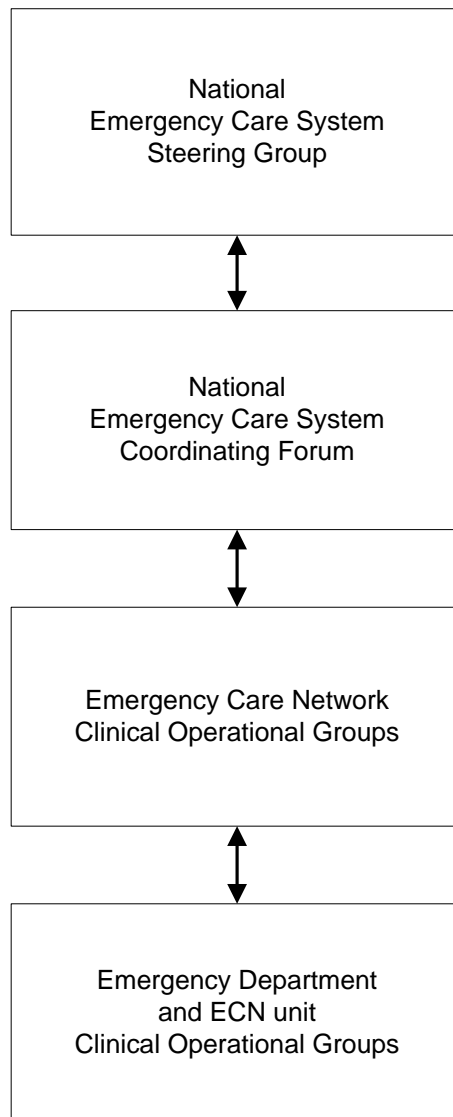*Figure 3.1: NECS Governance Structure*

3.3   National Emergency Care System Steering Group (NECS SG)

This high-level strategic group will be responsible for the ongoing development of emergency care in Ireland. Its membership should include the following:

- representatives of the DoH;
- the HSE Director of Clinical Strategy and Programmes;
- the HSE Director of Quality and Patient Safety;

- senior representatives of the relevant HSE directorates including the Integrated Services Directorate (ISD), Information and Communications Technology (ICT) and Human Resources Management (or the future directorates that replace them);

- the EMP Clinical Lead;

- regional and nursing EMP leads;

- a representative of academic EM;

- a representative of PEM;

- the chair of the Irish Association for Emergency Medicine;

- the chair of the Irish Committee for Emergency Medicine Training;

- the chair of the National Board for Ireland of the College of Emergency Medicine;

- a representative of a School of Nursing and Midwifery in a linked Higher Education Institution;

- the Medical Director of the National Ambulance Service (NAS);

- the Director of NAS;

- an Emergency Planner;

- a representative of the Office of Nursing and Midwifery Services;

- the four HSE Regional Directors of Operations;

- a Primary Care representative;

- a patient representative group nominee;

- a senior emergency nurse nominated by the Directors of Nursing & Midwifery;

- a Public Health Specialist.

It should be chaired by the chair of the body responsible for training in Emergency Medicine, currently the Irish Committee for Emergency Medicine Training.

3.3.1 Terms of Reference

The NECS SG should:

- develop ongoing & future national strategy for EC;

- advance the integration of emergency services;

- review national implementation of the EMP;

- ensure coherence in the development of services across all ECNs;

- oversee workforce planning across the NECS;

- set priorities for, and receive feedback from, the NECS Coordinating group;

- consider outputs from other National Clinical Programmes and how they might impact on the NECS;

- review ECN performance data;

- develop strategic relationships with other bodies both within and beyond the health service e.g. public health, Health Protection & Surveillance Centre (HPSC) etc;

- ensure appropriate levels of Major Emergency planning and preparedness across the NECS.

The NEC SG should be convened under the shared governance of the DoH, the HSE and the Emergency Medicine Specialty Training body and should meet every six months.

3.4   National Emergency Care System Coordinating Forum (NECS CF)

The forum's role will be to coordinate the implementation of the strategic decisions of the NECS Steering Group and to ensure there is consistent application of the EMP across the NECS. The forum should be chaired by the EMP National Clinical Lead and comprise the Lead Consultant in EM for each of the ECNs, a nursing representative from each ECN including PEM, a Consultant in PEM, a representative from the Therapy Professions, a representative from Medical Social Work and a representative of HSE Management Teams from each of the regions. Teleconferencing and video-links will be used to support this group's work and to minimise the need to travel to meetings. New patient care pathways, best practice interventions and clinical management strategies will continue to be developed by the EMP and there needs to be a process to ensure that best practice is disseminated on an ongoing basis to each ECN.

3.4.1   Terms of Reference

The NECS CF will:

- ensure that the strategic direction provided by the NECS SG is implemented at the level of individual ECNs;

- oversee operational plans to implement NECS SG guidance;

- support implementation of the EMP;

- liaise with HSE finance, service planning and resource management systems with regard to the NECS;

- ensure fair and efficient resource allocation across the NECS;

- receive reports from each ECN Clinical Operational Group;

- supervise EC aspects of National Trauma Audit roll-out;

- commission the development of clinical guidelines, protocols and decision support tools for EM from the EMP.

It should convene at least every four months under the auspices of the National Director of Clinical Strategy and Programmes.

3.5 Emergency Care Network Clinical Operational Groups (ECN COG)

Within each Emergency Care Network, clinical governance and operational issues should be directed and monitored by a network group which would be comprised of the Lead Consultant from each ED and ECN unit, a Lead Nurse from each unit, the local Ambulance service manager, the PEM Lead for the ECN and the hospital or group Chief Executive Officer (CEO)/General Manager or their immediate deputies. This group should meet quarterly. Smaller networks may combine ECN and ED-level COG meetings.

3.5.1 Terms of Reference

The ECN COG will:

- oversee ongoing implementation of the EMP within the ECN;
- conduct audits, review data reports from each unit and track progress;
- address staffing issues at network level;
- advance service development at network level;
- oversee the implementation of clinical and process improvement initiatives across networks;
- interact with local Primary Care representatives;
- ensure that a consistent and effective system of risk management, clinical education, clinical audit and other vital governance activities occurs within all parts of the ECN;
- ensure communication between the NAS and hospital-based services;
- advise the NECS Coordinating Forum of issues of national relevance or importance.

3.6 Quality Assurance for Emergency Care Networks

Quality assurance of ECNs will be achieved through the supervision of the National Emergency Care System Coordinating Forum (NECS CF) and through a system of peer review between networks. Representative groups from ECNs should be invited to appraise other ECNs on a rotational basis over an appropriate period of time, and all ECNs should be inspected in this

manner. The schedule of appraisal should be overseen by the NECS CF and each ECN should anticipate a peer review every three years. The terms of reference for, and structure of, appraisals will be developed by the EMP and refined and reviewed over time; however, the intention would be to ensure that assessors represent the key medical, nursing and administrative/management functions from a broadly similar clinical environment and that the overall approach of peer review is to proactively support the ECN.

3.7 Clinical Governance Activity at ED level

3.7.1 Emergency Department Clinical Operational Group (ED COG)

There should be monthly Clinical Operational (ED COG) meetings in each ECN ED, LEU and LIU. Representatives from Pre-hospital care, other specialties, community groups and hospital groups should be invited to attend ED/ECN unit COG meetings depending on the issues being discussed or a rolling programme with regular review of inter-specialty issues with the relevant teams could be established. In particular, these ED COG meetings should be used to foster close working relationships with the Unscheduled Care Specialties (Acute Medicine, Critical Care, Surgery, Paediatrics, Medicine for the Elderly, Diagnostic Imaging etc).

The participants in ED COG meetings should include, at a minimum, the Lead Consultant in EM and Consultant colleagues as available, a Specialist Registrar (SpR) representative (if relevant), the ED Clinical Nurse Manager, the Assistant Director of Nursing/Divisional Nurse Manager responsible for the ED, an ANP representative, Development/Business Manager (if such a function exists within a department), the data manager and representatives from other disciplines contributing to the ED/EU multidisciplinary team. Such meetings should be adequately supported from an administrative perspective and a summative report of this group's work should be made available to all staff members.

3.7.2 Terms of Reference

The ED/LEU/LIU COG Group will:
- review progress in achieving KPI targets and improving process measure data;
- meet with hospital AMU, Surgery, Paediatric and Diagnostic Imaging leads on a rolling basis;
- address staffing issues;

- review and manage budgetary issues, where devolved budgeting occurs;

- ensure service users and stakeholders are engaged in a structured and regular manner;

- address risk management issues including monitoring of adverse events and near misses;

- review feedback from the ECN Clinical Operational Group meetings;

- review implementation of national clinical guidelines;

- oversee local audit activity;

- consider Quality Improvement initiatives;

- review the care of patient groups with particular emergency care needs;

- report on research activity in the ED and linked units;

- develop and oversee educational programmes for the ED and its associated units.

3.7.3 Data Quality Monitoring Sub-group

It will be necessary for each unit to monitor the quality of unit data which will form the basis of process and quality measures and ED governance activity. This work may be an intrinsic part of the ED COG, covered by a standing agenda item at COG meetings or a sub-group may be formed to undertake this work in larger departments or across ECNs. Brief meetings should be scheduled involving the Lead or a designated Consultant in EM with a particular interest or expertise in informatics, Data Manager and/or hospital ICT representative, Development/Business manager and Lead Nurse. The frequency of these meetings may be greater initially until such time as data quality is stabilised. Data quality meetings should monitor the quality of data collection for process KPIs and coding and troubleshoot missing data or poor quality data issues.

3.8 Governance of Interface Issues

EDs, LEUs and LIUs cannot function in isolation and it is therefore imperative that clear responsibility for those areas whose performance impacts so heavily on the capacity of EDs and network units to function is formally assigned. The ultimate responsibility of ensuring that a hospital's ED, LEU or LIU is facilitated to function optimally rests with that hospital's CEO or General Manager. The current difficulties many EDs experience with overcrowding as a result of the ED being forced to accommodate admitted hospital inpatients (inpatient boarders) is an example of an issue which seriously impacts on ED function but is beyond the control of staff within the ED itself. This requires that those who are ultimately responsible for these issues operate within the governance framework of both the NECS and ECNs.

An individual hospital's Bed Management function has a key role in ensuring rapid and appropriate provision of hospital beds and, where hospital capacity constraints develop, in ensuring the prompt activation of Escalation Plans to ensure an ED or LEU's ability to meet its time targets for patient transit through the emergency pathway of care.

3.9 Clinical Governance for Emergency Care Roles

3.9.1 Roles and Responsibilities

The responsibility, authority and accountability of each staff member's role within the ECN should be clearly defined. All staff should be aware of the ECN's goals and development priorities.

Each unit and network should foster a culture of open and participative involvement of all staff members in continuous quality improvement. A successful network is likely to be characterised by strong clinical and organisational leadership[4], staff and patient involvement and teamwork. Strong external partnerships (e.g. with Primary Care and Community Intervention Teams) will need to be developed to support network development. Each ECN and the NECS should demonstrate through its activities that it places great value on education, staff development, audit and research.

Excellence in governance for ECN roles will only be achieved if appropriate supports are made available. These will include access to clinical evidence, ensuring there is adequate time devoted to service planning and developing training strategies. Adequate ICT infrastructure and clerical support will be crucial to governance functions.

3.9.2 Key Roles in ECNs

Each ECN should have suitable candidates fulfilling the following key roles:

- ECN Lead Consultant in EM;
- ECN Paediatric EM Lead;
- ECN Lead Nurse.

Each unit within an ECN should have suitable candidates to take responsibility for the following key functions:

3.9.2.1 Key roles in each Type A ED

- Lead Consultant in EM;
- Senior / Lead Nurse;
- CDU Lead;
- PEM Lead (for those EDs seeing children).

3.9.2.2 Key roles in each Type B LEU

- Lead Consultant in EM;
- Senior / Lead Nurse.

3.9.2.3 Key roles in each Type C LIU

- Consultant in EM with oversight responsibility for the unit;
- Senior / Lead Nurse.

3.9.3 Roles & Responsibilities of ECN Lead Consultant in EM

Within each ECN, a nominated Consultant will undertake the role of Lead Consultant. His/her role will mirror that of a Clinical Director and is to ensure that:

- the highest standard of clinical care is provided to all patients within the ECN;
- the ECN conforms with the range of standards determined by the NECS through the NECS SG and NECS CF;
- each unit (ED, EU) within the ECN operates according to EMP national standards without inappropriate inter-unit variation; and
- meetings of the ECN COG are held in accordance with the planned schedule and terms of reference and summary reports of these meetings are made available both to relevant staff within the ECN and to the NECS SG and NECS CF.

3.9.4 Roles & Responsibilities of Lead Consultant in EM within an ED/LEU/LIU

Each Unit will have a designated Lead Consultant who will be charged with ensuring that ECN standards are delivered within the individual unit.

3.9.5   Roles & Responsibilities of Consultants in Emergency Medicine

EM is characterised by high levels of teamwork and as in any team, all must contribute to achieve the shared goal. While the appointment of the current cadre of Consultants in EM has pre-dated the development of the EMP, additional Consultant appointments are *de facto* contingent on agreement to facilitate the goals of the EMP which have been developed in an inclusive EM-centred fashion. It is anticipated therefore that all Consultants in EM will work as a team to deliver the goals of the EMP for the realisation of the best clinical outcomes for patients attending the individual unit(s) in which the Consultant works. It is imperative that Consultants work collaboratively to ensure that patient care is delivered in a consistent manner in each ED and across each ECN. Consistency of approach in terms of leadership and the direction of patient care processes will enable more effective inter-disciplinary working.

The roles, responsibilities and accountability of Consultants in EM are outlined in the template job description for a Consultant in EM post available in Appendix 4.

3.9.6   Roles & Responsibilities of Lead Nurses in Emergency Medicine

The EMP Emergency Nursing Interest Group has developed a mission statement for emergency nursing practice: *"Emergency Nurses work independently & interdependently with the multidisciplinary team to provide the optimal level of emergency nursing care that is patient-focused, family-centred, maximises health and social gain, promotes excellence in nursing practice and advocates for all patients who suffer sudden injury or illness. Emergency nursing practice is underpinned by expert knowledge gained through specialist education and clinical experience. It is informed by best evidence and research."*

All nursing staff practise according to the code of professional conduct laid out by An Bord Altranais (2000).[7] Nurses also work within their institutional scope of practice[8] and take measures to develop and maintain the competence necessary for professional practice. Senior nursing management at Assistant Director of Nursing/Divisional Nurse Manager grade who report directly to the Director of Nursing are responsible for ensuring appropriate and ongoing service planning and needs analysis, supporting a culture of ongoing education, training, practice and professional development for ED nursing staff. They will play key roles in ECN governance activity and each ECN should have a nominated Lead Emergency Nurse.

Nursing roles within EDs generally comprise of clinical nurse managers (CNM 1, 2, 3) and staff nurses (S/Ns) supported by healthcare assistants/attendant staff (HCAs). They also include specialist roles such as clinical nurse specialists (CNSs) and advanced nurse practitioners (ANPs). There are standard nationally agreed job descriptions for each role[9] and additional ED-specific roles and responsibilities are being developed as part of the Programme. ANPs are accountable to the Director of Nursing for professional and operational issues but have a clinical governance relationship with the Consultants in EM for patient care issues. ED COG group work will be included in the management function of the CNM role in each ED, LEU and LIU.

The Health Care Assistant is a vital member of the emergency nursing team and is fundamental in order to support nursing staff in their roles. The EMP recommends the standardisation of HCA roles and responsibilities in the EM setting. A variety of other supporting roles exist in some organisations. These roles were developed in response to particular service or education need and include roles such as clinical skills facilitator (CF), practice development co-ordinator (PDC), patient/GP liaison nurse and research nurse. All such nursing roles are accountable to the Director of Nursing, through the ED nurse manager or CNM. The EMP through its workforce planning work-stream will develop a system of standardisation of all such roles across the NECS.

The National Emergency Care System (NECS) Steering Group, in collaboration with the HSE Office of Nursing and Midwifery Services Director, will guide the strategic development of emergency nursing as a key component of the overall development of the NECS.

3.9.7 Roles & Responsibilities of Therapy Professionals and Medical Social Workers in Emergency Medicine

The roles, responsibilities and accountability of Therapy Professionals and Medical Social Workers in relation to quality, safety and risk management are outlined in their job descriptions.[8] Therapy Professionals and Medical Social Workers report directly to the Head of their relevant discipline. Each must comply with the Rules of Professional Conduct and the Code of Ethics and Guidelines for Professional Behaviour of their respective Professional Bodies.[9] Medical Social Workers must be registered with the Social Work Registration Board.

3.9.8   CEO / General Manager and Directors of Nursing Support for ECNs and EDs

The key role of emergency care in national healthcare delivery requires that appropriate, dedicated support be provided at ECN level and to all EDs/LEUs/LIUs contained within the ECN. In addition to the obvious requirements for effective and dynamic bed management, effective ICT systems with adequate office support, clerical and administrative support for the day-to-day working of the elements of the ECN, there is a hitherto unmet need for service development. The EMP proposes that each ECN should have a dedicated Development Manager to lead on developing and integrating services offered within the ECN.

Hospital CEOs/General Managers and Directors of Nursing will work with ECN and ED Lead Consultants to ensure that these supports are developed, are of good quality and performance monitored. The Hospital CEO/General Manager has a key role in positively influencing and overseeing the interface between EM and other hospital specialties and departments in a manner which helps to realise the EMP's ambitious targets. He/she will also need to work with the ECN Lead Consultant with regard to resource management and strategic development.

3.9.9   Clinical Directors' Support for ECNs and EDs

The Clinical Director (CD) has a responsibility both to support Consultants in EM in achieving their roles and to oversee the interspecialty interface so that the ED is allowed to function optimally and the EMP's goal of consistent excellence in patient care within the NECS is realised. Consultants may have defined relationships with their CD in accordance with their contract of employment and all Consultants in EM may be expected to work with the CD responsible for EM services in a supportive and collaborative manner. Whereas there may be variability in the alignment of specialties within directorate structures in different hospitals, the EMP recommends that it should be part of a directorate focused on the provision of emergency and acute care services.

3.10   Resources to Support Governance Activity in EM

The delivery of good systems of governance requires appropriate resources and support. The requirement for meetings and collaborative working across the NECS means that teleconferencing facilities should be available within all EDs. This will not only minimise the need for unnecessary travel but it will support education and training activities, enhance inter-facility communication and

the development of a true network culture. This is particularly important in more geographically remote areas.

Clinical audit needs to be resourced at network and hospital level, and resources to support audit should be provided within a national framework and not on an *ad hoc* basis in hospitals. The time and staffing commitment for governance activity in ECNs needs to be recognised and resourced. Consultant participation in governance activity needs to be included in job planning and rostering arrangements. The participation of nursing and other multidisciplinary representatives in governance activities must similarly be resourced to protect service delivery and enable optimal participation in governance and service development activities. Ongoing dedicated administrative support for the NECS SG and NECS CF should be funded by the HSE. Documents relating to governance activity across the NECS should be archived within an appropriate administrative structure.

3.11   Audit

3.11.1   Trauma Audit

The EMP strongly believes that a national Trauma Audit for Ireland should be funded and initiated across all trauma receiving hospitals using the TARN (Trauma Audit and Research Network) system. This system was devised and implemented across the NHS in the UK and has now expanded to EU member states under the governance of EUROTARN.[10] Audit data should be used to inform system improvement processes at a whole hospital level. The ED will be the primary driver of hospital trauma audit involving relevant specialties e.g. EM, General Surgery, Trauma & Orthopaedic Surgery, Critical Care etc. and should coordinate hospital Trauma Audit meetings.

3.11.2   Cardiac Arrest Audit

Each ED should participate in the national Out-of-Hospital Cardiac Arrest Registry (OHCAR)[11] of patients who suffer cardiac arrest outside of hospital. In addition, in-hospital cardiac arrest registries should be developed in consultation with hospital Resuscitation Training Committees/Officers and management of Cardiac Arrest within the ED should be subject to ongoing systematic audit.

3.11.3   Acute Coronary Syndrome (ACS) and Stroke Thrombolysis Audit

National ACS and Stroke Thrombolysis audit tools should be developed in consultation with the relevant ACS and Stroke Clinical Care programmes to which EDs should contribute data.

3.11.4   Audit of Key ED presentations

The College of Emergency Medicine oversees periodic audits of a limited number of ED presentations and treatment interventions. The EMP will develop a group of conditions and interventions which will be subject to national audit and subsequent re-audit.

3.11.5   Locally Driven Audit

Each ED should have a multidisciplinary audit committee to develop proposals to audit either the management of high-risk clinical presentations or high-prevalence conditions as they pertain to an individual ED. Such audits should follow the standard practice of auditing ED performance against a gold standard, implementation of a quality improvement plan to improve performance and re-audit. Such audits and their implications should be considered at the ED COG meetings at two monthly intervals and may form the basis for wider audits within ECNs and the NECS.

3.12   Risk Avoidance in EM

Each ED will require robust risk management systems in order to assure consistent high-quality care. All EDs should record and formally investigate sentinel events in accordance with the risk management policies of the hospital and the HSE Directorate of Quality and Patient Safety. All ECNs should have electronic systems in place to record risk events and clear protocols to guide their responses to adverse patient events, near misses and other risks that come to notice. Certain risks that arise in an individual ED may have regional or national applicability and should be fed back via the ED COG group to the ECN COG and beyond.

3.13   Potential for Public Health Syndromic Surveillance

EDs offer an opportunity for the surveillance of localised outbreaks of infectious diseases as well as the prevalence of seasonal and pandemic conditions. Public health surveillance should also include surveillance for clusters of illness caused by chemical or radiation releases. Each ECN and ED

needs to receive timely alerts and advice from regional public health authorities and the Health Protection & Surveillance Centre (HPSC) about outbreaks of likely significance to them as well as having a facility to report events to these bodies.

3.14   Resource Use in Emergency Medicine

Variability in the cost of ED care was noted as an issue in the *Comptroller and Auditor General Special Report Health Service Executive Emergency Departments*, 2009.[12] However, it should be recognised that there is huge variability in how ED patient costs are calculated, what costs are devolved to individual EDs, how the costs of inpatient boarders are apportioned, comparability of individual ED's case mix etc. The creation of a NECS with individual ECNs operating in a consistently defined way offers the opportunity to develop more accurate and useful costing of care.

Recommendations:

- A National Emergency Care System Steering Group should be established.

- A governance hierarchy should be established with a National Emergency Care System Coordinating Forum ensuring implementation of the strategic recommendations of the NECS Steering Group and driving implementation of the EMP plan. It will oversee the work of ECN Operational Groups.

- Each ED will have monthly Clinical Operational Group meetings and contribute to ECN Operational Groups.

- Governance activity across the NECS must be adequately resourced. This includes clinical audit, guideline implementation, measurement of KPIs and related governance meetings.

- There should be clarity of roles, responsibilities and accountability for all members of the EM Multidisciplinary team.

Chapter Four

4. Patient Participation in Emergency Care

The EMP aims to deliver a system of emergency care organised around patients' needs that provides high-quality care no matter when or where patients seek emergency help. Patient advocates have been consulted during the development of the EMP and the programme's recommendations, when implemented, will ensure ongoing patient participation in the provision of emergency care and its future strategic development.

4.1 Patient Experience of ED care

The term "patient experience" describes the collection of individual patients' experiences of care through surveys that do not rate "satisfaction" *per se* (on the basis that satisfaction is not a clearly defined term) but rather ask people to indicate whether or not particular interactions, events or processes occurred during their episode of care.[1] The Society for Cardiothoracic Surgery in Great Britain and Ireland document *Maintaining patients' trust: modern medical professionalism* 2011[1] provides valuable insight as to how patient experience should drive service development. It proposes a "magic triangle" of safety, effectiveness and patient experience data to describe clinical performance and professionalism.

Two HSE reports provide important information about patient experiences in EDs. The HSE *Emergency Departments - Patient Profiles, Experiences and Perceptions 2007* [2] identified that 76% of patients were satisfied with ED care and 86% would return to the same ED; 93% considered that they were treated with dignity and respect. Patients were dissatisfied if they considered that they received less information and advice than they needed or if they received inadequate pain relief. The *Insight 07 Health and Social Services in Ireland – Survey of Consumer Satisfaction*[3] indicated areas to be addressed in improving patient satisfaction with EDs. Predictors of lower rating of quality of care in EDs were: the person first seen not having the necessary information; not having enough time to discuss problems with health care professionals; not having an opportunity to ask questions or to have them answered; difficulty getting into and around the ED;

toilets that were not clean and not being given enough privacy when being examined or treated. Clearly, these are aspects of ED-based care that must be addressed. Patient experience is a key outcome measure for health services and should be included in future evaluations of the NECS (National Emergency Care System). A survey tool will be designed which measures patients' experience as outlined in the HSE Health Services National Patient Charter *You and Your Health Service, What you can expect from your health service and what your health service can expect from you*, 2010.[4]

4.2 Standards of Care

The *HIQA Draft National Standards for Safer Better Healthcare* 2010[5] require that services are provided in a patient-centred manner that respects patients' values, preferences, needs and rights and actively involves them in the provision of care. The National Charter[4] outlines eight principles that are fundamental to health service providers and service users. These are of obvious importance in emergency care:

- access – services are organised to ensure equity of access;
- dignity and respect – for diversity of culture, beliefs and values;
- safe and effective services – delivered in a safe environment, by competent, skilled and trusted professionals. Patients can expect to receive good pain control;
- communication and information – this includes the provision of information regarding estimated waiting times;
- participation – involving people and their families in shared decision making;
- privacy – ensuring adequate personal space to ensure privacy; maintaining the confidentiality of personal information;
- improving health – promoting health and self-care;
- accountability – complaints and feedback are welcomed and addressed.

The Charter highlights patients', the public's and representative groups' responsibilities in ensuring that these principles are put into effect. Service users' responsibilities include respecting the privacy of other patients, communicating effectively with staff, treating staff with respect, dignity and consideration and becoming more involved in providing feedback on care experiences. Patients are encouraged to become partners in the delivery of high-quality emergency care. The Charter will be adapted for the National Emergency Care System and will be promoted in all services.

4.3　　　Patient Participation in Emergency Care

Patient representation is recommended at national and network level in the NECS. There should be a patient representative on the NECS Steering Group. ECN Clinical Operational Groups (ECN COGs) are mandated to ensure that service users are engaged in the ECN in a structured and regular manner and that the specific quality improvements initiatives that are instigated following service user feedback are successfully completed. ED responses to service users' complaints, feedback or compliments should be reviewed as part of each department's routine clinical governance function. Clinical guidelines and protocols will enhance the provision of equitable standards of care for patients in all emergency care settings and patient representatives should be involved in the development of national clinical guidelines.

A patient-friendly summary of the programme is included in Appendix 5 of this document.

Recommendations:

- Emergency care should be provided in a patient-centred fashion in keeping with the HIQA *Draft National Standards for Safer Better Healthcare* 2010.
- A survey tool will be designed to measure patients' experiences of emergency care.
- ED predictors of lower quality of care ratings must be addressed. These include infrastructural, communication and process of care issues.
- Patients will be encouraged to become partners in the delivery of high-quality emergency care through patient representation at national and network level in the NECS.

Chapter Five

5. Paediatric Emergency Medicine

5.1 Introduction

The principles of Emergency Medicine-delivered healthcare apply equally to adults and children. Therefore, while specific reference to paediatric issues is made in other generic sections of the EMP report, core general recommendations are also applicable to the care of children. This section of the EMP report is modelled on the UK 'Red Book' (*Report of the Intercollegiate Committee for Services for Children in Emergency Departments*, 2007)[1] and is designed to act as a companion piece to the IAEM/ICEMT/RCPI Faculty of Paediatrics document *The Development of Paediatric Emergency Medicine in Ireland,* 2010.[2]

The EMP recognises the importance of the specialty of PEM. There is international consensus in EM and Paediatrics regarding the primary importance of specialists in PEM when considering the provision of high-quality paediatric emergency care.[1-7]

5.2 Current challenges in PEM

The most obvious challenges in the emergency care of children in Ireland lie in:
- Constraints in ED staffing with PEM-trained clinicians (medical, nursing and Therapy Professionals and Medical Social Workers);
- Infrastructural deficits within EDs that preclude child and family-friendly care;
- Developing appropriate and rationalised location and configuration of services for acutely unwell or injured children.

The role of PEM needs to be developed within EM, Paediatrics and the healthcare system as a whole. PEM issues can be considered in the following areas:

- Service design;
- Child and family-friendly care in ECNs;
- Clinical care of children in ECNs:
  - direct clinical care;
  - Observation Medicine/Clinical Decision Units;
  - ED-based Review Clinics;
  - Diagnostics;
  - information systems and data analysis.
- Staffing and training issues in general;
- Training of doctors sub-specialising in PEM;
- Child protection in ECNs;
- Primary Care links.

5.3   Models of Care

5.3.1   Background

There are currently over 23 hospitals in Ireland where acutely ill or injured children are seen. Nearly all of those hospitals will admit children acutely, while others will see children within the ED but will not admit e.g. Naas General Hospital, St. Columcille's Hospital, Loughlinstown. Currently, there are over 110,000 attendances each year at the three PEDs in Dublin. In most hospitals with EDs that see both adults and children (typically outside Dublin), approximately 20-25% of all attendances will be children, and this is consistent with international data.[1,2]

With few exceptions, those hospitals that currently see acutely sick or injured children lack the necessary physical infrastructure i.e. they lack adequate child-friendly and appropriate audio-visually separated areas within EDs. Having appropriate infrastructure has been recognised internationally as being integral to the delivery of high-quality paediatric emergency care.[2,3]

5.3.2   Defining an Age-limit for Paediatric Emergency Care

The age at which patients are defined as children is a complex issue, given legal impetus by the following:

- the Irish Constitution defines a child as a person aged less than 18 years;
- the Non-Fatal Offences Against the Person Act 1997 allows patients aged 16-18 years to consent to, but not to refuse, surgical, medical or dental treatment;
- the Mental Health Act (2001) states that patients aged less than 18 years should be assessed by Child Mental Health Services, when those services are resourced to do so;
- Gillick Competency – this has never been tested in an Irish legal setting but is deemed to have likely applicability by clinicians who care for children;
- The Law Commission has recently produced a report on *Children and the Law* which recommends assuming capacity in children from 16 years i.e. patients aged 16 years and over will be assumed to be adults with capacity and can consent to, or refuse, treatment.

While not, strictly speaking, related to the age-limit for paediatric emergency care for children, the following pieces of legislation are also important when considering the emergency care of children in Ireland:

- UN Convention on the Rights of the Child (which was ratified by Ireland in 1992);
- The Child Care Act, 1991 (provides the legislative basis for dealing with children in need of care and protection);
- Children First: National Guidelines for the Protection and Welfare of Children, 1999 (not a legal document *per se*, but regularly referred to as guidelines from the DoHC which must be followed in practice).

In operational terms, the age cut-off for defining a child in an ED has varied between institutions, with some EDs defining a child as less than 16 years old, while others use 14 years as the division between 'paediatric' and 'adult'. In recent years, the three PEDs in Dublin have agreed that they will only accept patients aged less than 16 years.

Considering all the above, the EMP recommends that children are defined in the National Emergency Care System (NECS), in an operational sense, as those patients **less than 16 years old**.

5.3.3   Standards of Care

The EMP will develop draft standards for the emergency care of children, in conjunction with the Faculty of Paediatrics of the Royal College of Physicians of Ireland. These standards will be supported by Key Performance Indicators (KPIs) for the quality and efficiency of PEM.

5.3.4   Paediatric Emergency Care in ECNs

Paediatric emergency care should be integrated into ECNs. The elimination of traditional professional barriers between EM and paediatric clinicians is a pre-requisite for this approach. The skills of the whole network should be utilised with a flexible approach to traditional professional, organisational and/or managerial boundaries.

All ECN healthcare settings where children could potentially be seen should be resourced appropriately in terms of staffing, infrastructure, equipment and policies.[8-10]

Each ECN should have a nominated lead clinician for PEM, who will support the Network Co-ordinator for EM in overseeing the provision of PEM. It is possible that in some networks, at certain times, the same Consultant in EM may undertake both roles.

5.3.5   Access to PEM

Children should generally only be admitted to hospitals with Type A EDs (24/7 ED and on-site Paediatrics) and those with on-site General Paediatrics. Children may be admitted to hospitals with LEUs (Type B units), according to pre-determined protocols, developed between the ECN Lead Clinician for PEM and the General Paediatrics Lead for the hospital. Children may be admitted to a Clinical Decision Unit (CDU) according to ECN protocols. Children with non-life-threatening and limb-threatening injuries could attend a Type C Local Injury Unit, according to ECN guidelines and governance arrangements. Staff training and competencies at all such units must comply with national standards for PEM once these are developed. The network lead for PEM will oversee the governance of services for children at LIUs.

Certain clinical conditions should mandate immediate transfer to Type A EDs and ambulance access protocols should be consistent with the NECS protocols in relation to paediatric care e.g. protocols for major trauma, serious medical illness such as meningococcal sepsis. Regional or national networks must be in place, with standardised protocols for the stabilisation and transfer children to Paediatric Intensive Care Units. ECNs must have systems in place to provide early advice and transfer for trauma. This includes advice for Pre-Hospital Care providers and networks for the secondary transfer and retrieval of paediatric patients from DCSP Model 3 to Model 4 hospitals.

Ambulance services should comply with national guidelines for the pre-hospital care of children. Paediatric equipment should be standardised across the Pre-hospital system. All Pre-hospital practitioners should have basic paediatric care competencies.

5.3.6   Quality of Care in PEM

All front-line staff delivering acute care to children must be competent in the basic skills required for safe practice, in whichever setting they work. These skills include Paediatric Basic Life Support and having an understanding of, and training in, the use of paediatric-appropriate equipment and medications during paediatric resuscitation.

ECN EDs seeing a large volume of children each year should employ a Consultant with sub-specialty training in PEM. Where more than one Consultant in PEM appointment is appropriate the appointment of Consultants from EM and Paediatric training backgrounds would be an advantage. All EDs should have a named Paediatrician from within the hospital or network with designated responsibility for ED liaison.

There should be robust and transparent processes in place across ECNs to provide adequate child protection.

KPIs and process measures will be implemented in PEM across the ECN, under the shared governance of the Network Coordinator for EM and the Lead Clinician in PEM. Clinical audit and research are core elements of PEM and ECNs should facilitate PEM-specific research. There should be integrated ICT to support clinical audit and research.

5.3.7   Liaison with Primary and Community Care

A child's attendance at any emergency care setting should be notified in a timely way to the Primary Care team/provider. ECNs should prevent unnecessary hospital admissions by the development and utilisation of alternative options, such as CDUs, and developing care pathways for common conditions with community and paediatric colleagues.

5.3.8   Configuration of Services

The care of children and the provision of high-quality PEM services should be a key consideration in the configuration of emergency services. The proposed ECNs provide a framework to consider the reconfiguration of PEM services, which include Pre-Hospital Care, ED-based care, and paediatric inpatient care. Close liaison with Primary Care and community-based services, particularly social care and child protection services, is particularly important in the provision of appropriate systems of emergency care for children. The EMP is concerned regarding previous assumptions made in relation to paediatric emergency care (e.g. the suitability of minor injury clinics, paediatric 'urgent care centres', etc) which were advanced in isolation, without due consideration of their integration into a National Emergency Care System. The EMP recommends that the configuration of PEM services should be considered in the context of the overall recommendations of the EMP and advanced through collaboration between Paediatric and Emergency Medicine programmes. Where service reconfiguration takes place, it should be ensured that the safety and efficiency of the new arrangements are audited, clinical risks are fully assessed and risk mitigation measures put in place to cover the transition phases from existing to new service structures and practices.

5.3.9   Child and Family-centred Care in ECNs

Child- and family-centred care (CFCC) is an approach to the planning, delivery and evaluation of health care of children that is grounded in a mutually beneficial partnership between patients, families and health care professionals. CFCC ensures the health and wellbeing of children and their families through a respectful patient and family-professional partnership.

There are significant challenges to providing CFCC for children in the ED. The lack of a previous relationship between the patient/family and ED healthcare professionals, as well as the acute nature of many events prompting an ED visit, can limit the ability to create an effective partnership. In addition, many cultural and social variations affecting the constitution of families compound the difficulty in identifying with certainty who, in fact, is a child's legal guardian. Situations particular to the ED such as arrival of a child by ambulance without family; the unaccompanied minor seeking care without the knowledge of his or her family; visits related to abuse or violence; time-sensitive invasive procedures, including attempted resuscitation; and unanticipated critical illness, injury or death of a child require thoughtful advanced planning. Reluctance on the part of healthcare professionals to allow family members to be present during invasive procedures or attempted resuscitation has limited family access that may be beneficial to

the patient, family and healthcare professionals alike. ED overcrowding must be addressed so as to avoid causing delay or disruption of PEM and to facilitate the health care professionals in providing respectful and sensitive care for children.

Despite these challenges, achieving excellence in the provision of CFCC is possible in the ED. The following recommendations have been adapted from a technical report[11], intended to supplement the joint policy statement of the American Academy of Pediatrics (AAP) and the American College of Emergency Physicians published in 2006[12], which drew on previously published AAP policy statements and reports and reviewed current literature to produce guidance on aspects of emergency care that can reflect the practice of CFCC.

5.3.10   Recommendations to Embed CFCC in ECNs

5.3.10.1   EDs must accommodate the needs of children and accompanying families/guardians as far as is reasonably possible

- Patient Flow
  Patient flow that exemplifies CFCC does not limit the child's access to family members or vice versa unless the demands of evolving patient independence, the need for private interview or examination, or safety of the patient, family or staff dictate otherwise. For example, an operational patient flow that requires the parent to leave the child for registration while the child is receiving care can be made more patient and family centred with a bedside registration system. Assistance can also be provided for the single parent who arrives with an ill child in the ED set-down area so that he or she can remain with the child.

- Security and Identification of Family
  For security reasons, EDs should have a policy of identifying family members with a "family" badge, corresponding to a "visitor" badge used on some EDs. Changing that label to read "family" is a small step that may help to reinforce the commitment to moving beyond thinking of family as visitors and acknowledging them as partners in the care of the child.

- Family Presence

  ED healthcare providers should enable parents to be present during procedures, such as fracture reduction, according to pre-determined ECN policies.

- Interpretation Services and Communication

  Because communication is a cornerstone of CFCC, timely access to professional interpreter services is essential for providing CFCC when a language or communication barrier exists. Children of families with language barriers are more likely to be admitted to the hospital, have more tests ordered, and have more severe disease and are less likely to get good follow-up care.[13] The common practice of using family members or accompanying friends as translators, particularly in the setting of unfamiliar medical terms or sensitive information, runs the risk of allowing faulty communication and may compromise patient privacy and safety as well.

- Comfort Care

  The routine measurement of patient pain, anxiety and comfort as part of initial and continuing patient assessment is central to CFCC, as is the commitment to respond to identified needs for comfort with interventions such as pharmacological and non-pharmacological treatment, play therapy, and psychosocial and spiritual support.

- Discharge Planning and Instructions

  Standard discharge instructions can be a vehicle for CFCC when they can be customised to reflect solicited family preferences that are incorporated into the family's assumption of care at discharge and include appropriate input from and follow-up with the patient's primary health care professional.

5.3.10.2   ED infrastructure must accommodate the needs of children and their families

This requires:

- audio-visual separation from adults, including a dedicated paediatric waiting area and separate triage area;
- adequate isolation facilities;
- there must be at least one clinical cubicle or trolley space dedicated to children for every 1,100 annual child attendances;
- consideration of security issues, including the appropriate resourcing of EDs for managing child mental health emergencies;

- the availability of food and drink;
- the provision of baby-changing and breast-feeding areas;
- access to hygienic, safe play facilities;
- an appropriate ED infrastructure.

An infrastructure that embodies CFCC will accommodate family members, including well siblings, and provide restrooms. It should provide children protection from the sights, sounds and smells of emergency care of other ED patients and ensure adequate privacy on-site for sensitive interviews and for families who are experiencing grief or loss. Adolescents should have access to quieter waiting and treatment areas, and age-appropriate toys, music or films.

5.3.10.3 Families and service users should be included in the decision-making regarding changes in PEM services and in PEM education and training

- New policies, practices or infrastructural changes are more likely to reflect a CFCC philosophy if family representatives are included in the planning stages. For example, patients or family representatives should be enabled to provide input to drafts of printed materials and participate in the design of new ED facilities.
- Providing clinical supervision and teaching to trainees at the bedside, with the active participation of the patient and family, is an opportunity to model CFCC. Curricula that include precepts of CFCC or use families and patients as teachers reflect further enhancement of PEM care. Irish PEM should engage in research to examine the relationship of specific CFCC practices and short-term and long-term outcomes for both patients and health care professionals to ensure that progress toward the goals of CFCC is sustained.

5.4 The Clinical Care of Children in ECNs

5.4.1 Multi-Specialty Collaboration in the Emergency Care of Children

It is imperative to the future provision of emergency care for children that there should be an integration of service delivery across the specialties of PEM, general paediatrics, paediatric trauma surgery, paediatric surgery in general and paediatric diagnostic imaging, and that this approach should be reflected in national care pathways, protocols and agreed standards of care.

Currently, in a significant number of EDs where both adults and children attend, 'surgical' paediatric cases are usually managed by EM, while 'medical' paediatrics is usually managed by General Paediatrics. Paediatric trauma (including major trauma), acute abdominal pain etc will be seen as the remit of EM, while acute illness will be the remit of Paediatrics. Conversely, serious medical illness requiring resuscitation is often managed by EM, with Paediatrics consulting. Oftentimes, children with 'medical' illness will be reviewed on a General Paediatric ward or day unit after initial registration and triage in the ED. The EMP view is that this separation of the acute care of children into such 'silos', typically physically and professionally distinct, should not continue. The EMP supports a flexible and inclusive approach to traditional professional, organisational and/or managerial boundaries. The acute care of children should be delivered in a dedicated clinical area that is used by all specialties involved in the emergency care of children, where staffing and other resources are shared across disciplines and where the primacy of PEM care is accepted. This area should be audio-visually separated from the adult ED, but should be adjacent to the general ED. Separating the care of children into cohorts where the sickest children are initially cared for by practitioners who are not regularly seeing the majority of mild and moderately unwell children is unsafe practice and is not supported by the EMP.

5.4.2   Patient Reception and Triage

- All children attending EDs must be visually assessed as soon as possible after arrival, to identify an unresponsive or critically ill child.

- A brief clinical assessment should occur within 15 minutes of arrival.

- Triage tools should be fit-for-purpose for paediatric patients. Paediatric triage typically takes longer to complete than in adults and traditional tools, such as MTS, are not ideal for use in children. Therefore, the Paediatric Triage tool recommended by the EMP should be employed in all ECN units at which children attend. At times of peak activity, a contingency system of prioritisation for full assessment must be in place if the waiting time exceeds 15 minutes.

- Initial assessment must include a pain score, when appropriate.

- Registration details must include specific additional information (e.g. primary care team, school, public health nurse, accompanying adult).

5.4.3   Resources for the Care of Children

- All facilities receiving sick or injured children must be equipped with an appropriate range of drugs and equipment.[8,9]

- Urgent help must be available for advanced airway management. Paediatric anaesthesia should only be carried out by competent and trained staff.

- All hospitals receiving acutely ill or injured children must have the facilities and staff required to establish high-dependency care, and intensive level care for airway and respiratory support. ED doctors and nurses should be familiar with ECN PEM guidelines and know when and how to access more senior or specialist advice promptly for children.

- Systems must be in place to ensure safe discharge of children, including advice to families on when and where to access further care if necessary.

- All emergency care attendances in children must be notified to the primary care team: ideally both the GP and the public health/school nurse.

5.4.4   Observation Medicine/Clinical Decision Units

Paediatric acute care is particularly suitable to observation medicine, with a higher proportion of children, compared to adults, presenting with mild-to-moderate illness and injury and without pre-existing co-morbidity.[14] The international literature would strongly support the use of a CDU to complement PEM and traditional inpatient paediatrics, with many authors reporting equally favourable clinical outcomes in comparison to hospital admission with associated financial savings, reduced ED and hospital length of stay and improved patient satisfaction.[15-18]

In January 2009, the Royal College of Paediatrics and Child Health (RCPCH) (UK) presented advice for commissioners and providers of care in relation to short stay paediatric assessment units.[19] This report highlighted three alternative models of care:

(a)   CDU Co-located with a paediatric ward;

(b)   CDU Co-located with ED, run by the paediatric department and ED;

(c)   CDU Co-located with ED, run by ED in a specialist paediatric hospital.

The relative merits of each model would need further exploration, particularly in the context of local and regional resources, beyond the scope of this document. However, current senior staffing levels and infrastructural support would suggest a combination of models (a) and (b) best suits existing practice in Ireland.

There is some confusion, however, regarding terminology in this area of practice. Some authors/practitioners refer to the concept of a Paediatric Ambulatory Care Unit (PACU) or Paediatric Assessment Unit (PAU) and assume this to be a CDU, while others assume this to be an equivalent of the adult AMU model currently under development. It is important to ensure that practitioners and planners do not interpret a PACU as an alternative to an ED, whereby it is assumed that a large percentage of mild-to-moderately unwell children with 'medical' presentations can be safely and efficiently diverted, leaving injured and seriously unwell children to be managed by practitioners who subsequently have diminishing experience of dealing with children. This is not a model that can be supported, in terms of unacceptable clinical risk, and is not a model that has found favour internationally.[18]

5.4.5 ED-based Review Clinics

These clinics, which are best suited to a dedicated and/or large PED, could be run on a daily, twice or thrice weekly basis and can be physically located within the ED. The service can primarily be provided by general paediatricians or emergency physicians, or both. Their purpose is to provide acute 'outpatient' follow-up to patients attending the ED, where a delay of longer than several days is inappropriate, but where an admission is unwarranted. This service has the advantage of not requiring additional infrastructural or junior medical staffing support and has been recently explored in the RCPCH (UK) document on the role of the Consultant Paediatrician with a subspecialty interest or training in paediatric emergency medicine.[20]

5.4.6 Diagnostics

The generic recommendations contained in this report on Diagnostic Imaging and Laboratory support for the NECS and ECNs are applicable to paediatric care also.

- Appropriate consideration will need to be given to child-friendly diagnostic infrastructure, and staff in these areas (e.g. radiographers) will need specific training in care of children.
- A national guideline should be developed for safe procedural sedation of children, not only for diagnostics, but also for therapeutic procedures within ECN units.
- Point-of-care testing (POCT) should be explored as a utility in acute care of children. There is expanding evidence that POCT has particular benefits in the paediatric setting, particularly in the diagnosis of seasonal viral infections.[21-23]

5.4.7   Information Systems and Data Analysis

ICT considerations for PEM, as in other areas, have significant commonalities with those for adult/general EM. However, important specific requirements need to be considered:

- The particular needs of children, and paediatric clinicians, managers, commissioners and regulators need to be defined and used to inform the development of ED information systems (EDIS).

- PEM staff should participate in the national information technology agenda and engage pro-actively with local service providers to configure local systems as part of a national EDIS. It is likely that significant configuration of any national EDIS will be required for exclusive PEM practice e.g. existing PEDs in Dublin or the National Paediatric Hospital (NPH).

- There should be a minimum dataset, which incorporates the specific needs of children.

- Surveillance of local patterns of injury should be possible.

- ICT in PEM should be integrated with the pre-hospital electronic Patient Care Record and the ambulance arrivals system.

- Hospitals that see injured children should subscribe to a trauma registry (e.g. EUROTARN)[24] to assess their own outcomes for children with major trauma. This should be ideally as part of a national trauma registry within the NECS.

5.5   Staffing and Training Issues in PEM

Appropriate medical and nursing staff provision is recognised as being integral to the delivery of quality paediatric emergency care.[2,3] The levels of trained staff in PEM in EDs that currently care for children are outlined in the EMP workforce staffing survey. Deficits in staff training should be addressed as a priority.

5.5.1   Medical Staffing

While there are almost 70 Consultants in Emergency Medicine (EM) in Ireland at present, there are only five Consultants in PEM and all are based in the three PEDs in Dublin. This compares most unfavourably with international standards for staffing in PEM.

Consultant staffing in PEM in the existing PEDs in Dublin is:

- Our Lady's Children's Hospital, Crumlin (OLCHC): two Consultants for 35,000 annual attendances;
- Tallaght Hospital: two Consultants for 32,000 annual attendances;
- Children's University Hospital, Temple Street (CUH): two Consultants for 43,000 annual attendances.

International benchmarks are:

- RCH Melbourne: 12 Consultants for 70,000 attendances;
- Toronto Sick Kids: 32 attending physicians (i.e. Consultant equivalents) for 60,000 attendances;
- Children's Hospital of Philadelphia: 50 attending physicians for 78,000 attendances;
- Alder Hey, Liverpool: eight Consultants for 60,000 attendances.

While it is unrealistic to consider that Consultant in PEM numbers would approach staffing levels in North America, it is worth noting that the planned NPH proposes to care for nearly 70,000 children in the ED at the main hospital site, with over 55,000 attending an Ambulatory and Urgent Care Centre on another site. It is thought likely that these figures may change as parents opt to attend the NPH, consequently increasing attendances to a figure in excess of 80,000 attendances per annum.

The benefits of increased Consultant staffing in a PEM have been previously outlined. The EMP recommends that all Type A EDs that see children should appoint at least one Consultant with recognised subspecialty training in PEM.

If the successful candidate at interview were from an EM training background, then logically that person would be an additional person for the general EM on-call rota. The same principle should apply to someone from a Paediatric background i.e. they should be on the General Paediatric on-call rota. Ideally, a specialist in PEM would be appointed from both backgrounds to units where large volumes of children attend.

The recent publication of *The Role of the Consultant Paediatrician with Subspecialty Training in Paediatric Emergency Medicine*[20] by RCPCH (UK) provides valuable assistance in delineating the potential future role of such specialists, as well as highlighting the benefits of collaboration between Paediatricians and Consultants in EM.

Each ECN should appoint a specialist in PEM to coordinate the care of children within networked units. Junior medical staffing will likely comprise trainees in EM at basic and higher specialist levels, and these doctors will have mandatory training in PEM as six-month rotations. Non-EM trainees and other junior medical staff in ECN units should receive regular education and training in PEM as part of a generic education programme.

Finally, consideration should be given to academic appointments in PEM. There should be at least one Chair in PEM within Ireland in the future.

5.5.2   The Training of Doctors Sub-Specialising in PEM

The issue of training specialist doctors in PEM is dealt with in detail in the IAEM/ICEMT/RCPI Faculty of Paediatrics document *The Development of Paediatric Emergency Medicine in Ireland* (2010).[2] The main issues highlighted in that document are:

- unlike the UK, North America and Australasia, the specialty of PEM is not recognised by the Medical Council in Ireland;

- a six-month rotation in PEM will be mandatory as part of both basic and higher specialist training in EM;

- ICEMT has decided that recognition of specialty training in PEM requires 18 months additional training in PEM and paediatric critical care. Both components of PEM training (as part of general EM training and subspecialty training) are supported by clearly defined competencies and a validated curriculum;

- PEM is currently not a mandatory component of General Paediatrics training at either basic or higher level;

- ICEMT and the RCPI Faculty of Paediatrics have agreed to advance the development of PEM in Ireland in tandem, and have agreed a training programme that will facilitate PEM specialisation through either EM or Paediatrics (see Figure 5.1).
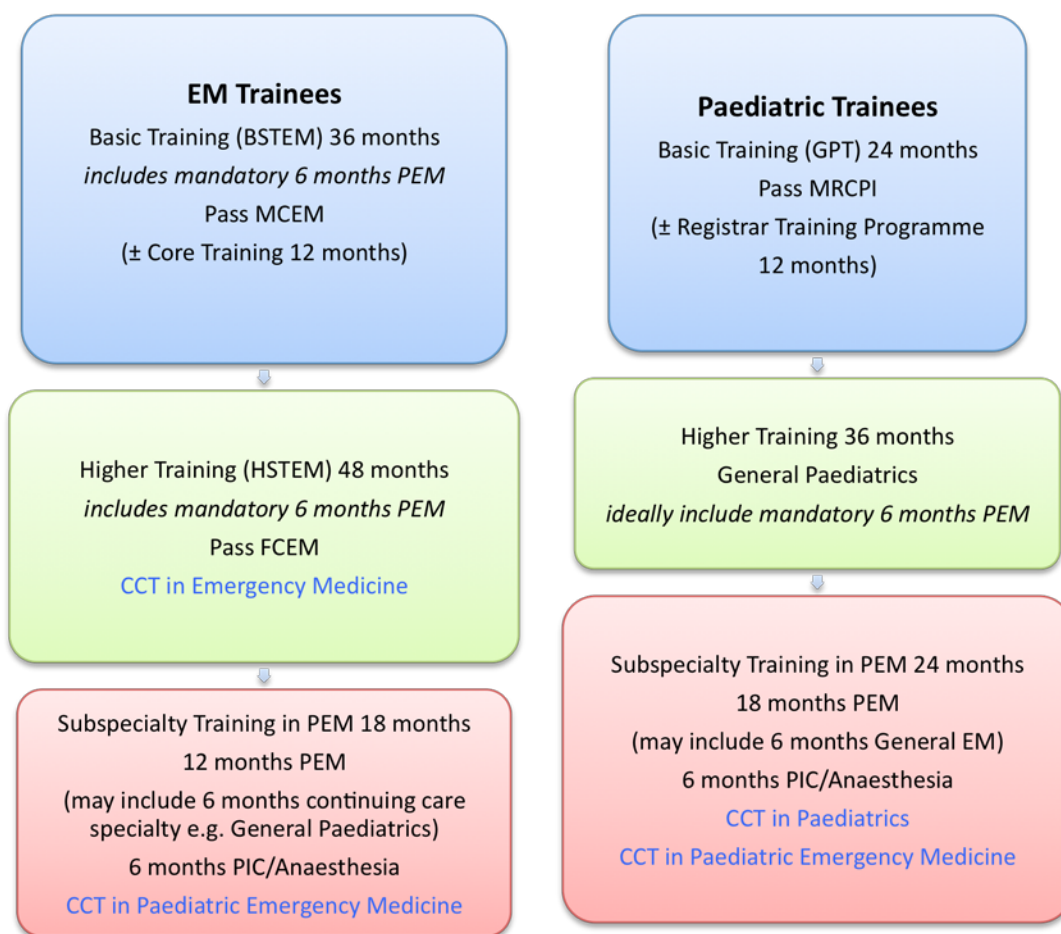
Figure 5.1: The agreed training programme to facilitate PEM specialisation through either EM or Paediatrics

A joint process (between ICEMT and Faculty of Paediatrics) of application to the Medical Council to have PEM recognised as a specialty on the Register of Medical Specialists is in progress.

5.5.3   Nursing Staffing

Nurses working in emergency care settings in which children are seen require at least basic competence in both emergency nursing skills and the care of children. In ECN units where children attend, adequate numbers of nursing staff trained in paediatric emergency care are crucial in the delivery of safe and efficient care. The following should be considered:

- nursing staff, in mixed units, should have the skills and competence to manage paediatric patients and their families. These skills can be provided through formal education and training programmes at postgraduate level and through needs-based in-service education as

part of the continuing professional development of the multidisciplinary team. Specifically, the recognition of serious illness, basic life support, pain assessment, and identification of vulnerable patients should be addressed;

- a minimum number of nurses specifically educated and trained in paediatric emergency care is required – current recommendations suggest one WTE nurse per 1,250 paediatric attendances annually (or at least one per shift in mixed EDs);

- Advanced Nurse Practitioner roles in Paediatric Emergency and Adult & Paediatric Emergency Medicine exist in EDs in Ireland. The development of these types of practitioners will have a role in ECN Local Injury Units and Type A EDs in particular;

- all EDs receiving children should have a Paediatric-trained lead nurse for the care of children and young people and a lead nurse responsible for child protection and associated issues (this could be the same person in smaller units).

5.5.4 Other Staff Groups

Other staff groups will also need to be considered in terms of appropriate paediatric training, with some professionals having specific advanced training, dependent on the volume of paediatric care delivered in particular ECN units:

- Play Therapist roles should be developed, particularly in units where large volumes of children attend;

- Allied Health Professions: Physiotherapy, occupational therapy and other allied health professions have a significant contribution to make to the care of children in EDs;

- Medical Social Work: this is a particularly important consideration, because of the unique issues relating to children e.g. child protection, parental and family support, death in children;

- Health Care Assistants;

- Administrative and Clerical staff.

5.6   Child Protection in ECNs

Child protection is the responsibility of all staff in the NECS; it is a difficult and challenging subject to address and the promotion of good practice requires not only guidance, but also training and support for staff at all levels. The HIQA Draft National Standards for Safer Better Healthcare[25] require that service providers protect the safety, health and welfare of service users, including the

protection of children and vulnerable adults from abuse. *Children First: National Guidelines for the Protection and Welfare of Children (2011 edition)*[26] provides an overarching template to assist in the identification and reporting of suspected child abuse in persons up to 18 years of age. These guidelines are complemented by a report produced by the Council for Children's Hospital Care, *Child Protection Guidelines for the Children's Hospitals*, 2008[27], the objectives of which are to:

- improve the identification, reporting, assessment, treatment and management of child abuse that presents in the children's hospitals;

- clarify the roles and responsibilities of various professionals and individuals within the hospitals;

- enhance communication and co-ordination of information between disciplines, departments and the statutory agencies responsible for child protection;

- provide a template for the training of staff.

Over the past two decades, major child abuse inquiries (e.g. *The Report of the Inquiry into the West of Ireland Farmer Case*, North Western Health Board, 1998 and The *Victoria Climbié Inquiry*, 2003 in the UK) have reported on situations where children have continued to be seriously harmed after presentation to hospital services and/or admission to hospital. Lessons learned include:

- the importance of contemporaneous record keeping by all staff, and the necessity for vigilance and follow up whenever irregularities appear;

- the importance of checking histories which may demonstrate patterns, such as repeated hospital visits, and injuries to a child which, when considered in totality, may raise the index of suspicion about child abuse or neglect;

- the importance of listening to children when non-accidental injury is suspected;

- the requirement to fully examine situations and challenge opinions where any doubts exist;

- the importance of following up all recommended actions in respect of child protection;

- the need to refer all suspicions to the statutory Child Protection Service (HSE Local Health Office) with detailed information on neglect or other concerns;

- the need to follow through on discharge plans and make sure that the child has an identified GP;

- the need for adequate information systems within and between hospitals for storage, retrieval and communication purposes so that if a child presents at more than one treatment centre (a common tactic to avoid suspicion), his or her history will be available.

Recommendations for Child Protection in ECNs

- All ECN facilities where children are seen should follow the recommendations of the Council for Children's Hospital Care *Child Protection Guidelines for the Children's Hospitals.*

- All ECN staff (clinical and non-clinical) must receive training in safeguarding children appropriate to their posts.

- All ECNs should nominate a lead Consultant and lead nurse responsible for safeguarding children within the ED.

- All ECNs must have guidelines for safeguarding children, specific to the ECN.

- All ECNs must be able to access child protection advice from a paediatrician and social services 24 hours a day. Direct or indirect access to a child protection register should be available.

- Systems must be in place to identify children who attend frequently.

- The child's primary care team, including GP and public health/school nurse, should be informed of each attendance.

Recommendations:

- The importance of PEM within a National Emergency Care System and the Irish healthcare system in general should be recognised and PEM should be developed through collaboration between the specialties of EM and Paediatrics.

- Consultant staffing in PEM will be increased both in the dedicated Paediatric EDs (PEDs) in Dublin and through the appointment of Consultants in PEM (i.e. Consultants with subspecialty training in PEM) to regional units. All 24/7 EDs in which children are treated should appoint at least one such Consultant.

- Each Emergency Care Network (ECN) should have a lead clinician for PEM.

- The EMP will develop workforce models to ensure that there are appropriate levels of paediatric-trained nurses, therapists and social workers with paediatric experience in all ECNs.

- The EMP will develop guidance on ED infrastructure to facilitate the provision of child and family-friendly care. Child- and family-friendly care is an innovative approach to the planning, delivery and evaluation of health care of children that is grounded in a mutually beneficial partnership between patients, families and health care professionals.

- Observation medicine (via Clinical Decision Units) should be developed as a priority area in PEM.

- Training pathways for specialists in PEM need to be formally established.

- ED information systems must include the specific needs of PEM.

- Child protection should be a fundamental concern of ECNs and robust systems of support to protect children should be in place (as per specific recommendations in this chapter).

Chapter Six

6. Pre-hospital Emergency Care

6.1 Introduction

Pre-hospital care (PHC) incorporates the primary response to injury and sudden illness, patient retrieval services, inter-hospital patient transfer, aspects of telemedicine and Major Incident Management and response. The delivery of PHC in Ireland is primarily the responsibility of the National Ambulance Service (NAS). Dublin Fire Brigade (DFB) provides an ambulance service in the Dublin area by agreement with, and funded by, the HSE National Ambulance Service. Prior to the recent appointment of a Medical Director of the NAS, medical input to the ambulance service was limited but characterised by high levels of enthusiasm and the generous sharing of expertise by those doctors previously involved in supporting PHC. The Pre-Hospital Emergency Care Council (PHECC) is the statutory regulator of the paramedic profession, analogous in many respects to the Medical Council or An Bord Altranais.

6.2 Current Challenges in PHC

6.2.1 The Configuration of Emergency Care

The future configuration of EDs and the development of ECNs will require a change in how the ambulance services respond to calls and manage patients. It is envisaged that EDs in some hospitals that are currently accepting undifferentiated patients will, in future, have restricted opening hours and/or will not offer the full range of acute complex medical and surgical services. In particular, specialised services such as the care of patients with acute coronary syndromes, stroke and major trauma will be centralised in larger EDs. The implications of this for ambulances services in Ireland are:

- longer transport times, with a resultant reduction in availability to respond to 999 calls;
- challenges in achieving any improvement trajectory in clinically orientated response time standards (as published by HIQA in 2011);

- higher acuity patients being under the care of paramedics/advanced paramedics for longer periods of time;

- a greater requirement for inter-hospital transfers, patient repatriation and patient transport services.

Additional ambulance service capacity is required to support such changes. Community acceptance of changes in ED access is more likely to be achieved if ambulance services are enhanced prior to and in conjunction with, hospital service re-organisation. A safe and effective transition to new systems of emergency care requires:

- an increase in the number of paramedics proportionate to the increased service requirements in specific geographical areas;

- an increase in the number of advanced paramedics (APs) with all APs being ring-fenced for 999 (AS1) and selected GP urgent (AS2) calls in line with the PHECC EMS Priority Dispatch Standard. Higher acuity or time-critical patients represent a relatively small proportion of the overall workload of the ambulance service but with rationalisation of ED-based services, these patients will require advanced interventions by APs more frequently and for longer transport times;

- dedicated AP availability in all areas with rationalised services to ensure life-threatening event responses and HIQA standards are not undermined by longer transport times and patient complexity. The AP service should have access to either a rapid response vehicle or a transporting vehicle, depending on the range and location of hospital services in a particular area as well as the population density and call volume;

- tiering of the service into acute (999) and non-acute (patient transfer) services. Currently the majority of patient transfers are performed by 999 vehicles staffed by paramedics and, on occasion, by APs. Because ambulance control centres will always prioritise emergency calls, inter-hospital transfers are often considerably delayed or postponed, often resulting in inefficient usage of existing bed stock. Separating out the patient transfer service from the 999 service will allow for greater efficiencies in bed usage, facilitate realistically achievable discharge planning, and protect the 999 service. The PHECC Inter-facility Patient Transfer Standard also has implications for this and tiering of the service as outlined will allow NAS fulfil its obligations under this standard.

6.2.2   Off-load Delay and the ED interface

Off-load delay occurs where ambulances are prevented from handing patients over to EDs by virtue of the ED being at capacity from admitted inpatients not moving to ward beds in the hospital. It is essentially a manifestation of hospital overcrowding. This has become a significant issue in many Dublin EDs and prevents ambulances from responding to emergency calls and inevitably adversely affecting response times as crews are delayed at EDs and are unable to respond to emergencies. Hospitals must put processes in place to address the issue of admitted inpatients hampering the ability of EDs to accept incoming acutely unwell patients. Ambulance off-load delays cannot be tolerated and the EMP will introduce a Key Performance Indicator (KPI) for all EDs with a target off-load time of less than 20 minutes. EMP recommendations in regard to ambulance diversion are available in Appendix 6.

6.2.3   High-Level Medical Support

Some of the challenges placed on ambulance services by ED rationalisation proposals may be addressed by more formal medical support from receiving EDs. These can be considered under three headings:

6.2.3.1   Online medical support

This is the practice of providing medical advice to pre-hospital personnel by radio or telephone in real time. As transport times increase and destination decisions involving bypass protocols become more common, pre-hospital practitioners will benefit from real-time clinical advice from senior doctors in EM. This would largely involve either advice on destination decisions e.g. which ED in the region is best equipped for that particular patient or clinical advice when the paramedic or AP has exhausted his/her treatment options and the patient still requires time-critical treatment.

6.2.3.2   On-scene high-level medical interventions

In rare circumstances, paramedics and advanced paramedics may encounter difficult clinical situations requiring highlevel interventions beyond their scope of practice, in the context of prolonged transport times e.g. the entrapped polytrauma patient. With the centralisation of EDs and greater number of Consultants in each ED, as well as the ongoing formalisation of pre-hospital care as a recognised subspecialty by the College of Emergency Medicine and other organisations,

scope for large EDs to provide pre-hospital care for interventions beyond the scope of practice of the paramedic will exist.

6.2.3.3   Competence assurance

Where advanced paramedic or paramedic interventions already occur in low volumes in some parts of the country, longer transport times may result in a further reduction in a practitioner's opportunity to perform a particular intervention. EDs have a significant role to play in terms of competence assurance by providing regular and clinically supervised exposure to patient assessment and interventions. The current practice of unidisciplinary training within the NAS contributes to confidence-building and competence assurance, however, that same isolated approach militates against real integration and team-building with ED staff. The key benefits of work that is done in the ED is that competence assurance is predominantly influenced and supported by senior clinicians and overall teamwork and communication improves.

6.2.4   Aeromedical Transport

Rationalisation of ED-based services, particularly but not limited to specialist areas such as trauma, stroke and acute coronary syndromes, will result in longer travel times to hospitals. Most ambulance patients are not time-critical, but the proportion that are will potentially be put at risk by their increased pre-hospital time. Ireland currently does not have a dedicated aeromedical transport service. A service level agreement exists between the HSE and the Aer Corps for inter-hospital transfer only.

The EMP supports the development of a Helicopter Emergency Medical Service (HEMS) as well as the further development of the existing inter-facility transport service. Existing state assets (Irish Air Corps and Irish Coast Guard helicopters) could, in conjunction with NAS, be used to provide an Irish HEMS. The development of aeromedical transport will be considered within the remit of the DCSP Transport Medicine Programme led by Dr Geoff King.

6.2.5   Communications

The NAS is currently rationalising the existing nine ambulance control centres into a single national centre on the east coast with a resilience site i.e. a backup facility on the west coast. All requests for ambulance service support, both emergency and non-emergency calls, will be routed through these centres. This presents an opportunity to centralise and improve acute medical

communications nationally and to develop pathways of care that involve alternatives to emergency ambulance dispatch or attendance at an ED.

6.3   Training in Pre-hospital Care

Educational, training and care standards have been developed and overseen to date by the Pre-hospital Emergency Care Council (PHECC). Medical input has been through the Medical Advisory Group (MAG) to PHECC and more recently the Medical Director of the NAS. There are a significant number of doctors with an interest in various aspects of PHC in Ireland. Their interest has been manifested, in the main, through operation of pre-hospital care vehicles supporting the ambulance service and some hospital-based PHC response vehicles and patient transport vehicles. These doctors are drawn from the specialties of Emergency Medicine, General Practice, Anaesthesia and Intensive Care.

6.3.1   International Comparisons

Doctor-based PHC is widespread in Europe and is particularly well developed in France, Germany, Scandinavia and Switzerland. In the United States, the American Board of Medical Specialties recognised Pre-hospital Emergency Medicine as a subspecialty of Emergency Medicine in October 2010. There is a Faculty of Pre-hospital Care at the Royal College of Surgeons of Edinburgh which has been a major driver of the specialty of Pre-hospital Care in the UK. An intercollegiate board for pre-hospital care has now been set up in the UK; a curriculum is under development and sub-specialty recognition is anticipated within the next two years. It is estimated that there will be a requirement for around 200 specialists nationally in the UK to sustain practice in the various aspects of PHC outlined above.

6.3.2   Future Requirements for PHC Medical Support in Ireland

Ireland will need doctors with an interest in pre-hospital emergency medicine into the future to provide the quality of clinical care that patients deserve and the public will demand. These doctors will be needed at management levels and as direct care providers working with the ambulance service and on future retrieval programmes. Such doctors will also have an important role to play in the future Trauma System. The need for medical support for PHC should be considered as part of workforce planning in EM and Intensive Care Medicine.

Recommendations for Pre-hospital Care:

- The EMP will work with the NAS, the Pre-hospital Emergency Care Council and the National Transport Medicine Programme to support pre-hospital services including:
  - the development of a tiered patient transfer service;
  - the provision of online medical support for advanced paramedics;
  - the development of a national model for helicopter emergency medical services/aeromedical transport; and
  - the development of alternative models of dealing with 999 calls that remove the need for emergency ambulance dispatch or ED attendance.
- The EMP will support the development of paramedic and advanced paramedic roles within the NECS.
- A National Ambulance Patient Handover KPI will be implemented by the EMP and will require that handover of the clinical care of patients from ambulance services to ED clinical staff happens within 20 minutes of ambulance arrival at the ED.
- Pre-hospital care medical support staffing should be included in future workforce planning for EM and Intensive Care Medicine.

6.4   Major Emergency Planning

Emergency Medicine is a crucial component of national Major Emergency responsiveness and planning. The EMP has undertaken a project with the HSE Emergency Planning office to develop a template for Hospital Major Emergency planning. This will ensure a consistent approach to Major Emergencies in all acute hospitals. The Major Emergency subgroup includes Emergency Planners, Pre-hospital representatives, the Medical Director and Deputy Medical Director of the NAS, Hospital managers, Consultants in Emergency Medicine and a Director of Nursing.

Training in the management of Major Emergencies is a core component of specialty training in EM. The Irish Committee for Emergency Medicine Training recognises the ALSG Major Incident Medical Management and Support (MIMMS)[1] and Hospital Major Incident Medical Management and Support (HMIMMS)[1] as mandatory courses for higher specialist training in EM. All ED staff, particularly nursing, medical and administrative staff, require ongoing training in Major Emergency preparedness. Effective liaison between the pre-hospital environment and EDs is crucial to Major Emergency Planning. Full recommendations regarding Major Emergency Planning for ECNs will be available when completed.

Recommendations for Major Emergency Planning:

- A standardised national approach to Major Emergency Planning at hospital and network level will be developed through collaboration between the EMP and the HSE Emergency Planning Unit.

Chapter Seven

7. The Organisation of Trauma Care

7.1　　Introduction

Trauma is the leading cause of death and disability in older children and adults of 44 years and younger. For every trauma death three to four people are seriously injured.[1] However, international research and education has resulted in improved outcomes for injured patients and has transformed the delivery of modern trauma care.[2-5] Severely injured patients are 15-20% less likely to die if admitted to a Trauma Centre than if admitted to other hospitals.[6]

Trauma care involves multiple medical and surgical specialties, healthcare organisations and other agencies and all have a contribution to make to the future development of trauma systems at a national level. Trauma care provision within the National Emergency Care System (NECS) will ensure that the right patient is delivered to the right hospital in the shortest possible time.

Improvements in trauma management are necessary at all stages of the patient journey from pre-hospital care to rehabilitation to reduce trauma morbidity and mortality. Injury prevention is an integral part of any trauma care system.

7.2　　Trauma Care in Ireland

7.2.1　Governance

An inter-disciplinary National Trauma Group (NTG) will be established, in conjunction with other trauma care specialties to advise the HSE/DoH on policy development, funding, system performance, quality management and research in trauma care. The National Trauma Group will develop a clinical governance framework for trauma care with clear lines of responsibility for clinical effectiveness, risk management and insofar as it is possible service user participation in trauma care. Strong working relationships will be developed between trauma services, other

stakeholders and appropriate DCSP programmes. These stakeholders will include *inter alia* EM, the National Ambulance Service (NAS), Critical Care, General Surgery, Orthopaedic and Trauma Surgery, Neurosurgery, Plastic and Burns Surgery, Vascular Surgery and other surgical subspecialties, Diagnostic Imaging, the National Transport Medicine Programme and Rehabilitation Medicine. Paediatric Trauma will be given specific consideration, with Paediatric Emergency Medicine and Paediatric Trauma specialist representation on the NTG. Strategies to improve and promote stakeholder awareness of the trauma system and its outcomes will be continuously identified and developed.

7.2.2 The Organisation of Trauma Services

The development of a National Trauma Network will be considered in parallel with the future configuration of acute hospitals and ECNs. The trauma receiving status of all acute hospitals will be defined. Appropriate Trauma Receiving Hospitals (TRHs) are hospitals which specialise in and are designated for the treatment of severely injured patients. They care for trauma patients with sufficient frequency to gain expertise in their management. The NAS National Trauma Access Protocol will be used to direct the transport of patients to TRHs in each region. ECNs will form a framework for the local delivery of trauma care with the National Emergency Care System supporting a National Trauma Network for the coordination of higher complexity trauma care.

The EMP recommends that there should be a limited number of Major Trauma Centres in Ireland in hospitals that can provide the entire spectrum of Trauma Care. These hospitals will be the destination for the retrieval of the most seriously injured patients, whose needs cannot be met at other TRHs. Information systems should be developed and maintained to generate and transmit trauma data and facilitate trauma care. These systems should support the use of integrated care pathways and decision support. Trauma ICT requirements include:

- capture of data that is valid, reliable, accurate and secure;
- the ability to track an entire patient encounter from trauma incident through pre-hospital care to rehabilitation;
- capture of the costs of patient care;
- linkages across the Pre-hospital/ED interface;
- linkages between all the various healthcare providers, hospitals and professionals involved in trauma care.

7.2.3   Quality of Care

The EMP and other relevant programmes and Colleges will develop standardised evidence-based clinical guidelines for trauma care. A national Trauma Audit for Ireland, as recommended by the National Trauma Audit Committee of RCSI, should be funded and initiated across the NECS and TRHs. This committee, comprising trauma specialists, Consultants in EM and surgeons, agreed that the most appropriate system to implement a national trauma audit would be the internationally recognised TARN (Trauma Audit and Research Network) system. This system was devised and implemented across the NHS in the UK and has now expanded to EU member states under the governance of EUROTARN.[7] Audit data should be used to inform system improvement processes so as not to just focus on mortality but to gain a better understanding and assessment of morbidity and quality-of-life outcomes.

The EMP will also support the development of a National Trauma Registry in conjunction with trauma audit to ensure the provision of quality data to inform continuous system improvement in trauma care. The Registry should include pre-hospital-based data as well as hospital-based data. Trauma audit and case review will be included in ED Clinical Operational meetings and will form the basis of inter-disciplinary educational meetings in all TRHs. Audit, Clinical Operational meetings and educational activities in relation to trauma care should also involve local ambulance services.

7.2.4   Education and Research

The National Trauma Group will be supported by the EMP in developing a framework to meet the education, training and research needs of the trauma workforce (paramedics, advanced paramedics, doctors, nurses, rehabilitation clinicians and other professionals). The trauma care workforce will be facilitated in developing and maintaining the necessary skills to deliver the highest quality trauma care. This will include undertaking Advanced Trauma Life Support courses or equivalent. The HSE, DoH, HRB, Universities and Medical Training Bodies should actively support trauma research.

7.2.5   Pre-hospital Trauma Care

The Pre-hospital Care system should be a fully integrated component of the overall trauma care system in the areas of dispatch and medical direction. The PHC system encompasses the patient journey from the response to the call to emergency services, the on-scene elements of care, triage, primary transfer to an appropriate TRH and secondary inter-hospital transfer and retrieval. It should deliver the trauma patient as rapidly and safely as possible to the hospital that can manage the definitive care for their injuries, either directly or by expedited inter-hospital transfer. The NAS will participate in the retrieval of patients, as per the recommendations of the Transport Medicine Programme that is in development at present.

In collaboration with the Pre-hospital Emergency Care Council (PHECC) and the NAS, the National Trauma Group will take an active role in the following: education of pre-hospital healthcare providers in trauma care, evaluation of PHC of severely injured patients through the advancement of trauma research in the PHC setting, participation in the development and implementation of Major Emergency management as it pertains to pre-hospital trauma care, supporting Pre-hospital Trauma Life Support (PHTLS) Courses and the co-development of policies, protocols and guidelines for pre-hospital trauma care.

7.2.6   ED and Acute Hospital-Based Trauma Care

Many major trauma patients may have sustained multi-system and torso injuries. The treatment of major trauma patients in the ED by Consultants in EM is carried out in conjunction with other trauma specialties, as previously listed. Consultants in EM and specialist trauma staff at TRHs will coordinate care for this complex patient group. Improved resourcing of Intensive Care Units and EDs will be required to ensure the healthcare system can respond appropriately to major trauma emergencies. The NTG will develop protocols to ensure that the secondary transfer and retrieval of patients with time-critical conditions to a TRH occurs without delay and that unnecessary clinical investigations are not performed. A structured checklist and standardised documentation will be developed for the secondary transfer of severely injured patients.

7.2.7 Rehabilitation Trauma Care

The EMP will consider the rehabilitation needs of trauma patients in collaboration with the DCSP Rehabilitation Medicine Programme and the NTG, when convened. Some key principles which apply include:

- full integration of rehabilitation services into the trauma system;

- the organisation and resourcing of rehabilitation services to avoid delays in patient access that can adversely affect long-term patient outcomes and reduce the efficiency of TRHs;

- inclusion of the rehabilitation aspects of trauma patient care in quality improvement strategies. This will require comprehensive analysis and understanding of patients' quality-of-life outcomes and may include hospital-based rehabilitation, ambulatory and community care services and burns services;

- inclusion of appropriate rehabilitation and burns patient data in the National Trauma Registry.

Recommendations:

- An inter-disciplinary National Trauma Group will be established by the EMP in collaboration with relevant trauma specialties to advise the HSE/DoH on policy development, funding, system performance, quality management and research in trauma care.

- Trauma networks will be established on the basis of ECNs and the NECS, with a small number of Major Trauma Centres receiving trauma from smaller hospitals. Paediatric trauma services will be specifically considered within these networks.

- The EMP will contribute to the development of a system for trauma patient retrieval in conjunction with the Critical Care and Transport Medicine Programmes.

- The trauma receiving status of all acute hospitals will be defined.

- There will be standardised protocols for trauma access and guidelines for clinical care.

- A national Trauma Audit for Ireland should be funded and implemented across all trauma-receiving Hospitals in 2013.

Chapter Eight

8. Inpatient Care in Emergency Medicine – Clinical Decision Units

8.1   Introduction

The Clinical Decision Unit (CDU) is an inpatient facility adjacent to the Emergency Department (ED) managed by Consultants in Emergency Medicine (EM).[1] CDUs may also include Chest Pain Assessment Units and may have been previously termed ED Observation Wards or Short Stay Units in some hospitals. The fundamental purpose of a CDU is to make safe, timely and economical clinical decisions on patients who present to the ED with specific emergency conditions whose length of stay is likely to be no longer than 6-24 hours duration.

A patient admitted to a CDU must have a specified suspected condition that comes under a defined evidence-based clinical pathway or Standard Operating Procedure (SOP). The conditions managed in a CDU may be obtained from the list of conditions outlined in this report that have an international evidence-based SOP but this list is not exhaustive. The list of conditions managed in any CDU can vary from one ED to another as it will be influenced by local needs, the physical size of the CDU and local expertise. Patients are usually managed by means of a specific patient-care pathway from ED assessment through to discharge within 24 hours.

8.2   CDUs in Ireland

A number of Irish EDs currently have CDUs and some have incorporated a Chest Pain Assessment Unit (CPAU). The number of beds, admissions, SOPs, duration of admission as well as availability of an Acute Medical Assessment Unit/Acute Medicine Unit or equivalent on site, currently varies from hospital to hospital. The EDs that have a CDU currently include: the Mater Misericordiae University Hospital, Connolly Hospital, Tallaght Hospital, St. Vincent's University Hospital, St. James's Hospital, Cork University Hospital and University Hospital, Limerick. The EMP recommends that all Type A 24/7 EDs should include CDUs. Recommendations on the size of CDU required

according to new patient attendances will be developed by the Programme. CDU care in PEM is addressed in Chapter 5 of this report. Close liaison between the CDU and AMAU as component parts of the Acute Floor, a concept outlined in the Acute Medicine Programme, is to be encouraged. The same condition-specific patient care pathways should be used in CDUs and AMAU/AMUs.

8.3 The Cost-effectiveness of CDU care

The cost-effectiveness and safety of CDUs and chest pain assessment units is well established in the international literature[2-7] and CDU care is an integral component of EM in the UK, Australia, Canada and the US. In an Irish context, a CDU effectiveness study conducted by the Tallaght Hospital ED in 2009[3] estimated a saving of €1.7million saving for the hospital as a result of reduced length of stay for CDU patients versus patients admitted with the same conditions to other hospital services.

8.4 Education and Training Opportunities in the CDU

The CDU is an ideal learning environment in which a broad range of healthcare providers may gain valuable experience and training in emergency care. Groups that are likely to benefit from learning opportunities provided in a CDU include medical students, interns and training grade doctors, all grades of nurses, Advanced Nurse Practitioners, Clinical Nurse Specialists and members of the Therapy Professions and Medical Social Workers.

8.5 Admissions Processes

All CDU patients are admitted under the care of a Consultant in EM and must satisfy the admission policy or Standard Operating Procedures for the CDU. SOPs must be evidenced-based and the EMP will standardise CDU SOPs for dissemination through the NECS. Deviation from the CDU SOPs is anticipated at the discretion of the Consultant in EM. Changes in CDU admissions policies should only occur in consultation with Consultants in EM and senior hospital management and only in exceptional circumstances.

Without stringent SOPs and close supervision by Consultants in EM, CDUs may be misused to admit patients with complex psychosocial or medical needs whom on-call teams are reluctant to admit under their care. Inappropriate use of the CDU will result in the re-allocation of patients with needs that cannot be met within the CDU to a more appropriate bed later. This results in avoidable duplication of work and inconvenience for patients, defeating the purpose of the CDU. Only appropriate patients should be admitted to CDUs and these units should not be used to hold patients at risk of breaching the Total ED Time Target. Patients will be admitted to CDUs for less than 24 hours. A CDU access KPI will be monitored. Clinical audit of CDU admissions will be mandatory in all EDs. CDU admissions should be included in HIPE data in a manner similar to AMAU admissions.

8.6   Patient Care Processes

Twice daily ward rounds should be conducted by the Consultant in EM or a senior clinical decision-maker to whom they may delegate this responsibility. Patients should also be reviewed on an as-needed basis to facilitate discharge at the earliest clinically appropriate time. Nurse specialists (e.g. Advanced Nurse Practitioners and Clinical Nurse Specialists in Chest Pain Assessment) may play a significant role in the management of CDU patients. Other specialties, particularly Liaison Psychiatry, may contribute to the care of EM patients in the CDU. There are generally three groups of CDU SOPs:

8.6.1   Observational Group

A period of safe observation is required after which discharge is expected. Examples of conditions in this group with an international evidence-base would include:

- Syncope assessment;

- Transient Ischaemic Attack (TIA) assessment;

- Head Injury assessment;

- alcohol intoxication observation;

- non-specific abdominal pain assessment;

- observation following self-harm;

- observation following procedural sedation;

- multidisciplinary assessment of elderly patients;

- observation following treatment of a pneumothorax.

8.6.2   Diagnostic Group

This is where investigation(s) or the results of investigation(s) determine whether the patient is likely to be discharged or require further specialist inpatient management. Examples of conditions in this group would include:

- Acute Coronary Syndrome (ACS) exclusion;

- acute headache; exclusion of Subarachnoid Haemorrhage;

- ureteric/renal colic;

- suspected Pulmonary Embolism (PE);

- low risk GI Bleed.

8.6.3   Short-term Therapy Group

This is where defined conditions are treated with the expectation that this short course of therapy will result in discharge. Examples of conditions in this group (that cannot be managed by home intervention teams) would include:

- Asthma – mild/moderate;

- Anaphylaxis;

- smoke inhalation/poisoning;

- Pneumonia – low risk;

- soft tissue skin infections including cellulitis;

- soft tissue injury requiring pain control.

8.7　　　Emergencies Within the CDU

As the CDU is guideline-driven and designed for patients who are stable and need a period of observation, a diagnostic investigation or a short course of treatment, it is rare for a patient to require emergency management because of deterioration in the condition. However, if this occurs then the contingency will be for the patient to be moved from the CDU and transferred to the ED Resuscitation room for immediate and urgent review by EM clinicians. The CDU should have a defibrillator and crash trolley to facilitate immediate management of cardio-respiratory arrest within the CDU.

8.8　　　Clinical Records

The CDU should be integrated into the ED Information System (EDIS). Ideally, electronic patient records and integrated care pathways should form the basis of patient care records. In hospitals using paper inpatient charts, patients CDU record should be included in the patient's inpatient record.

8.9　　　Discharge Procedures

All CDU patients undergo regular clinical review. The maximum length of stay (MLOS) which must be strictly adhered to is 24 hours. The programme has developed a KPI for CDU Length of Stay (Appendix 7). Patients should be either fit for discharge or admitted to the care of other inpatient teams after this time. Moreover, it would not be appropriate for the CDU to be 'bed-blocked' due to lack of capacity in-house to move patients out of the CDU. SOPs should include protocols for the re-allocation of a patient who initially satisfies an SOP for entry onto the CDU but is subsequently found to need further inpatient care. Thus, pathways of care must be agreed locally by EM, Acute Medicine, surgical specialities and other relevant clinical stakeholders. Patients discharged back to the community will be given appropriate advice and, if indicated, follow-up instructions. Patients' GPs will also be informed of the admission via a discharge summary.

8.10 Staffing Requirements

CDU staffing levels should reflect the rapid turnover and intense nature of the unit and include team members with good assessment skills and timely decision-making ability. Regular senior review and twice daily rounds are essential to maintain the high level of timely discharges required. The staffing provision below is a guide and local capability, unit size, casemix and expertise will dictate the staffing provision. The EMP will produce recommendations for CDU staffing in conjunction with its overall workforce plan.

8.10.1   Medical Staffing

There should be a lead Consultant in EM for the CDU to develop SOPs and lead on clinical governance issues. CDU activity will only be possible in EDs with sufficient overall Consultant staffing resources to support and sustain this work. The Consultant in EM should be supported by adequate numbers of NCHD staff to provide this service.

8.10.2   Nursing

CDU nursing care should be under the direct governance of the ED Nurse Management Team. There is currently no detailed guidance on nursing staffing provision for CDUs but nurse staffing models for CDUs will be developed by the EMP. The role of Advanced Nurse Practitioners and Clinical Nurse Specialists from within EM and other specialties in contributing to patient care in CDUs should receive particular consideration.

8.10.3   Therapy Professions and Other Staff

The requirement for Therapy Professions and Medical Social Worker input to the care of CDU patients will be similar to that provided in AMAU/AMUs. AHP staff should participate in the development of CDU care pathways. Social work support for CDUs will be crucial. CDUs will also require support from portering and Health Care Assistant staff. CDUs require administrative support for "ward-clerk" type duties.

Recommendations:

- CDUs should be developed in all 24/7 EDs.
- The EMP will recommend Standard Operating Procedures for CDUs to ensure the equitable provision of evidence-based, high-quality CDU care throughout the NECS.
- CDU care should be audited and CDU effectiveness should be monitored through ED Clinical Operational meetings.

Chapter Nine

9. Emergency Department Infrastructure

Ireland has a stock of Emergency Department built facilities which are, in the main, unfit for purpose. Even where departments have been redeveloped in recent years they have been upgraded to design standards that, although better than what they replaced, have generally resulted in facilities that are still suboptimal by contemporary international standards. Many remain unfit for purpose as their design makes them unable to support processes which are standard in the 21st century in other healthcare systems. Many general departments, i.e. those that see adult and paediatric patients, do not have the required audiovisual separation to ensure that children and adults are kept apart at all stages of their journey through an ED (apart from the Resuscitation Room, where it is accepted that duplication of resources would not be appropriate).

In the report of the *Emergency Department Task Force*[1] in 2007, the authors stated that seven of the 18 EDs that they reviewed were 'unfit for purpose' and most of the remainder required significant infrastructural improvement. The absence of standards for Emergency Department infrastructure, up to recently, has militated against delivery of facilities which are fit for contemporary EM practice, much less future-proofed. This deficit prompted the Irish Association for Emergency Medicine to publish *Standards for Emergency Department Design and Specification*[2] in September 2007. These standards draw on contemporary international best practice in ED design from Australia, the UK and the US, adapted for use in an Irish healthcare context. This document is currently undergoing revision to reflect the most recent developments in ED design for both general and Paediatric EDs. The HIQA Draft National Standards for Safer Better Healthcare[3] consider the care environment to be a component of service provision and require that "service providers plan, organise and deliver services, including the care environment, to protect the health and welfare of service users and staff".

In general, ED infrastructure should reflect the following concepts:

- Patient care is the key focus of ED Design.
- ED design should engender a sense of caring, efficiency and safety.
- The patient's right to confidentiality and privacy must be protected.
- Good design will promote efficient workflows and ensure an optimal environment for patients and staff alike.
- There must be adequate space provided for direct patient care, clinical support areas and non-clinical ED activity.
- Where adults and children are seen in the same ED, specific design requirements must be adhered to in relation to children, their parents and siblings. There should be clear separation of facilities between both groups.
- The involvement of the multidisciplinary ED team in the design process is crucial.
- Emergency Medicine is constantly evolving and all EDs will need to be updated or replaced in time, to support the provision of the highest standards of contemporary emergency care.
- There should be service user involvement in decisions made regarding the patient care environment.

The EMP advocates for a systematic approach to building or renovating ED facilities to ensure that the built environment in which 21st century EM is practised is in keeping with the consistently high clinical standards anticipated within the NECS. Any new ED build should reflect the concept of the Acute Floor that has been developed by the Acute Medicine Programme in collaboration with the EMP. Future ED infrastructure should reflect and facilitate the provision of models of care developed by the EMP and related Programmes.

Recommendations:

- The EMP will make recommendations for ECN unit infrastructure such that the physical infrastructure of EDs and all ECN units is improved to provide safe clinical environments for patients and staff.
- There should be audio-visual separation of children in general EDs; ideally this should also be provided for older people.

Chapter Ten

10. Information and Communications Technology

10.1   Introduction

As Emergency Medicine is a very data-intensive specialty and EDs are highly complex systems,[1] the importance of Information and Communication Technology (ICT) in the successful implementation of the goals of the EMP cannot be overstated. A recent survey conducted by IAEM confirmed that there is great variance between levels of ICT support across existing EDs in Ireland, with some having well developed ED Information Systems (EDIS) while others have no electronic EDIS at all.[2] The majority of EDs have what would generally be regarded as rudimentary provision of ICT support and systems.

10.2   ICT Developments Outside the ED Impact on Emergency Care

Technology decisions made by people working outside the EM setting often fail to recognise that most "non-EM healthcare software" is important to EDs and ECNs (e.g. reporting systems for laboratory results, online bed management and patient registration systems). EM should be included in major national, regional and local software decisions, even when that software is not intended specifically for EDs. Identifying a member of the ECN staff to direct and guide EM-relevant ICT is an important step to technology success throughout a hospital and network.

10.3   The ED User Interface

The ED is a high-volume, high-acuity, highly complex area where staff turnover can be high. Staff from other departments, agency or non-ED nurses, locum doctors, rotating trainees and other temporary workers are commonly found in the ED. ICT that requires extensive training for basic use is impractical for the ED and the importance of a software user interface that does not require training to perform its basic functions should be emphasised. This especially applies to order entry

systems, documentation systems and clinical results reporting systems, all of which sit at the centre of the patient care process. Similarly, the importance of system reliability, speed, and uptime increases as our reliance on technology increases. The more that technology helps to improve the quality and efficiency of care, the more ethically and practically difficult it becomes to work without it. An EDIS must be intuitive and allow rapid input of data using a single screen whereby tracking, ordering, results review, PACS (NIMIS), e-prescribing, internet access to e-BNF and decision tools, etc. are on one screen and only need a single click to view.

10.4 Capturing and Sharing Data

It is not clear how ED information should be captured and stored e.g. as free text or in a standardised format. What is clear is that ED software applications will need to be able to access data residing in other systems. For example, the scheduling of physiotherapy appointments may reside in software that is "owned" by the physiotherapy service, yet access to that data may be required for patients attending an ED. Sharing data within a department, between departments and between institutions is vital to the process of quality care. Regardless of the method used to capture and store data, systems that contain ED-relevant data must be able to format and send it using commonly accepted standards that can be understood by other applications. Those charged with shepherding data must expect and be willing to send it to other systems, as needed, to facilitate quality ED care and management. Access rights to different levels of data will need to be a fundamental component of EDIS.

ECNs should have clinicians with dedicated special interest roles in EM informatics, with adequate protected time and a budget sufficient to accomplish ED ICT goals. EM has been a leader in medical ICT worldwide. The broad-based and pragmatic aspects of the specialty offer a critical perspective to the evolution of the field. Continued dedication to developing EM ICT will reap diverse and multiple health care dividends.

10.5 Benefits of EDIS

Emergency Departments are one of the most difficult areas to manage within a hospital facility and an EDIS provides a means of eliminating supply chain lags and expediting patient turnover with

increased quality and efficiency.[3,4] Systems that are able to automate workflow processes have the following benefits:

- Reducing Errors: One of the most common causes of medical errors is illegible writing and phone calls made between nurses and doctors to communicate instructions and the condition of the patient. By automating this process and having information communicated digitally, errors that arise from illegible writing are significantly reduced;

- Continuity of Care: EDIS allow ED personnel to immediately access critical patient data. Medical records can be transmitted between various healthcare providers and ensure timely availability of information;

- Streamlining Workflow: EDIS allow ED and ECN managers to gain a macro-perspective of how their departmental operations are functioning in unit-specific, hospital-specific and network-wide aspects. Automated systems allow managers to easily track and identify areas where bottlenecks exist and hinder patient care. Furthermore, by having patient data accessible from an electronic database, also known as electronic patient records (EPR), ED staff can easily pull up patient data without going to a filing cabinet and manually extracting critical information;

- Utilisation of Patient Care Pathways: Patient care pathways with decision support can be implemented from the pre-hospital setting through to ED or hospital discharge. Their use can lead to reduced length of inpatient stay and the provision of better quality care;

- Registry Support: A key functionality of any EDIS, at local, network and national level, is the ability to create and maintain robust patient registries for a variety of conditions and processes e.g. trauma, cardiac arrest, child protection etc. Registry support is a key patient safety benefit of EDIS.

10.6   Components of EDIS

The following are critical components of any EDIS and are recommended by the EMP for implementation across the NECS:

- A single integrated electronic patient record across the NECS;

- A single sign-on for clinicians that allows secure access to all modules;

- A comprehensive set of EPR modules, including:
  - Computerised Provider Order Entry (CPOE), most notably for doctors;
  - Closed-loop Medication Management, supported by electronic medication administration record (eMAR);

- Electronic clinical documentation/charting/care plans by doctors, nurses and allied health professionals;

- Acceptance that all clinicians will use EDIS and that all patient records will be electronically created, stored and accessed securely;

- A filmless NECS — PACS should be in place for managing medical images.

Reductions of errors, continuity of care, and streamlined workflow are valuable benefits that are assumed from the following generic components of EDIS:

- Registration;

- Triage Acuity and Tracking;

- Patient Tracking;

- Doctor/Nurse Documentation and Charting (including e-prescribing);

- Disposition/Discharge;

- Casemix and Charge Capture/Bills Processing.

10.6.1   Registration

Registration is often one of the most time-consuming processes for both the ED and the patient. An EDIS can have registration applications that will significantly reduce time spent on registration. Some examples of these applications include:

- Pre-registration: Registration is performed before a patient arrives at the hospital whilst en-route in an ambulance, helicopter or from another doctor;

- Point-of-care registration: Registration is done effectively irrespective of a patient's status and whereabouts within the ED;

- Potential for self-registration at Registration booths in ED reception.

10.6.2   Patient Tracking

The EDIS patient tracking system may be also termed the Electronic Whiteboard. Such a patient tracking system is able to supply real-time information concerning the condition of patients, the number of patients and patients' lengths of stay but also replaces the use of ED write-on whiteboards. A key feature of patient tracking is that it captures the most up-to-date condition and location of patients without nurses and doctors having to walk around the ED. Tracking can refer both to where the patient is in the ED process but also to the physical location and journey of the patient through the ED. Specialised views for doctors, nurses, support staff and ED administration

are required due to differing needs. Views may include the number of patients waiting for lab tests, x-rays, bed requests, as well as the number of patients in different locations.

Locating a patient may be facilitated via infrared/RFID devices, which allow for locating a patient's whereabouts quickly. There are two general categories of patient tracking systems: passive and active systems. A passive tracking system is one that involves no human intervention or interaction. The tracking of patient is facilitated via a marker, which is endowed with infrared sensors and radio frequencies. An active tracking system requires input of patient data by a staff member.

10.6.3   Alerts and Team Communication

The ability to generate alerts is directly tied to tracking doctor-patient encounter times. Capturing time information is not only important for retroactive analysis but can and should alert caregivers when wait times exceed the user-defined values for phases of care. While many or all of these components are captured in EDIS, one of the most significant aspects of EDIS is charting a patient's symptoms and progress. Communicating accurate and precise data of patients' real-time status is time-consuming when charts must be manually transferred back and forth between departments and amongst staff members. An electronic system of charting is therefore invaluable in providing accurate and timely transfer of patient data in the ED setting.

10.6.4   Charting

A charting system and module should support multiple views, address the requirements of external agencies, include a standard set of fields and templates applicable to the end-user, be flexible enough to accommodate a variety of input modalities, and be customisable without significant interaction with the vendor. The following components therefore ought to characterise successful charting capabilities:

- Customised Views: The three charting views commonly provided in an EDIS are triage, nursing and doctor's views. There is overlap between the three fields; however, each field accommodates the unique needs of staff members and allows for a semi-permeable filter of data input depending on who should enter data and to what extent.
- External Agencies: Information that ought to be captured in a charting system consists of the assessment, admission notes, allergies and discharge disposition. A good charting system ought therefore to address these aspects:

- Access to fields using a pick-list (e.g. discharge/disposition);

- Access to patient history, care history and specific information relating to special care;

- Access to necessary data to be semi-restrictive to comply with regulations and ensure confidentiality of selected information.

- Input Modalities: This system includes voice recognition and point-of-care solutions, such as PDAs, notebook computers and remote systems access. A scanning solution also needs to be included in EDIS to allow e-capture of GP letters, pre-hospital documents, etc. Ultimately, this would become redundant once the EDIS can communicate electronically within those areas.

- Customisable: The system should be customisable without vendor intervention. Pick lists and customised templates should be driven or modifiable in a way that an end-user is able to make changes or additions as he/she feels appropriate e.g. creation of drop-down lists for rapid ordering of common order sets (trauma/sepsis).

10.6.5   E-prescribing

Electronic prescribing is a core component of an EDIS and a Closed Loop Medication Management solution is recommended. The specific characteristics of Closed Loop Medical Management in an ED setting are outlined in Appendix 8 of this report.

10.6.6   Patient Disposition and Discharge

An EDIS will provide a means to facilitate the transfer of patients to and from different care units and also allow for proper discharge instructions to be communicated to different staff members both within and outside the ED:

- Prescriptions: Doctors are able to record and transmit prescriptions eliminating the need to handwrite them;

- Aftercare Instructions: Instructions in multiple languages are accessible and modifiable by doctors and staff members providing care completion;

- Work/school Certificates: Certificates required for employers and school /college authorities justifying absence due to ED attendance are now automated rather than handwritten;

- Discharge/Disposition: Includes bed requests and also intra-department and intra-unit transfers;

- Diagnostic Coding: This will facilitate case-mix capture within the ECNs and should be ICD-10 based;

GP discharge letters: These may be sent via email.

10.6.7   Charge Capture / Billing Management

This issue may become more pertinent to Irish EM in future if patient level costing becomes an integral part of our acute healthcare system. High volumes of patients and activity can create an environment where information required to cost care is easily misplaced or lost. An EDIS should provide tools to help capture charges and should address these following specifications:

- Pick Lists: This simplest type of charge capture is created by manually entering charges selected from a drop-down list;

- Supply Cabinets: Automated supply cabinets not only provide a means of capturing charges but also facilitate inventory management. Through barcoding, inventory is easily tracked, managed and shortages eliminated.

- Code Generation: The strongest type of charge capture module, which generates charges as the encounter is documented, eliminating the need for further intervention in order to raise an automated invoice.

10.7   Interfaces

EDIS require strong interface capabilities to meet the different needs of care units. An EDIS with proper interface capabilities will encompass these following criteria:

- Design: An interface designed to meet the specific needs of different staff members – administrative staff members, nurses and doctors.

- User-Friendly System: The interface should be user-friendly and not sufficiently technical and difficult to use as to need the constant attention of the vendor.

- Compatibility/Integration with Main Healthcare Information System: Compatibility between EDIS and enterprise-wide HIS will allow for smooth clinical workflow e.g. the ability to generate electronic consult requests.

- Key interfaces with other systems, besides the main HIS, should include:
  - Digital Imaging e.g. PACS/NIMIS;
  - Order Communications – this should be for both radiology and laboratory investigations, and results of same;
  - Laboratory Information Management System e.g. national LIMS or in the interim, hospital based;

- Pre-hospital ICT systems – sharing of demographic information, clinical information (physiological data from monitors, 12 lead ECG transmission), electronic pre-alerting of receiving facility, data sharing between EDs and ambulance control centres.

As healthcare information systems (HIS) and EDIS have both matured and grown in popularity over the last several years, the development of newer technologies applicable to the ED setting such as hand-held devices have the capacity to meet specific ED needs even more efficiently and effectively. Newer technologies and their ED applications are listed in Appendix 8.

10.8 Technology Evaluation Considerations

As technologies are put into place, their effects must be studied to ensure that a net benefit is achieved. Benefit is a multivariate concept and any analyses should reflect this. For example, a technology may improve clinical documentation but increase length of time for data entry, with potential negative effects on patient waiting times. A multivariate analysis will better inform technology decision-making. This may be the area of EM ICT requiring the most urgent research.

The success of EM ICT depends on the publication of EM ICT research. Much of the received wisdom about ICT has not been studied in the ED environment. Most importantly, the EM community will benefit by fostering an active interest in EM informatics research and development among its members. Success in EM ICT will not happen without dedicated resources. Fellowships in EM informatics should be created, and trainees should be encouraged to apply. Academic departments of EM and Healthcare Informatics should encourage research in EM ICT.

10.9 ICT Vendors

Hospitals seeking information system solutions to best meet the everyday needs of the ED are often times faced with a plethora of choices and decisions in choosing an EDIS. Opinions regarding the best strategy and system will ultimately depend on the factors that are unique to the ED and ECN in question. A national EDIS solution should be procured: one that is proposed and championed by the Irish EM community but with capacity to be configured locally to meet specific needs.

In the world of HIS, there are two main types of EDIS: niche (best-of-breed or BoB) and HIS enterprise vendors. There are advantages and disadvantages to both BoB and enterprise products. Enterprise vendors allow for hospital-wide information technology implementation and BoBs allow for need-specific implementation. Regardless of the type of solution, the three most important criteria to be considered are:

- functionality, workflow, and ease of use that truly meets the needs of the ED staff and end-users;
- implementation horizon;
- tangible return on investment (ROI).

Before assuming a cost saving for maintenance and integration with an EDIS solution, EDs should look closely not only at the domain of the software and hardware offered by the vendor but also the system administration requirements that are necessary for good compatibility.

Recommendations:

- The ICT needs of the NECS should be identified and addressed as a matter of urgency.
- There should be secure electronic transfer and sharing of patient care data between all units in an ECN.
- All NECS units should have electronic patient tracking systems.
- EDIS should include a full electronic patient record with e-prescribing for all units in the NECS.
- Every ED clinician should have basic computer literacy.
- The EMP will ensure that every ECN unit has web-based access to EMP-recommended online decision support tools and educational materials.

Chapter Eleven

11. Clinical Guidelines

11.1   Definitions of a Guideline, Policy, Protocol and an Integrated Care Pathway

The EMP's approach to the development of clinical guidelines is outlined in the document: *IAEM Development of Clinical Guidelines – a guide for clinicians, May 2012* (Appendix 9).

A Clinical Guideline, also known as a Clinical Practice Guideline (CPGs), is:

- a 'systematically developed statement to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances'[1];
- based on a 'thorough evaluation of evidence' [2-4] and is defined as the way a procedure is done or a condition is managed.

In addition, guidelines can play an important role in health policy formation and have evolved to cover topics across the health care continuum (e.g. health promotion, screening, diagnosis). In contrast to a policy which reflects an organisation's position regarding an issue and must be adhered to, guidelines allow flexibility on the part of the clinician based on the specific patient receiving care.

A protocol is defined as a written plan that specifies procedures to be followed in defined situations thus a protocol represents a standard of care that describes an intervention or set of interventions. Protocols are more explicit and specific in their detail than guidelines; they specify who does what, when and how. Protocols are most typically used when developing instructions for drug prescription, dispensing and administration i.e. drug protocols.

The IAEM/EMP will therefore intermittently produce a (clinical) standard that may be a guideline rather than a protocol e.g. the IAEM/EMP standard for management of pain might be the CEM (UK and Ireland) guideline for same.

An Integrated Care Pathway is more complex and is sometimes misinterpreted as a clinical guideline. An integrated care pathway (ICP) is a multidisciplinary outline of anticipated care, placed in an appropriate timeframe, to help a patient with a specific condition or set of symptoms move progressively through a clinical experience to positive outcomes. An ICP can be used as a tool to incorporate local and national guidelines into everyday practice but is not a guideline in itself – in fact an ICP typically needs a guideline as a template or basis.

11.2   Emergency Medicine Programme Clinical Guidelines

The EMP has asked the Academic Committee of IAEM to develop clinical guidelines for EM with the support of a subgroup from the Emergency Nursing Interest Group and input from the Therapy Professions, Medical Social Workers and patient representative groups where required. This group will also review and contribute to clinical guidelines developed by other DCSP programmes that involve emergency care. Clinical KPIs will be derived from the EMP clinical guidelines and KPIs from other national programmes will be co-implemented by the EMP in the emergency care setting. ICT development will be required to support the collection of clinical data to support these KPIs.

The following EMP Clinical Guidelines have been prioritised for development in 2012:

11.2.1   Triage

- a National Guideline for Paediatric Triage;
- a National Guideline for Mental Health Triage, in collaboration with the Liaison Psychiatry Faculty of the College of Psychiatry in Ireland;
- prevention of Health Care Acquired Infection (HCAI) and cross infection in the ED.

11.2.2   Paediatric Emergency Medicine

- Anaphylaxis in children;
- Asthma in children;
- Bronchiolitis;
- Croup;

- the Fitting Child (in collaboration with the relevant national clinical programmes).

11.2.3   Adult Emergency Medicine

- Pain Management;
- suspected subarachnoid haemorrhage (SAH), in collaboration with the Neurosurgery Programme;
- Status Epilepticus, in collaboration with the Epilepsy Programme;
- head injury, in collaboration with the Neurosurgery Programme;
- Ureteric Colic;
- ED management of patients with suspected fractured neck of femur;
- alcohol withdrawal, in collaboration with General Practice and Psychiatry;
- Emergency Management of Patients with Implantable Defibrillators;
- Diagnostic Imaging in Abdominal Pain;
- "Low-risk" Chest Pain.

11.2.4   Pre-hospital Care

- The National Trauma Access Protocol, in collaboration with the National Ambulance Service (NAS);
- Paediatric Bypass Protocol, in collaboration with the NAS and the Paediatric Programme.

11.3 Clinical Guidelines from Other National Clinical Programmes

Clinical Pathways from other programmes may also apply to ED patients. The EMP will collaborate with the relevant programmes to ensure that all clinical decision support material is easily implementable in an ED setting and that programme outcomes are measured. These guidelines are listed in the following table.

Programme	Guidelines, Care Pathways and Care Bundles relevant to EM
Acute Coronary Syndrome	ST Elevation Myocardial Infarction and Non ST Elevation Myocardial Infarction guidelines
Acute Medicine	All medical guidelines common to AM and EM
Asthma	Acute Asthma; adults and children
COPD	Acute Exacerbation of Chronic Obstructive Pulmonary Disease
Diabetes	Management of Diabetic Ketoacidosis. Hyperosmolar Hyperglycaemic State. The diabetic patient going for surgery. Inpatient worksheets and daily prescription for patients with diabetes with brief guidelines for hypo- and (non-emergency) hyperglycaemia. Referral from the ED to the Diabetic Day Centre.
Diagnostic Imaging	Guidelines for appropriate use of imaging modalities in ED
Epilepsy and Neurology Services	Guidelines for seizure management
Heart Failure	Protocol for management of Acute Decompensated Heart Failure
Obstetrics and Gynaecology	Assessment of suspected ectopic pregnancy guideline to be shared. Recent Rape/Sexual Assault: National Guidelines on Referral and Forensic Clinical Examination in Ireland 2010.
OPAT	OPAT Guidelines applicable to EM patients
Palliative Care	Pain management for the patient with advanced cancer (adults and children).
Rehabilitation Medicine	Head Injury Guidelines for non-admitted patients
Stroke	Stroke thrombolysis. Acute Stroke Care. TIA management.

Table 11.1: Guidelines from other DCSP Programmes supported by the EMP

Recommendations:

- The EMP will develop a suite of clinical practice guidelines for the NECS based on best practice in clinical guideline development.
- Guidelines will be developed for the top 20 EM conditions.
- Clinical Key Performance Indicators relating to EMP clinical practice guidelines will be introduced across the NECS.
- The EMP will co-develop and implement guidelines in collaboration with other national programmes.

Chapter Twelve

12. Key Specialty and Service Interfaces

The specialty interfaces described in this chapter and the related recommendations are based on preliminary consultation with relevant DCSP Programmes and specialty representative groups. They should be considered to be starting points for ongoing collaboration with interfacing specialties and services. It is envisaged that these themes will be expanded through future work and that new opportunities will be identified to strengthen inter-specialty interfaces and to co-develop services. The EMP looks forward to future collaboration with its interfacing specialties to improve the quality and patient experience of unscheduled care.

12.1 The Interface with General Practice

12.1.1 Comparing General Practice and EM Casemix and Clinical Activity

Both Emergency Medicine and General Practice (GP) provide 24/7 unscheduled care by means of 24/7 EDs, GP practices and GP co-operatives. Both manage undifferentiated patient presentations and high levels of diagnostic uncertainty. Emergency Medicine recognises that only a small proportion of patients managed by GPs are referred to hospital. Internationally less than one patient per 1,000 is sick enough to require immediate referral to an Emergency Department (ED).[1] GPs play an important role as gate-keepers for non-emergency hospital services. In contrast, the cohort of unscheduled care patients seen in EDs have higher acuity levels, with hospital admission rates of 20-30%.

There is limited crossover between the top ten complaints in General Practice and the top ten complaints in EDs. Furthermore, patients with Triage Category 4 or 5 in EDs are diametrically different in terms of acuity, resource needs and outcomes to the majority of patients in the Primary Care setting.[1] Moreover, a large proportion of these patients are actually referred directly to the ED by Primary Care, especially in urban settings.

The Primary Care Foundation in the UK found that between 10% and 30% of ED attendances could be classified as having problems which are regularly seen in the General Practice setting.[1] The Foundation report also described a range of services with Primary Care working within or alongside the ED, but indicated that there is a paucity of evidence on which to base policy and local system design. The report states that "there may be benefits of systems of joint working between primary and emergency care but at present this cannot be said to be evidence-based".

The increased provision of out-of-hours co-ops and the development of Primary Care Teams allow patients to avail of clinical expertise in Primary Care. In other countries improved communication between GPs, Pre-hospital Care and EM has enabled patients to be rapidly and safely treated by the right clinician in the right setting. The interface between EM and Primary Care must ensure patient safety comes first. Patients should be seen by the skill group best able to meet their needs but flexibility should be built into the system. Clinical and operational governance processes should apply to all patients and all pathways across Primary and Emergency Care, supporting the development of safe care and making best use of resources.

12.1.2 Communication between Primary Care and Emergency Medicine

Accurate and timely communication in both directions between Primary Care and EM is crucial in enabling safe quality care for patients. This communication pathway needs to include Pre-hospital Care and should, ideally, be centred within the Navigation Hub, as described in the Acute Medicine Programme.

The Navigation Hub will be accessible by all Primary Care providers and allow GPs to seek advice from Consultants in EM (as well as Consultants in other acute specialties) on clinical care, referral pathways and access to secondary/tertiary care. Future developments in the Electronic Patient Record (EPR) and investment in the EMP ICT/Healthlink interface will allow rapid GP referral of patients and real-time transfer of discharge information from the ED to GPs.

The EMP, in conjunction with other DCSP Unscheduled Care Programmes and Primary Care, intends to develop patient care pathways based on best practice which will facilitate the rapid and safe patient journey from Primary Care/Pre-hospital Care through Emergency/Acute care and then back to Primary Care with appropriate and timely communication at each step.

12.1.3   A Shared Approach to Improving Patient Access

Unfortunately resource scarcity within the Irish Health system, especially in terms of staff shortages, restricted access to diagnostics and lengthening waits for urgent/non-urgent specialist outpatient review or elective admission and underdevelopment of community-based services, has increased the patient load on both EM and Primary Care. It is difficult to quantify the impact this has on ED demand but feedback from clinicians suggests that it has contributed to increasing numbers of patients being referred from Primary Care to EDs, both with emergency conditions within the scope of practice of EM, but also with problems that would be more appropriately addressed in alternative care environments. The EMP intends to forge a partnership in patient advocacy with Primary Care to address these mutual concerns.

A number of DCSP programmes and other HSE initiatives will contribute to providing alternative and more appropriate pathways of care to patients who might otherwise be referred by default to EDs. These are listed in the following table (Table 12.1). The Emergency Medicine Programme will collaborate with Primary Care, Community Care and other DCSP programmes in promoting and supporting these services.

12.1.4   General Practice Working alongside Emergency Care

General Practice and EM have some similarities in the nature of their unscheduled, undifferentiated patient workload and their delivery of clinical care to patients. Many GP trainees rotate through EDs as part of their training and this training is delivered by Consultants in EM. Furthermore some Consultants in EM have a training and qualification background in General Practice. GPs have been utilised successfully within EDs and with mixed results where GP services are co-located with EDs.[2-6] The EMP recognises the potential for GPs who have an interest in emergency care to contribute to patient care in an ED setting. This could take the form of GPs on the Specialist Register being facilitated to work sessions in Emergency Care Network units as members of the ECN team, in addition to their work in Primary Care and GP trainees who wish to undertake further training in Emergency Care/Acute Injury Care being enabled to do so. The EMP and the Irish Committee for Emergency Medicine Training will engage with the Irish College of General Practitioners (ICGP) to investigate the feasibility of such a training structure.

DCSP Programmes and HSE Initiatives	Pathways of Care
Acute Medicine Programme	Direct medical assessment and admission for acute, non-emergency, medical conditions
Surgery Programme	Acute Surgical Units: Assessment and admission for acute but non-life-threatening surgical conditions. Rapid Access Clinics. Minor Operations / 'one stop clinics'. Catheter/Stoma/PEG care clinics.
Medicine for the Elderly Programme	Rapid Access Clinic for the Elderly
Acute Psychiatry	Alternatives to ED attendance in development
Diagnostic Imaging	Direct GP access to imaging modalities
Obstetrics & Gynaecology	Gynaecology Rapid Access Clinics. Early pregnancy clinics.
Primary Care Special Interest Clinics	Minor Operations. Chronic Disease Management Programmes. Access to Diagnostics.
National Cancer Control Programme	Urgent suspected cancer (e.g. weight loss, change in bowel habit, breast lump, skin lesion)
Community Intervention Teams	Routine management of catheters/stomas/PEG tubes. Catheterisation (Male/Female). Support for nursing home residents including: IV antibiotics / Sub-cutaneous fluids / Bowel care / Palliative care.
Sexual Health Services	Sexual Health management. Contraceptive device management.
Primary Care Teams	Non-acute psychiatry, social care, elective detoxification. Community Physiotherapy for non-emergency musculoskeletal conditions.
OPAT teams	Patients requiring IV antibiotics

Table 12.1: Pathways of Care that should be developed through DCSP Programmes and HSE initiatives to improve health-system access for patients who might otherwise attend EDs

There are potential benefits to the health system to be gained from increased GP involvement in pre-hospital care, particularly in rural areas. The EMP will work with pre-hospital care and the ICGP to explore ways in which collaborative development of emergency care/pre-hospital care and Primary Care might serve to improve patient care across this interface.

There are international precedents for training in EM for GPs, aimed particularly at GPs working in remote and rural areas; Australia offers a Postgraduate Diploma in Community Emergency Medicine, New Zealand has an Accident and Medical Care course and Canada has a Certificate of Special Competency in EM.[7-9] The EMP would welcome the development of comparable training programmes in the Irish health system.

Recommendations:

- The EMP will work with the DoH, the HSE, the ICGP and other Primary Care organisations to develop new and sustainable roles for GPs who may wish to work on a sessional basis in EDs and other ECN units.
- The EMP will explore the potential for collaborative service and training development between Emergency Medicine, Pre-hospital Care and Primary Care, with the aim of improving the quality of patient care across this interface.

12.2 The Emergency Medicine Interface with Other Unscheduled Care Specialties

12.2.1 Introduction

Patients with acute and emergency medical problems should experience a continuum of high-quality medical care from their first point of contact through their entire pathway of acute, emergency or critical care to safe discharge from hospital. EM, Critical Care (CC), acute General Surgery and Acute Medicine (AM) are complementary systems of patient care. These specialties should, ideally, be co-located on an "Acute Floor". This concept is outlined in the *Report of the National Acute Medicine Programme*, 2010. The interface between these specialties should be developed and managed in a coordinated manner to maximise the quality and cost-effectiveness of care provided by both services.

12.2.2 Clinical Governance for the EM Interface with Acute Floor Specialties

The lead Consultants in the acute access specialties or Acute Floor specialties are each responsible for the quality and efficiency of care provided in their respective clinical areas and will work collaboratively to ensure the effective running of their respective services. Unscheduled Care Specialty lead clinicians should be invited to ECN COG meetings when issues relating to their clinical areas are under consideration. Process and activity measures that overlap the AM/EM and other acute specialty interfaces should be monitored in a collaborative manner. Ideally there should be a single ICT system in operation across the Acute Floor. This is particularly important for EDs and AMU/AMAUs to support efficient, high-quality clinical care and to allow the collection of high-quality process data.

Systems of care should be agreed between all specialties that are evidence-based, quality-assured, cost-effective and sustainable and there should be a shared approach to clinical audit, quality assurance and risk management across the acute specialties. The roles of all health-care staff should be coordinated across the Acute Floor. The potential for collaboration in relation to nurse and therapist management, training and work-practices should be promoted. All protocols and policies should be evidence-based, quality-assured, cost-effective and consistent with relevant national clinical guidelines.

An equitable quality of care must be provided day and night and at all times clinical justice must prevail, with the most critically ill patients prioritised to receive care first, irrespective of whether

they happen to be in the ED, AMU/AMAU or Surgical Assessment Unit (SAU). AMUs/AMAUs and EDs should not compete for resources. Acute Floor/unscheduled care specialty and pre-hospital care interfaces should be included in major incident planning.

12.2.3 Education, Training and Research

Shared academic activity should be promoted across the EM, AM, Surgery and CC interfaces. The specialty training bodies are tasked to develop shared training for AM, EM and CC at Basic and Higher Specialist Training level. Undergraduate medical training should also be coordinated across this interface. Research and training for Nurse, Therapy Professional and other healthcare providers working across these specialty areas should also be enhanced. There is a need for systems-level research across all the acute specialties in an Irish healthcare context.

12.3 The Emergency Medicine and Acute Medicine Interface

12.3.1 Hospital Models

- In Model 1 hospitals there is no MAU/AMAU/AMU.
- In Model 2 hospitals there is only an MAU function in which GP selected patients will be seen.
- In Model 3 hospitals there is a 24-hour ED and when the AMAU is not open on a continuous basis, all patients presenting with medical conditions will be managed in the ED by the acute medical team on-call, from two hours before the AMAU closes until it reopens.
- In Model 4 hospitals there is a 24-hour ED and a 24-hour AMU. The AMU incorporates an AMAU function and an adjacent medical short stay function.

12.3.2 The Pathway of Care for AM Patients

Ideally, patients attending Model 3 and 4 hospitals should access ED and AMU/AMAU through a common entrance. Ambulance personnel may re-direct an AMU/AMAU-referred patient to an ED should the patient's clinical status deteriorate during transport. The ED should be placed on stand-by to receive all such patients.

AMU/AMAU accepted patients should be briefly assessed using the Manchester Triage System to ensure that they do not require immediate transfer to the ED resuscitation area. This must not

result in preventable delays for patients. Each patient should have a single HCAI assessment upon arrival at the hospital. AMU/AMAU referred patients who are redirected to the ED resuscitation area will remain the primary responsibility of the acute medicine team on-call but EM, CC and other specialty teams will provide support as required.

There should be no unnecessary repetition of tests or duplication of patient documentation across the EM/AM interface. Potential process bottlenecks, such as access to time-critical diagnostics, must be avoided. Patients will be admitted from the ED/CDU directly to the AMU/AMAU after discussion between the Consultant in EM or their delegate and the AMU/AMAU on-call physician or their delegate. Patient transfer can occur prior to the results of all clinical investigations being available. The assessment by the AM team should, in general, occur in the AMU/AMAU rather than the ED unless the clinical status of the patient requires care in a resuscitation area or when the AMU is closed.

12.3.3   Surge Capacity Planning

There should be planning for routine and surge capacity across the ED/AMU/AMAU interface to prevent overcrowding. In cases when demand exceeds capacity, a shared response will be required and the extra workload should be managed effectively across the ED and AMU/AMAU. A pre-agreed surge policy should be invoked in such situations and all such episodes reviewed by the Chief Executive Officer/General Manager/Clinical Director, AMU/AMAU lead physician and ED COG to minimise the risk of recurrence. AMU/AMAU/ED/pre-hospital care/critical care interfaces should be included in major incident planning.

Recommendations:

- The key interface between EM and Acute Medicine (AM) will be developed to ensure the provision of high-quality patient care for patients accessing both services.

- There will be coordinated implementation of the EMP and AMP, along with the other Acute Access group of National Programmes.

- There must be clinical justice in the delivery of services across both specialty areas.

- AMUs/AMAUs and EDs should not compete for resources.

- There should be planning for routine and surge capacity across the ED/AMU/AMAU interface to prevent overcrowding.

- The Acute Floor concept that sites the ED, Critical Care facilities, Diagnostic Imaging and acute speciality assessment areas in proximity to each other should be realised in future acute hospital infrastructure development.

- There is potential for shared training between EM and AM for all healthcare professions.

- The EMP will work with the Acute Medicine Programme to promote shared academic activity between EM and Acute Medicine.

12.4 The Emergency Medicine and Critical Care Interface

12.4.1 Hospital Models

- There will be LIUs in Model 2 hospitals. Any patient who inadvertently presents to this unit and is found to require more complex emergency care (and potentially critical care) than that which can be provided at this hospital will be transferred or retrieved from this unit.
- In Model 3 hospitals there will be a 24-hour ED and ICU services (Category 1 or 2).
- In Model 4 hospitals there will be a 24-hour ED and ICU services (Category 3 or 3s). These categories of ICU are explained in Appendix 10.

12.4.2 The Pathway of Care for ED Patients Who Need Critical Care

Any EM patient may potentially require critical care given the undifferentiated nature of ED patient presentations. Pre-hospital critically ill patients receive care from Paramedics and Advanced Paramedics and the streaming of patients to CC begins through the prioritisation of response, instigation of therapy and advance notification of EDs. Critical care specialists may be placed on standby for the reception of resuscitation patients, particularly trauma patients or in other cases in which their advanced airway skills are required. Close clinical collaboration should characterise resuscitation room working relationships between EM, AM and other acute specialties in dealing with the complex needs of emergency patients requiring CC. Although Consultants in EM are increasingly developing advanced resuscitation skills similar to those traditionally only delivered by CC specialists, the timely support of CC services in the care of emergency patients remains invaluable. It should not be necessary to define a response time for CC support for EDs as in many cases immediate support is required. There should be standardisation of CC equipment across each hospital (and ideally the NECS), ICU and ED resuscitation room so that CC staff can work comfortably in the ED environment without the clinical risks associated with using unfamiliar equipment in a stressful clinical situation.

12.4.3 Quality of Care

A number of condition-specific pathways of care have been developed that involve CC, EM and AM specialists, most notably those governing the management of sepsis. The EM/CC interface is key to the development of Trauma Care and Transport Medicine services. The interface between EM and

CC should be audited and continuously improved. Clinical governance for critically ill patients includes inter-hospital and intra-hospital access performance measures.

12.4.4 Access to Critical Care

There must be equity of access to CC for patients regardless of where in an ECN a patient presents. Network protocols should govern the transfer or retrieval of such patients to regional units. Inadequate CC capacity can result in delayed ICU admission and prolonged waiting times for patients in resuscitation rooms. This can be a significant problem for patients who need to be urgently transferred from smaller hospitals and are accommodated in ED resuscitation rooms pending ICU bed availability. The 6-hour total ED target applies to patients waiting for ICU admission and all ED patients should be moved to ICU within six hours of ED arrival. There should be effective planning for routine and surge CC capacity to prevent such occurrences. EM and CC capacity planning is particularly important in exceptional surge events such as those associated with Influenza Epidemics and Major Emergencies.

12.4.5 Training and Education

CC and anaesthesia are core components of training in EM and the specialty acknowledges the support for EM training in Ireland provided by the College of Anaesthetists of Ireland and the Joint Faculty of Intensive Care Medicine of Ireland. Simulation training and Resuscitation Training Courses offer exceptional opportunities for inter-specialty training and the development of team-working skills. The future development of Transport Medicine in Ireland will need medical staff trained to work across the CC, EM and Pre-hospital interfaces. The EMP will support initiatives to develop and strengthen training collaborations between CC and EM.

Recommendations:

- All EM patients who require ICU admission should be admitted to an ICU bed within six hours of ED arrival.
- Shared clinical guidelines and protocols should be used in the care of patients across the EM/Critical Care interface and the quality of care should be audited and continuously improved.
- There should be standardisation of Critical Care equipment across each hospital, ICU and ED resuscitation room, with Pre-hospital Care and at regional and national level, as appropriate.
- Training and professional development collaboration between EM and Critical Care should be enhanced.

12.5 Emergency Medicine and Surgery Interface

12.5.1 Background

Surgery and surgical specialties have close historic associations with EM. The links between EM and Surgery in Ireland are enhanced by the prominent role that the Royal College of Surgeons in Ireland has taken in EM training in Ireland. Developments in emergency care and surgery, along with changes in the spectrum of medical, surgical and trauma presentations to EDs in the past two decades have resulted in fewer true surgical emergencies and more medical acute illness in the workload of most modern EDs. Developments in Diagnostic Imaging have also had a major impact on the clinical interface between EM and surgery. The availability and timeliness of a surgical response for patients who present with surgical emergencies is a critical component of emergency care. A hospital's emergency surgical capability is a key determinant of its designation according to the DCSP's Generic Hospital Models and therefore a determinant of the level of ECN unit it can support.

12.5.2 The Surgical Response

EM has important interfaces with the whole spectrum of surgical specialties, as outlined below. EM clinicians require access to senior decision-makers in surgical specialties. On-site Registrar presence is required for the major surgical specialties, whereas sub-specialty surgical services will be provided in a networked system. All patients within an ECN should have equitable emergency access to all surgical sub-specialties whether locally or through networked services.

The EMP access standards for emergency care require that patients who are referred for surgical care should be assessed within one hour of referral (two hours are allowed for completion of assessments). There should be clear lines of communication for ED clinicians who require a sub-specialty opinion as to the appropriateness of off-site transfer or follow-up of an ED patient. There should be appropriate governance with regard to networked surgical services.

12.5.3 Clinical Guidelines

Many surgical conditions lend themselves quite easily to clinical practice guideline and pathway development (e.g. ureteric colic, head injury, etc.). Such guidelines are in existence in many EDs and national standardised guidelines in these areas will be developed for the ECN. EM and surgery

should focus on the development of care pathways for surgical conditions that facilitate safe alternatives to traditional inpatient care (i.e. admission avoidance) or allow timely diagnosis and admission for definitive treatment when admission is warranted. In addition to improving the quality of emergency surgical care, guidelines will ensure the more appropriate use of Diagnostic Imaging reducing unnecessary demand on imaging services.

12.5.4   Training, Education and Research

There are many opportunities for EM to progress common areas for training, education and research with a broad range of surgical and related specialties e.g. trauma care, acute abdominal pain, neurosurgical emergencies. The development of academic links with ECNs and the NECS will facilitate this much-needed development.

12.5.5   An Overview of the EM interface with Surgical Specialties

12.5.5.1   General Surgery

- EDs require timely, senior (i.e. at SpR/Registrar level) on-site on-call support for acute presentations, haemorrhage control and trauma e.g. the acute abdomen.

- Surgical Assessment Units (SAUs) should be developed to provide rapid access for GP and ED referred patients with surgical problems.

- Rapid access outpatient clinics should be available for General Surgery conditions presenting through EDs and to GPs.

- EM, General Surgery and Critical Care should jointly lead the national, regional and local operational and strategic management of major trauma care (see separate Trauma section).

12.5.5.2 Trauma/Orthopaedic Surgery

- EDs require timely, senior, on-site on-call support for acute presentations e.g. long bone fractures, spinal injury.

- EDs and all other ECN facilities require timely and regular access to Fracture/Hand Injury Clinics.

- Rapid access outpatient clinics should be available for other Orthopaedic conditions presenting through ECN facilities.

- ED-based procedural sedation (including intravenous regional anaesthesia) has facilitated fracture reduction and management in EDs that previously required inpatient care. This area of care should be jointly developed by EM, Anaesthesia and Trauma/Orthopaedic Surgery.

12.5.5.3 Neurosurgery

- All Type A1 EDs must have neurosurgery on-site.

- Type A2, A3 EDs and Type B LEUs require timely and senior (i.e. at Registrar level) support for acute presentations e.g. major head injury, suspected subarachnoid haemorrhage (SAH).

- As Adult Neurosurgery is centralised to two units in the country, there must be clear and robust national access protocols for all EM patients, irrespective of when or where they present.

- The EMP is co-developing clinical guidelines with Neurosurgery.

12.5.5.4 Plastic Surgery

- All Type A1 EDs must have plastic surgery on-site.

- All other EDs and ECN units require timely on-call support for acute presentations e.g. burns, hand injuries.

- There must be clear and robust access protocols for patients with burns or plastic surgery presentations irrespective of which ECN unit they present to.

12.5.5.5 Urology

- EDs require timely senior on-call support for acute presentations e.g. ureteric/renal colic, scrotal pain, GU haemorrhage.

- Rapid access outpatient clinics should be available for certain conditions presenting through ED and LEUs e.g. acute urinary obstruction.

12.5.5.6 Ophthalmology

- All EDs require 24/7 senior on-call support for acute Ophthalmology presentations e.g. eye trauma, acute visual loss.

- Access protocols and referral pathways should be available for patients who require referral to dedicated Eye Emergency Units.

- ECN units should have dedicated facilities for assessing patients with eye problems e.g. an Eye Room with slit lamp, etc.
- The EMP has established links with the Faculty of Ophthalmology to advance inter-specialty collaboration and the development of shared pathways of care.
- GPs and community ophthalmology services should have direct access to acute hospital ophthalmology without having to refer patients through EDs.

12.5.5.7 Maxillofacial Surgery

- EDs require timely senior on-call support for acute presentations e.g. facial trauma, oro-dental trauma.
- There must be clear and robust access protocols for patients with maxillofacial emergencies to access centralised maxillofacial surgical care, irrespective of which ECN unit they may present to.
- Rapid access outpatient clinics should be available for ECN-referred patients.

12.5.5.8 ENT

- EDs require timely senior on-call support for acute presentations e.g. complicated epistaxis or ENT foreign-body presentations.
- There must be clear and robust access protocols for all ECN patients to access centralised ENT services.
- Rapid access outpatient clinics should be available for ECN-referred patients.

12.5.5.9 Gynaecology

- EDs require timely and senior (i.e. at Registrar level) on-call support for acute presentations e.g. suspected ectopic pregnancy.
- Guidelines and shared protocols for the assessment of abdominal pain in women should be developed and implemented between Gynaecology, Surgery and EM.

12.5.5.10 Diagnostic Imaging for the EM/Surgical Specialty Interface

The clinical interface between EM and many surgical specialties is often dependent on the availability of timely diagnostic support, especially radiological investigations:

12.5.5.10.1 CT scanning

- Neurosurgery for head injury, suspected SAH;
- Urology for ureteric/renal colic;
- Major Trauma – multiple surgical specialties.

12.5.5.10.2 Ultrasound (US)

- General Surgery for the acute abdomen;
- Gynaecology for abdominal pain in women;
- Ultrasound scanning is not only a diagnostic tool that is required in the acute setting; protected and stable access for EM to outpatient US for a range of conditions after discharge is important to allow more efficient and appropriate ED care.

12.5.5.10.3 Magnetic Resonance Imaging (MRI)

- Neurosurgery for acute back pain with suspected significant neurological abnormality e.g. cauda equina syndrome;
- Orthopaedics for acute joint injury.

12.5.5.10.4 Plain Imaging

- Clinical guidelines will be developed to ensure the judicious use of plain film X-ray in various clinical scenarios e.g. investigation of abdominal pain presentations and avoid unnecessary X-rays being performed.

12.5.5.11 Hospital Models

ECN unit	Hospital	Surgical Services	
Local Emergency Unit (Type C EU)	Model 2 Hospital	General Surgery	There may be a surgical assessment unit (SAU) on site.
Local Emergency Unit (Type B EU)	Model 3 Hospital	General Surgery	There must be on-site surgical capability for the hours of operation of the unit. There may be a SAU on site.
Type A3 24/7 ED	Model 3 Hospital	Acute Surgery	24/7 on-site acute Surgical capability* There may be a SAU on site.
		Orthopaedic Surgery	24/7 on-site acute Orthopaedic capability*
		Gynae	24/7 on-site acute Gynaecological Surgery capability*
		Subspecialty Surgery	Access to networked on-call services
Type A2 24/7 ED	Model 3 or 4 Hospital	Acute Surgery	24/7 on-site acute Surgical capability.* There may be a SAU on site.
		Orthopaedic Surgery	24/7 on-site acute Orthopaedic capability*
		Gynae	24/7 on-site acute Gynaecological Surgery capability*
		Subspecialty Surgery	Vascular: on site or emergency on-call service. Neurosurgery, Plastic, ENT, Ophthalmology, Maxillofacial Surgery, Urology: emergency on-call service.
Type A1 24/7 ED		All surgical specialties on site	
* A senior trainee with Consultant on-call; Consultant response times may be defined for trauma receiving hospitals.			

Table 12.2 Generic hospital models and associated surgical services

Recommendations:

- Timely, senior, on-site general and orthopaedic surgical support is needed for all EDs.*
- There should be clear protocols to ensure equitable access to networked or centralised surgical specialty services.
- Clinical guidelines should be developed to improve the quality of care and ensure the appropriate use of Diagnostic Imaging for surgical presentations.
- Surgical assessment units should be developed as part of the Acute Floor.

  *Previous regionalisation of Orthopaedic services leaves some 24/7 EDs with off-site support only. This issue will be examined in the future review of the provision of emergency trauma services within ECNs.

12.6   The Emergency Care of Older Patients

12.6.1   Introduction

The age profile in Ireland is predicted to change from the youngest in Europe in 2002 (Females > 65 years = 12.5%) to a more international ratio by 2021 (Females > 65 years = 16.4%).[1] The number of old people living alone is to increase from 25% to 30% over the same period with those over 80 years doubling in number. This reflects the tremendous socioeconomic gains and improved healthcare provision in the country over the last 50 years. The term 'older people' as used in this document broadly refers to the age of 65 onwards.

In 2005 the *Health and Social Services for Older People II (HeSSOP II): Changing Profiles from 2000 to 2004* report revealed that up to 13% of attendances to Irish EDs in the preceding 12 month period were by people over 65 years.[2] Older people are over-represented in EDs, making 12% to 21% of all ED visits. A study of four Dublin Academic Teaching Hospitals in 2004 found that 10% of attendees were aged 80 years or older.[3] Compared to younger adults, older attenders use more resources per ED visit, have a greater level of urgency, stay longer in the ED, have a higher frequency of missed diagnoses and are more likely to make a return visit.[4-8]

The literature reports negative outcomes for older people over and above those experienced by younger people when expressed in terms of likelihood of inpatient admissions, ED re-attendance, inpatient re-admissions, institutionalisation, functional decline and death.[8]

Older people who attend an ED and require subsequent admission can be broadly classified into three groups:

- those with a distinct diagnosis who are admitted under the care of the relevant specialty;
- those who are unwell but the cause is unclear. They need a clinical work-up to establish a definitive diagnosis and appropriate treatment and are usually admitted under the general physicians or geriatricians;
- those with an acute but intrinsically minor problem (that would be treated as an outpatient or discharged in younger patients) but who require admission because of significant co-morbidities or social isolation (e.g. wrist fracture in an elderly patient's dominant arm).

12.6.2   Solutions

There is some supportive international evidence for innovative and safe strategies between EM and Geriatric Medicine (GM) to obviate hospital admission.[9] Peer reviewed publication of positive outcomes from national admission avoidance strategies and their potential effects on Irish ED attendances in older people is awaited:

- Rapid Access Clinics for the Elderly;
- Direct admission to Geriatric Respite and Short Stay beds;
- Emergency Nursing Home provision;
- Hospital at Home/Community Intervention Team and Emergency OT;
- Geriatric Liaison Nurses in ED.

These services are not currently available nationally in a consistent and sustainable, networked fashion.

The ready availability of accurate information pertaining to older people's usage of ED services is urgently required to inform resource utilisation and to form the platform for research leading to evidence-based protocols and pathways in this area. Priority should be given to developing hospital ICT systems so that data relevant to older people's use of EDs is available at local and national level. Suggested service data should include ED use by older people as a percentage of total ED footfall, hospital admission rates and lengths of stay, ED re-attendance, hospital re-admission and mortality. Similar information should also be sought for transfers to EDs from care facilities.

Healthcare providers in other EM systems (USA, Canada) have proposed specific 'elderly-centric' solutions to improve outcomes amongst this vulnerable group of patients.[4,10] This approach mirrors the development of Paediatric Emergency Medicine as a sub-speciality.

Suggested strategies include:

- developing and providing resources for new models of ED Geriatric Care:
  - Geriatric ED Team;
  - Geriatric ED Design – both the macro- and micro-physical environments.
- geriatric-specific training for EM;
- research leading to evidence–based protocols and pathways;
- collaboration with community teams/geriatric teams;

- improving the resource-utilisation balance between hospital/admission avoidance and early hospital discharge;
- advocacy roles.

With the implementation of the Acute Medicine Programme nationwide, specific improvements have been announced for the Medical Care of the Older Person in the AMU section of the acute floor model. These include *inter alia*:

- improved communication between primary care and hospital teams;
- closer liaison between specialist Geriatricians, Psychiatrists of Old Age, AMU/AMAU/MAU Physicians, Consultants in EM, Liaison Psychiatrists and GPs and other community services;
- joint adaptation of care pathways developed by the relevant national clinical programmes (e.g. stroke), the development of referral protocols and the sharing of clinical guidelines across assessment units and hospitals;
- assignment of a designated space within the AMU/AMAU/MAU tailored to meet the needs and expectations of an ageing population with more complex illnesses;
- ensuring geriatric medicine training of ED/AMU/AMAU/MAU staff;
- fast-tracking of older people who require hospital admission to an acute assessment bed or a designated area within an AMU/AMAU/MAU;
- acceptance that maintaining and enabling older patients to remain at home should be the priority.

As clinical justice for all patients is applicable across the acute floor, the identical prerequisite components for quality Geriatric EM care are as vital for the EMP as they have been determined for the AMP.

Recommendations:

The EMP recommends that a new paradigm of care is developed for older patients within ECNs. It will support and nurture the development of Geriatric EM throughout all networks and improve care to this increasingly complex group of patients. The EMP will implement the following proposals:

- Closer collaboration with the Primary Care, Medicine for the Elderly and Acute Medicine Programmes in providing education and training in core geriatric competencies and recognition of atypical presentations within EDs.
- Improve the integration of Geriatric Care at the hospital/community/public health nursing/General Practice interface with safe hospital avoidance and timely discharge.
- Establish specific early detection and screening tools for rapid detection of 'at risk' older patients.
- Establish national Geriatric EM quality standards and evidence-based practice.
- Establish a safe ED physical environment and one that encourages retention of independent function.
- Fast-track admissions of older patients to inpatient beds.
- Implement polypharmacy review and controls with specific pharmacist review of older patients' medications in the ED.
- Support investment in Geriatric EM research and audit.

12.7 The Psychiatry Interface

This section is based on a submission made by the Liaison Psychiatry Faculty of the College of Psychiatry of Ireland to the EMP.

12.7.1   Introduction

The EM/Psychiatry interface is important because mental health morbidity in patients in the ED and acute hospital setting is high and dedicated services are needed. In Ireland in 2009, there were approximately 12,000 ED presentations with self-harm.[1] Patients with mental ill-health and medical co-morbidity typically have complex assessment needs, longer hospital stays and have unique risks attached to their care. Patients with mental ill-health are entitled to the same access to emergency medical care when they are medically ill as others. ED staff often feel ill-equipped to address these patients' mental health needs and risks. Clinical collaboration between EM clinicians and on-site dedicated Psychiatry staff is essential in providing optimal and timely management of the mental health needs of patients with medical or surgical emergencies. Appropriately resourced, flexible, available and responsive mental health services are therefore a vital part of the delivery of emergency healthcare services in the ED.

12.7.2   Access to Mental Health Services

Mental Health (MH) Services in the ED need to be available and accessible. Timely access to MH services/expertise must be continuously available for patients attending the ED in crisis. There should be a single point of contact for ED staff to access MH services for patients and the referral procedure should be a simple one. For adult patients, during working hours, this should be the Liaison Psychiatry team based on-site. Out-of-hours in all 24/7 EDs, there should be mental health staff available on-site supported by a Consultant on-call. Appropriate MH services should also be available for all age groups attending at the ED including Child and Family Services and Old Age MH services. MH services also need to develop sufficient capacity to provide acute mental health care in the community to those who need it.

The ED must not be the pathway of access to mental health care for patients with mental ill-health who have no acute medical need. The ED is not an appropriate environment for such patients. They should be assessed elsewhere (i.e. community mental health service; acute mental health unit). A system should be formalised for Primary Care to access urgent / emergency mental health

care in each Integrated Service Area. This system could involve a Navigation Hub Case Manager as well as telephone contact directly with clinical mental health staff. This will reduce the likelihood of inappropriate referral to the ED of those with mental health needs in the absence of urgent medical need. Notwithstanding this, the need for an emergency mental healthcare response in the acute hospital (e.g. for patients with self-harm, acute behavioural disturbance) will remain. Ambulance personnel and Hospital Navigation Hub Case Managers will also need to be appraised of hospitals with on-site Psychiatry by day and out-of-hours to facilitate appropriate streaming of EM patients with mental health needs.

An agreed mental health inpatient bed management policy that transcends mental health catchment areas should be in place. The proposed Navigation Hub model of the National Acute Medicine Programme[2, 3] is an opportunity for Psychiatry to implement area-wide bed management in relation to mental health inpatient beds using the Case Manager template. An area-wide mental health unit inpatient bed management policy and procedure should be put in place in each Integrated Service Area. The continued absence of such a policy is a barrier to the timely transfer of patients from the Model 3/4 hospital to inpatient mental health care.

Patients in Community Psychiatric Hospitals should only be transferred to EDs for the management of emergency conditions. Patients' Primary Care and non-emergency medical care needs should be met on-site by either a GP, through Physician liaison or through agreed transfer to an Acute Medicine Unit (AMU).

12.7.3   Clinical Governance

A shared governance model between mental health services and EM is necessary in relation to mental health service provision in the ED. Meetings between key ED staff and MH staff should be incorporated into the governance activity of the ED. This should encompass clinical, educational, risk management and service issues. Clinical audit should also be undertaken across the EM/Psychiatry interface to drive continuous quality improvement of the care of patients with MH presentations to EDs. There should be a named Psychiatrist for each ED or ECN charged with leading implementation of these recommendations and co-developing the Psychiatry/EM interface at local level.

12.7.4   Staff Education and Training

All staff with direct contact with patients in the ED should be provided with basic training on dealing with patients with mental health needs. Ambulance staff, administrative and security staff should receive mental health awareness training tailored to their needs. Specific areas of training for clinical staff should include:

- mental health triage/brief risk and needs assessment;
- managing acute behavioural disturbance;
- managing self-harm;
- brief intervention for alcohol problems;
- management of treatment refusal;
- use of Common Law and the Mental Health Act.

Liaison Psychiatry services should take a lead role in training EM staff in relation to mental health in the emergency medical setting. All mental health staff who provide mental health assessment and management to patients following self-harm should also receive appropriate training. Interdisciplinary teaching and training is recommended.

12.7.5   Environment

The ED Mental Health Assessment Area should have at least one interview room. There should be an emphasis on the safety of staff and patients in the design, location and proximity of security staff. Interview rooms should have two doors opening both ways and not be lockable from the inside. There should be shatter-proof glass panels in room walls or doors for visibility. Furniture should be fixed or heavy enough not to be moveable. The room should contain a panic button. Guidelines for appropriate design are available[4,5] and are included in the EMP recommendations for ED infrastructure.[6]

12.7.6   Triage

The Manchester Triage System should be adapted and used for patients with mental health needs in the ED.[7] There is evidence that mental health triage scales reduce waiting times and reduce the proportion of patients who leave the hospital before being seen.[8] A national EM mental health triage scale will be developed and introduced by the College of Psychiatry of Ireland and the EMP.

12.7.7   Guidelines, Policies and Procedures

There is a need for guidelines, policies and procedures in relation to mental health and emergency medical care (i.e. mental health referral, assessment, treatment, communication and transfer). Standardised protocols will be developed that can be adapted for local use according to the Model of Hospital / ED and the level of availability of mental health services. The following guidelines supported by appropriate training for EM staff should be in place in the ED. The Liaison Psychiatry Faculty of the College of Psychiatry of Ireland and the EMP will collaborate in the development and implementation of the following guidelines that should be in place in all EDs:

- Mental Health Triage;
- alcohol problems including brief intervention and detoxification (in conjunction with the Primary Care Programme);
- self-harm;
- acute behavioural disturbance.

The EMP will also implement the following policies and procedures in the ED:

- referral to Psychiatry;
- Special Observation/Care;
- management of Challenging Behaviour;
- transfer and transport of patients to an Acute Mental Health Unit;
- absconding patients who leave prior to being assessed.

Psychiatry services will develop protocols to govern the handover of care between daytime and on-call Psychiatry teams.

12.7.8   Mental Health Services to the ED

Mental Health Services should be available in the ED that span the entire age range and are provided irrespective of the catchment area /address of the patient. MH staffing resources should be adequate to provide a timely response to referrals from the ED. There should be dedicated MH staff with clinical and training responsibility for Self-Harm and for Alcohol and Drug problems.

12.7.9   Liaison Psychiatry

Liaison Psychiatry services should coordinate the emergency mental health care response for adults in Model 3 and 4 hospitals. There is consensus in Ireland and elsewhere that mental health service delivery to acute/emergency medical patients is best provided by a specialist liaison mental

health team based on-site in the acute hospital.[9-11] In Ireland, specialist mental health services are underdeveloped and there has been no progress at all in the provision of Liaison Psychiatry multidisciplinary teams since the publication of the latest national mental health policy, *A Vision for Change Report of the Expert Group on Mental Health Policy, Department of Health and Children*, 2006.[8] The main priority of current mental health policy[9] has been the delivery of mental health care by multidisciplinary teams of mental health professionals in the community.

In large acute hospitals (>500 beds), most of the existing specialist liaison teams are not staffed in accordance with minimum staffing recommendations and in two of these (Galway and Waterford), there are no specialist teams at all. In many of the smaller acute hospitals, there are stand-alone nursing posts without dedicated Consultant sessions or a multidisciplinary team. Liaison Psychiatry and on-call Psychiatry services need to be available in the EDs of Model 3 and Model 4 hospitals. There should be a single point of contact for hospital staff to access emergency mental health services that should be available 24/7. Liaison Psychiatry services should be provided by a multidisciplinary team that is Consultant-led and staffed in accordance with need (i.e. hospital size; ED activity including self-harm; presence of supra-regional specialty services). While specialist nursing posts are a key part of such teams, stand-alone posts are not recommended. All Psychiatry Nurse Specialists should work in EDs as members of Liaison Mental Health teams under the governance of a Consultant Psychiatrist. Medical Social Work support should be available to the Liaison Psychiatry team in the ED.

The core functions of the Liaison Psychiatry service in Model 3 and 4 Hospitals and EDs are clinical assessment and intervention as well as teaching and research. Typical emergency referrals include: patients following self-harm; patients with acute behavioural disturbance (secondary to substance misuse, delirium and acute mental illness); patients refusing urgent treatment etc. Liaison Psychiatry service provision needs to be considered across networks rather than mental health catchment areas. Liaison Psychiatry Services should be configured regionally in line with the acute hospital and ECNs. Staffing resources for such services should be in accordance with regional need. In this regard, the *Vision for Change* plan in relation to Liaison mental health services does not readily map onto acute hospital networks and their current reorganisation. Equally the *Vision for Change* minimum Liaison MDT staffing recommendations per 500 bed hospitals might better be viewed as staffing per 500 acute hospital beds in a hospital network. Regional Liaison Psychiatry should form a single Liaison mental health service to a region or network and such services would necessarily transcend mental health catchment areas.

12.7.10   Child and Adolescent Mental Health

Timely access to MH services must be available at all times for children and adolescents attending the ED in crisis. All EDs should have defined access to assessment by Child and Adolescent Mental Health services (CAMHS) via a simple referral procedure. Ideally this should be a dedicated Liaison CAMHS supported by the on-call CAMHS Consultant. This service should be accessible 24/7 via a single point of contact. The MH service responsible for assessment of 16 and 17 year-olds in the ED should be clearly defined nationally and consistently available.

12.7.11   Old Age Mental Health

The vast majority of adults who require MH services in the ED are under 65 with a smaller numbers of older adults (i.e. >65) requiring such services. The latter often have complex mental health needs and their number is likely to increase significantly in line with changing population demographics. The availability of MH staff with a dedicated remit for older adults is variable and current MH policy makes no specific recommendations in relation to Old Age Psychiatry in the acute hospital.[9] Services are generally provided by a dedicated Liaison Psychiatry team on site, by a community-based Old Age Psychiatry team in-reaching to selected patients or by an On-Call Psychiatrist. Only one hospital currently has its own dedicated Old Age Liaison Psychiatry service. All out-of-hours MH service provision to older adults in the ED is provided by On-Call Adult Psychiatry. Liaison Psychiatry services based on-site in Model 3 and Model 4 Hospitals should include staff with expertise and a specific remit in the assessment and management of older adults with mental health needs in the ED. There should be dedicated Consultant in Old Age Psychiatry sessions and specialist nursing support. Although Old Age Psychiatry services are community-oriented, staff with a dedicated remit to the Acute Hospital/ED should not be limited to a particular MH catchment area or location within a hospital.

12.7.12 Communication/Information Sharing

Rapid sharing of clinical information is integral to patient care in emergency settings. This requirement includes all relevant professional agencies involved in that patient's care. ICT systems that support effective two-way communication with community (i.e. Primary Care and MH) services will benefit emergency mental health assessment in the ED and timely follow-up after discharge. Liaison Psychiatry services will participate in discharge planning in relation to ED patients with co-morbid mental health needs. This will usually involve telephone or direct contact with the follow-up agency and with the family/carer. The patient will be informed of the follow-up plan. A Mental Health Discharge summary will be completed before discharge or transfer and sent by an agreed mechanism to the patient's GP or other follow-up service and a copy retained in the healthcare record.

12.7.13 Specific Clinical Problems

12.7.13.1 Self-Harm

All ED staff should be trained in basic suicide awareness and in the acute management of suicidal patients. Where there is an ED on-site, self-harm should normally be medically assessed and managed in the ED/CDU/AMU/AMAU. Exceptions are: patients requiring transfer from ED Resuscitation to ICU; patients requiring surgical intervention; patients requiring specialist medical care (e.g. Liver Failure following paracetamol overdose). Where there is no ED on-site, self-harm should be managed in the acute medicine service only if admission criteria are met and there is on-site Psychiatry available. If there is no Psychiatry available on-site, self-harming patients should be diverted to the appropriate Network Hospital where it is available. Patients requiring resuscitation following self-harm should only be diverted to a Network hospital ICU where there is Psychiatry on-site. All patients who present with self-harm should have a bio-psycho-social assessment by a suitably trained mental health professional prior to their discharge.

12.7.13.2 Alcohol and drug misuse

All ED clinical staff should be trained in the recognition and treatment of substance abuse and to provide brief advice and initial intervention. Guidelines should be agreed regarding the prevention and/or treatment of alcohol/drug withdrawal and its complications. ED guidelines for alcohol withdrawal will be co-developed by Liaison MH, EMP and the Primary Care Programme. Liaison MH

services have a role and responsibility in the management of complex cases. A flexible approach should be taken in the care of patients with psychiatric co-morbidity who require detoxification, and clinicians in EM, Psychiatry and Acute Medicine should work collaboratively to address each patient's needs. A balance of risks will need to be considered in determining whether an individual patient is better managed in a psychiatric unit with medical input or on a medical ward with psychiatry support. There should be a lower threshold for the admission of older people requiring alcohol detoxification.

12.7.13.3 Acute behavioural disturbance/violence

All staff including medical, nursing, security, ambulance and mental health staff should be trained in the management of acute behavioural disturbance/violence. A clinical guideline on the management of acute behavioural disturbance should be available.

12.7.13.4 Treatment refusal/absconding

ED medical and nursing staff should be trained in the assessment of mental capacity and its application in the ED. Patients with mental health needs who refuse treatment and/or threaten to leave the ED should have an assessment of capacity performed by a doctor. When a patient leaves the hospital prior to necessary mental health assessment or medical treatment, a clear procedure should be followed by ED staff in response. The EMP and Liaison Psychiatry Faculty will develop a standardised protocol to direct this response.

12.7.13.5 Frequent attendance

A number of patients repeatedly attend the ED. Such patients are vulnerable and consume considerable ED resources. A mechanism to identify patients who frequently attend should be in place in the ED. Psychiatry/ED/Social Work staff should work together to identify and manage these patients using patient-specific care plans. People who are homeless often have complex psychosocial care needs that require a multidisciplinary approach, working across the interfaces of social services, community care, Primary Care and the ED.

12.7.13.6 Delirium

Delirium is a cause of significant morbidity and mortality in the elderly. Delirium is a medical problem requiring vigorous treatment of the underlying cause. When delirium is associated with

behavioural disturbance and/or psychological symptoms, Psychiatry services (Liaison Psychiatry and/or Old Age Psychiatry) may have a role in the management of such cases. Patients with behavioural disturbance in the context of delirium (typically older adults) require a flexible, collaborative approach by EM, Acute Medicine and Psychiatry clinical staff to address their needs. Primacy is given to addressing their physical needs by appropriate medical investigation and treatment. It is not appropriate for acutely confused patients to be referred directly to an acute psychiatric unit.

12.7.13.7 Common Law and the Mental Health Act

ED and MH staff should be familiar with the principles of treatment under Common Law as well as the use of the Mental Health Act 2001. Patients in the community who are subject to a recommendation for MH admission under the MHA should be brought to an Approved Centre (i.e. a Psychiatric Unit). The ED is not an approved centre. Only patients requiring treatment for a significant emergency medical co-morbidity (e.g. self-harm sequelae) should be brought to the ED. Some patients may become subject to a recommendation for MH admission under the MHA after their arrival in the ED because of urgent mental health concerns. Such patients should, as soon as their emergency medical needs have been addressed, be conveyed to an Approved Centre in accordance with Mental Health Commission good practice.

12.7.13.8 Special observation/care

Special arrangements for enhanced observation/care must be immediately available to ensure patient and staff safety if patients are considered to be a risk to themselves or others during ED assessment. This care should be delivered according to specific hospital protocols. Special observation may involve one-to-one care delivered by nurses or care attendants and an enhanced security presence depending on the clinical situation. All staff who provide special observation/care should have received appropriate training prior to undertaking this role. The requirement for one-to-one care in an ED should be audited.

Recommendations:

- Dedicated services are needed for patients who present to EDs due to mental illness.

- Patients with mental ill-health who present when they are medically ill must have equitable access to EM and other acute specialty services.

- Liaison Psychiatry services and on-call Psychiatry services, including services for children and families, must be resourced to provide emergency mental health care in the ED to those who need it.

- All patients who present with self-harm should have a bio-psycho-social assessment by a suitably trained mental health professional prior to their discharge.

- All ED patients must have 24/7 access to Medical Social Work services, whether provided on-site or on a regional basis.

- Guidelines, policies, procedures and care pathways will be developed in relation to mental health issues in the ED setting.

12.8   Diagnostic Imaging in Emergency Medicine

12.8.1   Introduction

Diagnostic Imaging is a core component of ED processes and of fundamental importance in delivering safe and efficient emergency care. The successful use of care bundles and pathways mandates timely access to investigations while the risks of misdiagnosis of some conditions are too high to be left to clinical assessment alone.[1] Furthermore, early access to diagnostics can also prevent unnecessary hospital admission with consequent cost savings e.g. outpatient DVT management. Diagnostic imaging for EDs can be considered under the following:

- Imaging Modalities;
- Operational issues:
  - Digital Imaging;
  - Staffing;
  - Physical infrastructure.

12.8.2   Imaging Modalities

There are four main imaging modalities that EDs utilise:

- Plain radiographs;
- Ultrasound;
- Computed Tomography (CT);
- Magnetic Resonance Imaging (MRI).

12.8.2.1   Radiographs

The ED must have access to plain radiography 24 hours a day for Model A units and for the duration of opening hours for Model B and C units. The images should be available on a digital Picture Archive and Communication System (PACS) system for review in the ED and by colleagues in other clinical areas within the hospital and network e.g. intensive care and the trauma and orthopaedic departments. All radiographs must be reviewed by a Radiologist. Immediate, 'hot' reporting is ideal (within one hour) but as a minimum the official report should be available for review within 24 hours. All EDs undertaking fracture reduction e.g. Bier's Block, procedural sedation, should ideally be supported by co-located radiology suites and mini image intensifier (C-arm) availability.

12.8.2.2   Ultrasound (US)

Ultrasound is now established as a fundamental component of the assessment of the ill and injured patient in the ED. Every Type A ED should have a dedicated ultrasound machine physically located in the ED. Trainees in Emergency Medicine undergo training in ultrasound as part of their curriculum-based training. ED clinicians will increasingly be expected to provide diagnostic ultrasound in the following situations:

- focused assessment with sonography for trauma (FAST) scan;

- abdominal aortic aneurysm (AAA) diagnosis;

- central venous access as required by national guidelines;

- foreign body location.

In many areas, ultrasound services will be provided by radiology. If this is the case, systems must be in place to ensure a timely 24/7 service.

12.8.2.3   Computed Tomography (CT)

The use of CT has increased over recent years providing early, prompt and detailed assessment of the undifferentiated patient. The College of Emergency Medicine recommends that a CT scanner should be available within, or immediately adjacent to, the ED and be available 24 hours a day. Arrangements should be in place with colleagues in Radiology to facilitate protocol-based referral for CT in head injury, stroke, pulmonary embolus, major trauma and abdominal pain. There should be electronic transfer of images for reporting within one hour of request.

12.8.2.4   Magnetic Resonance Imaging (MRI)

Access must be available for urgent MRI 24 hours a day for those conditions where immediate surgical intervention may be necessary (e.g. spinal cord compression). This facility may only be available in certain units but systems should be in place to ensure timely provision and prompt transfer from other units in an ECN. MRI of the extremities will provide prompt and detailed assessment of injuries where previously repeat radiographs and clinical assessment was unavoidable. These conditions would include wrist injuries with possible scaphoid fracture, knee injuries, etc. All Type A EDs should be able to access on-site MRI on a priority basis.

12.8.3   Operational Issues

12.8.3.1   Digital Imaging

All departments in an ECN, regardless of configuration, should be filmless. Each will require a minimum number of high-resolution monitors which provide diagnostic-quality images.

The generic benefits of PACS are well established and include:

- allowing the transfer of images throughout a hospital or network;
- providing images to a variety of users simultaneously;
- allowing quick retrieval of historical examinations;
- providing a permanent central store of images;
- providing advanced image processing tools to clinical staff where required;
- providing easy access to diagnostic images for teaching and research purposes.

For EM, digital imaging systems can provide specific benefits in the following areas:

- facilitation of immediate, 'hot' reporting;
- discrepancy reporting i.e. missed fractures, etc.;
- creation of teaching archives;
- remote assessment of images in lead ED from smaller/remote units.

12.8.3.2   Staffing

Type A EDs should have dedicated radiography staff available on a 24/7 basis. Those EDs with a co-located CT scanner require the scanner staffed appropriately, and services should be cognisant of stretching radiography staff across functionalities, especially at night and at weekends – this can and does lead to unnecessary delays in patient throughput in EDs.

Consideration should also be given to sessional commitments of radiologists to EDs: this could be through the allocation of SpRs in Radiology to EDs for hot reporting or US support.

The ability of ED nurses and Advanced Nurse Practitioners to order plain radiographs will greatly improve ED processes and will be a fundamental requirement across ECNs.

12.8.3.3   Physical infrastructure

Type A units will require a co-located radiology suite for plain radiography.[2] Furthermore, many or all of these units should have a co-located CT scanner. Where these adjacencies are not feasible, then distances between ED and imaging services should be minimised.

12.8.4   Clinical Guidelines

Clinical guidelines and pathways for EM conditions developed by the EMP and relevant programmes are likely to require increased and earlier access to CT scanning. Examples from international best practice recommendations include:

- Head Injured Patients: CT scan result available within one hour of request as per NICE guidelines;

- Stroke: Immediate CT scan for suspected stroke within eligibility time frame for reperfusion therapy.

12.8.5   The ED/AMU/Diagnostic Imaging Interface

A designated Acute Floor (or acute area) should be developed to facilitate the seamless provision of patient-centred care across the range of specialties involved in the early management of acutely and critically ill patients. Ideally, in larger hospitals, the Acute Floor, which includes the ED, CDU, Critical Care and AMAU and other acute units should include a Diagnostic Imaging suite. The close proximity of acute units in one area, close to the Diagnostic Imaging department, will facilitate patient movement to and from imaging and between acute floor services.

Patients should not be admitted solely for diagnostics. ED and CDU patients, AMU/AMAU/MAU and medical inpatients must have access to same day diagnostic tests, particularly Diagnostic Imaging. The current volume of activity being driven by ED and AMU/AMAUs for each Diagnostic Imaging modality needs to be identified, streamlined and resourced. AMU/AMAU/MAU and ED imaging priorities for patients with medical conditions are outlined in Appendix 11.

Recommendations:

- Access to Diagnostic Imaging is critical to providing high-quality, efficient emergency care services and avoiding unnecessary hospital admissions.
- There should be equitable access to Diagnostic Imaging across ECNs.
- All ECN units should have access to Digital Imaging and shared Picture Archiving Systems.
- There should be standardised clinical protocols for the appropriate use of Diagnostic Imaging in emergency care.
- Diagnostic Imaging services should be co-located on the Acute Floor with EM, Acute Medicine and other acute care specialties.

12.9 Emergency Diagnostics

Emergency Medicine requires support from an extensive range of other diagnostic services to support ED and CDU services. These include, *inter alia*:

- Echocardiography;
- Exercise Stress Testing;
- Cardiac Telemetry;
- Vascular Studies, including Doppler Venography;
- Neuroelectrophysiology for emergency EEG;
- Nerve conduction studies.

12.10 Laboratory Medicine

The EMP recommends a maximum turnaround time of two hours for all urgent EM laboratory tests and other emergency diagnostic investigations. A more rapid laboratory response is required for the most urgent blood test results (e.g. coagulation tests for Stroke Thrombolysis protocols; serum potassium). All ECNs should establish links with their supporting laboratory services to develop turnaround time monitoring systems. The EMP recognises that many Microbiology and Virology tests require longer processing times and that only microscopy is deliverable in a two hour timeframe. The use of daytime services versus on-call services for patient investigations should be maximised as a cost-saving measure. This can be achieved through the front-loading of clinical investigations for patients who attend during daytime hours. The EMP will develop standard order sets for laboratory tests to facilitate the fast-tracking of laboratory tests, minimise unnecessary investigation and optimise resource utilisation. Point-of-Care Testing (POCT) should be a component of clinical laboratory support services for ECNs and must comply with national best practice guidelines.[1]

Transfusion services are of critical importance to EDs and ECNs. All EDs should comply with best practice guidelines in regard to the provision of blood samples for blood cross-match and transfusion administration.[2] Transfusion and blood product usage should be included in each ED's clinical audit programme. Coagulation services are particularly important in the management of

patients with haemorrhage who have clotting disorders, most commonly due to the use of anti-coagulant and anti-platelet medication.

Clinical microbiology plays a crucial role in advising EM on the judicious use of antibiotic therapies and in advising on and supporting infection prevention and control functions in the ED.

Recommendations:

- All ECN units should have service level agreements with specialties providing this diagnostic support to ensure optimal patient access.
- Emergency diagnostics should be routinely available from 08:00 to 20:00 seven days a week and emergency on-call services must be responsive to service need.
- There should be regular audit of service access and quality within the ECN governance framework.
- The EMP recommends a maximum turnaround time of two hours for all EM laboratory tests and other emergency diagnostic investigations.
- There should be electronic ordering and review of laboratory and other diagnostic test results.
- The EMP will develop standard order sets for laboratory tests to facilitate fast-tracking of laboratory tests and optimal resource utilisation.
- Patient access to diagnostic tests and response times will be monitored by ECN Clinical Operational Groups.
- The use of Point-of-Care testing is a component of clinical laboratory support to ECNs and must comply with national best practice guidelines.
- Transfusion practice and the use of blood products should be audited in each ED.

12.11 Infection Prevention and Control

The EMP will collaborate with the Health Care Acquired Infection Programme (HCAIP) to co-develop standards, clinical guidelines, care pathways, process indicators and service initiatives to enhance Infection Prevention and Control (IPC) in emergency care. Compliance with HCAI standards should be included in ED governance activity and should be a standing item on the agenda for ED COG meetings.

12.11.1   Future collaboration

Important areas for future development include:

- integration of IPC approaches across community (e.g. nursing homes), Pre-hospital and ED settings;
- a national ICP screening tool for use at triage and audit of its use;
- antibiotic stewardship in the ED;
- hand-hygiene compliance;
- compliance with standards for the prevention of central line related infections;
- the development of nursing roles to enhance IPC in the ED;
- access to isolation facilities in the ED and across ECNs;
- access to specialist infection prevention and control advice in the ECN;
- development of ED infrastructure standards to optimise IPC;
- collaboration with Public Health in regard to infectious disease outbreaks and notification of infectious diseases;
- involvement of IPC services in planning for Major Emergencies.

12.11.2   Staff Training

All ED staff should have mandatory IPC induction training before commencing employment (including agency and temporary staff). This should cover hand hygiene and aseptic technique, standard and transmission-based precautions. This should also be supported by an ongoing programme aligned with the hospital/network educational programme.

Recommendations:

- The EMP and HCAIP will collaborate to improve infection prevention and control and reduce risks associated with HCAI in the ED setting.
- All EDs should have adequate infrastructure for infection control and prevention.
- All ED staff should have mandatory infection prevention and control induction training before commencing employment.
- All patients will undergo screening at Triage for the prevention of HCAI and cross-infection in the ED.

Chapter Thirteen

13. The Emergency Team and Workforce Planning

13.1   The People who Provide Emergency Care

Emergency care is provided by a broad range of clinicians and other healthcare workers, some of whom are the visible face of emergency care and others who work "behind the scenes" to provide essential support for emergency care services. The EMP recognises the valuable contributions that all healthcare staff make to ensuring patients receive emergency care on a 24/7 basis in our healthcare system. The Emergency Medicine Workforce includes:

13.1.1   Medical Roles

- Consultants in Emergency Medicine;
- Specialist Registrars in Emergency Medicine (Higher Specialist Trainees), including those in full-time temporary research positions;
- other senior non-Consultant Doctors in Emergency Medicine such as Staff Grades, Associate Specialists;
- Basic Specialist Trainees
  Note: These are doctors at Senior House Officer level who are participating in recognised training posts. They include Basic Specialist Trainees in Emergency Medicine (BSTEM) and BST in Medicine, Surgery, General Practice and Paediatrics;
- Non-Consultant Hospital Doctors (NCHDs), including Registrars and Senior House Officers who are not on Higher or Basic Specialist Training Programmes;
- Interns;
- General Practitioners undertaking sessional work in EDs.

13.1.2   Nursing Roles

- Clinical Nurse Managers (CNM grades 1, 2 and 3);
- Staff Nurses;
- Healthcare assistants: Attendant staff (HCAs); Multi-task attendants;

- Clinical Nurse Specialists (CNSs)

  Note: There are no CNS roles specific to emergency nursing but CNS roles in respiratory medicine, cardiology, care of the older adult, paediatrics, wound care and liaison psychiatry are well established and function as a resource to the ED multidisciplinary team (MDT);

- Advanced Nurse Practitioners (ANPs);

- Other nursing roles in existence in some organisations:

  - Clinical skills facilitator (CF);

  - Practice development coordinator (PDC);

  - Patient/GP liaison nurse;

  - Research Nurse.

13.1.3   Administrative Roles

- Business Managers;

- Receptionists;

- Patient/GP liaison roles;

- Ward Clerks;

- Secretaries;

- Data Managers (may also be from a nursing background).

13.1.4   Therapy Professionals and Medical Social Work

- Physiotherapists;

- Occupational Therapists;

- Medical Social Workers, including Bereavement Social Workers;

- Other therapy professionals who may be involved in emergency patient care include Orthoptists, Speech and Language Therapists, Dieticians and Podiatrists

  Note: In most EDs, therapy professionals and social workers are employed outside the ED but contribute to patient care in the ED. In other EDs, various numbers of therapy professionals and medical social workers dedicated to emergency medicine are included in the ED staff complement.

13.1.5   Support Staff

These are staff not allocated solely to EDs but who make a major contribution to patient care in EDs:

- Radiographers;
- Pharmacists;
- Medical Physics Staff;
- Materials Management Staff;
- Cardiac Technicians;
- Catering Staff;
- Household Staff;
- Cleaning Staff;
- Chaplains;
- Porters;
- Security Staff;
- ICT Support Staff;
- Hospital Management including General Managers/Chief Executive Officers, Directors of Nursing, Human Resources Staff, Risk Managers, Bed Managers, etc.

13.1.6   Pre-hospital Care / Ambulance Staff

These people are employed by the NAS or the Dublin Fire Brigade. They interface with ED staff and make a significant contribution to emergency care:

- Paramedics;
- Advanced Paramedics.

13.2   Emergency Department and Minor Injury Unit National Workforce Survey, December 2010

A survey was developed by the EMP working group to collect information and data from all EDs pertaining to workforce, support and infrastructural resources available in their EDs. Data was requested in December 2010 from the 40 hospitals nationwide where emergency units, either Emergency Departments or Minor Injury Units, were located. All surveys were completed and returned representing a 100% response rate. The purpose of collecting this information was to determine the baseline level of existing resources and to support future workforce planning and

service development across the National Emergency Care System. The full report from 2010 is available in Appendix 12 of this report. The key findings with regard to workforce planning are presented here.

13.2.1   Emergency Nursing Staff

- There was a total of 1,413 nurses (WTE 1183.8) employed in EDs and other units, 70% of whom (824.9 WTE) were staff nurse grade.

- There were 40.5 WTE ANPs employed in the system.

- These nurses held a total of 1,161 postgraduate nursing qualifications.

- Two hundred and forty three nurses had a management qualification, including 79% of CNM grades.

- The total number of certificates, including current, expired or instructor status, in Advanced Life Skills course held by nurses in EDs was 2,233, indicating that many ED nursing staff had completed more than one course. Forty-one nurses held ALS course instructor status.

- Nursing staff in EDs had a range of specialist skills and competencies relevant to their role.

13.2.2   Health Care Assistants

- There were 132 (123.3 WTE) Health Care Assistants (HCA) employed.

- 56% (74) were trained to FETAC 5 level.

- The ratio of HCAs to nurses employed was 1:9.6.

- Healthcare Assistants skills varied considerably across the units.

13.2.3   Medical Workforce

- There were 62.64 WTE Consultants in Emergency Medicine employed in EDs nationally at the end of 2010.

- The Non-Consultant Hospital Doctor (NCHD) cadre in Irish Emergency Medicine (December 2010) was 173 Middle Grade doctors (including 20 Higher Specialty Trainees), 230 Senior House Officers (SHOs) and ten Interns. Updated data from January 2012 indicated that there was a total of 416.5 WTE NCHDs in Emergency Medicine at that time, including 201.5 WTE Middle Grades (29 Specialist Registrars, 172.5 Registrars) and 204 SHOs (26 Basic Specialty Trainees in Emergency Medicine, 88 Basic Specialist Trainees in other specialties, 90 SHO posts not on training rotations) and 11 Intern posts.

13.2.4   Therapy Professionals and Medical Social Workers

- Medical social workers were employed as members of the ED team in 14 units.

- Nineteen EDs had dedicated Physiotherapist staffing, with 14.7 WTE employed to provide these services. Sixteen of the 40 units surveyed had neither dedicated physiotherapy staffing nor arrangements in place to request physiotherapy support from within the hospital.

- Occupational Therapy was available in six EDs and 4.8 WTE were employed for ED services.

- One ED had a dedicated dietetic service (employing 0.5 WTE).

- Dedicated Speech and Language Therapy services were available in two EDs (1 WTE). His service was available on request or referral in 11 other units.

13.2.5   Administrative and Support Personnel

- ED Business Managers were employed in six EDs.

- Data Managers were available in almost half of all units (49%), the majority of these were not dedicated specifically to the ED but were a shared hospital resource.

- Plaster technicians were available in 14 units.

- A Pharmacist/Pharmacy technician resource was available to all units; 26 sites shared this resource with the rest of the hospital and 14 had dedicated pharmacy support.

- Patient liaison officer personnel were present in 18 (45%) units.

- Research staff were available in only one ED.

- Bed Managers were available in 32 of the sites.

13.3   Introduction to Workforce Planning

Workforce planning is a continuous process of shaping the workforce to ensure that it is capable of delivering its objectives now and in the future. In simple terms, workforce planning aims to have "*the right people in the right place at the right time with the right skills, diversity and flexibility to deliver high-quality care to meet the needs of individua*ls".[1,2] HIQA maintains that if there is appropriate planning, the service user can expect that at all times staff caring for them are sufficiently qualified, skilled and experienced to meet their care requirements.[3]

HIQA recommends that in planning, configuring and managing the workforce, the following elements need to be considered:

- assessed needs of the population served;
- national and international best available evidence regarding the model of service or type of service being provided;
- size, complexity and specialities of the service being provided;
- number of staff required to deliver the service;
- skill mix and competencies required to deliver the service;
- resources available;
- changes in the workload;
- relevant legislation and government policy.

The Healthcare Commission UK maintained that a shortage of resources, in particular clinical staff, is a frequently cited reason for poor performance and quality from EDs.[4] Appropriate staffing of the ED is the single most important factor in providing a prompt, timely and clinically effective service to patients.[5] Staffing levels and mix in an ED need to reflect the demand for service in order to provide safe, effective and efficient care.[6] An adequate level of staffing is crucial in meeting patients' needs and assuring their safety in EDs. The *Comptroller and Auditor General Special Report, Emergency Departments*, November 2009[7] acknowledges that there are significant variations in resources devoted to attendances at EDs nationwide. It quotes that "the number of patients handled by medical staff ranged from 8.15 to 30.57 per day" across the different EDs. It found that 23 of the 33 Irish EDs examined had delays in accessing senior decision-makers. This disparity is not exclusive to medical staff in EDs as a HSE report in 2008[8] identified that nursing and other related support staff ranged from three to 23 per 10,000 attendances.

13.3.1 Workforce Planning for the NECS

The Programme will develop standardised models for multidisciplinary team staffing for all EDs, LIUs and LEUs. It will advise on long-term workforce planning for the NECS. This process will be informed and influenced by:

- base-line staffing data acquired through a survey of staffing in all EDs undertaken in December 2010 and repeated in December 2011;
- best research evidence and reports from the international literature;
- clinical activity, acuity and casemix profiles for EDs and other units;
- the future configuration of acute hospitals and EDs;

- the hours of service provided in each ECN unit;
- best practice in workforce planning in an Irish Healthcare context;
- enhanced ECN efficiency and access targets.

A balance will need to be achieved between developing an equitable and coherent national staffing model and allowing ECNs to adapt generic staffing models to meet local service demand.

13.3.2 Current Challenges

The implementation of the European Working Time Directive (EWTD) has had an impact on the ED medical workforce with NCHDs now working a maximum of 48 hours per week. Recent problems regarding recruitment of NCHDs also have had a very negative impact on the medical staffing of EDs.

A number of challenges in emergency nursing workforce planning were identified through the EMP National Workforce Survey 2010. Vacancies and additional nursing hours required are notable. There are inconsistencies between EDs in the type and duration of induction programmes for staff. There is a need for standardisation of HCA roles across the NECS. The EMP Workforce survey confirmed that there is a shortage of Paediatric trained nurses in EDs that care for children in Ireland. Overall, there was variability in the resourcing of EDs across a broad range of services, including the therapy professions, medical social work, mental health services, support services, research support, training and on-site Diagnostic Imaging services.

13.4 Emergency Nursing Workforce Planning

There are no national guidelines for nursing establishments in EDs in Ireland. The HSE (2008)[8] in a feasibility study identified that nationally, the average number of WTE nurses per 10,000 patient attendances was nine and the average qualified nursing to unqualified support staff ratio was 9.1:1. This report also identified that there were difficulties involved with establishing like with like comparisons between data from other countries and baseline data from Ireland. The Health Service Employers Agency[9], in a review of nursing staffing in EDs, carried out direct care timing and activity analysis studies in a sample of EDs across Ireland to help develop a robust manpower planning tool. The findings of the direct care timing studies revealed that the average minutes of direct care required by each patient Triage category were as follows:

- Triage 5 – 13.1 minutes of direct nursing care;
- Triage 4 – 14 minutes;
- Triage 3 – 22 minutes;
- Triage 2 – 94 minutes;
- Triage 1 – 187 minutes.

The activity studies revealed that the median value of direct care was 47.7%. The overall findings were that EM patients or "effective inpatients" from Triage Categories 1 and 2 have care needs which are similar to those found in a CCU or ICU. Effective inpatients from Triage Categories 3, 4 and 5 have care needs similar to that found amongst Dependency 3 patients in an acute ward setting.

The NHS in the UK is recognised as being the health service which mirrors the Irish health service most closely. Therefore it is the logical first place with which to compare workforce recommendations. The Jones Dependency Tool has been developed in the UK to practically assess patient dependency in the ED which in turn can be used to predict workload, resource use and the optimum staffing levels that will provide safe and effective patient care in the ED.[10] However, Paw[5] identifies that no recommendations have been made for nurse staffing levels in EDs in the UK. Traditionally, the UK methodology for determining nursing requirements in EDs is heavily dependent on professional judgement by local managers. The same can be said for nursing staffing establishments in EDs in Ireland. Paw identified standards established in legislation in other jurisdictions:

- Australia (Victoria) - a minimum of one nurse per three patients plus a Triage nurse and a nurse in charge;
- USA (California) – maximum number of patients to be cared for by a nurse at any one time in an ED is four, or a max of two critical care or one trauma patient.

O'Brien & Benger[11] believe that staffing calculations based only on numbers of patients fail to take account of dependency of presenting patients and therefore the actual nursing workload. Patient volume takes no account of the time spent in the ED or patient dependency. Attendance figures do not take into account the complexity or acuity of the patient.[12]

A dependency measurement tool (other than Triage) would provide meaningful information to inform grade mix of ED nursing staff, the development of nationally accepted competencies and

identification of education and training needs.[11] The Australasian College for Emergency Medicine (ACEM) also agree that the number of attendances is a crude estimation of workload and activity demand even when combined with Triage categories.[13] They advocate that a reliable and accurate tool for measuring true ED workload and activity needs to be developed. In the absence of such data, workforce requirements may have to be made based on the information at hand.

The profile and mix of nursing staff required in any ED should be determined by the activity of unit and acuity of patients attending the department. Challender & Schofield[14] state that matching the peak periods of patient presentation to peak staffing period is key to determining appropriate staffing for EDs. The HSE[15] identifies that level of nursing resource within the ED is directly influenced by the following elements:

- designation of the department;
- opening hours;
- number of attendances;
- typical flow of patients over 24/7 period;
- layout of the department;
- the provision of dedicated capacity;
- model of care;
- the role of the ANP.

Rostering of staff, i.e. when staff are allocated on duty, needs to take consideration of ED activity.

An ANP capacity building strategy will be developed by the EMP and will address specific issues relating to career planning, ANP education, role expansion and the future contribution of ANP-provided care to the NECS.

13.5   Therapy Professionals and Medical Social Workers

Timely access to Therapy Professionals and Medical Social Workers in the ED is essential for identifying patients' needs, implementing timely intervention and facilitating safe early discharge, where appropriate. It is fundamental that the appropriate number and skill-mix of these grades are determined for ECNs to ensure the provision of quality services to the public. A workforce plan for the Therapy Professions will be co-developed by the EMP and the Therapy Professions Committee. Likewise, workforce plans for Medical Social Workers in the NECS will need to be developed.

13.6   Health Care Assistants, Administrative and Other Support Staff

Doctors and nurses in the ED require support from a range of other staff such as Health Care Assistants/attendants, clerical staff, porters and other professional staff. The HSE[16] recommended that non-qualified grades of staff be introduced to EDs in Ireland where they do not currently exist. The role of these staff would be to assist the nurses and doctors and support the delivery of patient care under the supervision and direction of qualified nursing personnel.[16]

Initially the functions undertaken by Health Care Assistants (HCAs) were non-nursing, clerical and associated work tasks. Since this time, the role of the HCA within the Irish Health Service has expanded greatly, due largely to the introduction of FETAC 5 training and the acknowledgement at service level that these grades of staff are now fundamental to the mix. The HCA role is as an integral part of the ED team, working to support nursing staff and to enable them to embrace and develop more extended roles. The number and experience of HCAs will be dictated by the activity and demand within the ED setting. It is recommended that HCAs commence training to FETAC Level 5 within a specific period of time from commencement of employment if they do not already hold this qualification.

Other support staff, such as clerical and administrative staff, are fundamental to the efficient functioning of an ED. The numbers of these staff required are dictated by the model of ED and the activity within the department taking cognisance of peaks and troughs in activity. Adequate cleaning, household and security staff are required throughout the 24 hours to comply with health and safety requirements. Adequate portering staff are required to assist with patient transfers/transport. Having sufficient portering staff available will result in less nursing time being wasted undertaking non-nursing duties.

In its workforce planning, the EMP will consider the optimum numbers of various categories of staff for different ECS units and workloads.

13.7 Medical Workforce Planning – The Consultant Workforce

13.7.1 The Consultant in EM Workforce 2010

A Consultant in Emergency Medicine is a medical practitioner who has undergone training in a recognised training programme and is included on the Specialist Division of the Register of Medical Specialists in Emergency Medicine.[*]

There were 62.64 whole-time equivalent (WTE) Consultants in EM employed in Ireland at the end of 2010, five of whom work exclusively in Paediatric Emergency Medicine. This Consultant cohort is distributed across 31 EDs, with nine of these departments having only a sessional Consultant presence. Consultant staffing levels in a further nine hospitals do not support the provision of 24-hour Consultant in EM on-call rosters. These EDs are supported through out-of-hours cover from Consultants from other specialties. No ED in Ireland currently has more than four WTE Consultants in EM. Consultant staffing in Paediatric Emergency Medicine (PEM) is particularly underdeveloped.

No ED is currently staffed to ensure Consultant in EM presence from 08:00-20:00, five days a week and Consultant presence at weekends is on a sessional basis only, if at all. There are 32 Higher Specialist Training (HST) posts in EM and on average three to five doctors have completed training each year over the past five years.

Inadequate consultant staffing currently precludes extended hours working. The current dependence on Non-Consultant Hospital Doctors (NCHDs) is unsustainable as evidenced by recent workforce issues and staffing shortages in many EDs.

The concept of regionalisation of EM in Ireland with enhanced Consultant staffing is not new. The Comhairle na nOspidéal report[17] in 2003 recommended the structuring of emergency care around regional emergency services with extended hours Consultant presence from 08:00-20:00, seven days a week. The Hanly[18] report also recommended regionalisation of emergency care. It advocated a Consultant provided service but significantly underestimated the number of Consultants this would require.[19] Current Consultant staffing levels in EM are not consistent with

---

[*] A Consultant is defined in the Consultant Contract 1997 as being "a registered medical practitioner in hospital practice who, by reason of his training, skill and experience in a designated specialty, is consulted by other registered medical practitioners and undertakes full clinical responsibility for patients in his care, or that aspect of care on which he has been consulted, without supervision in professional matters by another person. He will be a person of considerable professional capacity and personal integrity" . Since 2010 appointees to Consultant in Emergency Medicine posts are obliged to be on the Specialist Register in the division of Emergency Medicine.

international models of best practice and do not provide adequate levels of clinical expertise to support high-quality, efficient patient care. Enhancement and reorganisation of the Consultant in EM workforce is therefore strongly recommended.

13.7.2   International Comparisons

Both the UK and Ireland look to Australia[20] for an exemplar EM system, wherein Consultant staffing levels support the provision of high-quality emergency care while allowing most Consultants a rewarding and sustainable working life. The UK College of Emergency Medicine (CEM), describing the Australian system[21], stated the "number of emergency physicians estimated to be required for major referral Emergency Departments in Australia ranged from 11 to 16 per department, and for urban district and major rural/regional hospital Emergency Departments, the range was from 6 to 8 per department. Currently in Australasia, 14 Consultants, who would primarily deliver the service, would staff a typical Emergency Department seeing 60,000 – 80,000 patients per annum".

The Australasian College for Emergency Medicine (ACEM) recommends Consultant supervision for at least 60% of the operational hours per day in each ED (i.e. 16/24 hours).[20,22] The state of Victoria (Australia) with a population of 5,529,400 had 336 Consultants in EM *(personal communication – data from 2011)*. A corresponding provision of Consultant staffing for the Irish population would be 272 Consultants. Comparing Consultant staffing levels for the whole of Australia with Ireland suggests a requirement for at least 180 Consultants in total, though the service would aspire to levels similar to those in Victoria.

For the UK, CEM recommends "Consultant expansion with an aim to provide 10 whole time equivalent (wte) Consultants as a minimum in every Emergency Department"... "This would allow for one Consultant working clinically during premium time up to midnight."[20] In England, there were 753 WTE Consultants in EM in 2007 and this was estimated to be less than half the staffing complement in the US and Australia (English ratio – 1 Consultant : 67,861 per head of population). These Consultants were, however, supported by 1,230 non-training grade senior staff (e.g. Associate Specialist/Staff Grade/ Clinical Assistant/Trust grade).

In the US, 24/7 Consultant staffing is provided in larger urban departments. It was estimated in 2003[19] in response to the Hanly report[18] that delivery of this level of service in Ireland would

require, as a minimum, 286 Consultants in EM. Whereas this might be ideal, it is not a realistic goal within the planning timeframe of the EMP.

13.7.3   The Cost of Hospital-based Emergency Care

The *Comptroller and Auditor General Special Report, Emergency Departments*, November 2009[7] indicated that there were over one million ED attendances in 2008 with direct costs before taking account of overheads estimated at €196 million and care of patients admitted through EDs costing an additional €1.5 billion in the 33 hospitals it studied. Consultants in EM in Ireland have the potential to influence patient care which ultimately totals €1.696 billion in costs. It would make sense, therefore, to optimise the effectiveness of this team of clinicians.

13.7.4   Why Increase Staffing Levels with Consultants?

Consultants in EM represent a "pluri-potential" workforce. Other professional groups who may work in EDs are capable of seeing only some groups of patients and this is recognised as introducing potential inefficiency.[6] Consultants in EM consider the entire breadth of emergency care as their clinical remit or scope of practice. They aim to make their expertise available to all patients who seek emergency care. Patient access to Consultant-supervised and Consultant-provided care is, however, dependent on the capacity of the Consultant team in any department, network or health service. Increasing levels of Consultant cover support a phased increase in Consultant involvement in direct patient care from the current levels of supervision and care of some resuscitation cases only to review of all patients with high-risk conditions[21] to Consultant-sign off on all discharged cases to direct Consultant involvement in the care of all patients.

13.7.5   A Team Approach

Teams of Consultants are at the heart of multidisciplinary teams in EDs; they provide core clinical expertise and fulfil crucial leadership roles, in both clinical and managerial terms. It is simply not possible for single-handed Consultants in EM or teams of three or four Consultants in EM to deliver comparable quality and efficiency of care outcomes to those of well resourced and managed teams elsewhere in the world. The quality of care provided by under-staffed clinical teams is likely to be over-reliant on individual effort and enthusiasm and high performance is unlikely to be sustainable in the longer term. All Consultant team members must be competent across the spectrum of EM but a well developed and high-achieving team will include members with additional experience and skills in key elements of EM practice, such as research, PEM, education and management.

13.8　　The Benefits of Consultant Staffing in Emergency Medicine

13.8.1　　Patient Safety and Quality of Care

It is simply unacceptable that the bulk of patient management in EDs is provided by doctors in training, with varying degrees of Consultant supervision.

Enhanced senior supervision in EM will be necessary to comply with national healthcare standards. The draft National Standards for Safer Better Healthcare[3] state that "service providers facilitate members of the workforce to seek support or advice, including seeking advice from decision makers and senior team members" and under Standard 5.3 that "the workforce have and maintain the competencies required to deliver high-quality and safe care".

A correlation between levels of senior supervision and the frequency of reporting of medical errors among junior doctors was identified in the UK report *Foundation for Excellence: An Evaluation of the Foundation Programme.*[24]

An analysis of closed claims files held by the State Claims Agency demonstrated that the majority of claims in EM in Ireland involved SHOs (74%) versus Registrars (14%) and Consultants (8%). This is to be expected given that SHOs provide the largest proportion of care in EDs and are relatively inexperienced.[25]

Studies have demonstrated that increased Consultant staffing has resulted in:

- inappropriate discharge reduced by 9%;[26]
- complaints reduced by 41%.[27]

13.8.2　　Improved ED efficiency, reduced inpatient admissions and potential cost savings

A study in an ED in Dundee[27] (with 48,044 new patient attendances annually and a 23% admission rate) demonstrated that senior review of all patients provided by a team of six Consultants and nine senior middle-grade staff achieved the following benefits:

- a reduction in referral phone-calls of 62%, improving system efficiency;
- a reduction in inpatient admissions of 12%;
- a reduction in AMAU admissions of 21%;

- increased discharge rates by 22%;
- appropriate operational throughput increased by 35%.

A study in a paediatric ED in Perth, Australia[28] demonstrated that with increased Consultant staffing:

- admissions decreased by 27%;
- average waiting times fell by 15%;
- by the addition of 3.6 WTE Consultants a net saving accrued to the hospital of A$9.4 million (equivalent to approximately €6.86 million).

Surveys reported by the College of Emergency Medicine[21] indicated the following improvements achieved through increased Consultant staffing:

Kingston Hospital, London:

- admissions reduced from 21% to 16.7%;
- returns reduced by 30%;
- complaints reduced by 40%;
- compliments increased by 350%;
- hospital length of stay reduced;
- increased trainee satisfaction score ensued.

Salisbury Hospital, Wiltshire:

- admissions reduced by 25%;
- hospital length of stay reduced by 10%;
- an increase in CDU work of 25%.

North Wales Hospitals:

- a comparison of Consultant delivered vs non-Consultant delivered service; an admission rate of 16% (Wrexham Maelor Hospital) versus 24-31% (Glan Clwyd Hospital, Rhyl and Ysbyty Gwynedd, Bangor).

The more senior the ED workforce, the more efficient it will become.[6] This is because senior staff work faster, make decisions earlier, require less quality control and can deal with a broader range of problems.[28,29]

13.8.3   Planning for Future Consultant Staffing in Emergency Medicine

The only acceptable vision for emergency care in Ireland is one that delivers standards of care that are comparable with international best practice in EM. To achieve this we must aim to have optimal levels of staffing across the entire EM multidisciplinary team, including Consultant staffing. Our long-term plan therefore must be to have comparable levels of Consultant staffing in Ireland to those EM systems which we consider to be models of good practice, irrespective of how ambitious this may seem given our starting point and the current economic reality. To aim for less cannot be in the best interest of our future patients and our communities.

The long-term aim must therefore be to achieve 180 WTE Consultants within the shortest feasible period. Ultimately, we anticipate that in order to achieve staffing levels and services comparable to the state of Victoria, our EM system would need 240 WTE. Significant changes in work practices and models of care with extended hours working are inherent in this vision for future services.

One hundred and eighty Consultants represent just less than a three-fold increase in current Consultant numbers. To achieve this would require a sustained commitment from all key stakeholders and most importantly from the DOC and the HSE. Such large-scale change would need a carefully developed, phased implementation plan.

Implementation should involve, firstly, an immediate increase in Consultant numbers. These new posts should be allocated to EDs that have particular need of Consultant staffing and which are likely to be of strategic importance following the reorganisation of acute and emergency services.

Secondly, the overall system of emergency care should be developed to optimise the effectiveness of all Consultants, thus maximising the return on this investment, in terms of improvement in the quality, accessibility and cost-effectiveness of patient care. Emergency care (EC) functions as a complex system that requires integrated teamwork, resources, efficient processes and adequate infrastructure. Deficiencies in other components of the EC system will undermine the measurable effectiveness of the Consultant team. The development of ECNs is fundamental to creating an appropriate environment and framework for Consultant expansion. Implementation of the EMP's recommendations for future models of care and efficient patient care processes will enhance the effectiveness of the Consultant in EM role. It is important to point out, however, that the full benefits of enhanced Consultant staffing will only be demonstrable when a "critical mass" of Consultant staffing is achieved in each ECN along with the development of other critical components of enhanced emergency care such as timely access to diagnostics and allied

specialists. Then, Consultants in EM will be able to provide the level of extended-hours practice that is crucial to providing high-quality emergency care.

Thirdly, we will need to "grow" our future population of Consultants in EM. This will require a concerted ongoing recruitment campaign among medical undergraduates, with expansion of post specialist training capacity in EM. Having a clear strategic plan for EM, which includes consistent, albeit incremental, increases in Consultant staffing, should encourage young doctors to train in EM and may also attract trainees from equivalent training programmes in other countries. It takes a minimum of a year's internship, three years at BST level and five years HST to become a Consultant in EM. A training cycle time of at least seven years means that early, anticipative increases in training numbers are necessary so as to meet future staffing targets. To train more Consultants into the future, of itself, requires additional Consultants to be in post to facilitate this training.

The ultimate aim of the EMP Consultant expansion plan must be to have a mature National Emergency Care System which is supported by adequately and efficiently staffed multidisciplinary teams, in which Consultants in EM play a key role. The time frame within which we can achieve appropriate levels of Consultant staffing in EM in Ireland is uncertain and is dependent on the success of our initial recruitment, our capacity to attract trainees and our capacity to expand our training schemes. It is likely that this may take up to ten years but detailed workforce planning against likely scenarios will enable this potential time frame to be refined.

13.8.4   *Phased Improvement in Consultant Staffing Levels in Emergency Medicine*

The following steps are recommended for the phased increase in Consultant staffing which our emergency care system requires:

Step 1: Identify Consultant post applications that are in progress and ensure they are compatible with the EMP framework. Identify current Consultant in EM staffing levels across all EDs.

Step 2: Create new posts to support Emergency Care Networks (ECNs), focusing first on centres destined to become Type A units. All new appointments should be made on a regional basis to allow for network development. All job descriptions should include a commitment to providing support to future networked units.

Step 3: Establish the structure of future networks and map requirements for future posts accordingly. Continue recruitment to Consultant in EM posts.

Step 4: Expand BSTEM and HSTEM training in a phased manner in anticipation of future staffing needs.

Step 5: Engage in ongoing workforce planning to support the development of ECNs.

Step 6: Support adequately staffed and mature ECNs with new Consultant work practices.

13.9 Creating New Consultant Posts

13.9.1 Incentives & Enablers

Factors that will influence our ability to improve on our current levels of Consultant staffing include:

- patient safety and quality of care issues, in addition to the potential for cost-savings, suggest that earlier recruitment of greater numbers of Consultants would be advantageous for patients as well as having the potential to realise cost-savings;

- senior staffing expansion should be expedited in response to the current problems maintaining EM services across the country;

- recruitment to specialist training in EM will be enhanced by having a strategic plan for expansion and development of the service that emphasises the key role that emergency care can play in the Irish health system;

- having more Consultants will increase our training capacity for specialist training in EM. (Additionally, this will enhance the training provided by EM to other groups thus improving emergency care across the health system. These groups include medical undergraduates, trainees in other medical specialties, particularly General Practice, the Therapy Professions and prehospital care providers particularly Advanced Paramedics and Paramedics).

13.9.2 Challenges

- The current availability of trained Consultants in Emergency Medicine may limit the rate at which expansion can occur.

- New Consultant posts will need to be sufficiently attractive to draw candidates from permanent Consultant posts outside Ireland.

- The current economic situation may make Ireland a less attractive country in which to work.

- Overly rapid expansion cannot be allowed to undermine an appropriate degree of competition for posts to ensure that the highest calibre of candidates is appointed.

13.9.3 *Consultants in EM will be sourced from:*

- Doctors who have already achieved a CSCST (Certificate of Satisfactory Completion of Specialist Training) through the national Higher Specialist Training Programme in EM (HSTEM) but for whom no posts have been available.

- Doctors who are currently employed as Consultants outside Ireland but who may wish to work here.

- Doctors in HSTEM outside Ireland but who are likely to be eligible for inclusion in the Specialist Register in EM (most usually those training in the UK or Australia but trainees from other countries may also be eligible).

- Current trainees in EM at BST and HST level. The BST programme was introduced in July 2011. It will be necessary to increase both BST and HST training places to provide adequate numbers of Consultants to meet our long-term needs. However, increasing training posts is dependent on having adequate numbers of trainers and training resources to "pump-prime" this system.

- Consultants with additional training in PEM from any of the above sources, who will be required to meet PEM service and training needs. Consultants in PEM must meet agreed additional training requirements for subspecialty certification in PEM.[30]

13.10 Ongoing Workforce Planning for Consultants in Emergency Medicine

Detailed workforce planning will be required to ensure an appropriately resourced workforce matches service needs. Improved ICT and data management will be key to monitoring service need and systems efficiency. There will need to be a balanced allocation of future posts across the national EM system to ensure equity of service provision. Factors that will influence this phase of the development of Consultant staffing include:

- ongoing support for EM networks and Consultant staffing;
- the rate of reconfiguration of services;
- the number of linked Type B and C units in each network;
- the development of Type A1 units, if any;
- resourcing of the factors which influence the workload of Consultants (see below);
- the availability of other grades of medical staff;
- demographic changes in regions;

- high-acuity or increased resource demand due to casemix or social factors in some networks (e.g. social deprivation increases EM service demand and is likely to increase during economic recession);

- succession planning: staffing predictions will need to factor-in "natural attrition" due to retirement, illness and death;

- the development of sub-speciality fields such as Pre-hospital Care;

- flexible working practices. Job-sharing and flexible hours working should be supported, particularly given the demographics of the current medical school output.

It will be necessary to ensure that, after a period of expansion, training numbers are controlled and ultimately matched to provide replacement for retirements and workforce attrition and that a healthy level of competition for posts is maintained. It would be wasteful and unfair to train excessive numbers of Consultants who had little prospect of employment in the longer term.

13.11   Medical Staffing for Emergency Care Networks

The National Emergency Care System and Emergency Care Networks provide a framework for the deployment of new Consultants. A network-based approach will promote a more equitable allocation of resources and support better workforce planning at regional and national level. In future, Consultant appointments should occur in a coordinated, balanced and fair manner nationally and across networks, without competition between EDs and hospitals. The allocation of new posts should reflect the planned long-term configuration of emergency care within a region.

All new appointments should be made on a regional basis to allow Consultants to work across all units within a network. All new Consultant appointments should be made to future Type A EDs with a commitment to provide appropriate levels of cover at networked Type B and C units, under the governance of the ECN Coordinator for Emergency Medicine. All ECNs must have at least one Type A ED. Additional Consultant staffing will be required in Type A units that provide Consultant staffing resource to networked Type B and C units.

There must be at least one Consultant in PEM appointed to each Type A hospital that cares for paediatric patients. A lead Consultant in PEM will provide clinical governance in relation to PEM across each network.

13.11.1   Type A 24/7 Emergency Departments

The level of Consultant presence available in any ED will depend on the number of WTE in the Consultant team. The smallest Consultant team recommended is five WTE, so that Consultants are not required to work more than one in four weekends and that locum cover is not routinely required to cover annual leave periods. However, there is a strong argument that Consultants should not be expected to provide more than one evening shift per week and this position is supported by ACEM staffing recommendations.[13] One of the early aims of the enhanced staffing plan for the EMP should be to ensure that there are five WTE Consultant teams in EDs that are likely to remain Type A EDs. Thereafter, Consultant staffing should be increased incrementally but consistently to support increased evening work and support requirements for staffing at networked LEUs. The EMP recognises that interim staffing allocations will be needed until such time as sufficient Consultants are trained. The programme's recommendation is that in the longer term all Type A3 EDs should have a minimum of five WTE and ideally six WTE, and that Type A2 EDs should be staffed with eight to ten WTEs, depending on the role of the ED within a network and service demand across the network it supports. Consultant staffing for Type A1 units, if developed, would be considerably higher if 24/7 Consultant presence was to be provided at these units.

13.11.2   Local Emergency Units

The EMP estimates that each LEU would require at least 2.7 WTE from the network pool of Consultants in EM. The basis for this estimation is that this unit will need to be staffed for 12 hours, seven days a week, which is equivalent to 4,368 hours/year. A Consultant WTE is estimated to provide 1,621 hours per year. In addition, given that no Consultant should be expected to do weekend work on more than a 1:4 roster, a pool of ten Consultants would be required to provide weekend cover at a Type B and a lead Type A unit within a network.

13.11.3   Local Injury Units

LIUs (Type C) will receive Consultant support from the lead ECN Type A unit. This will be at minimum two half-day sessions of Consultant presence in any week, provided by one or more Consultants. One Consultant should undertake primary responsibility for service delivery in the LIU though ultimate clinical governance responsibility will rest with the ECN Coordinator for EM. In addition to this Consultant presence, additional administrative time should be factored into the lead unit Consultant cohort to cover administrative support for the LIU. The ongoing demand on the unit should be monitored to ensure consistency between demand and Consultant resource

allocation to the unit (i.e. if service demand wanes, a reduced Consultant commitment may be more appropriate).

The Consultant Staffing scheme for units within ECNs is outlined in Table 13.1. A pragmatic approach with interim staffing levels is presented, in addition to the longer-term staffing goals. The combination of Type A, B and C units in any network will determine the overall staffing requirement for that network and each ECN must have at least one Type A unit.

Model	Criteria	Basic Consultant Staffing	Interim Staffing	Long-term Staffing
Type A1	< 100,000 attendances	Do not exist	10	18-20
Type A2	< 40,000	5	6	8
	40,000 to 80,000	6	7-8	10
Type A3	< 40,000	5	5	6
Type B1	< 40,000	At least 2.7 WTE from network pool		
Type B2	< 40,000	At least 2.7 WTE from network pool		
Type C	< 30,000	8 hours Consultant presence from network pool + 4 hours administration time per week = 0.3 WTE		

Table 13.1: Consultant Staffing for EDs, Local Emergency Units and Local Injury Units

13.12   The Non-Consultant Hospital Doctor Workforce in Emergency Care Networks

13.12.1   Protection of Service during Transition Phases

Whereas the ultimate aim is to replace a proportion of junior medical posts with Consultants in EM to achieve a largely Consultant-provided service, this transition must be managed carefully to prevent any reduction in service provision or patient safety during the process. Non-Consultant Hospital Doctor (NCHD) staffing should only be reduced when appropriate numbers of Consultants are in place. Additional training numbers in BSTEM and HSTEM will require increased numbers of Consultants to be specialty trainers in EM.

13.12.2   Minimum Staffing Requirements for 24/7 rosters

Middle Grade (i.e. Registrars and Specialist Registrars) and BST staffing in any ED cannot be reduced below levels necessary to provide 24/7 rosters and staffing levels must allow for training time and annual leave requirements. It is recommended that there should be no fewer than seven middle-grade staff, and ideally eight, on 24/7 rosters for type A EDs. The number of SHO-level doctors required in any ED will depend on staffing at Consultant and Middle Grade level and the number of other Clinical Decision Makers in the unit e.g. ANPs. Most large EDs currently require a minimum of ten SHOs to provide a 24/7 roster and service the clinical workload.[31]This number is also influenced by requirements for protected teaching time for this group.

13.12.3   Rebalancing the Medical Workforce in Emergency Medicine

A restructured workforce, with enhanced senior and middle grade staffing and broader roles for non-medical staff, could ultimately reduce the numbers of SHOs to a level that reflects training need only. ED SHO posts will be needed for Basic Specialist Training in EM, Medicine, Surgery, Paediatrics, General Practice and Acute Medicine and may also be sought by doctors who have not decided on their ultimate career paths but who recognise the value of "generalist" training in EM.

13.13   Staffing Requirements for Mature Emergency Care Networks

Optimal patient outcomes will be achieved through "mature", well developed, highly functioning networks, with adequate staffing and a culture of continuous quality improvement. It is difficult to predict precisely what our Consultant staffing needs will be when this stage in our system's development is reached and we can only rely on the experience of what are currently more advanced emergency systems, such as that of Australia. It has been suggested that the real drivers for the future of EM are likely to come not from EM itself, but from other medical specialties, societal change and technological innovation in addition to cost and quality considerations.[32] New treatments or clinical procedures, changes in how we deliver healthcare and patient expectations may bring about unforeseeable changes in emergency care and thereby influence staffing needs. The best way to prepare for unpredictable change is to have strong and resilient teams capable of adapting to and assimilating change and thereby continuously improve the emergency care they provide for patients. The only certainty about the future is that it is uncertain!

13.14   Summary

There is no "one site fits all" methodology for determining appropriate nursing, therapy and support staffing requirements in EDs. Information from each emergency setting is required in order to make informed recommendations. As discussed earlier, data, including designation of the department, opening hours, number and dependency of attendees, typical flow of patients over 24/7 period, layout of the department, the provision of dedicated capacity and model of care will be required in order to progress with planning the workforce requirement. This is especially the case in the absence of comparable systems internationally to benchmark against.

Once ED staff profile/workforce data is gathered via survey, population data gathered via Health Atlas Ireland and the Central Statistics Office and activity data gathered via a robust standardised ECN ICT system, this information will provide the basis for determining the most appropriate number and mix of staff required for each model of emergency care unit. Succession planning will also be considered when developing workforce models for the NECS.

Outcome measures and key performance indicators (KPIs) will be used to measure the effectiveness of patient care and these indicators, along with patient acuity and casemix measures, will become important components in evaluating staffing levels and skill mix.

Recommendations:

- There will be ongoing comprehensive workforce planning for EM, including all components of the multidisciplinary team and supporting services, because appropriate staffing of the ED is the single most important factor in providing a prompt, timely and clinically effective service to patients.
- Standardised staffing models will be developed to ensure the equitable and appropriate staffing of all EDs and ECN units.

Chapter Fourteen

14. Emergency Nursing

14.1   Introduction

This chapter provides an overview of emergency nursing in Ireland and informs the nursing agenda for the National Emergency Medicine Programme. It provides a definition of emergency nursing and a specific competency framework that underpins the role and scope of practice of nurses working within the specialist area of emergency care. The current nursing structure which exists in our EDs is outlined and areas where strategic planning and professional development will be required to support service development within Emergency Care Networks are highlighted.

14.2   What is Emergency Nursing?

Emergency Nursing has developed into a distinct specialist area of practice and as the ED is a gateway to the hospital environment, it is necessary for ED staff to have an extensive range of skills and resources to meet the demands of patients.[1] Maximising the scope of nurses working in EDs will support the achievement of the goals of the EMP, namely to improve access, quality and cost in EM in Ireland. The EMP envisages that:

- Emergency nurses, support staff and multidisciplinary team will liaise closely to ensure the patient receives the optimum level of care.
- As part of the multidisciplinary team, Emergency nurses will provide standardised evidence-based pathways for the care of emergency patients.
- Emergency nurses together with the therapy professions and medical social work will develop combined documentation to enhance seamless transfer of patient care within the emergency care network.

14.3   Definition of Emergency Nursing

Currently there is no nationally agreed definition of Emergency Nursing in Ireland. The involvement of nursing in the EMP has provided an opportunity to develop a definition of Emergency Nursing across the NECS.

Emergency Nursing is defined as the provision of immediate nursing care and intervention to adults and children who have undiagnosed, undifferentiated healthcare needs arising from social, psychological, physical and cultural factors (adapted from Emergency Nurses Association 2009).[2] The key components include:

- rapid patient assessment and assimilation of information, often beyond the presenting problem;
- allocation of priority for care;
- intervention, based on the assessment;
- on-going evaluation;
- discharge or referral to other sources of care undertaken independently by the nurse within guidelines.[3]

This definition reflects the international literature defining "Emergency Nursing" [2,3] and complements the international definition of Emergency Medicine.

14.4   Mission of Emergency Nursing

Professional development encompassing a range of educational activities, both formal and informal, and contributing to achieving the goals set out in the mission statement on emergency nursing practice, supported by the EMP Emergency Nursing Interest Group, and which states:

Emergency Nurses work independently & interdependently with the multidisciplinary team to provide the optimal level of emergency nursing care that is patient focused, family centred, maximises health and social gain, promotes excellence in nursing practice and advocates for all patients who suffer sudden injury or illness. Emergency nursing practice is underpinned by expert knowledge gained through specialist education and clinical experience. It is informed by best evidence and research.

Defining the specialty of emergency nursing provides an overview of the role and scope of practice of an emergency nurse and requires a Competency Framework for Emergency Nursing which outlines domains of competence and core competencies for nursing practice within the specialty.

14.5 Competency Development for ED Nursing

Effective clinical outcomes are influenced by the competence levels of practitioners. Patients and clients have increasingly complex healthcare needs. Technological and pharmacological advances, changing demographics and increased international mobility mean that the nature of illness and disease, and consequently the modes of care delivery and management, are changing. There is greater emphasis on patient safety and the general public's knowledge about and expectations of a quality health care service are rising.[4] HIQA has recently reinforced the fact that the healthcare workforce should possess, maintain and continuously develop its knowledge, skills, attitudes and behaviours to provide safe and high-quality care to the Irish public.[5] HIQA adds that to provide high-quality, safe healthcare and to improve it on an ongoing basis requires a skilled, knowledgeable and competent workforce. HIQA stipulates that service providers should ensure that the workforce has the required competencies to deliver high-quality, safe care. It also recommends that service providers facilitate each member of the workforce in maintaining and improving skills, knowledge and competencies to fulfil their roles and responsibilities in delivering high-quality and safe care.

In launching the Department of Health's recent publication of *Strategic Framework for Role Expansion of Nurses and Midwives: Promoting Quality Patient Care*,[6] the Chief Nurse, Sheila O'Malley, sets out policy direction for the enhancement of nursing and midwifery roles. The strategy builds on the work of the past ten years and is set within the context of clinical and regulatory standards. The *Programme for Government, 2011* and policy initiatives such as legislative changes for the introduction of nurse (and midwife) medication prescribing create significant opportunities to expand the role of nurses in a proactive manner. This policy document is focused on enhancing and expanding the roles of staff nurses, clinical nurse specialists and advanced nurse practitioners. A six-step process provides a framework for nursing role expansion in line with service need and national policy direction. Each of the six steps contained in the strategy outlines the necessary considerations for nurse role expansion. It promotes clinical care that is delivered in a timely and evidence-based manner that reflects patients' needs. The

document provides a policy framework to further expand the role of nurses and midwives to promote their delivery of safe, high-quality care.

14.6   Competency Framework for Emergency Nursing

An Emergency Nursing Competency Framework has been developed specifically for the EMP. This framework details a set of competencies that forms the foundation of emergency nursing practice in Ireland (Appendix 13). The development of a competency framework for ED Nursing will guide ED nurses towards achieving predetermined competencies to meet patients' needs in this challenging clinical environment. An Bord Altranais[7] has defined five domains of competence which each nurse must demonstrate in order to be registered to practice. The five domains of competence will be used as the building blocks for competence development for ED nursing staff:

1. Professional/Ethical Practice;
2. Holistic Approaches to Care and the Integration of Knowledge;
3. Interpersonal Relationships;
4. Organisation and Management of Care;
5. Personal and Professional Development.

Each domain of competence consists of performance criteria and their relevant indicators. A behavioural indicator is a statement of the behaviour that would be observed when effective competence is demonstrated (Appendix 13).

14.7   Specific Competency Skill Sets

Specific competency skill sets form the foundation of emergency nursing practice, enabling the novice staff nurse in the emergency environment to develop the knowledge, skills and attitudes required to progress on a continuum of professional development leading to proficient and expert practice (Appendix 14). These sets of competencies have been generated from various sources and are further informed by the results of the Workforce Planning Survey and Best Practice Workshops (see below) undertaken by the EMP in 2010/2011. This skill set has been validated through the Emergency Nursing Interest Group (ENIG) as meeting the professional development needs of emergency nursing whilst meeting the service needs of the National Emergency Care System. Clinical Nurse Managers utilise the Office for Health Management Competencies for Nurse Managers[7,8] to benchmark their practice while Clinical Nurse Specialists and Advanced Nurse

Practitioners utilise guidance frameworks developed by the National Council for Nursing and Midwifery.[9-11]

The development of a competency framework will be supported by the National Council's recently published *Nurse and Midwife Clinical Competency Determination and Competency Development Planning Toolkit*.[12] It is envisaged that this toolkit will be utilised to develop specific competency skill sets for emergency nursing and across each of the clinical care programmes within the DCSP. The toolkit provides a systematic approach to determining and developing competencies to meet service and patients' needs (see Figure 14.1).[12]
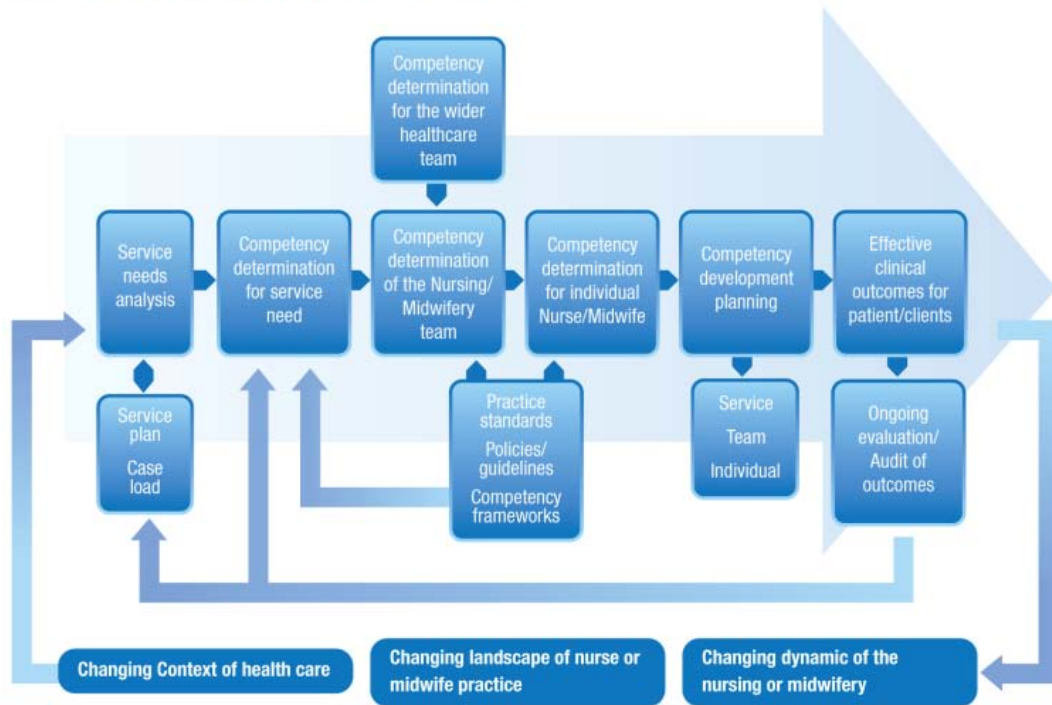
Figure 14.1.Diagram of Competency Determination (NCNM Toolkit 2010)

14.8   Structures for the Delivery of Emergency Nursing Care

A well coordinated system of care in each ED will facilitate the provision of high-quality patient care that is standardised and easily accessible with high levels of effectiveness and efficiency, accountability, sustainability, good staff morale and strong system resilience. An experienced and competent emergency nursing team is required to ensure the delivery of the highest quality of care for patients in line with the EMP. This section outlines current and future structures and roles for emergency nurses. It is important that roles be dynamic and have the capacity to respond to future demands for emergency care.

14.9   Governance

The Director of Nursing, Chief Executive Officer/General Manager and Clinical Director are the senior management team responsible for managing nursing resources efficiently and effectively within an agreed budget, ensuring the effective delivery of optimal patient services throughout the whole organisation. This governance function will support the implementation of the recommendations of the EMP to underpin the delivery of services to patients requiring ECN care.

14.9.1   Clinical Governance for Emergency Care Roles

The responsibility, authority and accountability of each staff member's role within the Emergency Care Network should be clearly defined. All staff should be aware of and understand the network's goals and development priorities. Each unit and network should foster a culture of open and participative involvement of all staff members in continuous quality improvement. A successful network will be characterised by strong clinical and organisational leadership, patient partnership and teamwork. Strong external partnerships will need to be developed to support network development. Each network and the National Emergency Care System should demonstrate that it places great value on nursing education, staff development and research. Strong clinical governance will only be achieved if appropriate supports are made available. These supports will include access to evidence, ensuring there is adequate time devoted to service planning and developing training strategies. Adequate ICT infrastructure is also crucial to nursing governance functions.

14.9.2   Emergency Department Nursing Workforce

There are a number of organisations with a clinical directorate structure where the Nurse Manager (NM) leads the nursing team. Nursing roles within EDs generally comprise of Clinical Nurse Managers (CNM 1, 2, 3) and Staff Nurses (S/Ns) supported by Healthcare Assistants/attendant staff (HCAs). Specialist roles such as Clinical Nurse Specialists (CNSs) and Advanced Nurse Practitioners (ANPs) are variable in quantity and geographical location. A variety of other supporting roles exist in some organisations; anecdotally these were developed in response to particular service or education needs and include roles such as Clinical Skills Facilitator (CF), Practice Development Coordinator (PDC), Patient/GP Liaison Nurse and Research Nurse. The Workforce Planning Survey provides more detail regarding the prevalence of these roles nationwide.

14.9.3   Senior Nursing Management

Senior nursing management at Assistant Director of Nursing (Divisional Nurse Manager /ADON) grade ensure that appropriate and ongoing service needs analysis and service planning are carried out. This will facilitate the re-engineering of the delivery of nursing care and the introduction of 'lean thinking' philosophy to support future planning and development of emergency nursing care. Initiatives will include the development of nurse-led and nurse-delivered services such as specialist and advanced nurse practitioner-delivered care. Workforce planning strategies in line with the *Integrated Workforce Planning Strategy for the Health Services*[13] will seek to ensure that there will be sufficient staff available at the right time with the right skills, diversity and flexibility to deliver high-quality care. Senior nursing management should support a culture of ongoing education, training, practice and professional development and implement nationally agreed job descriptions for emergency care providers (staff nurses, healthcare assistants) in collaboration with clinical nurse manager(s) in the ED.

14.9.4   Clinical Nurse Manager Role

The primary purpose of the role in front-line nurse management is to coordinate and lead the implementation and delivery of nursing activities within a unit of service.[7] The function of the CNM is to provide professional/clinical leadership, deploy staff effectively, engage in staff development, manage resources effectively and facilitate communication with key stakeholders. The scope of the role encompasses key result areas which include planning of services, deployment of resources both human and physical, providing leadership on standards and quality assurance and providing

direction, support and supervision to frontline staff on the discharge of their roles. The role of CNM will be critical in supporting standardised models for multidisciplinary team staffing and the future configuration and service delivery in EDs.

14.9.5   Staff Nurses

Staff Nurses comprise the largest group of nurses in the ED. The role of the staff nurse is increasingly complex and requires additional knowledge and clinical skills beyond those required for registration. The career pathway for nurses wishing to specialise in the area of emergency care follows a novice-to-expert type continuum and is supported in many organisations by formal induction or orientation programmes, formal and in-formal education opportunities and in-service education. Role modelling by senior nurses in management and advanced practice roles serve to encourage junior nurses to consider a career pathway leading to proficiency in some area of the speciality. This professional development planning (PDP) needs to become part of the succession planning process at both local and national level nationally. Strategic planning to identify appropriate scopes of practice, location and education is required to support the National Emergency Medicine Programme. This should occur from a national perspective and will be informed by the national workforce survey.

14.9.6   Clinical Nurse Specialist (CNS)

There are no CNS roles specific to emergency nursing but CNS roles in disciplines such as respiratory care, cardiology care, care of the older adult, paediatric conditions and liaison psychiatry are well established and function as a resource to the ED multidisciplinary team (MDT). They function in a variety of modes; they may take direct referrals from the ED or have a discreet caseload and be located in the ED. The number and specialty specific types of CNS that are required to support the ED will form part of the strategic plan for the future.

14.9.7   Advanced Nurse Practitioner (ANP)

There is general acceptance among the clinical care programmes that the development of ANP roles across the whole system will be key to delivering improvements in access and quality of care. ANP roles both within and outside the ED therefore will need consideration in order to meet the aims of the clinical care programme. There are 40.8 WTE Advanced Nurse Practitioners (Emergency) practising in EDs around the country, with a further 15 nurses undertaking an education programme in preparation for registration as an ANP. The development of ANP posts is

expected to continue in line with the models of hospital/types of units. The numbers of ANPs required to deliver services within ECNs will form part of the strategic plan for the future.

14.9.8 Clinical Skills Facilitator/Skills Facilitator

The role of Clinical Skills Facilitator (CSF)/Skills Facilitator in emergency nursing exists in a number of EDs throughout the country. The role originated in response to the development of formal specialist education programmes in partnership with third level institutions. A number of CSF roles were also developed from an identified need to provide orientation programmes for new staff in a time of high turnover in some organisations. As a logical progression, the CSF role broadened to provide in-service education and on-going clinical skills education to nursing and allied health professionals in EDs. The workforce survey provides information on the numbers and titles of roles that exist currently in the system and these roles will need to be formalised within ECNs in order to facilitate the education and training needs of the MDT in ED.

14.10   Emergency Nursing Education

There is a comprehensive range of postgraduate education programmes available for nurses wishing to pursue a career in emergency nursing. The number of nurses holding a post-registration qualification in emergency nursing across the spectrum of general and paediatric nursing is significant. Many of these courses have developed in partnership between third level institutions and service providers and are based on service need.[13] Since 2007, legislative and regulatory change has facilitated a number of significant developments in nursing which serve to improve the services and quality of care provided to patients and facilitate the expansion of the role of nurses. Education programmes are well underway to prepare suitably qualified nurses to prescribe medicinal products and ionising radiation within their scope of practice. All EDs should create formal links with third level institutions for the advancement of emergency nursing and to assist with increasing the body of evidence supporting the speciality through facilitated education at higher diploma, postgraduate diploma, masters and doctoral level. It is recommended that the Higher/Postgraduate Diploma in Emergency Nursing will be coordinated through the "hub" hospital in each network with clinical placements facilitated in each network site to provide exposure to all aspects of emergency nursing.

In addition to postgraduate education programmes, a range of short courses support emergency nurses' continuing professional and competency development. These courses provide for the development of competencies and skills to support practice specific to ED and include Pre-hospital Trauma Life Support (PHTLS), Advanced Cardiac Life Support (ACLS), Paediatric Advanced Life Support (PALS), Advanced Paediatric Life Support (APLS), Neonatal Advanced Life Support (NALS), Advanced Trauma Life Support (ATLS) and Trauma Nursing Core Course (TNCC). The results of the workforce survey confirm that a significant number of ED nurses have undertaken these and a range of other courses at certificate and diploma level.

In line with the *Scope of Nursing and Midwifery Practice Framework*[13], ED nurses also develop their competencies through experience and skills development under the supervision of senior nurses, clinical facilitators and other appropriate healthcare professionals. The results of the workforce survey suggest that a significant proportion of nurses practise enhanced clinical skills ranging from, for example, Triage training and intravenous cannulation to ECG interpretation, wound closure and non-invasive ventilation (see Appendix 14 for a more comprehensive list).

Further information on Emergency Nursing training is available in Chapter 16, Academic EM Medicine & Nursing Activity.

Recommendations:

- The National Emergency Medicine Programme recommends that its definition of Emergency Nursing is adopted across the National Emergency Care System.

- The National Emergency Medicine Programme recommends that the Emergency Nursing Competency Framework which underpins the minimum competencies expected of an emergency nurse working across the NECS is adopted nationwide.

- The National Emergency Medicine Programme recommends standardising nursing roles and job descriptions across the NECS. Workforce planning and the use of an appropriate patient dependency and acuity measurement tools will support the standardisation of staffing levels, grade and skill mix which match with each type of emergency unit throughout the system.

- The National Emergency Medicine Programme recommends that a cohesive national strategy be adopted to facilitate postgraduate education and continuing professional development specific to emergency nursing. A minimum level of education at Postgraduate Diploma in Specialist Nursing will support the career development of the entire nursing team.

- Each ECN should implement competency skills development and specific in-service education that is focused on enhanced nursing roles.

Chapter Fifteen

15. The Role of the Consultant in Emergency Medicine and Specialty Training

15.1 Introduction

A Consultant in Emergency Medicine is a medical practitioner who has undergone training in a recognised training programme and is included in the specialist division of Emergency Medicine in the Register of Medical Practitioners.[*] The Governance of the role of the Consultant in EM has been previously described in section 3.9.5 of this report.

15.2 Direct Patient Care

A Consultant's primary role is to provide clinical care to patients. As Consultant teams expand, the Consultant's role will develop from direct involvement in resuscitation cases and supervision of the most critical patients to providing direct care for all patients with high-risk conditions. Ultimately, with adequate Consultant numbers, it should be possible for all patients to be "signed off" by a Consultant prior to discharge, as happens in North American models of care. A number of factors will determine how effective each Consultant can be in terms of their involvement in direct patient care. It is important that all necessary multidisciplinary team and administrative supports are made available to ensure that the maximum proportion of a Consultant's time is spent doing the work that only a Consultant can do.

---

[*] A Consultant is defined in the Consultant Contract 1997 as being "a registered medical practitioner in hospital practice who, by reason of his training, skill and experience in a designated specialty, is consulted by other registered medical practitioners and undertakes full clinical responsibility for patients in his care, or that aspect of care on which he has been consulted, without supervision in professional matters by another person. He will be a person of considerable professional capacity and personal integrity". Since 2010 appointees to Consultant in Emergency Medicine posts are obliged to be on the Specialist Register in the division of Emergency Medicine.

15.3   Hours of Work

Work-plans for Consultants in EM should be fair and equitable and should compare favourably with those of Consultants in other acute specialties. No Consultant shift should be longer than ten hours and there must be adequate rest periods between shifts in compliance with EWTD. Evidence clearly shows that decision-making accuracy and mental alertness decrease while error rates increase when doctors work continuously beyond ten hours and changes exponentially beyond 12 hours of continuous duty.[1] It is reasonable to expect that a Consultant would do no more than one evening shift each week. A 1:4 roster is the most onerous permissible for weekend cover. This is also the recommended minimum in Australia.[2] Five Consultants are required as a minimum in any ED to maintain this roster over leave periods. Six Consultants in an ED will allow a 1:5 to 1:4 roster to be maintained even through leave periods and for one evening shift to be provided each week-day even during Consultant leave periods.

15.4   CDU/Observation Ward Work

Consultant cover requirements will vary depending on the size and type of the CDU from a minimum of two-four hours work per day. CDU activity must be appropriately resourced if it is to operate effectively.

15.5   Supporting Clinical Activities

Consultant work includes direct patient care and other professional activities, variously described as "supporting clinical activities" or "non-direct patient care". These activities should be recognised as an important and an essential component of Consultant in Emergency Medicine work as they are fundamental to improving the standard and quality of patient care. Supporting clinical activities include, for example, continuing professional development activites, clinical audit, teaching, administrative work and risk management. Consultants, their Clinical Directors and ECN coordinators should agree the proportion of time to be spent in these supporting clinical activities. The Programme recommends that eight hours per week should be assigned to supporting clinical activities for every Consultant. Administrative and clinical support work will be concentrated within a key group of Consultants with specific roles as networks develop and the requirement for every

Consultant to become involved in administration will correspondingly reduce. Network audit and clinical governance meetings will also need to be resourced in terms of Consultant time.

15.6　Environment

EDs should provide safe well-equipped working environments with appropriate ICT and administrative support for Consultants in EM. There must be adequate office and teaching space within each ED, so that Consultants remain immediately available should they be required for direct patient care in the ED when undertaking non-direct patient care activities. This flexibility and prioritisation of clinical work is characteristic of EM.

15.7　Contractual Issues

Consultant appointments must comply with nationally agreed Consultant contracts. It is outside the scope of the programme to propose changes to work practices which would contravene current contractual terms and conditions of service. However, the programme would be supportive, in principle, of initiatives to expand the hours of Consultant presence in EDs through agreed national Industrial Relations (IR) approaches and in parallel with other system changes required to extend the hours for which the hospital functions at normal (daytime) levels of activity.

15.8　Flexible Working

Emergency Medicine is ideally suited to flexible and part-time working. Such work practices should be encouraged in the interest of career longevity and good work-life balance for Consultants and other staff members. These lifestyle-friendly options may be attractive to many aspiring Consultants in EM. The potential for flexible and part-time working in EM should be developed across the entire workforce and included in network staffing plans. It should be highlighted in future recruitment initiatives.

15.9　Sustaining Consultant Teams in Emergency Medicine

Lifestyle factors such as a demand for job sharing and part-time Consultant working will influence the overall numbers of Consultants employed. The aging of EM workforces in other countries has

prompted debate on the deployment of older Consultants (those aged over 55). Whether participation in full on-call and out-of-hours rosters is appropriate for this group will need to be considered.

Changing roles and increased patient and health service expectations of Consultants in EM are major issues for the profession and the health service to manage. The current low levels of Consultant in EM staffing in Ireland place unacceptable and unsustainable demands on the Consultants trying to support current services and deny many patients the benefits of direct Consultant-provided care. It is crucial to the working life longevity, job satisfaction and morale of Consultants that rosters and work-plans are created to achieve optimal work/life balance and to minimise the adverse effects of shift-work, work-related stress and overwork. Unless this is achieved, recruitment and retention issues will undermine the delivery of a Consultant-provided service for patients. The benefits of increasing the seniority of EM staff will not be sustainable unless gains in work-practice changes deliver greater efficiency and job satisfaction.

15.10   Factors Influencing Consultant in Emergency Medicine Workload

Consultants in EM work in multidisciplinary teams in a complex work environment. The demands placed on Consultants may vary on a moment-by-moment basis, though overall service demand in any ED is predictable over a longer timeframe. A recent US study found that Emergency Physician efficiency was optimised in moderate sized EDs seeing between 30,000 and 45,000 patient attendances per year and that the highest levels of individual Physician efficiency were achieved within the range of 1,250 to 1,800 hours worked annually, with the maximum point of efficiency at 1,550 hours and a significant decline in productivity after working 2,000 hours or more.[1] It is estimated that allowing for leave entitlements a Consultant in Emergency Medicine in Ireland works for approximately 1,621 hours per year. Some of the many factors which may influence Consultant workload are outlined in Table15.1.

Factors	Key Issues	Comment
Departmental Factors	Department designation	Model A-C
	Performance targets	Resourcing to meet targets
	Casemix	Increasing complexity and co-morbidities increases EM workload
	ED Demographics	Paediatrics / Adult / Elderly / Very Elderly
	Socio-economic factors	Populations with increased health needs due to low socio-economic status place increased demands on ED resources.
	Infrastructure and ICT	Minimise waste and frustration. Enable good time management. Provide data for service demand analysis to which staffing can be matched.
Multidisciplinary Team Support	Medical Teams	Leave availability and cover. Availability of NCHD staffing. Role substitution and task delegation. Supervision of junior staff.
	Nursing staff	Appropriate levels and skill-mix
	AHP and Social Care staff	Appropriate staffing levels
	Administrative support	Support to minimise administrative work
Other Consultant roles	Network roles	CDU work. Support to network units. Pre-hospital care & Retrieval services.
	Administrative roles	Local and National Organisations
Education and Training	For the team	Bedside and "on the run" teaching. Participation in formalised teaching programs.
	CPD	Attending and organising CPD activity
Factors related to a safe and satisfying workplace	Shift Work	Optimal rostering practices. Consideration of the impact of evening & weekend work. Recruitment and retention. Increased productivity from a motivated workforce. Staffing levels should promote resilience and sustainability within the team. Flexibility, part-time working; allowance for lifestyle factors. Peer support.

Table 15.1: Determinants of workload for Consultants in Emergency Medicine [2]

Recommendations for Consultant Staffing in EM:

- There needs to be a phased and sustained enhancement of Consultant in EM staffing to achieve levels comparable to international norms.

- Enhanced Consultant in EM staffing will support expanded hours of Consultant working and, in parallel with expansion of the functioning hospital day, will improve the quality, access and cost-effectiveness of patient care in ECNs.

- The spectrum of work undertaken by Consultants in EM needs to be recognised and resourced.

- EM needs to become an attractive and sustainable career choice for Irish medical graduates.

15.11   Training in Emergency Medicine in Ireland

The Royal College of Surgeons in Ireland is the training body currently recognised by the Medical Council as being responsible for Emergency Medicine training in Ireland. The Irish Committee for Emergency Medicine Training (ICEMT) is a subcommittee of RCSI's Irish Surgical Postgraduate Training Committee (ISPTC). The principal role of ICEMT is the organisation, oversight and delivery of EM training in Ireland. Information regarding training in EM and Paediatric EM is available on its website.[3] ICEMT has close links with the College of Emergency Medicine (CEM) in the UK and Irish EM training uses the CEM curriculum as well as the Membership and Fellowship examinations of the College (MCEM and FCEM).

Postgraduate training in EM is divided into Basic Specialist Training (BSTEM) and Higher Specialist Training (HSTEM). Training in Emergency Medicine at undergraduate level is developing in many Irish medical schools and ICEMT is developing a strategy for its further consolidation. Emergency Medicine is recognised for intern training and while there are currently a limited number of intern posts in EM, the specialty is actively working to increase this number, particularly in the context of the incipient increased medical school output.

15.11.1   Basic Specialist Training in Emergency Medicine

BSTEM is the initial step for doctors intending to become specialists in EM. It is a three year training programme during which doctors rotate through six month posts at SHO level in Emergency Medicine and other specialties relevant to the practice of EM. There are 26 trainees in each year of the programme i.e. at full capacity the annual output of BSTEM is 26 doctors. The programme is outlined in Table 15.2.

Basic Specialist Training in Emergency Medicine	
Year 1	Emergency Medicine
	Trauma & Orthopaedic Surgery or Plastic Surgery
Year 2	Acute Medicine
	Paediatric EM or Acute Paediatrics
Year 3	Anaesthesia or Intensive Care Medicine
	Emergency Medicine

Table 15.2: Basic Specialty Training in Emergency Medicine

Doctors are eligible to enter BSTEM once they have successfully completed an intern year. During BSTEM, training is delivered through shop floor teaching (direct clinical exposure) supplemented by workplace-based assessment, formal teaching sessions and on-line educational modules. Trainees are appraised annually and progression through the programme is contingent on satisfactory appraisals. As they progress through BSTEM, trainees prepare for and sit the Membership examination of the College of Emergency Medicine (MCEM). MCEM comprises three parts. Part A is a Multiple Choice Question paper covering the basic sciences as applied to Emergency Medicine. Doctors are eligible to sit part A in their first year on BSTEM. Parts B (data interpretation written paper) and C (OSCEs) may be attempted in the third year of BSTEM.

Satisfactory completion of the three year BSTEM programme leads to the award of a Certificate of Completion of Basic Specialist Training (CCBST). Doctors intending to progress to Higher Specialist Training in Emergency Medicine must possess a CCBST and pass MCEM.

15.11.2   Higher Specialist Training in Emergency Medicine

Higher Specialist Training in Emergency Medicine (HSTEM) is a five year programme during which trainees rotate through a minimum of three training EDs. HSTEM includes six months training in Paediatric EM. There are currently 32 training places on HSTEM. At full capacity, the output of the programme is six doctors each year. The training departments are outlined in Table 15.3.

Emergency Departments recognised for Basic and Higher Specialist Training in Emergency Medicine	
Our Lady's Children's Hospital, Crumlin	Sligo Regional Hospital
St James's Hospital, Dublin	University Hospital, Galway
St Vincent's University Hospital, Dublin	University Hospital, Limerick
Beaumont Hospital, Dublin	Cork University Hospital
Mater Misericordiae University Hospital, Dublin	Waterford Regional Hospital
Connolly Hospital, Blanchardstown, Dublin	Midland Regional Hospital, Tullamore
Tallaght Hospital, Dublin	Mercy University Hospital, Cork (HSTEM only)
Cavan General Hospital (BSTEM only)	Our Lady of Lourdes Hospital, Drogheda

Table 15.3: Emergency Departments recognised for training in Emergency Medicine

During HSTEM, trainees consolidate and expand on the clinical foundation delivered in BSTEM. As trainees progress through HSTEM there is an increasing emphasis on leadership as well as the

administrative and managerial competencies required for specialist EM practice in Ireland. Training is delivered through shop floor teaching, formal teaching sessions, workplace-based assessment and monthly training days. Trainees are granted a non-clinical half day each week to facilitate training in research, audit, etc. Trainees undergo annual appraisal and progression to the next year of HSTEM is contingent on a successful appraisal. During HSTEM, trainees prepare for the Fellowship examination of the College of Emergency Medicine (FCEM). FCEM is the exit examination for HSTEM and trainees must pass it to successfully complete the programme. FCEM consists of five parts – a clinical topic review (written work and viva), a critical appraisal written paper, a management viva, a clinical short answer question paper and OSCEs.

Doctors who have successfully completed the five year HSTEM programme and have passed the FCEM examination are awarded a Certificate of Successful Completion of Specialist Training (CSCST) by the ISPTC. Doctors in possession of a CSCST in Emergency Medicine are eligible for inclusion in the Specialist Division of the Medical Council register in Emergency Medicine.

15.11.3   Non-Training Grade Doctors in Emergency Medicine

Increased Consultant in EM expansion and consolidation of the existing training programmes will be the cornerstone of future development of the EM medical workforce. However, the current and future contribution of non-training grade doctors in EM should be considered at this time. Factors favouring the development of a non-training grade, the Staff Grade (SG), include current challenges in NCHD recruitment, the lack in continuity of service caused by NCHD rotations and a willingness to develop career structures for a number of doctors who have been working at Registrar level, often in the same department, for many years. The EMP considers that what is required is a balance between service and training such that the medical complement in EDs is a mixture of doctors in training and doctors who have achieved a defined level of training and experience. The EMP proposes that the development of the SG role within a structured training and education framework under the governance of the Irish Committee for Emergency Medicine Training (ICEMT) should be advanced in the context of future workforce planning for the NECS.

15.12 General Practitioners working in Emergency Care

The potential for GPs to work on a sessional basis within ECNs and to undertake additional training in emergency care is explored in section 12.1.4.

Recommendations:

- There needs to be a phased and sustained enhancement of Consultant staffing levels in EM to achieve levels comparable to international norms.
- Enhanced Consultant in EM staffing levels will support expanded hours of Consultant working and, in parallel with an expansion of the normal working day in other hospital specialties and supporting services, will improve the quality, access and cost-effectiveness of patient care in ECNs.
- The spectrum of work undertaken by Consultants in EM needs to be recognised and resourced.
- EM needs to become an attractive and sustainable career choice for Irish medical graduates.

Chapter Sixteen

16. The Roles of Therapy Professionals and Medical Social Workers in Emergency Care

16.1 Introduction

The Therapy Professions include:
- Physiotherapists;
- Occupational Therapists;
- Orthoptists;
- Speech and Language Therapists;
- Dieticians;
- Podiatrists.

While not strictly speaking a 'Therapy' profession, Medical Social Work also makes an essential contribution to emergency care.

16.2 Physiotherapy in Emergency Care

Physiotherapists assess and analyse the effect of illness, disability, injury and inactivity on an individual's functional ability. They promote health and treat injuries and functional limitations working in partnership with their patients and other members of the multidisciplinary team (MDT). Physiotherapy services are provided to patients presenting to the ED with respiratory, neurological and musculoskeletal disorders by clinicians who have developed specific expertise in these clinical specialities. Physiotherapists work as part of the ED MDT providing assessment, treatment, discharge-planning and onward referral as required. The ED physiotherapist aims to facilitate safe and timely discharge from the ED for patients who are medically fit and, where possible, provides early intervention for patients who may require subsequent hospital admission.

16.2.1   Respiratory Physiotherapy

Patients presenting with acute respiratory conditions such as exacerbations of COPD, respiratory infections and rib fractures can benefit from physiotherapy in the ED. Treatment is indicated to address problems such as impaired airway clearance and loss of lung volume (atelectasis). Physiotherapy interventions may include advice/education, positioning, breathing exercises, airway clearance techniques and mobilisation. If a patient is deemed to be fit for discharge, care may be continued at home via COPD outreach/early supported discharge services. Provision of a respiratory outreach service that includes early discharge care, followed by on-going support has been associated with reduced readmission rates in COPD patients.[1] Other options for respiratory physiotherapy follow up include referral to community physiotherapy or pulmonary rehabilitation programmes which have been shown to reduce risk of hospital readmission and mortality.[2]

16.2.2   Neuro-rehabilitation

Physiotherapists work closely with other members of the MDT in the management of patients who present to the ED with falls or mobility problems. Mobility assessments are often performed jointly with an Occupational Therapist and appropriate aids or appliances provided. Falls risk assessments are carried out using standardised outcome measures. Follow up physiotherapy can be arranged in PCCC where such services are available.

16.2.3   Musculoskeletal Physiotherapy

Physiotherapists provide critical early assessment, advice and treatment to patients who present with acute musculoskeletal and sports related injuries thus preventing later chronic problems. Early access to physiotherapy can lead to significant financial savings. Work absenteeism accounts for up to two-fifths of the cost of managing musculoskeletal injuries.[3] Physiotherapy provided within five days of injury has been shown to significantly reduce time absent from work compared to patients treated beyond the five-day mark.[4] Follow up physiotherapy is provided in hospital outpatient departments or PCCC.

The potential for future development of advanced physiotherapy practice roles in EM has been highlighted, with evidence demonstrating reduced waiting times and earlier access to appropriate services for patients presenting with soft tissue injuries.[5] These roles are well established in the UK, US, Canada and Australia, providing innovative and extended services in EM.

16.2.4 Physiotherapy in Review Clinics

The role of the Physiotherapist in ED Review Clinics is described in Chapter 20 of this report.

16.2.5 Potential Future Development of Other Physiotherapy Roles

The EMP recognises that there are international models for Advanced Physiotherapy Practitioners working independently alongside Advanced Nurse Practitioners and doctors, assessing and treating musculoskeletal injuries. This service has been shown to contribute to reducing overall ED waiting times and length of stay[5] and be associated with a high level of patient satisfaction.[6] Consideration of the introduction of this role would require analysis of clinical data from individual sites to determine service need, consideration of the training requirements of such a role and its interface with existing ANP services.

16.2.6 Workforce Planning

Physiotherapy services and hours of work will be realigned to meet operational requirements on a site-specific basis in ECNs. This may include extended hours of work based on analysis of demand and patterns of ED attendance e.g. 8.00-20.00.

Recommendations:

- Physiotherapy-provided soft tissue review clinics should be established in ECNs.

- There should be appropriate workforce planning for Physiotherapy services in ECNs.

- All ECN patients should have appropriate access to physiotherapy services in respiratory care, neuro-rehabilitation and musculoskeletal therapy.

16.3   Occupational Therapy in Emergency Care

16.3.1   Statement on Occupational Therapy

The following is a statement on Occupational Therapy from the World Federation of Occupational Therapists (WFOT):[1]

"Occupational therapy is as a profession concerned with promoting health and well-being through occupation. The primary goal of occupational therapy is to enable people to participate in the activities of everyday life. Occupational therapists achieve this outcome by working with people and communities to enhance their ability to engage in the occupations they want to, need to, or are expected to do, or by modifying the occupation or the environment to better support their occupational engagement."

16.3.2   Role of Occupational Therapy in Emergency Medicine

Occupational Therapists make an invaluable contribution to ED patient care. They work as members of the ED multidisciplinary team providing rapid assessment, treatment, discharge planning and onward referral as required. Research demonstrates that Occupational Therapists employed in EDs have been effective in significantly reducing the number of admissions and re-admissions into hospitals.[2]

The cost-effectiveness of early Occupational Therapy intervention has been demonstrated in several settings in the UK with savings resulting from admission avoidance, initial screening of falls patients and increased efficiencies in discharging patients home within 72 hours of admission.[3] Studies have shown that even minor injuries or illness in the older and frailer patient may bring disproportionate new dependency that is poorly recognised in EDs.[4,5] It is acknowledged that older people discharged home directly from the ED are a vulnerable group.[6-8] Two such studies report that on discharge from the ED over 50% of older patients are unable to carry out basic activities of daily living, suggesting functional incapacity, vulnerability and the need for additional support.[9]

16.3.2.1 Admission avoidance

The role of Occupational Therapy in the ED includes:

- preventing unnecessary admission;
- facilitating safer[10] and more timely discharge;

- preventing unnecessary re-admission;
- reducing multiple attendances at the ED.

16.3.2.2 Management of Trauma

- Splinting and positioning of limb injuries
- Providing Occupational Therapy clinics as an alternative and complementary care pathway to outpatient clinics

16.3.3 The Emergency Department Patient Pathway Involving Occupational Therapy

16.3.3.1 Direct referral from Rapid Assessment & Treatment (RAT)

Multidisciplinary protocols can enable the direct referral of appropriate patients for Occupational Therapy assessment thus expediting ED care and discharge planning. The EMP will work with Occupational Therapists and ED teams to standardise and disseminate this practice.

16.3.3.2 Occupational Therapy functional assessment in the ED

The Occupational Therapist determines a patient's functional ability, often as part of a multidisciplinary team, thus contributing to the decision-making process for patients with suspected functional problems. If the patient is considered to be suitable for discharge from the ED, the Occupational Therapist identifies and implements the appropriate equipment and/or support services required to facilitate that discharge. If the patient is not suitable for discharge, the Occupational Therapist will make recommendations in relation to the patient's needs/services required and has commenced the Occupational Therapist process for the inpatient service.

If continuity of care is required, the Occupational Therapist will refer the patient to community services to ensure a seamless pathway of care from the hospital to follow up care in the home. It is essential that services and budgets are integrated across the hospital/community interface so that the Occupational Therapist in the acute setting can prescribe and supply essential enabling equipment to avoid inappropriate admissions and to maximise the safety and independence of patients during the transition from ED to home.

16.3.4   Occupational Therapy for Musculoskeletal Injuries

16.3.4.1   Hand therapy

Patients who present with hand injuries are followed up by an Occupational Therapist in the ED and provided with specialised hand therapy intervention or referred for treatment as an outpatient. This practice reduces the risk of complications, duplication of service and the number of follow up outpatient clinic visits required. Early access to Hand Therapy Led Clinics ensures better outcomes for the patient[11] and can release Consultant clinic slots for other patients.[12] This service is provided to ED patients in most of the Dublin Academic Teaching Hospitals but is not available in a consistent manner in other regions.

16.3.4.2   Trauma orthopaedics

Occupational Therapists provide a Pre-Trauma Clinic service for the provision of customised braces and splints along with functional assessment for patients with limb and back injuries. Delays to appropriate splinting can prolong, impair or complicate a patient's healing process. Such intervention can also prevent admission for specialist splinting when provided in ED. Over 50% of older patients with limb, rib or back trauma leave the ED unable to perform basic activities of daily living. Occupational Therapy intervention can meet the functional needs of these patients prior to discharge home.[13]

16.3.5   Workforce Planning

The Association of Occupational Therapists in Ireland (AOTI) recommends the introduction of Occupational Therapy services to all EDs throughout the country. It also recommends that services in EDs should be staffed by experienced Senior Occupational Therapists. Senior Occupational Therapists generally supervise staff grade Occupational Therapists and Occupational Therapy Assistants who can provide support, as required. A judicious combination of these grades is recommended to achieve a cost effective, efficient quality service. Staffing levels should be sufficient to allow extended hours working to facilitate easier access and improved efficiencies for patients.

Recommendations:

- All ED patients should have access to Occupational Therapy, including functional assessment, hand therapy and customised splinting services.

- Referral protocols to Occupational Therapy services should be introduced to all EDs.

- There should be integration of services and budgets across the community/ED interface.

- There should be appropriate workforce planning for Occupational Therapy across ECNs.

- The educational needs of Occupational Therapists in the ED setting should be supported.

- Documentation and patient information leaflets should be standardised.

16.4   Speech and Language Therapy in Emergency Care

Speech and Language Therapists have an important role in the acute management of communication and swallowing difficulties. Early screening of swallow and assessment by a Speech and Language Therapist for at-risk populations, including acute and progressive neurological conditions, dementia and COPD, within the ED, can ensure that patients receive timely care and can help avoid unnecessary fasting and withholding of medications. The Irish Heart Foundation (IHF) National Clinical Guidelines and Recommendations for the Care of People with Stroke and Transient Ischaemic Attack (TIA)[1] recommend that early assessment in the ED should include both swallowing and communication. Patients with stroke or TIA should have their swallow screened using a validated tool within three hours by an appropriately trained professional in addition to the assessment of basic communication needs. To achieve this target dedicated Speech and Language Therapists must be available to each ED and LEU.

16.4.1   Role of Speech and Language Therapy

Speech and Language Therapy services provided to ED patients include assessment and management of swallowing (dysphagia) and communication difficulties as well as education and training of ED staff in these areas. Speech and Language Therapists have a role in supporting assessment of capacity to consent and assisting with obtaining informed consent. Speech and Language Therapy is indicated where assessment may expedite discharge from the ED and where clinical decisions in relation to the management of swallowing and communication are required in the patient's care pathway once a decision to admit has been made. Prompt referral to Speech

and Language Therapy services is recommended when swallowing or communication difficulties are identified. Research has shown that older patients in the ED benefit from early multidisciplinary intervention, including Speech and Language Therapy, resulting in improved continuity of care, reduced rate of admission and shorter average length of stay.[2]

16.4.2   Management of Swallowing Difficulty (dysphagia)

Assessment of swallowing ability may be indicated for patients presenting with a variety of conditions including stroke, progressive neurological disorders such as multiple sclerosis, frail elderly with multiple co-morbidities, traumatic brain injury, respiratory disorders such as COPD and patients post-laryngectomy. Speech and Language Therapy assists with the identification of risk factors for swallowing difficulties and signs of penetration or aspiration during eating or drinking. For patients deemed to be at risk of dysphagia, best practice is for prompt Speech and Language Therapy assessment of swallow function.[3] However, ED staff often need to make interim decisions regarding a patient's ability to safely manage oral intake for nutrition, hydration and importantly, oral medications. Swallow screening programmes have been found to be reliable and sensitive in large trials.[4] It is important that Speech and Language Therapists work closely with nursing and medical staff during training, establishment and ongoing delivery of screening programmes. Swallow screening programmes are effective only where there is prompt access to Speech and Language Therapy for clinical assessment and appropriate management.

16.4.3   Communication

Early identification of communication difficulties is important to ensure prompt intervention, to facilitate patient involvement in joint decision-making and to ensure appropriate onward referral for patients being discharged from the ED. Patients may present with new onset acute or pre-existing conditions such as:

- Acquired language disorders e.g. aphasia;

- Motor speech disorders e.g. dysarthria and verbal dyspraxia;

- Cognitive-Communication disorders.

Patients may also present with intellectual and/or physical disabilities, visual and hearing impairment or illiteracy or they may have difficulty communicating in the English language. In addition, the ED environment itself can pose communication barriers. Speech and Language

Therapists help to facilitate communication with patients and their families through the identification and appropriate management of these difficulties.

16.4.4 Capacity to Consent

The Speech and Language Therapist has a role in the process of determining capacity to consent in patients with communication difficulties. The IHF guidelines state: *"If the patient has aphasia it is essential that decisions about mental capacity are taken in conjunction with a multidisciplinary team including a speech and language therapist."* [1] The Speech and Language Therapist can also facilitate assessment of capacity in the patient with dementia and support such patients to be involved in decision-making regarding their care.

For patients being considered for stroke thrombolysis, a decision regarding whether consent can be obtained needs to be made within 30 minutes of arrival to be consistent with IHF guidelines. ED staff making these decisions should be educated in determining capacity to consent and how to support patients with communication difficulties to both understand information provided and reliably express their own wishes.

16.4.5 Future Development of Speech and Language Therapy in Emergency Medicine

Further education of ED staff by Speech and Language Therapists on the identification of swallowing and communication difficulties would likely result in improved outcomes for patients presenting to the ED with these problems. While Speech and Language Therapists in Ireland identify an ED service as a priority, there are extensive gaps in this service in Ireland with few dedicated Speech and Language Therapy services to this area. The Irish Heart Foundation *National Audit of Stroke Care*, 2008[5] reported a notable gap in access to early assessment and management by a Speech and Language Therapist with only 25% of patients receiving Speech and Language Therapy swallow assessment within 72 hours, as is best practice.[5] Increased resources for Speech and Language Therapy services are required if these standards are to be achieved. There is a high degree of national variation in the level of Speech and Language Therapy resources to PCCC teams. Further development of Speech and Language Therapy services in the community with good links to the acute setting could facilitate discharge from the ED for certain patients.

Recommendations:

- All ECN patients should have appropriate access to Speech and Language Therapy Services.

- Speech and Language Therapy Staff should be involved in the education of ECN staff on the identification of swallowing and communication difficulties.

16.5   Clinical Nutrition/Dietetics in Emergency Care

16.5.1   Introduction

The ED Dietitian/Clinical Nutritionist should play an important role in clinical care, education, research and service development in EM. Malnutrition is common among patients presenting for emergency care and results in increased morbidity and mortality and higher healthcare costs. Irish data from the British Association of Parenteral and Enteral Nutrition (BAPEN) Nutrition Screening Week 2010 indicates a prevalence of malnutrition risk identified in 33% of patients admitted to acute hospitals. Twenty-five percent of patients admitted were at high risk of malnutrition. It has been suggested that early nutrition intervention has an impact on reducing length of stay for patients identified with nutrition risks and therefore may provide future hospital cost savings.[1] Nutrition intervention in the ED setting may also reduce the need for hospital admission.

16.5.2   Role of Clinical Nutrition/Dietetics in Emergency Care

Dieticians/Clinical Nutritionists provide training for other health care professionals on nutrition screening. Nutrition screening using a validated tool e.g. MUST (Malnutrition Universal Screening Tool) should be performed on appropriate patients with onward referral to the appropriate nutrition and dietetic service as per local protocols. The Dietitian/Clinical Nutritionist may identify additional resources required to support nutrition intervention e.g. Meals on Wheels. Prompt transfer of care of patients to community dietetic services may help reduce the re-presentation of patients to the ED with malnutrition-related conditions.

16.5.3   Care of the Older Person

The prevalence of older people attending the ED varies between 10.9% and 21%.[1] Malnutrition is common among this group with the consequences of higher morbidity and mortality rates and increased health care costs. Early nutrition intervention has an impact on length of stay for patients identified at nutrition risk and therefore may provide future hospital cost savings.[2] Falls are recognised as a major public health issue, particularly among older people, and have been targeted for attention by national service frameworks and National Institute for Health and Clinical Excellence guidelines in the UK. Malnutrition has been postulated as a factor that increases the tendency to suffer falls.[3] Nutrition intervention as well as other interventions for falls patients may reduce re-presentation to the ED due to falls. Follow up care following discharge from the ED may involve referral to hospital outpatient or community services depending on patient needs.

16.5.4   Research and Development

Research and Development activities in Clinical Nutrition include:

- regular audit of practice and benchmarking with best international guidelines and standards;
- participation in accreditation and in the resultant continuous quality improvement plans in EM e.g. team based performance management;
- identification of areas of clinical practice where further education or training will ensure sustained improvements in patient care and outcomes;
- involvement in research projects contributing to the evidence base supporting best practice in the speciality;
- submission of abstracts to national/international conferences and journals.

16.5.5   Education

Educational activities in Clinical Nutrition include:

- acting as a resource for all nutrition related matters in ED patient care;
- training of other healthcare professionals on the ED multidisciplinary team on the nutritional management of ED patients[4] e.g. nutritional screening using the Malnutrition Universal Screening Tool;
- participation in departmental journal clubs;
- development and maintenance of own knowledge and professional competence in this area through continuous professional development.

Recommendations:

- The availability of dietetic services to EDs should be increased to enhance awareness of nutrition related issues, increase referral rates to the service and promote early, appropriate nutrition intervention.

- Adequate resources should be provided to ensure the needs of patients requiring nutrition intervention are met in an appropriate setting following discharge from the ED.

- The scope of practice in Clinical Nutrition and Dietetics in the ED should be extended to include PEG tube replacement.

16.6   Podiatry in Emergency Care

Podiatrists are involved with the assessment, diagnosis and management of disorders of the lower limb. Early access to podiatry services has been recommended for patients with active diabetic foot disease.[1,2] NICE guidance on the prevention and management of foot problems in patients with Type 2 diabetes recommends emergency referral to a multidisciplinary foot care team within 24 hours for patients with acute active foot disease (e.g. ulceration with infection/gangrene or Charcot's osteoarthropathy). It is advised that a multidisciplinary foot team should include highly trained specialist podiatrists, diabetes nurses and diabetologists with access to urgent inpatient facilities, vascular and orthopaedic surgery, radiology and microbiological diagnostic and advisory services. There should be agreed pathway for optimal care of patients who present to EDs and ECN units with active foot disease.

Recommendation:

- All ECN patients and particularly those with Diabetic Foot Disease should have appropriate access to Podiatry services.

16.7   Orthoptics in Emergency Care

Orthoptic assessment is required in patients with eye movement abnormalities, double vision (diplopia) and visual field or perception impairment. These symptoms can occur in conditions such as acute intracranial hypertension, head trauma, transient ischaemic attack (TIA), multiple sclerosis and space-occupying lesions and can present to the ED as neuro-ophthalmic emergencies. Those presenting to the ED with stroke or TIA are recommended to have their vision assessed within three hours.[1] A high percentage of stroke patients have visual field defects, very often hemianopia (14.6%), visual agnosia and visual neglect or diplopia (5.5%).[2]

Orthoptists have a role in the rapid diagnosis and management of these cases and can identify patients in need of urgent treatment and further investigation. Unnecessary admissions can be avoided as well as reductions in their length of stay.

Recommendations:

- All ECN patients should have appropriate access to Orthoptic services.
- Access to Orthoptic services should be considered in the organisation of trauma care.

16.8   Medical Social Work in Emergency Care

16.8.1   Introduction

The Medical Social Work (MSW) profession promotes social change, problem solving in human relationships and the empowerment and liberation of people to enhance well-being. Concepts of human rights and social justice are fundamental to MSW.[1,2] MSW has developed in response to this holistic concept of health and Medical Social Workers assess the psychosocial functioning of patients and others, intervening where necessary to strive for improved outcomes.

16.8.2   The Role of Medical Social Work in Emergency Care

MSW is a well-established service throughout EDs in urban Ireland.[3] The MSW service in an ED can improve hospital efficiency in various ways: facilitating early discharge to home or respite care, reducing re-attendances, decreasing medical/nursing time spent on psychosocial issues and most importantly enhancing the patient's quality of life.[4,5] MSW referral is included among the recommendations of the *HSE Emergency Department Taskforce Report*.[6] The provision of MSW in an ED assists the hospital in meeting its statutory obligations and meeting best practice standards for the immediate management of vulnerable and at risk patients.[7] A competency framework for Medical Social Workers will be provided on the EMP website. Some of the key roles of MSW in EM are listed below.

16.8.2.1   Child protection

In accordance with legislative and policy frameworks, Medical Social Workers assess risks pertaining to children resulting from the actions or the failure to protect by others. This relates to children (under 18 years) who may be ED patients, visiting the ED or highlighted as at potential risk by a patient/visitor/staff member in the ED. This may also involve dealing with retrospective allegations of abuse/neglect from adult patients, including identifying any children that could be potentially at risk of harm from an alleged abuser. Medical Social Workers liaise with and refer to MSW colleagues in community child protection teams in such cases.

16.8.2.2   Elder protection

Medical Social Workers provide assessment and intervention in cases where the physical, sexual, emotional or financial abuse of an elderly person is suspected or identified, or where concerns arise that an elderly person is experiencing neglect. Risk identification and immediate and long term safety planning are core objectives of MSW. This may include referral to local Officers for Elder Abuse.

16.8.2.3   Homelessness

Improving health services to marginalised groups such as the homeless has been identified as a core objective by the HSE. It is the responsibility of the Medical Social Worker in the ED to assess homeless persons upon attendance and to liaise with local community services with a view to the immediate provision of accommodation and other health and welfare services as needed.

16.8.2.4   Domestic (intimate partner) violence

In accordance with HSE guidelines, Medical Social Workers complete a comprehensive assessment and intervention plan with female or male victims of domestic violence. This includes an assessment of risk and protective factors, safety planning, assistance with alternative accommodation if required, support with legal options and referral to relevant community support agencies.

16.8.2.5   Deliberate self-harm

Medical Social Workers offer psychosocial assessment and intervention in cases of deliberate self-harm with the aim of improving coping strategies. Intervention may include an increase in protective factors such as social supports and short-term supportive counselling interventions, as appropriate.

16.8.2.6   Alcohol and substance misuse

In cases of alcohol misuse identified in the ED, Medical Social Workers provide alcohol education and can intervene directly with hazardous and harmful drinkers. Patients presenting with alcohol dependence syndrome and drug misuse can be referred to specialist services.

16.8.2.7   Frail older patients

A proportion of older patients attending the ED will not need acute admission. However, their social situation may be precarious. Medical Social Workers liaise with other members of the MDT to ensure that all available supports are provided to allow the patient to return home, if possible. Such discharges plans can be complex, requiring MSW participation in joint team assessment, coordination of family meetings and community referrals.

16.8.2.8   Trauma work

Traumatic events such as assaults, road traffic accidents or workplace accidents can have varying effects on patients, depending upon individual coping skills and support networks available. Medical Social Workers provide an initial psychosocial assessment, simple education and advice and offer follow up support as required after discharge.

16.8.2.9 Bereavement work

Medical Social Workers provide bereavement support services to families following the death of a patient in the ED and serve as a contact for follow up support.

16.8.2.10 Vulnerable adults

Adults with a physical or intellectual disability, cognitive impairment or mental ill-health diagnoses may require additional social supports during and following their ED presentation. Medical Social Workers complete a psychosocial assessment if required and respond accordingly. When carers of vulnerable adults present to the ED, MSW must ensure that the dependent adult is safe in the community and provided with relevant supports.

16.8.2.11 Case management

Medical Social Workers may take on a case management role in complex cases such as frequent attenders. Medical Social Workers may convene a case conference, with participation from all relevant staff and support agencies, in order to develop a care plan for the patient. MSW responsibilities in such cases may also include individual and family work and the coordination of services.

16.8.2.12 Supportive counselling

Medical Social Workers offer short term counselling support to patients presenting to the ED with issues such as crisis pregnancies/eating disorder disclosure/stress related presentations.

16.8.2.13 Advocacy and advice

Medical Social Workers provide advice and advocacy for patients who are identified as vulnerable on presentation. Such patients include those affected by refugee/asylum seeking issues, unemployment, poor housing and social situation or recently release from prison.

16.8.2.14 Material aid

MSW provide material aid e.g. clothing or financial assistance via the Community Welfare Officer for the most vulnerable patients in the ED.

16.8.2.15 Major emergencies

Medical Social Workers have a significant support role in Major Incidents, providing emotional and practical support to patients and family members.

16.8.2.16 Training and research

Medical Social Workers provide child protection and domestic violence training to other staff in the ED and contribute to research in the area of EM.

16.8.2.17 Paediatric Emergency Medical Social Work

Medical Social Workers provide a specialist service in Paediatric EDs. This service includes an assessment of the safety of a child in cases of suspected physical, sexual and emotional abuse and/or neglect. The Medical Social Worker also assesses children presenting following substance misuse, episodes of deliberate self-harm, homelessness or where concerns are expressed about a delay in the child's presentation to the ED. Where personal stressors impacting upon the child's physical or emotional well-being are identified, a MSW assessment can ensure that age-appropriate support is provided. Such stressors may include bullying, sudden trauma such as death in a family, a child's involvement in a motor vehicle collision, family breakdown and stress related behaviours. The Medical Social Worker also provides vital support for the families of children who die in the ED.

Recommendations:

- Medical Social Work services should be established throughout ECNs, staffed by a senior Medical Social Worker or highly experienced (minimum of three years of medical social practice) main grade staff member with access to immediate senior support.

- Medical Social Worker staffing levels should facilitate extended hours of service and at a minimum, an emergency on call MSW service should be available to ED patients. A facility for non-urgent out-of-hours referrals should be in place, ensuring that all patients receive a social work service regardless of the time of their presentation.

- Medical Social Worker expertise should be utilised within ED policy development and review, where appropriate. This includes future policy development in order to establish consistent policies across ECNs in areas such as elder protection, domestic violence identification and intervention and homelessness etc.

Chapter Seventeen

17. Academic Emergency Medicine and Emergency Nursing Education, Professional Development and Academic Activity

17.1   Academic Emergency Medicine

The stage of development of academic pursuit in Emergency Medicine (EM) reflects the development of the specialty itself i.e. a relatively young specialty which first concentrated on development of clinical services and is now developing research and education. The development of the specialty in other countries has paralleled the development and integration of evidence-based medicine (EBM) into healthcare in general and EM has been at the forefront of specialties that have adopted and advanced evidence-based clinical practice.

The EM Representative bodies (IAEM and ICEMT) are now actively promoting research and education as important strategic objectives. The definition of EM, outlined in Chapter One of this report, illustrates the opportunities for academia within the specialty, emphasises the broad scope of EM and the importance of having the training and ability to develop systems of emergency care. With EM playing a critical role in health care delivery, it is essential that our students and doctors have adequate training from clinicians with an appropriate mix of clinical and academic expertise.

The development of a dedicated academic focus in EM will facilitate the implementation of national health strategy through the development of best practice initiatives, protocols and policies, care pathways and guidelines on a foundation of evidence based EM care. The development and evaluation of national, agreed and standardised triage processes and the creation of evidence based protocols for the transfer of patients within and between regional areas and tertiary units have been identified as priority areas for academic EM. In addition, academic activity by active clinicians will further foster excellence in individual patient care. Academic EM has a critical role in the ongoing rigorous evaluation

of EM processes of care, the outcomes of changes introduced by the EMP and the impact of other DCSP programmes on emergency care.

Universities are adopting an expanding role in the education and health improvement of the community (i.e. the major source of funding of the Universities). Academic EM must engage in the education of the community with regard to illness and injury prevention, self care (as appropriate) and health promotion.

17.1.2   Academic Posts in Emergency Medicine

The Medical Council review of Irish Medical Schools in 2003[1] pointed to what it called a "critical lack of capacity in clinical training" and recommended the urgent implementation of measures to improve clinical training capacity. In 2006, a report[2] was published by the Working Group on Undergraduate Medical Education and Training – *Medical Education in Ireland: A New Direction* – commonly referred to as the Fottrell Report. The Fottrell group undertook a comprehensive review of undergraduate medical education examining all aspects of the area from entry requirements and curricula through to governance, funding and staffing issues. On staffing, the group identified significant deficits and inconsistencies and recommended that the number of joint education/healthcare academic clinician appointments should be increased in line with international norms.

The *Report of the Postgraduate Medical Education and Training Group* (the Buttimer Report), also published in 2006[2], made a broad range of recommendations based on the vision that "Ireland's postgraduate education and training environment will be attractive to all medical graduates and deliver high-quality programmes that will result in a sufficient number of fully-trained, highly competent doctors to deliver a patient-centred, high-performance health service for this country". The report saw universities, medical schools and third level institutions as central to high-quality postgraduate medical education and training. The importance of research as a core component in a high-quality service was also recognised.

On the basis of the recommendations of the Buttimer and Fottrell reports, education, training and research in EM from undergraduate level to specialist training must be coherently developed. To do so requires the appointment of joint education/healthcare academic clinicians at Senior Lecturer, Associate Professor and Professor level to EM in Ireland. These clinicians will require appropriate

support from training bodies and institutions and will also have to work collaboratively with academic colleagues in related disciplines (e.g. Nursing, Ambulance Services College and others) to further develop research, education and training in EM in Ireland.

In the past two years, the first Professorial Chair in Emergency Medicine was established at University College Cork as a result of recommendations in the Fottrell Report. While there have been subsequent professorial appointments (promotions to Clinical Professor) involving Consultants in Emergency Medicine in Ireland, there remains only one Chair in Emergency Medicine (UCC). Another Consultant in PEM holds a Chair in Paediatrics in UCD. The EMP recommends that further Chairs in EM be developed, ideally one for each Medical School and the promotion/appointment of Senior Lecturer posts should be facilitated.

17.1.3   Research in Emergency Medicine

There is already considerable academic and research activity within the EM community in Ireland. The Academic Committee of IAEM has a broad remit to promote research and evidence-based EM within the specialty. The Academic Committee has produced an overarching *Research Strategy for Emergency Medicine in Ireland* [3] to foster multicentre clinical research through the creation of an Irish EM research network, ECARN (The Emergency Care Academic Research Network). This strategy highlights the potential in EM to develop original research in the following areas:

- Clinical Research, including randomised controlled trials;

- Health Services Research;

- Translational Research.

To this end, there are now several EM-dedicated research units in place in Ireland: the Paediatric Emergency Research Unit (PERU) at Our Lady's Children's Hospital, Crumlin; the Emergency Care Research Unit (ECRU) at Midlands Regional Hospital, Tullamore; and the Pre-hospital Research Centre, University of Limerick. Furthermore, a number of higher trainees in EM have successfully completed, or are currently undertaking, full-time clinical research (many within these units).

17.1.4   Research and Collaborative Links

The multidisciplinary nature of the environment within Universities with the presence of schools of Medicine, Pharmacy, Nursing and Therapies, Departments of Medicine, Surgery, Paediatrics, General Practice and Public Health, amongst others, provides opportunities for synergy and collaboration. The academic EM clinician will engage with the academic needs of the HSE and act as a resource to address the common problems faced in meeting the enormous demand for emergency medical services.

17.2   Undergraduate Training in Emergency Medicine

17.2.1   Background

"There is a critical and growing need for emergency physicians and emergency medicine resources worldwide. To meet this need, physicians must be trained to deliver time-sensitive interventions and life-saving emergency care." (The International Federation for Emergency Medicine, 2010)

The development of a structured and coherent undergraduate education and training programme in EM in our Medical Schools is a logical next step based on the evolution of the specialty over the last two decades in Ireland. It is also in line with international trends and best practice in medical education. It is axiomatic that, at the completion of undergraduate training, all doctors should possess a basic knowledge of emergency care and the skills to initiate management of the most common acute problems. A consensus statement by the International Federation for Emergency Medicine on undergraduate training and development asserts that "competence in basic emergency medicine should be an outcome measure for all medical students and represent a criterion for conferral of the degree".

Schools of Medicine are completing a major process of curricular reform and redesign with an emphasis on a modular approach to education. This reform has created the opportunity to develop new modules or adapt existing modules to address emerging trends in medical education as well as preparing Irish doctors (including those at Intern level) for the health service of the future. Specific new core modules in the clinical curriculum in UCC, National University of Ireland, Galway, University

College Dublin and the University of Dublin, Trinity College, Dublin include modules in Emergency Medicine.

The ED also plays a key role in the training and development of Nurses, Advanced Nurse Practitioners, Advanced Paramedics, Paramedics and a spectrum of students who require exposure to management of patients with acute illness and injury. The academic EM clinician will be a resource in terms of the provision of expertise in training across the network of hospitals offering emergency services.

17.2.2   The Undergraduate Medical Curriculum in EM

There are some principles that can be used to guide curricular content for undergraduate EM training and education. While the clinical content of much of the workload of EM is encountered as a part of many other clinical specialties, the volume of patients, their undifferentiated presentations and the time-centeredness and criticality of care are unique to EM.

EM provides students with an important perspective on links between the community, primary care and the hospital. EM and pre-hospital care are fundamentally entwined, with multiple opportunities for shared training across this interface. Teamwork is crucial in EM. There are few other settings in healthcare delivery where one must function while working under pressure and the multidisciplinary team must operate smoothly through every patient encounter. Simulation training, as currently included in the final year undergraduate curriculum in UCC, offers medical students particularly valuable training in critical team working in a protected learning environment. Risk management is an important element of day-to-day work in the specialty and while a feature throughout medical practice, there is perhaps no other setting where risk management and patient safety feature in such a central way.

As an example, the current undergraduate curriculum at UCC follows:
- 1st/2nd Year: BLS/AED course (IHF accredited); 'First Aid'; Introduction to suturing, phlebotomy, IV access
- 3rd Year: Clinical Risk awareness , Access to Care (lectures); Identifying the 'sick patient'; Ambulance attachment (one shift); Maritime Medicine Module (optional)

- 4th Year: Clinical Assignments and basic competency development (two week ED attachment); Small group teaching on ABC/Shock, head injury, and toxicology; Trauma Care half day (workshops)
- 5th Year: Simulator Training (bringing it all together) - scenario based team training in ASSET centre.

The International Federation for Emergency Medicine (IFEM)[4] has produced an outline undergraduate curriculum for EM which captures all the essential elements of such a curriculum and which should form the basis for future undergraduate curriculum development in EM in Ireland.

17.3   Postgraduate Medical Training in Emergency Medicine

EM training in Ireland is addressed in a previous section of the report.[5,6]

Recommendations:

- All ECNs should be linked to a University Medical School.
- Designated centres should lead on EC research across ECNs and at national level.
- The EMP will work with all stakeholders to enhance undergraduate teaching in EM, based on the International Federation for Emergency Medicine Curriculum for Undergraduate Training in EM.

17.4   Nursing Education and Professional Development in Ireland

The first Bachelor of Science in Nursing degree programme in Ireland commenced in 2002 (although the option existed for already qualified nurses to pursue a degree prior to this). This pre-registration degree programme educates nurses for entry to general, intellectual disability and psychiatric nursing. In 2004 the *Report of the Expert Group on Midwifery and Children's Nursing Education* [7] resulted in the establishment of two further pre-registration degree programmes that commenced in 2006: a direct entry route to midwifery and an integrated children's /general nursing programme. A review of

these undergraduate degree programmes is anticipated in the coming year and recommendations from this review will reflect the changing healthcare care environment and will outline the skills and competencies required by graduate nurses entering into the healthcare workplace both currently and into the future with new models of care delivery.

17.4.1   Emergency Nursing Undergraduate Education

Exposure to emergency nursing at undergraduate level is essential – ideally, a minimum period of four weeks supernumerary clinical placement and a rostered placement in 4th year in an ED should be facilitated in order to expose the undergraduate nurse to the broad nature of emergency nursing care. Aligned with clinical exposure are the theoretical and clinical skills sets such as venepuncture, intravenous cannulation, ECG acquisition and medication management which will equip the graduate nurse with the requisite skills fit for purpose and for practice. Specific education related to prescribing of medicinal products[8] and prescription of ionising radiation may also become part of undergraduate nursing curriculum development in the future.

17.4.2   Academic Emergency Nursing

A significant number of emergency nurses nationally hold higher awards at Higher Diploma, Master's and Doctorate level (See Appendix 12). Links with third level institutions are essential for the advancement of emergency nursing on an academic level and to increase the body of knowledge and research evidence supporting the specialty through facilitated education and research undertaken at higher diploma, master's and doctoral level. Higher diploma is the minimum standard of education required for approval as a Clinical Nurse Specialist (CNS), whilst master's-level education is the minimum standard required for registration as an advanced nurse practitioner (ANP).[9-11]

A number of third level institutions offer a Master of Science (MSc) in Advanced Practice which is a generic programme in advanced practice. This type of programme is generally undertaken by a broad range of nurses wishing to specialise in areas such as Cardiology, Respiratory, Renal, Primary Care, Diabetes, Stroke Care and Epilepsy. The MSc in Nursing in Trinity College, Dublin offers a specific module for ANP (Emergency); this module prepares suitably qualified emergency nurses to manage a specific cohort of patients presenting to EDs. In the past year, most MSc programmes have incorporated nurse prescribing of medicinal products and prescription of ionising radiation into their

curricula providing a more comprehensive and cohesive educational experience for the individual nurse and avoiding duplication across multiple programmes. Clinical doctoral programmes have recently been offered by University College Cork and University College Dublin while PhD by research is offered in the majority of third level institutions.

17.4.3   Audit and Research

Audit and research are core activities for CNSs and ANPs. A recent research report published by the National Council[12] stated that "*ANPs (and some CNSs) were engaging in research, and clinical audit was well established for both; however, ongoing support to build these skills is required*". The report recommends that collaborative research networks for CNSs and ANPs, clinician and academics in relevant disciplines be established in order to maximise research potential and that links with nursing and midwifery academic areas be forged, including where possible, partnerships, secondments or joint appointments, in order to maximise CNS/ANP research and publications. A final recommendation is that protected time to pursue research and publication activities is established for all ANPs and that both CNSs and ANPs be provided with access to educational opportunities and resources to develop their skills in audit and measurement of clinical outcomes in order to increase quality care, research and audit in practice. These recommendations fit well with previous reports – *A Strategy for Nursing and Midwifery Research in Ireland* [13], *Nursing and Midwifery Research Priorities for Ireland* [14] and *The Development of Joint Appointments: a Framework for Irish Nursing and Midwifery.*[15] The *Strategy for Nursing and Midwifery Research in Ireland* recommended that a research priorities exercise was carried out, the result of which ranked the need for research into clinical outcomes of care delivery as the highest priority, followed by management issues such as staff recruitment and retention. The Framework on Joint Appointments[9] illustrated some examples of current and possible future joint appointments between educational institutions and healthcare agencies. Such strategies will need to be explored in more depth as capacity builds within the system and more nurses gain higher level education at master's, doctoral and post-doctoral levels.

Recommendations:

- Undergraduate nursing degree programmes should include ED secondments.
- Undergraduate nursing programmes should provide nurses with the theoretical and clinical skills sets required to work in an ED environment.
- The EMP recognises the high levels of postgraduate training among Emergency nurses and will support the ongoing postgraduate training of Emergency nurses within Emergency Care Networks (ECNs).
- The EMP will support ANP/CNS staff clinical audit and research activity through ED governance structures and the academic links established for all Emergency Care Networks.

Chapter Eighteen

18. A Systems Improvement Approach to Emergency Care

18.1   Introduction

The EMP's overarching aim is to improve the safety and quality of patient care and to reduce waiting times for patients in EDs. Achieving this aim requires us to examine and optimise patient care processes in all EDs and across Emergency Care Networks. The programme's approach to this challenge is based on:

- learning from international experience;
- promoting evidence based practice;
- the application of systems management tools to the ED Setting;
- identifying existing best practice in Irish EDs;
- process measurement and data-driven continuous quality improvement.

18.2   Learning from International Experience in EM Systems Improvement

Remarkable success has been achieved in reducing waiting times for ED patients in England through the introduction of a time-based target[1], other systems management strategies[2] and significantly increased spending on acute care. Similar approaches have been implemented in New Zealand[3], New South Wales[4] and other Australian states.[5,6] The EMP will base its recommendations for systems improvement in emergency care on proven strategies from international reports and literature reviews.

18.3   Promoting Evidence-Based Practice

The EMP will introduce standardised Clinical Guidelines for common and relatively high-risk EM conditions to promote evidence-based practice and thereby improve the quality and safety of care

provided for patients. Clinical Guidelines from other DCSP programmes relating to EM will also be co-implemented by the relevant programmes.

18.4   The Application of Systems Management Tools to the ED Setting

Many of the international successes in improving ED processes were achieved through the application of business methodologies such as "Lean Methods"[7] and other management tools including Six-Sigma, queuing theory and the theory of constraints. Lean systems have been used successfully to drive improvements in Emergency Medicine[8-10] and across health systems in general.[11-13] Research on the use of lean methods in EDs in the US, UK, Australia and Canada[14] has demonstrated reductions in ED length of stay and waiting times, reductions in rates of patients leaving before completion of treatment, senior physicians having more time to spend on direct patient care and clinical supervision along with improvements in the utilisation of staff. The Six-Sigma methodology of design, measure, analyse, improve, implement and control underpins the programmatic approach to service improvement in the DCSP programmes, including the EMP. Six-Sigma techniques are applicable to tackling ED waiting times[15] e.g. a 6-hour Total ED time target is set as the upper acceptable time threshold for the ED care process. Some EM quality improvement programmes have used Lean and Six-Sigma approaches concurrently to good effect.

18.5   Identifying Existing Good Practice in Irish EDs

Nurses, doctors and other staff from EDs across all regions of the country participated in a series of workshops that were held between mid-December 2010 and February 2011. Staff were asked to identify those areas of their practice that they considered to have a positive impact on patient care. The results of this exercise will be evaluated and benchmarked against international best-practice before being disseminated through the EMP. Areas for improvement and barriers to providing high-quality, timely emergency care were also identified during Best Practice Workshops and strategies to address these are included in the EMP plan. The full results of the Workshops are available in Appendix 15.

Overall, the priority areas that workshop participants felt the EMP should focus on were as follows:

- the introduction of national standardised Integrated Care Pathways;

- improved access to diagnostics;

- the implementation of EDIS and improved ICT in EDs;

- development of standardised staffing models for EDs;

- ensuring equity of resource allocation for EDs;

- implementation of clinical audit, standardised data collection and key performance indicators.

18.6   Measuring and Improving Emergency Care Processes

Defining process measures and implementing key indicators for process efficiency and quality of care will enable and encourage ED teams to measure, monitor and continuously improve the quality and efficiency of the care they provide for patients. A target or KPI is a tool to provide a common goal or focus for service improvement. Clearly defined data, measures and indicators will enable reliable trending and comparison of progress towards improved efficiency and improved patient outcomes across the NECS. Data must be reliable and must be "owned" by the service providers. A culture of continuous self-improvement against national targets will be promoted, as opposed to a mandated regime of externally measured performance presented in league tables. Underlined is the fact that it is the hard work and sustained effort of healthcare providers undertaken towards achievement of the target, rather than the target per se, that will produce real improvements in the quality and efficiency of patient care.

18.7   Systems Management Tools in the ED setting

Lean and Six-Sigma methods have been used effectively to improve the timeliness and quality of emergency care. A brief overview of these methodologies is presented below to highlight how they may be applied to the ED setting and to encourage ECN teams to adopt these approaches in their ongoing quality improvement work. More detailed information is available in the references to this chapter and in the links to the supporting material that will be made available on the EMP website.

18.7.1   Lean Methods

Lean has been described as a toolset, a transformative management system and a philosophy[15] in the workplace. It was developed by Taiichi Ohno and others as the Toyota Production System and popularised through the work of Womack and Jones.[7] A brief description of the application of Lean methodology to the ED is outlined here as Lean-thinking underpins many of the EMP's recommendations for improving ED processes. Its success as a tool for quality improvement in ED is thought to be dependent on both the involvement of front-line staff and an organisation's leaders' commitment to its use.[13] Lean is not about cost-savings as its name might suggest but rather about quality improvement for patients and empowering staff to work in a more effective and satisfying way. It has been suggested that applying a "Lean lens" to healthcare systems demonstrates that they have not been designed around the patients' needs but have been unduly influenced by the needs of service providers and payment systems.[16] Two key concepts in Lean are the total removal of waste in all its forms and working to promote respect for people. The Lean approach to work and to people are explained in Table 18.1.

18.7.1.1   Waste in the ED

Waste is defined as any activity that does not help patients or move them towards discharge or "cure" thereby adding "value" to the process of their care. Waste, therefore, is activity that does not help get work done well and efficiently. Value should be defined from the ED patient's perspective but other service users and providers may also define value in an ED setting such as patients' families, carers, other clinicians (e.g. the patient's GP) and hospital staff (e.g. inpatient teams providing ongoing care for the patient). In Lean, waste can be reduced through ongoing cycles of improvement undertaken by workers. This is characterised by Kaizen as "small low cost low risk improvements that can be easily implemented".[17]

18.7.1.2   Respect for people in the ED setting

ED overcrowding is a clear failure to respect patients and their needs. Prolonged delays for patients who are waiting to be treated similarly contravene the principle of respect for patients. The concept of respect applies equally to ED staff and other healthcare workers and should be evident in the management and leadership culture in an ED and among members of the ED team.

Characteristics of a Lean ED – the work:

- Emergency work is designed, standardised and continuously monitored and improved around the patients' needs.
- Patients' needs are analysed and understood as much as possible.
- Work is error-proofed as much as possible using lean tools.[12]
- Problems that occur are addressed rapidly through root-cause analysis (asking 5 whys) and implementing improvements through small cycles of changes which are tested before full implementation ("PDSA or Plan, do, study, act" cycles).
- Activities are "done right the first time".
- Delays are eliminated to allow work processes to flow smoothly. This requires adequate capacity planning; ideally, work should be pulled through the system (e.g. no delays for Diagnostic Imaging or access to an inpatient bed).
- Barriers between departmental silos[11] are broken down allowing hospital departments and healthcare providers to work in a more coordinated way for the benefit of patients.
- High-quality data is collected and analysed to monitor performance and identify areas for improvement.
- Quality improvements are sustained and built upon.

Characteristics of a Lean ED – the people:

- Solutions are disseminated through collaboration and good communication.
- People in all roles in the ED are involved in improving quality and efficiency in the ED, the hospital, the Emergency Care Network and the healthcare system.
- People working in the ED are actively involved in error prevention and there is a no-blame culture and supportive professional response if errors occur.
- Ideas for service improvement permeate from front-line staff through the management system and goal-setting and feedback are communicated from management teams to the rest of the workforce.
- There should be no need for staff to act as "heroes" delivering care "against the odds" because the work system is designed for staff to work effectively and efficiently at all times.
- Staff are encouraged to expand their skills and progress their career development.

Table 18.1: Key features of Lean

18.7.1.3   The Application of Lean Methodology to Emergency Care Processes

Lean-thinking offers values and solutions that can be applied to emergency care systems to continuously eliminate waste, improve the quality of patient care and improve staff morale. Examples of waste and their application in an ED environment are shown in Table 18.2.

Types of Waste[12]	Examples in EDs
Waiting	• Patients waiting to be seen. • Sequential rather than parallel processing of patients (e.g. patient waiting until after they have been seen by a doctor to have their blood tests done).
Defects or errors	• Missed diagnosis and inadvertent patient discharge requiring patient recall to the ED or an adverse outcome
Overproduction	• Clinicians undertaking too many diagnostic procedures or tests
Transportation	• Poor design requiring patients to be transported long distances for Diagnostic Imaging
Inventory	• Storing excessive stocks of drugs or clinical material that go out of date
Motion	• Poor ED layout requiring staff to walk excessively to gather equipment needed for their work, instead of reorganising equipment layout
Over-processing	• Collecting data that is never acted upon. • Collecting overly detailed process measures. • Duplication of assessment and documentation by ED staff or admitting teams (double-clerking). • Multiple unnecessary patient hand-over episodes. • Patient assessment by junior clinicians who have difficulty making disposition decisions (compared with senior decision makers). • Repeated transcribing of documentation (EDIS solutions).
Human Potential	• Demoralised staff who feel that they are not listened to. • Staff not encouraged to participate in quality improvement. • Failure to develop staff to the full of their potential. • Staff attrition due to burnout and stress.

Table 18.2: Examples of types of waste in an ED setting, adapted from Graban[12]

18.7.2   Six-Sigma Methodology

Six-Sigma is a data-driven, quality method developed by the Motorola Corporation in Japan to reduce the number of errors in a process and to improve cost-effectiveness[15] which has a number of applications in EM. The Six-Sigma methodology of "design, measure, analyse, improve, implement and control" can be used to implement change such as new care pathways in EDs. Applying these methods should become a routine part of the work of Clinical Operational teams in EDs. Targets in relation to ED waiting times are examples of 'upper specification limits' set in Six-Sigma terminology to drive improvements in processes. Six-Sigma methods can be applied to ED process data in the form of Statistical Process charts to predict and manage service demand and capacity.[15] ED teams do not need to become Six-Sigma experts but emergency care is likely to benefit from having Six-Sigma methods embedded in quality control and capacity management processes at national level.

18.7.3   Process Mapping

This is a valuable management tool applicable to service improvement in EDs and other components of healthcare.[18,19] Process observation and mapping enables workers to identify where bottlenecks and Lean "waste" occur in the patient's pathway through the ED. Process mapping should include measures of the time taken to perform steps in a process so that the efficiency as well as the structure of the process is measured. It is best undertaken by direct observation, with the involvement of workers and the support of trained facilitators. Process mapping requires appropriate resources, including staff time, and should not be treated as an end in itself. The key challenge is the successful implementation of the improvements needed to resolve the systems problems identified through the process mapping exercise.

18.7.4   The Standardisation of ED Work

Lean advocates the standardisation of work as defined by "the current one best way to safely complete an activity with the proper outcome and the highest quality".[12] In a healthcare context, this does not imply that standardised care is provided in a dumbed-down, uniform manner to the detriment of flexibility, individual judgement, initiative, innovation or the necessary individualisation of pathways of care to meet patients' needs. Instead, standardisation relates to the identification and dissemination of best-practice based upon research-evidence where available, direct observation and analysis of current processes linked with systems of continuous improvement. Standardised work in healthcare should continuously evolve on the basis of new

evidence and the ongoing analysis of system outcomes. It should be undertaken by those doing the work, supported and guided by management teams and should focus on promoting quality of care and patient safety. Not all healthcare work needs to be standardised, but there are clear benefits to be achieved from standardising and improving work that is high-risk for patients and / or high-cost or high-volume in the healthcare system. Having robust systems in place to manage most ED work efficiently enables teams to manage unexpected surges in demand and frees up team resources (including thinking-time) to deal with unexpected crises. The standardisation of ED work provides a framework within which the complexity and variability of emergency care can be managed.

18.7.5   Complexity and Variability in ED Work

ECNs and EDs are complex systems i.e. relatively self-contained health care delivery systems that are each "extensive in the scope and richness of both its mission and its processes".[20] The parts of the system that give rise to the collective behaviour of the system are interdependent such that change implemented at one point in the system may have unanticipated consequences at other interdependent parts of the system.[21] The complexity of EDs exists in four domains: the patient, the care-giver (doctor/ANP/nurse), the clinical decision-making and the totality of the environment.[19] ED staff have been said to "self-organise" [20] to provide patient care that is individualised to the patient's needs. Complexity theory suggests that greater effectiveness is achieved when processes in complex systems are designed with fewer steps and fewer people and with feedback loops to detect and correct errors.[20]

There is so-called random variability inherent in the system in that all patients do not have the same disease with the same severity, patients do not all arrive at the same rate every hour and all care providers are not identical in their ability to provide quality care.[19] This variability is natural and can be managed through robust well-organised processes. It cannot be eliminated. Non-random variability may be introduced into any system through individual behaviours and priorities.[22] This variability should be eliminated through the standardisation of work if it is associated with sub-optimal patient outcomes or resource-utilisation or other forms of waste in the system.

18.7.6   Queuing Theory

Queuing theory, the mathematical study of queues, has been applied in the ED setting to analyse[23] and manage waiting times, to develop capacity management tools including staffing models[24] and as a basis for simulation modelling of EDs. Queues can potentially develop at any of the "servers" in the ED e.g. access to ED cubicles, ED nurses or doctors/ANPs etc. Emergency care requires the optimal matching of fixed resources (staffing, ED space) to unscheduled but predictable demand. Queuing theory determines that at high levels of utilisation (i.e. above 85%) small changes can lead to a rapid deterioration in system performance. Conversely a small positive change at this level can bring about improvement (e.g. freeing up a number of ED cubicles in an overcrowded department may enable many patients to be seen).

18.7.7   Theory of Constraints

The application of this management theory to ED systems is valuable in explaining that time lost at bottlenecks in a process is lost to the entire system. However, time saved by improving efficiency at a stage in a process that is not a bottleneck will not improve the overall system performance.[25] ED improvement teams should first identify the true bottlenecks in their care processes and work to improve these, measure the improvement achieved and roll out the improvements identified. ED teams also need to be aware that bottlenecks may jump to different stages in highly variable processes[26] so monitoring of systems performance across interdependent stages in a process is necessary during improvement initiatives and also to ensure that progress is sustained.

18.7.8   Clinical Microsystems

The Clinical Microsystems model provides an insightful and effective approach to quality improvement based on the primary importance of the patient-care provider interaction in any health care system. The EMP implementation plan draws heavily on the Clinical Microsystems approach as developed by the Dartmouth Institute for Health Policy and Clinical Practice.[27] The term "clinical microsystem" is explained as the "atomic" unit of healthcare delivery comprised of a patient, a care-giver and the information exchanged between them.[28] A healthcare microsystem is "*a small group of people (healthcare providers, patients and their families) who work together in a defined setting on a regular basis to create care*".[28] Multiple Microsystems combine to form mesosystems (e.g. hospitals or ECNs) and macrosystems (e.g. the health service or National Emergency Care System). The clinical microsystem is where care and quality are "made". All other components of the health system exist to support the clinical microsystem.[28] Highly performing microsystems are characterised by patient focus, outcomes, performance and process

improvement, intelligent use of information and technology, leadership, culture and staff development. They reach out across interfaces and harness support from other linked systems.[27] Applying the Clinical Microsystems approach allows providers to implement change from the bottom up, focusing improvement activity where it really matters i.e. "where patients, families and clinical teams meet".[27]

18.8   A Systems Improvement Approach to ED Patient Care Processes

Although each patient attending an emergency care service receives an individualised programme of assessment and treatment according to their needs, the overall clinical approach based on the clinician's assessment is to determine if the patient needs:

- resuscitation or life-saving treatment; and/or
- time-critical care to prevent disability (limb-saving treatment); and/or
- inpatient care; or
- a limited emergency care intervention, after which they can be safely discharged to the care of their GP, to self-care or will have no further care needs.

Similarly discrete phases within the process of patient care in an ED, sometimes termed the "milestones" on the patient's ED journey, are fairly uniform and involve:

- patient registration;
- Triage;
- first clinical intervention / Rapid Assessment & Treatment (RAT) e.g. first ECG performed;
- clinician assessment / examined by treating clinician;
- clinical investigation;
- treatment;
- subsequent review;
- a decision regarding the patient's ongoing clinical care needs.

The EMP has developed a generic map of ED patient care processes to act as a framework for quality and efficiency improvement throughout the emergency care system. This is a form of standardisation of ED work that is **not** intended as a "one-size-fits all" solution to ED processing problems. Instead, it demonstrates how best current evidence and international experience can be applied in our EDs to drive sustainable improvement. The Programme recommends that ECNs adopt the National Model of Care advocated by the programme but then go on to improve on this

model by applying systems improvement tools and undertaking much needed health systems research within their EDs and ECN units. The Programme considers that the appropriate standardisation of ED processes will bring real benefits across the NECS:

- The application of uniform terminology around the phases of ED patient care will enable better communication between healthcare providers.

- The standardised application of data definitions, process measures and KPIs will provide good quality data to support service improvement and facilitate research.

- A standardised ED data set will ensure that patient information and process measures are recorded in a consistent manner across the system.

- A standardised approach to the common aspects of care processes will promote safer care and the provision of equitable standards of care across the emergency care system.

- A standardised approach to ED patient care processes will enable healthcare managers and service developers to implement systems-wide approaches to improve acute hospital capacity.

- Staff moving between hospitals for training or change of employment will find it easier to adapt to new surroundings if standard processes occur in all EDs.

- Inter-specialty interfaces will be easier to manage if a standard approach to care processes is taken in EDs and related specialties.

18.9   Process Measures for the Patient's Journey in EM

Process measures are necessary to enable us to monitor the timeliness of care across the emergency care system and support a culture of continuous quality improvement. These measures are key to capacity management and measuring the cost-effectiveness of care. Standardised measures will enable analysis and management of the variance between units and systems research in EC.

The inclusion of process measures and indicators may seem to place undue emphasis on the timeliness of ED care. The EMP recognises that the safety and quality of patient care must always take precedence over efficiency considerations. Nonetheless, the timeliness of care is an important component of quality and research has demonstrated that prolonged ED waits are associated with poorer outcomes for patients.[29-31] Patient satisfaction surveys have pointed to ED waits as a cause of patient dissatisfaction with the service they receive.[32,33] This is why the completion of the ED patient's process of care within six hours is a primary patient access and quality KPI for the EMP.

Achievement in terms of process measures must be balanced with quality achievement including clinical KPIs and patient experience. Process data should be analysed in the context of ED casemix.

Most EDs do not have EDISs that support the real-time capture of detailed process measures. Future EDISs should allow capture of all levels of data. The same categorisation of data will apply to ED activity data (e.g. the numbers of presentations of Paediatric versus Adult patients attending an ED).

Recommendations:

- Systems improvement approaches from industry have been proven to be effective in improving the quality and timeliness of care in EDs and should be used as tools to support quality improvement in the Irish EC setting.
- Existing good practice identified through Best Practice Workshops will be shared with all EDs.

Chapter Nineteen

19. The Emergency Medicine Patient Pathway

19.1 Introduction

A generic map of patient care processes following the pathway of patient care in an ED is presented in Appendix 16. The stages that apply to patients attending other ECN units are outlined thereafter. The associated process measures, recommendations for work-practice changes and the rationale for these recommendations are presented in context.

19.2 The 6-hour Total ED Time Standard

This indicator is recommended to monitor the timeliness of care and ensure that patients do not experience excessive waiting times in EDs and other ECN units. The Programme recommends a national Total ED Time (TEDT) standard of 95% of patients having their emergency care completed within 6 hours of arrival in an ED.

19.2.1 Rationale for the 6-hour Standard

- A 6-hour standard for ED has been included in the HSE service plan for a number of years and Patient Experience Time, which is analogous to TEDT, has been collected in some EDs since 2010.
- TEDT includes both productive clinical time and delays. This indicator aims to reduce the delays without compromising on quality of care.
- Prolonged delays for inpatient boarders in EDs are associated with poorer outcomes.[1,2]
- Patient presentation to EDs during shifts with longer waiting times is associated with adverse outcomes among patients who are well enough to be discharged from the ED.[3]
- Prolonged TEDT is likely to increase rates of patients leaving before completion of treatment.
- Delays adversely affect patients' experience of ED care.[4,5]

- Patients waiting more than 6 hours should be cared for in a more appropriate care setting than an ED.

- Patients who have completed their period of EM care draw on nursing and other ED resources that would be more effectively directed at new patients who require timely initial clinical assessment and nursing care.

- This indicator sets an upper limit on the duration of ED patient care. However, a small minority of patients may validly require longer than 6 hours care in an ED setting due to the complexity of their presenting problems, which is why a 95% compliance standard has been set. An upper limit is included in that no patient should spend more than 9 hours in the ED (100% mandatory compliance).

- Monitoring TEDT data will allow hospitals that do not achieve the standard initially to monitor the timeliness of the care they provide, to better understand performance and demonstrate improvement towards achievement of the standard. Secondary measures will also allow hospitals that meet the standard to demonstrate exemplary performance in further reducing waiting times and will support benchmarking of hospital performance.

- Efficient care should not be rushed. Comparison of median and 75th centile data between similar EDs will indicate if a particular unit is managing patients at an unexpectedly quick rate. This will flag the need to investigate whether this variance represents more efficient or sub-optimal care.

- Analysis of TEDT data will also demonstrate any potentially unfavourable distortions in practice such as a rush to discharge or admit a disproportionate number of patients close to the 6-hour standard time.[6]

- Patients should not be admitted or moved to inappropriate clinical areas to meet TEDT standards. Inpatient admission rates (IPAR), including CDU admission, need to be reviewed in association with TEDT.

- TEDT is a Clinical Quality Indicator in the UK, albeit with a four hour target[7] and a 6-hour standard is used in New Zealand[8] and New South Wales.[9]

19.2.2   Work-practice Changes to Support the 6-hour Standard

19.2.2.1   A systems-wide approach

International experience has shown that the ED waiting time standards can only be achieved and impact positively on patient care if they are accepted as hospital-wide standards and that systems-wide changes are implemented to achieve them.[10,11] As the work-practice and organisational changes necessary to achieve the 6-hour standard stretch far beyond the ED, it is imperative that hospital systems and supporting specialty care processes are aligned to create an operational environment that facilitates achievement of the 6-hour standard.

19.2.2.2   The role of other programmes

All DCSP programmes that impact on emergency care or acute hospital utilisation or capacity management will contribute to achievement of this standard.

19.2.2.3   Staff ownership of the 6-hour standard

Achievement of the 6-hour standard will need to be a shared goal for all staff involved in acute and emergency care and care processes within and out-with the ED will need to be streamlined. ED staff will need to take responsibility for recording time-related patient data, to ensure the accuracy of data and to measure the interim steps or milestones that contribute to the TEDT.

19.2.2.4   Time awareness

The smallest reductions in TEDT can make a difference to patients and the overall efficiency of ED care. A ten minute reduction in the TEDT time of every patient in an ED that sees 150 patients each day would result in an overall reduction of 25 hours of direct patient care time in each 24 hour period or 9125 hours per year. Each stage of the patient care process needs to be optimised to complete care within a 6-hour time frame.

A 3:2:1 approach to organising the ED care of patients who need referral for admission has been implemented in New South Wales, Australia.[9] This breaks down as:
- three hours for ED clinicians to complete patient assessment;
- two hours for admitting teams to complete their assessments;
- one hour for the patient to be transferred from the ED to a ward bed.

19.2.4.5 ICT support

Improved ICT/EDIS will be required across the NECS to ensure accurate recording of TEDT.

19.2.4.6 Recommendations for the Total ED Time Standard

- ED episodes of care should be completed within six hours for 95% of patients and no patient should spend more than nine hours in an ED.

- A 3:2:1 approach should be adopted for patients who are referred for admission.

- An EDIS should be introduced to facilitate measurement of ED processing times.

19.3 Patient Care Processes in the ECN

19.3.1 Patient Arrival at an ED or ECN unit

Patients may self-refer; arrive by ambulance or by their own transport. Patients may be referred to an ED by a GP and subsequently arrive by ambulance or by their own transport. A range of other healthcare providers may also refer patients to ED (e.g. dentists). Patients may be referred to an ED from a linked unit in an ECN and arrive by their own transport or by ambulance.

19.3.2 Ambulance Patient Pre-alert

An ED is placed on stand-by through notification by the Ambulance Service in all cases of cardiorespiratory arrest and major trauma. Stand-by may also be required for other forms of critical illness or injury. The EMP and the NAS jointly recommend that in cases of major trauma, the receiving ED should be pre-alerted early and not less than 15 minutes prior to arrival (unless anticipated transport time is less than 15 minutes). This will allow the timely notification of appropriate ED staff and other relevant clinicians to prepare to receive the patient.

19.3.3   Ambulance Patient Hand-over at the ED

All EDs will accept ambulance patients, though there may access protocols for certain defined high-complexity or time critical conditions that direct the patient's transport to designated units. The care of patients who arrive by ambulance should be accepted by the ED team immediately upon patient arrival. Patients who need to remain recumbent should be transferred without delay to ED patient trolleys. Ambulance crews will need to remain briefly with patients to provide clinical handover to the accepting ED team. This handover includes a clinical history and details of pre-hospital patient care provided. The ambulance team should be able to leave the patient in the ED once the handover has occurred. It is imperative that EDs facilitate ambulance teams in handing over patients in a safe and efficient manner so that ambulance teams are mobilised to respond to new calls as quickly as possible.

19.3.4   Recommendations for the Ambulance Handover Time Target

- A National Emergency Care Key Performance Indicator, the Ambulance Patient Handover Time in ED (APHT) of 95% of patients being handed over within 20 minutes of arrival, will be implemented to measure the efficiency of ambulance patient handover at EDs and encourage hospitals to prevent delays for patients who arrive by ambulance in accessing ED care and accommodation.
- The NECS standard dataset will include ambulance handover time data.

19.3.4.1   Work practices to support ambulance patient handover

APHT is to be measured from the time the ambulance arrives at the ED to the time patient handover occurs from the ambulance crew to nursing or medical staff in the ED. Patient transfer from an ambulance stretcher to an ED trolley must occur at the time of clinical handover. A target of 95% of all patients to be handed over within 20 minutes of ambulance arrival at the ED will be applied.

The Ambulance Service will record the time of ambulance arrival. Clinical handover and patient transfer to a hospital trolley should occur concurrently. The time this occurs should be documented on the Pre-hospital Care Report by the nurse or doctor who first takes over care of the patient. A copy of the Pre-hospital Patient Care Record forms part of the patient's ED record. The time of patient handover (off trolley) will be manually recorded until such time that electronic means are developed to enable this. The time of ambulance arrival and the time of ambulance patient

handover will need to be entered retrospectively in the ED Patient Administration System or EDIS. The time of ambulance arrival at the ED and the time of ambulance patient handover will be included in the NECS Minimum Dataset. The time of handover is also the time of triage for ambulance patients. The interval between time of ambulance arrival and time of patient handover is the Ambulance Patient Handover Time (APHT).

19.3.4.2   Rationale for an ambulance patient handover time KPI

- Delays handing over patients at EDs are a measure of inadequate access to ED accommodation and are associated with inpatient admission access block.[12,13]

- Delays to ED treatment are associated with poorer clinical outcomes for patients.

- Delays cause discomfort to patients.

- Delays at EDs mean that vehicles and crew are operationally unavailable; increase ambulance response times and cause increased clinical risk to patients who need ambulances in the community.

- Delays for ambulances at EDs waste healthcare resources.

- Experience in other countries indicates that ambulance delays offset the start of measures of total time in the ED. This is unacceptable and must be prevented through the combined introduction of APHT and total ED time as ED performance indicators.

19.4   Patient Registration

19.4.1   Background

All patients need to be registered so that there is a record of their attendance at the ED or hospital. Registration also involves matching a patient to their pre-existing hospital record and the collection or checking of a range of demographic and other healthcare-related data. Registration may be time consuming, depending on the EDIS and the number of fields to be completed. Patient queuing for registration must be prevented.

It has been demonstrated that the immediate accommodation of trolley patients and bedside registration reduces total ED time; reduces the number of patients leaving before completion of treatment and improves patient satisfaction (average decrease ED Length of Stay (LOS) of 15 to 20 mins in different studies).[14] Research supports the initial use of mini-registration followed by full formal registration. Mini-registration refers to the collection of patient information, limited to that

necessary for the commencement of care, the generation of an ED record and matching of the patient to existing hospital records. These data include presenting complaint and basic demographic information (name, date of birth and address in some cases). Bedside mini-registration is routinely undertaken in the resuscitation room in most EDs at present and is now recommended for all patients who need trolley-based care. Mini-registration could also be applied to patients referred to AMU who undergo rapid Triage in the ED.

Research has shown that ambulatory patients find it easier to understand what to do if registration occurs before triage.[15] Systems that perform triage before registration for all patients would fail to measure delays to triage if they occurred. The EMP workforce survey 2010 indicated that 32 of 39 units performed registration before triage.

19.4.2   Recommendations for Patient Registration

- Patient registration should take place before or at the same time as triage, depending on the patient's clinical status, with the proviso that delays to triage must be minimised.
- ED Registration time should be considered ED Arrival Time.
- Patients should, ideally, be placed in available treatment cubicles, where triage and mini-registration should take place.
- Mini-registration should be available for AMU-directed patients.
- There should be standard datasets for mini-registration and full registration.
- A standardised EDIS solution needs to be implemented across the NECS.

19.4.3   Work-Practice Changes to Improve Patient Registration Processes

Triage and registration occur concurrently for the most severely ill and injured patients. Triage, Ambulance Patient Handover Time and Registration time/ED arrival time will be almost identical for resuscitation patients. For ambulatory patients most, but not all, EDs currently undertake registration before triage. The EMP recommends a consistent approach to registration and triage to ensure equitable care is delivered across the system and to enable consistent measures to be employed.

The use of mini-registration will require reception and clinical staff to work in a flexible manner. Lack of staff buy-in is recognised as a barrier to the successful implementation of this strategy.[14] Full registration should be completed at a later stage in the patient's pathway or when more

convenient for administrative staff. Newly presenting patients who need initial mini-registration must always be prioritised over patients completing full registration. Ambulatory patients may, if considered clinically appropriate by the Triage Nurse, return to a registration desk to complete registration after triage or full registration could be undertaken in the ambulatory care area.

Immediate trolley accommodation will not be possible, of course, if an ED is allowed to reach 100% capacity. Mini-registration should occur irrespective of where patients are accommodated. A standard mini-registration and full registration dataset will be developed by the EMP. EDIS implementation must support mini-registration and full registration work flows.

19.5   Triage

19.5.1   Introduction

Triage refers to the prioritisation of patients presenting for emergency care. Its principal purpose is to ensure clinical justice. (In this context clinical justice means that all patients receive care in the timeframe appropriate for their clinical condition) and that available departmental resources are used efficiently.[16]

The Manchester Triage System (MTS)[17] is the most commonly used triage system in Ireland, as indicated in the EMP Workforce Survey 2010. The MTS utilises a 5-point scale which has been shown to be effective in identifying the critically ill[18] and has excellent inter- and intra-observer agreement when compared to other 5-point scales (e.g. Emergency Severity Index).[19]

Triage is only necessary when there is a mismatch in quantum, time or location between the needs of patients and available resources. Traditional triage, if applied when it is unnecessary (e.g. when there are more free spaces than patients and doctors are waiting to see patients), can cause an avoidable bottleneck.[20] The obverse of triage is "not-triage", which is unethical and unacceptable.

In the UK, where the introduction of a 4-hour ED target reduced waiting times and queuing in EDs, simpler forms of triage are used in many departments.[21] These can involve "meeting and greeting" patients prior to formal registration in order to quickly separate them into Resuscitation, Urgent, and Ambulatory care streams.

There is no gold standard against which ED triage can be measured.[16] Despite efforts at standardisation of triage, the complexity and diversity of patient presentations and the interplay of patient and practitioner-related factors means that triage remains a highly subjective practice.[16] Triage categorisation should therefore be neither used as a surrogate marker of ED casemix nor should it be considered to be a reliable measure to benchmark clinical activity or acuity.

19.5.2   Recommendations for Triage

- The Manchester Triage System[17] is the recommended triage system for the NECS at present.

- All ECN ED and LEUs (i.e. both Type A and B units) will use MTS in the Triage assessment of adult patients.

- An Irish Children's Triage System will be introduced. A paediatric pain assessment and management system will be developed in conjunction with the Triage procedure.

- Pain assessment is a key component of the MTS and patients shall receive rapid and appropriate assessment and analgesia based on Manchester Pain Ruler Score (for adults) and the EMP Clinical Guidelines for Pain Management in the ED.

- The MTS will not be applicable in LIUs but standardised protocols will be applied for the identification of patients whose care needs cannot be met at these units.

- Triage assessment will be rapid and will occur at the same time or after patient registration. A maximum delay of 15 minutes from registration to Triage is advised and 95% of ED patients should be triaged within this timeframe.

- In situations where immediate emergency medical care is commenced (i.e. Category 1/2 patients such as those in cardiac arrest) the Triage process is concurrent and shall be recorded retrospectively.

- Extended nursing roles (e.g. venesection and X-ray prescribing) are not to be part of the Triage process. They are considered to be part of Rapid Assessment and Treatment (RAT), to be undertaken at a later stage.

- Patient confidentiality will be maintained throughout the Triage process.

- Triage may occur in a patient treatment cubicle or in a designated Triage area in the ED.

- In a Major Incident / Major Emergency, the Triage system as laid out by the EMP Major Emergency document, shall take precedence over all other EMP Triage standards.

- HSE/Local guidelines for isolation of patients with potential high-risk pathogens (e.g. H_1N_1/TB/SARS) or high-risk chemical/radiation incidents, will pre-empt the standard Triage process. Best-practice protocols for infection prevention and control will be applied.

- ICT guided Triage shall be a key component of a national EDIS.

- Triage on arrival is unnecessary in situations where resources meet demand (e.g. when there is a doctor or an ANP waiting to see a patient without a delay). In these cases, the Triage score shall be recorded retrospectively at discharge as part of an Acuity Coding System that the EMP will develop.

- Triage across the Acute Floor for AMAU/AMU and EM shall be co-located and provided under the governance of EM. Triage Category 1 patients and all patients who require resuscitation or condition-specific care that can best be provided in an ED setting, shall be managed in the ED. All other patients referred to AMU by their GPs shall be transferred directly to AMU after rapid triage.

- Training competencies in MTS shall be developed nationally and regularly audited across ECNs.

- The development of a single Triage standard for Emergency Care in Ireland will offer significant opportunities for original research, particularly with regard to the validation of triage strategies and acuity measures in an Irish healthcare setting.

19.5.3   Rationale for Implementation of Standardised National Triage System

It is important for the quality of care in EDs that Triage should be used when, as is usually the case, demand exceeds available resources. The safety and reliability of Triage can best be protected if all ED staff use the same system. A single Triage system will also facilitate the inclusion of ICT guided Triage in a national EDIS.

19.5.4   Measures and Indicators for Triage

The Programme recommends that 95% of ED patients should be triaged within 15 minutes of registration and that EDs should monitor Triage times to ensure that the start of Triage is not delayed or it takes too long. Time-to-Triage (i.e. the time from Patient Registration/Mini-registration to the start of Triage) should be monitored to ensure that unacceptable delays do not occur and Time-to-Triage should be included in routine ED process data analysis. The EMP does not recommend Time-to-Triage as a national quality indicator. Factors considered in the decision not to use Triage as a national quality KPI include the following: the time of First Clinical Intervention (e.g. first ECG) is a more valuable measure of the quality of patient care; Triage may be more time consuming for Paediatric patients and the proportion of children attending an ED

may influence Triage performance; Triage is a subjective practice and standardisation is difficult. Likewise, Triage categories should not be used as surrogate markers of casemix.

19.5.5   Work-Practice Changes to Improve Triage

19.5.5.1   Staff training in Triage

EDs that currently do not use the Manchester Triage System (MTS) will need to plan to train staff in the application of MTS. Triage competencies training is a core part of emergency nurse training and should be continuously updated and audited across ECNs. Paediatric EDs and General EDs in which children are seen will need to provide training in Paediatric Triage once the EMP Irish Children's Triage System is disseminated. Work practices should be evaluated and training provided to ensure that patient confidentiality is maintained throughout the Triage process. The EMP and the National Healthcare Associated Infection Programme are developing a standardised protocol for Infection Prevention and Control assessment in the ED. A Mental Health Triage Tool is also recommended by the Programme. Staff training in the use of all Triage tools will be required on an ongoing basis.

19.5.5.2   Triage and associated clinical interventions

Some EDs may be reluctant to change current practices, such as the performance of additional clinical evaluations which supplement basic Triage. The Programme recommends that these processes occur as part of the process of Rapid Assessment and Treatment (RAT) at a later stage in the patient's assessment, with the exception of the recording of an ECG in patients with suspected ST-elevation Acute Myocardial Infarction or Acute Coronary Syndrome. An initial ECG should be performed immediately after MTS and without delay in this patient group. In general, MTS alone should be used as the standard, initial Triage in all EDs and this should not be complicated or delayed by additional procedures. An un-modified MTS score should be included in the patient care records and data returns with regard to patient processing made to the ECN, NECS and HSE.

19.5.5.3   Pain management

The EMP Clinical Guidelines for pain assessment and management will be implemented in all ECN units once they are made available. Audit of pain management will be included in the audit programme of all EDs.

19.5.6   Infrastructural Changes

EDISs will need to be configured or implemented to allow the real time recording of Triage times in all ECN units. Triage Target performance data should be analysed within each ED and ECN. Infrastructural deficits in EDs that adversely effect patients' privacy and confidentiality will need to be addressed.

19.5.7   Interface with Acute Medicine

ED staff will need to work collaboratively with the Acute Medicine team to ensure that triage for AMAU/AMU-directed patients is applied in a rapid and consistent manner. The triage of Acute Medicine patients should be audited.

19.6   Infection Prevention and Control Assessment

All patients will undergo Infection Prevention and Control Assessment (IPCA) at Triage. The EM and HCAI programmes will co-develop a simple screening tool for IPCA to be used at ED arrival. Use of the tool will be audited and will form a clinical KPI for infection prevention and control in ECNs.

19.7   Rapid Assessment and Treatment (RAT)

19.7.1   Background

Rapid Assessment and Treatment (RAT) is the term used to describe the initiation of diagnostic, therapeutic and management protocols by nursing staff based on the patient's presenting symptom. In some EDs, a Consultant or Senior EM doctor provides additional early assessment at this stage to supplement nursing assessment. RAT would not be applicable to a LIU setting. Two comprehensive reviews[14,21] outline evidence that Nurse- or Doctor-provided RAT can lead to substantial improvements in patient care including:

- reductions in total ED time (this was most marked for patients in the Urgent Category and in the region of 70 minutes in some studies);
- decreased time to pain treatment;
- decreased time to first ECG;

- improved patient satisfaction;
- improved and timelier assessment of patients with Mental Health presentations.

RAT may also be termed Team Triage, Advanced Triage (AT), IMPACT[22] or by similar names. RAT improves the timeliness and quality of ED patient care by providing time-critical assessments (e.g. ECG) and front-loading clinical investigations. This reduces the amount of wasted time a patient may spend waiting for clinical investigation to commence. The initial Triage nurse should focus on the timely provision of basic MTS Triage and the primary triage of all new patients must take precedence over RAT. The nurse designated to care for a patient may undertake RAT as part of the initial patient assessment. At times of peak demand and overcrowding a dedicated RAT team may be provided to keep up with the rate of new patient arrivals. Analysis of the rate of presentation of patients and TEDT will indicate the times when Team RAT is likely to be of value. Ideally, doctor-provided RAT would not be necessary because there would be no delay for patients to see a doctor, if resources matched demand. This model has been shown to be helpful in overcrowded EDs. The provision of dedicated RAT teams is dependent on staffing resources of nurses and doctors in the ED with specific skills and competencies.

19.7.2   Components of Rapid Assessment and Treatment (RAT)

RAT usually includes:

- Pain Assessment and Management if required;
- ECG, if indicated by the patient's clinical presentation;
- assessment of vital signs;
- clinical investigation including urine testing, peak flow measurement, as indicated;
- cannulation and/or phlebotomy with blood testing according to standardised protocols;
- commencement of therapy e.g. intravenous fluids, supply of simple analgesia according to protocol;
- patient hospital clinical notes should be requested at RAT, unless it is routine practice to obtain hospital notes for all ED patients.

RAT Scores or 'Red Flags' shall be utilised to supplement the MTS in specific conditions in adults:

- Stroke e.g. FAST score[23];
- Sepsis/Unstable patient – Physiological Score[24];
- Major Trauma – Trauma Scores[25];
- Acute Coronary Syndrome /Acute Myocardial Infarction - ECG changes and TIMI score[26].

RAT may also include:

- Nurse requesting of x-rays as per national protocol;

- Doctor assessment and initiation of treatment;

- Deferred Care Practices: a number of low acuity patients who present to the ED may, after senior clinician review at RAT, be recommended to re-attend the ED or an alternative service (e.g. community dressing clinic) in a scheduled manner. Protocols have been developed to support this practice but senior clinician input is required because of the potential patient safety risks involved. Differences in patient and clinician understanding of the acuity of a presenting complaint may be a challenge in this practice;[21]

- Streaming of selected patients for EM, other specialty, multidisciplinary, Therapy Professional or Medical Social Worker assessment.

19.7.3   Measures and Indicators for Rapid Assessment and Treatment (RAT)

The time from patient registration to that at which RAT is commenced is to be termed the Time to First Clinical Intervention (FCI). Until such time as formal RAT protocols and procedures are developed the time to FCI in EDs may be designated as the time from registration to the start of any treatment, diagnostic test, procedure or review by an EM clinician which contributes to the patient's diagnosis and clinical management i.e. it improves the quality of care and reduces delay to disposition decision. It does not include recording of vital signs.

Time to FCI may be the same as Arrival Time for resuscitation patients. This time point is particularly important for condition-specific patient cohorts e.g. patients requiring ECG. Time to FCI will be a KPI for some EM-related programmes such as the National Acute Coronary Care Syndrome Programme. This measure should be recorded and monitored at ECN level. ICT improvement will be required for this time point to be accurately measured, recorded and analysed at ED, ECN and ultimately NECS level.

19.7.4   Work-practice and Infrastructural Changes to Enable Rapid Assessment and Treatment (RAT)

The skills and competencies necessary to undertake RAT are outlined in the Emergency Nursing Competencies section of this document. Nurse training will be needed to support the implementation of clinical protocols for RAT. Staffing allocation may need to be reorganised to support RAT. EDIS will need to be configured to support capture of the Time to FCI. Staff

practices will need to be changed to undertake real-time capture of FCI in EDISs. RAT may occur in the ED patient cubicle or in a designated area adjacent to Triage – it is a process not a place.

19.7.5   Recommendations for RAT

- Functions that are not part of MTS should be bundled as RAT processes and should be provided after MTS so as to minimise delays for initial triage.

- RAT is a process, not a place and should be implemented in EDs to improve the timeliness and quality of care and to support rapid initial Triage.

- The EMP will develop clinical protocols and staffing models to support RAT practice.

- The implementation of RAT should be customised by EDs according to service demand. EDs that fail to meet the 6-hour Total ED Time should look to Team RAT as a means of improving the timeliness and efficiency of patient care.

- ICT support should be provided to enable Time to FCI to be measured.

19.8   Access to Diagnostics

A patient's requirement for diagnostics may be determined at the time of RAT, entry into a condition-specific care pathway or when reviewed by an ED clinician. The Imaging requirements for ED patients and associated recommendations are outlined in Chapter 12. A full list of diagnostic tests commonly required for ED patient care is outlined in Appendix 11.

Laboratory testing is a key element of ED assessment. The EMP recommends that protocols should be developed within each hospital to ensure the judicious use of laboratory tests. Point of care testing (POCT) is used in some EDs. Rigorous quality control of POCT is needed. Further laboratory testing recommendations are outlined in Chapter 12.

19.9   Patient Waiting in EDs

19.9.1   Introduction

ED clinicians and hospitals have a duty of care to patients who may need to be accommodated in a waiting room area. Ideally, all patients should be able to access an assessment area on arrival and waiting room delays are *de facto* indicative of a demand/resource mismatch in the ED. The

amount of wasted waiting time for patients can by reduced by the front-loading of clinical investigations though Rapid Assessment and Treatment (RAT). Clinical sub-wait areas should be sufficient for patient flow through the ED.

19.9.2   Recommendations for Patient Care in ED Waiting Rooms

- Patients should not be required to wait in a waiting room but should be directed to the most appropriate clinical treatment area.
- Paediatric treatment areas, sub-wait areas and waiting rooms must be completely separate from the equivalent adult areas in EDs that see adult and paediatric patients. There should be no audio-visual connection between adult and paediatric areas in such units. The one exception may be where there is a paediatric bay in a resuscitation room, but if this is the case there should be the facility to screen this area from adjoining adult bays.
- Elderly patients should also ideally have audiovisual separation from other ED patients.
- Patients should have access to drinks and toilet facilities if waiting for ED treatment.
- Disabled facilities should be available.
- The waiting room should be a safe and pleasant environment for patients or relatives who need to be there.
- There should be clear procedures for relatives, carers or visitors to access patients in the ED, but the numbers of non-patients in an ED may need to be controlled.
- Security must be available to supervise the ED waiting room.
- There must be regular and clear communication with patients in the waiting room about waiting times.
- Health promotion information should be made available to patients in ED waiting rooms.

19.10   Patient Streaming

19.10.1   Background

Most EDs currently operate in states where demand exceeds capacity, where there are inadequate numbers of doctors, ANPs and nurses to provide immediate care to all patients on arrival and a persistent shortage of available treatment cubicles, often exacerbated by prolonged ED waiting times and inpatient overcrowding. The appropriate allocation of staff to patients prioritised according to the MTS often means that where there is demand from high-priority patients lower acuity patients can experience excessive waiting times; queues inevitably develop. Patient streaming and fast-track systems have been shown to be effective in reducing ED waiting times.[14,21] Fast-tracking may be undertaken without adverse effects on other patient groups in the ED (i.e. more critically ill patients) but its implementation is unlikely to be cost-neutral.[21] Further research is needed to identify optimal streaming systems.[21] A broad range of such systems is described in the literature. Each ED team should decide which systems are most likely to yield results in their setting and EDs should use the minimum number of streams to optimise the effective use of available resources. The most appropriate system in each ED may depend on the ED staffing resources and skill-mix, ED infrastructure, access to diagnostics, the existence of multidisciplinary condition-specific care pathways, the availability of alternative services (e.g. Rapid Access Clinics), casemix (e.g. adults or children, numbers of elderly patients). Streaming or segmentation is most effective during times of peak demand and analysis of patient arrival rates will identify the times when streaming is most likely to be required. Patients may be streamed according to:

- Manchester Triage Category;
- Rapid Assessment and Treatment (RAT) Protocols for "Red Flags" eg Acute Coronary Syndrome, Stroke etc.;
- whether patient is ambulatory or trolley-dependent (walking/not walking);
- condition-specific fast-track protocols: Fractured Neck of Femur; Mental Health Pathway;
- fast-track to ANP or ED GP services;
- streaming to alternative health services e.g. dentists, pharmacy, GP services;
- streaming according to a Complexity and Acuity Matrix.[27]

19.10.2   Complexity and Acuity Matrix

The following Complexity and Acuity Matrix was introduced in the John Hunter Emergency Department, New South Wales in 2006 as part of a clinical redesign project that improved ED performance.[27]

High Complexity / High Acuity: Patients requiring resuscitation

Low Complexity / High Acuity: Fast track for pain relief in otherwise healthy patients e.g. pain relief in uncomplicated fractures or suspected renal colic

High Complexity / Low Acuity: Relatively well patient with multiple co-morbidities or complex psychosocial problems

Low Complexity / Low Acuity: Uncomplicated musculo-skeletal injuries, simple wounds, etc.

Each ED team should decide whether this or a comparable complexity and acuity matrix is appropriate to use for patient streaming in their unit.

19.10.3   Recommendations for Patient Streaming

- The EMP recommends that EDs develop systems of patient streaming if analysis of service demand indicates that streaming is likely to be effective in improving ED efficiency. These systems should be audited and monitored to ensure patient safety.

- Simple streaming into pathways for patients who need trolleys and those who can walk around the ED to access care should be considered as a first approach to ED streaming.

- The EMP will develop condition-specific pathways of care to enable patient streaming. Existing care pathways identified through the Best Practice Workshops will be shared with other EDs.

- Staffing models developed by the EMP will support patient streaming and fast-tracking in EDs.

- Research is needed to determine the most cost-effective models of patient streaming and fast-tracking in the Irish healthcare system.

19.11 Patient Assessment by Treating Clinicians and the Multidisciplinary Team

The objective of patient assessment by a treating clinician is to deliver life-saving treatment and/or time-critical care to prevent disability or clinical deterioration. In addition, the EM clinician must determine the patient's ongoing care needs, if any. These may include inpatient care or a limited emergency care intervention, after which the patient can be safely discharged to the care of their GP; to self-care or have no further care needs.

The assessment of undifferentiated presentations is a key skill in EM and requires highly developed special clinical decision-making acumen.

19.12 Clinical Decision Making in EM

19.12.1 Background

The challenges inherent in clinical decision-making (CDM) in EM must be recognised and managed in the interest of patient safety in EDs.[28] The timeliness and appropriateness of ED clinical decisions are crucial to providing high-quality care. EM practice is characterised by:

- high decision density – many clinical decisions to be made within limited periods of time;
- high uncertainty levels and limited clinical information – patients may require resuscitation before the results of their blood tests or imaging are available;
- the variety of undifferentiated conditions that may present, requiring clinicians to have decision making skills across a broader spectrum of conditions than is necessary for most other medical specialists;
- a small window of time and focus – patients are assessed within hours, not days;
- time management issues;
- high levels of interruptions and multiple switching of tasks[29];
- resource limitations including over-reliance on doctors in training for service provision in Irish EDs.

Other factors influencing clinical decision-making in EM include:

- the behaviours and expectations of patients, their families and carers;
- societal factors and the healthcare system in which service users and service providers co-exist;

- the ED environment (adverse conditions such as overcrowding and noise have been associated with increased risk of clinical error[30]);

- clinicians, their knowledge (evidence-based, professional and life experience), professional craft (cognitive and procedural skills), reasoning ability and metacognition[31] (self-evaluation skills);

- EM clinicians' awareness of the types of decision-making they employ[31] and the potential for error associated with the different methods[32];

- the potential for human error. This is usually a symptom of systems failure and is only rarely the sole cause of an adverse outcome in patient management;

- responsible resource stewardship, which places limits on the time or resources that can be devoted to individual cases so that all patients receive a basic level of care and the clinical safety of the overall ED population is maximised[33];

- the need to adapt practice as new research supersedes previously accepted knowledge, new technologies provide alternative methods of clinical investigation and patient expectations evolve over time.

19.12.2   Recommendations for Improved Clinical Decision-Making in EM

- Decision-making tools will be easily accessible for ECN staff. These will include algorithms, clinical guidelines and care pathways. These materials protect against error by reducing reliance on memory, directing the appropriate use of clinical investigation and reducing inter-operator variability in patient management;

- Increased numbers of senior decision-makers in emergency care;

- The promotion of a culture within ECNs that supports good clinical decision-making;

- The inclusion of clinical decision-making in ECN educational activities, including the provision of formal and informal feedback provided to clinicians by their peers within an appropriate educational framework;

- The optimisation of ECN working environments to minimise interruptions and distractions.

19.13   Multidisciplinary EM Assessment

Patients with complex needs may require assessment by several members of the EM team. Multidisciplinary consultations should be requested and completed in as efficient a manner as possible. ED protocols may support the fast-tracking of selected patients for Therapy Professional or Medical Social Worker assessment prior to treating clinician assessment so that multidisciplinary consultation occurs in parallel with and not sequential to treating clinician assessment.

19.14   Measure of the Time to be Seen by a Treating Clinician

The treating clinician is a practitioner who can make the decision to discharge or admit the patient, therefore an EM doctor or an ANP. The EMP recommends that the Time Seen By a Treating Clinician (TSBTC) is a key milestone in the ED patient journey and should be monitored.

19.14.1   Rationale for TSBTC measures:

- The waiting time for an ED patient to see a treating clinician is a measure of patient access to ED care. Measurement of this component of Total ED Time reflects patient access to care provided by ED clinicians, as opposed to access to on-call specialty teams for patients who are subsequently admitted.
- The TSBTC has been found to be related to patient outcomes for admitted medical patients.[1]
- The TSBTC and the associated measure of Time to Disposition Decision measure ED patient care process efficiency.

19.15   Patient Handover between Emergency Medicine Clinicians

19.15.1   Background

EM clinicians work on a shift-basis and a number of patients may be still undergoing assessment (e.g. waiting for a CT scan) at the end of a doctor's shift. These patients must be handed over to a colleague clinician. Patient handover is recognised as a high-risk event in terms of patient safety. Miscommunication between clinicians and failure to inform nursing staff of patient handover and related issues may result in clinical error or delays for patients. Good time management by clinicians and efficient referral processes minimise the number of patients that need to be handed over at the end of a shift. Formal board rounds have been demonstrated to reduce this risk and to be of educational value in EM training.[34] End of shift rounds also provide an opportunity for clinical staff to report any operational problems during the shift.

19.15.2   Recommendations for Patient Handover within the Emergency Medicine Clinical Team

- Training in safe handover practice should be included in ECN educational activity.
- There should be standard ED protocols in regard to patient handover.
- All patient handovers should be documented.
- Formal board rounds or patient rounds involving medical, ANP and CNM staff and incorporating handover of care should be undertaken at a minimum at the end of night shifts and day shifts. There should be clear procedures for patient handover at the interface of staggered ED shifts.

19.16　　　Disposition Decision

19.16.1　Background

After completion of the EM assessment phase, a disposition decision will be taken. The disposition options may include, *inter alia*:

- inpatient admission;
- discharge of the patient from ED;
- transfer for care at another hospital or healthcare site;
- outpatient pathway of care with on-call specialty, regional specialty or Primary Care;
- deferred care (i.e. a patient is advised to attend at a designated future time).

The *Time of Disposition Decision* is equivalent to the *Decision to Admit Time* for patients who are subsequently admitted. A request for an inpatient bed should be made at this time. It is accepted that not all referred patients will be admitted but the numbers not subsequently admitted are likely to be small. Calling this time-point the "*Decision to Admit*" time has led to communications difficulties with on-call teams who may disagree with the decision to admit – the term disposition is appropriate to patients who are subsequently admitted or discharged. The number of patients referred for consultation should be monitored at departmental level as rates may reflect levels and methods of access to outpatient care pathways such as rapid access clinics, home care, chronic disease management teams etc. The number of patients referred for consultation only who are subsequently admitted and the proportion of patients referred for admission but not subsequently admitted should be monitored at departmental level. These data will provide valuable feedback to treating clinicians.

19.16.2　Measure of Time to Disposition Decision

This is the time interval from Arrival Time to the time when the treating clinician decides on a patient's further management. The *Disposition Decision* time is the same as *Decision to Admit* time for patients who are subsequently admitted. It should be recorded for all ED patients by the clinician making the disposition decision. It signals the end of the EM assessment process but EM clinical management may continue beyond this point. It is very difficult to capture this measure in a consistent and reliable manner in EDs that do not have appropriate EDISs.

19.16.2.1 Rationale for the Time to Disposition Decision (TTDD) measure

- ED Arrival Time to TTDD is a measure of ED patient care process efficiency. It is a combination of Arrival Time to Time Seen by a Treating Clinician and the time taken by the clinician to review the results of clinical investigations, administer and review the outcome any emergency treatment delivered and to make a clinical decision regarding ongoing patient care. This may reflect access to diagnostics, multidisciplinary consultations and other components of ED patient care.

- TTDD should be within 3 hours for patients who are likely to require admission, in keeping with the 3:2:1 approach for the 6-hour standard.

19.17   Emergency Medicine Discharge and Emergency Department Departure

19.17.1   EM Discharge

Patients whose disposition decision is that they should be discharged to GP-care or self-care may progress rapidly to discharge from the ED. Clinicians may need to complete follow-up arrangements and generate discharge communication with the patient's GP. GPs should receive notification of the attendance of their patient at an ED, irrespective of whether they referred the patient or the patient self-presented. The time at which all EM care processes for a patient are completed should be logged by the discharging clinician as the EM Discharge Time on the EDIS.

EDs with good access to structured clinical pathways as alternatives to hospital admission may refer significant numbers of patients directly to outpatient care from the ED without the need for consultation with or referral to inpatient specialty teams. These referrals must always be notified to the patient's GP.

19.17.2   EM Discharge Options

Discharge and follow-up options may include, *inter alia*:

- admission to specialty ward;

- admission to CDU;

- admission to Acute Medicine Unit;

- admission to ICU/HDU;

- transfer to Coronary Revascularisation suite;

- transfer to Interventional Radiology suite;

- transfer to Operating Theatre;

- admission to psychiatry unit;

- discharge/transfer to other hospital;

- discharge/transfer to paediatric hospital;

- transfer to network ED/CDU;

- discharge to Primary Care;

- discharge home to self-care;

- discharge to nursing home;

- discharge to Garda custody;

- discharge and referral to routine OPD clinic;

- discharge and referral to Rapid Access Clinic, including Fracture Clinics;

- discharge to outpatient home anti-biotic care (e.g. OPAT);

- discharge and referral for ED review/scheduled return/deferred care;

- discharge to Community Intervention Team;

- discharge and referral to attend Public Health Nurse /Integrated Service Area clinic;

- left before completion of treatment or against medical advice;

- discharge to other place/service not specified;

- brought in dead;

- died in ED.

19.17.3 ED Departure

Patients may have completed their episode of EM care but may be delayed in the ED either waiting for assessment by an admitting team, waiting for transfer to an inpatient bed or waiting for transport home. If this delay occurs, it should be captured by the discharging nurse recording the time of ED departure when the patient physically leaves the ED. The Time of ED departure is the end point for the Total ED Time measure and related KPI.

19.17.4 Recommendations for Patient Discharge and Departure

- All patients should have an appropriate brief discharge summary sent to their GP;
- The EMP will develop a template for ED discharge summaries in collaboration with the DCSP Primary Care Programme;
- The time of EM discharge and the time of ED departure should be recorded for all patients;
- Follow-up care arrangements for all patients should be recorded in the patient's ED records/EDIS;
- Standard NECS datasets will include follow-up arrangements for ED patients;
- Patients should be provided with self-care information as part of the discharge process (e.g. head injury advice).

19.18   Referral for Non-Emergency Medicine Specialty Admission

19.18.1   Background

Delays in patient access to non-EM specialty teams has have the potential to contribute to increased waiting times for ED patients, ED congestion and may have an adverse effect on patient outcomes. It is Delays are a patient safety issue. Patients who are referred for admission should be seen by admitting teams within a timeframe appropriate to their clinical priority and not exceeding the 3:2:1 guidance. On-call admitting teams must not have conflicting demands on their time, such as outpatient clinics to attend, when they are on call and are required to be available to the ED.

19.18.2   Communication and Referral Protocols

Communication between referring and admitting teams is recognised to be a high-risk area in terms of patient safety as poor quality communication can lead to adverse patient outcomes. It is a key area for training in emergency care. The number of patient handovers in any system of care should be minimised. There should be clear protocols in each hospital governing referral practices from the ED. These should include:

- means of contacting on-call teams;
- issues relating to the referral of patients to more than one on-call team if shared care is needed to deal with co-morbidities or multi-system presentations;
- policies for the onward referral of patients should the first team to whom the patient is referred determine, on the basis of their examination of the patient, that an alternative clinical team would be more appropriate to the patient's needs (the patient should not be referred back to the EM team as this practice results in avoidable duplication of work and potential delay for the patient);
- clarity in each hospital about referral pathways for patients who present with conditions that may fall within the clinical remit of more than one specialty and that may be referred to different specialty teams depending on historical local practice and the on-site specialty services in each hospital. Patients who present with such conditions must not be disadvantaged in their access to care as a result of unclear or inconsistent referral practices (the conditions that commonly cause referral problems include cellulitis, pancreatitis, low acuity gastro-intestinal bleeding and pubic ramus fractures);

- clear arrangements for transition of care between EM and on-call teams. For simplicity, this should occur at the time of telephone communication to the on call team;

Any problems relating to referral processes should be brought to the attention of Consultants in EM and on-call specialties at the earliest opportunity to protect patient safety and avoid delays for patients.

19.18.3   Time seen by Admitting or Consulting Team

The time a patient is seen by an admitting team doctor should be recorded in the patient's clinical notes and on the EDIS. The waiting time for a patient from the time of disposition decision to the time seen by an admitting or consulting team is a key access measure.

19.18.4   Recommendations for Referral for Non-EM Specialty Admission

- Patients who are referred for admission should be transferred directly to an inpatient bed for review by the admitting team, whenever a bed is available. This transfer should occur on the basis of protocols and the admitting Consultant-on-call or their delegate should be informed of all such admissions before the patient leaves the ED.

- The EMP recommends that all referred patients should be examined by a senior decision-maker from an on-call team within one hour of referral or sooner in specified circumstances. This is consistent with the standard set by the Acute Medicine Programme. Some critically ill or injured patients will require on-call teams to be on standby in the ED prior to patient arrival or to respond immediately to contact by the ED team.

- If the assessment occurs in the ED, admitting teams should complete their assessment of referred patients within 2 hours of referral or sooner, according to the 3:2:1 rule.

- There should be service-level-agreements between the EM and on-call specialty teams that indicate expected on-call team response times.

- The clinical risks associated with patient hand-over and referral should be recognised and addressed through protocols and training.

- Duplication of clinical documentation around the referral process should be avoided, for example through the use of shared notes, integrated pathways and proformas.

- The ED nurse responsible for the patient's care should document the time the patient is seen by an on-call team or check that the on-call doctor has completed this time stamp on the EDIS.

19.18.5   Referral for Non-EM Specialty Consultation

In a small number situations where the EM team assesses that inpatient admission is not needed, patients may be referred from EM teams for consultation with the non-EM specialty teams to determine the most appropriate follow-up care arrangements. The number of such referrals will decrease over time with improved clinical pathways, availability of Rapid Access Clinics and increased seniority of the EM clinical team.

19.19   Patient Care Processes in an ECN Local Injury Unit

19.19.1   Background

ECN LIUs serve patients with non-life-threatening and non-limb-threatening injuries. Patient care processes and pathways are therefore relatively more straightforward than those applied in EDs. Ambulance patients will not attend LIUs so the Ambulance Patient Handover Time KPI will not apply in this setting. The Total ED Time standard and the proportion of patients leaving before completion of treatment should be monitored in LIUs.

19.19.2   Patient Arrival

Patients may decide themselves to attend an LIU or may be referred by a GP or another healthcare provider. Patients arriving at LIUs will go firstly to a registration desk where a member of the LIU administration team will undertake patient registration. The receptionist will immediately inform an LIU clinician if the patient's self-reported presenting complaint is outwith the LIU protocol or if s/he has concerns for the patient's well being. If the patient's care needs cannot be met in the LIU they will be transferred to the ECN hub hospital or retrieved, as appropriate. Resuscitation equipment will be available in all LIUs and staff will be appropriately trained to care for patients who may present with or develop unexpected medical emergencies. Manchester triage will not be formally undertaken on LIU patients as higher acuity patients will not be expected to attend. Prolonged patient delays are not anticipated in this setting. Formal streaming of patients will not be necessary.

19.19.3   Patient Assessment

The same standards of care apply in EDs and LIUs. There should be complete audiovisual separation of adult and paediatric patients in LIUs that see children. Disabled facilities should be

available. Patients may be examined by ANPs or Doctors depending on their presenting complaints. The times from Patient Arrival to Time Seen By a Treating Clinician and the Time of Disposition Decision and Patient Departure will be monitored as process measures in LIUs. Nurses will undertake essential nursing care and support ANPs and Doctors in undertaking necessary procedures. Healthcare attendants may also contribute to patient care and these or portering staff will assist with patient movement to and from X-ray units and through the LIU. Patients may require assessment by on-site Therapy Professionals and or Medical Social Workers. There needs to be continuous access to on-site plain X-ray imaging to minimise delays for patients. X-ray reporting by Consultant Radiologists may occur on-site or via electronic links.

19.19.4   Patient Discharge

Patients may be suitable for discharge to self-care or GP care or may need to be transferred to other hospitals for ongoing care (e.g. fracture fixation) or to follow-up at outpatient clinics on-site or in designated ECN hospitals. There must be protocols to govern the transfer of care and OPD referral to optimize the efficiency of these processes. Discharge letters for patients' GPs will be generated for all LIU patients and patient self-care advice information will be made available.

Recommendations:

The 6-hour Total ED Time Standard:

- Key Performance Indicators are necessary to drive quality improvement in EC. The key access KPIs are:
  - Episodes of EM care should be completed within 6 hours.
  - Ambulance-borne patients should be handed over to EM staff within 20 minutes.
  - Fewer than 5% of patients should leave an ED before completion of treatment.
- A 3:2:1 approach should be adopted for patients who are referred for admission: three hours for completion of EM assessment, a maximum of two hours for assessment by admitting teams and one hour for transfer to a hospital bed.
- ED Information Systems should be developed to facilitate measurement of ED processing times and support the delivery of high-quality care.

Triage:

- Patient registration should take place before or at the same time as triage.
- Patients should be able to access treatment cubicles on arrival and bedside triage and registration should be provided.
- There should be standardisation of a minimum dataset for patient registration.
- The Manchester Triage System is the recommended triage system for the NECS.
- An Irish Children's Triage System will be developed.
- EMP Clinical Guidelines for Pain Management in the ED will direct pain assessment at triage.
- All patients will undergo Infection Protection and Control Assessment at Triage.
- Rapid Assessment and Treatment (RAT) protocols should be implemented in EDs to improve the timeliness and quality of care.

Patient Streaming:

- Patient streaming and fast-tracking systems should be implemented to improve ED efficiency.

- Research should be undertaken to determine the most cost-effective models of patient streaming and fast-tracking in this healthcare system.

- All patients who need it should have access to care provided by the Therapy Professions and Medical Social Workers. Multidisciplinary assessment is particularly valuable in supporting the safe discharge of patients with complex care needs.

Clinical Decision Making:

- Clinical decision making in EM will be enhanced through increased awareness, training and the dissemination of decision-making support tools including patient care algorithms, clinical guidelines and care pathways.

Transitions of Care:

- Protocols should be developed in all hospitals to allow patients who are referred for admission to be transferred directly to an inpatient bed for review by the admitting team, whenever a bed is available. This transfer should occur on the basis of protocols and the admitting Consultant-on-call or their delegate should be informed of all such admissions before the patient leaves the ED.

- All referred patients should be examined by a senior decision maker from an on-call team within one hour of referral if not sooner, depending on clinical acuity. This is consistent with the standard set by the National Acute Medicine Programme. Assessments should be completed within two hours of referral.

- The clinical risks associated with patient hand-over and referral should be recognised and addressed through protocols and training.

- Duplication of clinical documentation around the referral process should be avoided. A general protocol will be developed to govern inter-specialty documentation.

- Practice with regard to referral for admission or consultation should be monitored at departmental level. This will include the number of patients referred for admission subsequently discharged by on-call teams and the proportion of patients referred for consultation that are subsequently admitted.

- Condition-specific or inter-specialty care pathways should be developed to support the direct referral of patients to rapid access clinics from ED without the direct involvement of specialty teams.

Local Injury Units

- Standard pathways of care should be used in all ECN LIUs.

Chapter Twenty

20. The Review Clinic

20.1   Introduction

It is the norm for a patient to attend the ED once for treatment of their emergency. However, traditionally somewhere between 5-10% of the annual attendance at many EDs is brought back for a scheduled further review. Despite this relatively large cohort of patients and the workload involved in their care, there is surprisingly little published research into review clinics.

The reasons for the existence of review clinics include:

- being easier to diagnose the full extent of certain acute injuries a few days later, whilst maintaining safe practice and reducing demand for Diagnostic Imaging;

- being perceived as a safety net for patients who did not need to be admitted but for whom junior medical staff may have had diagnostic or management difficulties during times when they were working without direct Consultant supervision, as happens in some units;

- providing a facility for the review of patients in whom a need for further review has become evident after ED discharge (e.g. queries raised by a Radiologist's report);

- senior ED staff having a particular expertise in certain conditions that makes it appropriate for them to be the ones to review these patients.

Other, less positive, reasons include:

- the perception that "*there is nowhere else for the patient to go*" because of lack of access to alternative follow-up services (e.g. Plastic Surgery, Musculoskeletal Injury or Trauma Clinics or Community Care/Public Health Nurse Dressing Clinics);

- GP practice charges for procedures such as removal of sutures or follow-up appointments serving as a financial disincentive to GP follow-up for many patients, whereas there is (appropriately) no additional charge for the review clinic attendance.

20.2 Governance and Operational Issues

- The Consultant in EM is responsible for the clinical governance of all EM scheduled review activity that occurs within an ECN.

- Review clinic activity is always of secondary priority to the immediate management of new ED patient presentations.

- Review clinics should be scheduled for the least busy times in the ED day (usually the early morning).

- Review clinic activity should be recorded, monitored and frequently audited to ensure the quality, safety and cost-effectiveness of the care provided.

- Risk management issues identified during review clinics must be addressed.

- Alternative pathways of care to EM review should be developed where appropriate.

- The number of review appointments that each patient requires should be kept to a minimum.

- Patients should be discharged to the care of their GP as soon as appropriate.

- Senior staffing levels in EM should be enhanced to provide real-time senior opinion on complicated ambulatory presentations and to thus reduce the need for subsequent patient review.

20.3 Consultant-Led Review Clinics

There will remain a need for some patients to return to be seen by an experienced EM doctor, ideally a Consultant in EM. The number and type will vary within different EDs, in line with the pattern of service provision in the hospital and ECN in general and geographical considerations. Consequently, it may be that the Consultant is the only person providing the clinic, e.g. in an LIU, or that the Consultant reviews patients in conjunction with other practitioners e.g. a Physiotherapist.

20.4 Other Review Clinics

20.4.1 Advanced Nurse Practitioners Patient Review

ANPs may elect to review a carefully selected cohort of patients to determine the most appropriate ongoing pathway of care for these patients. ANPs must have referral rights to outpatient clinics,

including Plastic Surgery, Fracture and Trauma clinics, community dressing clinics and therapy clinics. Patient follow-up should not default to the ANP service.

20.4.2   Physiotherapy Review Clinics

The introduction of Physiotherapy-led soft tissue review clinics, operating in conjunction with or as a care-stream within ED review clinics in ECNs will provide specialist expertise in the management of patients with musculoskeletal conditions and thereby reduce the need for patient review by Consultants in EM. This is the current operational model in many centres in the UK and in some Irish EDs where musculoskeletal review clinics are managed by an experienced physiotherapist and physiotherapy treatment or onward referral to specialist services provided as appropriate. The need for these roles within ECNs will be considered depending on availability of resources and individual site needs. Protocols will be established to enable physiotherapists to refer to appropriate outpatient clinics and other therapy services. Physiotherapists, working in a review clinic context, can contribute to the training of Specialist Registrars in EM, ANPs and other clinicians in the management of patients with musculoskeletal presentations.

20.4.3   Hand Therapy Clinics

Many patients who present to the ED with hand injuries can be effectively managed by a Hand Therapist (Such practitioners may come from an OT or Physiotherapy background with particular additional training and expertise). This option reduces the risk of complications, duplication of service and the number of follow-up outpatient clinic visits required. Early access to Hand Therapy-led clinics ensures better outcomes for the patient[1] and can reduce the demand on Consultant in EM-provided patient review thus enabling Consultants to focus on their core work.[2] Expansion of Hand Therapy services is recommended within Emergency Care Networks following analysis of individual site needs. EM patients should be able to access this service through collaboration with Plastic Surgery and Orthopaedic outpatient services, under whose governance this service is most likely to be provided.

20.4.4   Dressing Clinics

Whereas it may be necessary to review a complicated wound in the initial stages of healing to determine the need for further intervention or onward referral, the ED is not an appropriate site for the ongoing or routine dressings of wounds. This is not an appropriate use of EM resources. Patients with surgical wounds and chronic skin ulcers should not be brought back to EDs for

dressings but should be cared for in outpatient dressing clinics, primary care and/or community care clinics.

20.5   Non-EM Patient Review

The ED should not be the location for the outpatient review of patients from any specialty other than EM. Ambulatory patients referred to specialist centres, who do not require emergency care, should not be seen in an ED, where they may draw on ED resources or contribute to ED overcrowding. Rapid access specialty clinics must be provided outside the ED.

Recommendations:

- Review clinic work should be recorded, monitored and audited.
- Alternative pathways of care should be developed to minimise the requirement for EM review clinics.
- The multidisciplinary team can effectively contribute to EM review activity.

Chapter Twenty-One

21. Patients with Particular Emergency Care Needs

21.1   Introduction

Some people have additional or particular care needs when they present to emergency services. These include:

- patients requiring palliative care;
- the relatives and friends of patients who die in the ED;
- patients with complex psycho-social problems;
  - homeless people;
  - people who frequently attend EDs;
  - people with alcohol and other substance dependency problems;
- people with intellectual disability;
- people with physical disability;
- people with language or communication problems;
- pregnant women;
- patients who allege rape or sexual assault.

21.2   Patients with Palliative Care Needs

The patient population with palliative care needs who present to the ED includes those patients with life-limiting conditions who experience crisis episodes related to their known diagnoses and those individuals with little or no prior medical history of note who present critically unwell to the ED and in whom interventional treatment fails. Both groups of patients commonly pose challenges to staff in terms of effective management of pain and symptom control issues, appropriate and timely decision-making, care planning and communication with patients and their families. Due to the complexity of their care requirements, the demands that this population place on the healthcare system are significant and it is important that their needs are addressed in an effective

manner. The EMP will work with the Palliative Care Programme to ensure that patients with life-limiting conditions and their families can easily access a level of palliative care service that is appropriate to their needs. This will involve strengthening specialist and general palliative care services with improved access and quality of care for patients who present to EDs. Clinical guidelines and shared care protocols will be developed and interface issues between services will be addressed.

21.2.1   Recommendations for Patients with Palliative Care Needs

- The EMP and Palliative Care Programme will work together to ensure that patients with life-limiting conditions and their families can easily access a level of palliative care that is appropriate to their needs.
- Clinical guidelines and care protocols will be developed to support the delivery of high-quality palliative care for patients who present to EDs.

21.3   Bereavement Care in the Emergency Department

Sudden death of a patient in the ED can be a difficult time for both relatives and staff. Dealing with unexpected death due to trauma or sudden medical illness is a core part of emergency care. The majority of ED deaths require notification to the Coroner's Office and ED staff need to be aware of best practice with regard to communication with the Coroner's Office and management of issues relating to Coroner's post-mortem examinations. Some EDs have access to dedicated Bereavement Care Social Workers to support families following sudden death. These experienced care givers may also provide support to ED staff in dealing with their personal reactions to experiences related to patient deaths in the ED.

21.3.1   Communication with the Bereaved

There is no standard reaction to sudden death. Staff need to be trained in how to communicate the gravity of the situation sensitively and the types of reaction to expect from the information they are giving. It is essential that the situation is dealt with in a culturally sensitive and non-confrontational manner. Breaking bad news is a key skill in emergency care and effective communication in this regard requires appropriate training and experience. The Hospice Friendly Hospitals Organisation has become involved in supporting EDs in providing appropriate

bereavement care. Its Quality Standards for End-of-Life Care in Hospitals[1] are applicable to the ED setting.

21.3.2   The Hospital

- Care After Death - policies and guidelines for care after death are respectful of the deceased person and his/her wishes and beliefs.
- Post-mortem Examination - the hospital manages all aspects of post-mortems in a transparent, timely and sensitive manner.
- Bereavement Care - the hospital provides assistance and support to families in dealing with loss during the period approaching and following a death.

21.3.3   The Patient

There is a need for timely, clear and sensitive communication with each person, as appropriate, in respect of a diagnosis that he/she may be approaching or at the end of life.

21.3.4   The Family

- Communication with family members: sudden/unexpected death or irreversible decline in health leading to death - the patient's family is provided with prompt and clear information in cases involving a sudden change in the patient's condition likely to lead to death and in cases of sudden/unexpected death.
- Supporting family members - family members are treated compassionately and are provided with practical assistance in dealing with different aspects of the life of a loved one.
- Responding to the needs of the family members after death - family members are treated with compassion and in a caring manner following the death of a loved one.

21.3.5   The Child and Family

- The Dying Child - the particular needs of a child whose death is imminent are provided for in a sensitive and culturally appropriate manner.
- Communication with the family in the event of a child's sudden/unexpected death or sudden irreversible decline in health leading to death.
- Responding to the needs of the family after the child's death - the family are supported in a compassionate and caring manner following the death of their child.

- Parents of a deceased baby are facilitated and supported in the aftermath of the baby's death.

- Miscarriage - supporting parents following early or late miscarriage.

21.3.6   Recommendations for Bereavement Care in the ED

- All ECN units should have policies to deal with death and bereavement in the ED.

- Training should be provided to staff in relation to bereavement care.

- Emergency care staff should be aware of legal issues in relation to their obligations as to when to contact the Coroner's Office.

- Emergency care staff should comply with best practice recommendations with regard to bereavement care and issues relating to post-mortem examinations and organ retention.

21.3.7   Resources

- The Health Services Intercultural Guide[2] published by HSE has guidelines on the care of deceased persons from all religious beliefs.

- A Code of Practice for Post-mortem Services is due to be published in 2012.

21.4   Patients with Particular Psychosocial Care Needs

21.4.1   Homeless Persons

The management of homeless persons throughout ECNs will be based on an agreed national strategy as reflected in the national policy documents *Homelessness, an Integrated Strategy 2000*[1], *Youth Homeless Strategy 2001*[2], and *The Way Home. A Strategy to Address Adult Homelessness 2008 – 2013.*[3]

Homeless people are more likely to die younger and be sicker than those who are non-homeless. They have mortality rates 3.5 to 4 times that of the housed population and have higher morbidity from both physical conditions that are common as well as those rarely found in the general population such as HIV, Hepatitis, Tuberculosis, etc. Despite the increased need for healthcare, homeless people have less access to healthcare with 45% not having a medical card. Due to the combination of poor health and lack of access to appropriate primary healthcare, they use secondary care services to a greater extent than the housed population. Rates of admission to acute hospitals vary from 2.7 to 7 times that of the general population while ED usage rates have been shown to be 2.6 to 5 times that of the general population.

The responsibility of EM staff is to identify the homeless person on attendance and, following completion of treatment, to liaise with the Medical Social Worker, who will then communicate with multidisciplinary teams in the community with a view to immediate provision of appropriate services on discharge.

The HSE provides funding to the Safetynet Primary Care Network for Homeless Health Services. Safetynet is a networking organisation providing clinical governance for nurses, doctors and voluntary agencies providing primary health care to homeless people living in Dublin, Cork and Galway cities. Currently Safetynet membership is comprised of doctors and nurses working in thirteen Dublin-based and two Cork-based homeless services. Clinical guidelines are being developed to allow safe management of common illnesses in the community, only directing patients to EDs when appropriate. The EMP will work with Safetynet to facilitate communication and safe governance of the homeless person at the community/ECN interface.

21.4.2   People Frequently Attending EDs

There is no consensus in the literature regarding the number of attendances that might be considered noteworthy and re-attendance rates vary between adult and paediatric EM patients. This is an area for future research. Patients who attend EDs frequently commonly have complex psychological, physical and/or social problems. Case-specific interventions involving medical social work, mental health and community services have been shown to have a positive impact in addressing the care needs of this patient group.

21.4.3   Alcohol Dependency and Substance Abuse

Patients who present to EDs with substance abuse or alcohol dependency problems have complex psychosocial healthcare needs, therefore an agreed national strategy is required that will support and standardise the approach to managing these groups of patients. Medical social workers make an invaluable contribution to the management of patients with dependencies who attend ED services. These patients are particularly prone to malnutrition. They are also at increased risk of injury and their co-morbidities adversely affect their clinical outcomes. The EMP will work with the Primary Care Programme, Psychiatry Programme and other stakeholders to improve the EM care of people with alcohol dependency and substance abuse problems.

21.5   The Emergency Care of Persons with Intellectual Disability

Patients with intellectual disability (ID) require considered treatment in the ED because:

- they may be unfamiliar with acute healthcare environment (being out of their comfort zone);

- they often cannot self-report illness;

- they may have communication and/or comprehension difficulties;

- they may have associated physical/sensory difficulties;

- their behavioural problems/behaviour may be challenging to manage in an ED setting;

- they may be at risk to self and others;

- staff in EDs may be unfamiliar with and are not specifically trained to deal with this patient group.

Reasons for increased demand for emergency services from this group include:

- this group are now living longer due to enhanced care over the years;

- persons with ID may have many co-morbidities;

- they also may have complex healthcare needs;

- many currently receive polypharmacy.

The specific educational preparation required by ED staff to help them provide best care for this patient group includes:

- the need to understand what Intellectual Disability is;

- the need to understand potential associated physical and behavioural problems;

- the need to understand what specific support patients require;

- exploration of effective communication methods for this group;

- understanding why and how to tailor assessment for these patients and have relevant tools available;

- awareness of who to contact for further information/advice/support;

- ensuring they are up to date on relevant legislation in relation to rights of person with ID.

Ultimately, there is a requirement for the availability of competent staff to care for this client group should they present to ED.

21.5.1   Examples of Good Practice

A number of initiatives have been employed in EDs and hospitals to make the ED experience effective and efficient and to minimise risk for this group. Several concepts have been explored and these are outlined below.

21.5.1.1   Patient passport

A concept developed in the NHS (Humber Mental Health Teaching NHS Trust) of a patient passport which provides crucial information about a person's everyday needs and wishes. It also specifies the person's primary diagnosis e.g. ID. The passport will hold enough detail to enable others to understand the person's needs at first contact and help the person to feel safe, comfortable and understood.

21.5.1.2   Acute needs assessment

The patient passport, where possible, should be used to inform the Acute Needs Assessment. The purpose of an acute needs assessment (developed in the same NHS trust) is to identify areas where the person with ID may be at risk, the level of additional support required to reduce this risk, who would most effectively provide this support and how this support would be delivered. The acute needs assessment would take place prior to (in the case of elective admission) or at the point/as soon as possible after admission as would be the case in the ED. It should be completed and agreed jointly between ID staff, carers and acute hospital staff.

21.5.1.3   A collaborative protocol

A further protocol developed in the NHS (Coventry & Warwickshire) to support care of patients with a learning disability when they access acute hospital services. It places the patient firmly at the centre of care. The goals of the protocol are to:
- enhance communication between patients, carers and healthcare professionals;
- ensure a high standard of care is provided;
- highlight issues of consent and advocacy;
- highlight resources available (assessment, planning, education and support);
- promote use of learning disability assessment scale.

The protocol also identifies various care pathways ID patients may take during their contact with the acute hospital to include emergency admission.

21.5.1.4   Acute hospital policy

The development of a *Policy for the admission to Hospital for Adults with Intellectual Disabilities* at Connolly Hospital, Dublin is an example of good practice that should be emulated across all acute hospitals. The policy aims to support hospital employees and standardise practice when patients with an ID are referred for admission and/or treatment. One section of the policy is dedicated to emergency admission, detailing care from presentation through Triage to ED departure (admission or discharge). It also presents best practice principles for communication and includes a Health Communication Book that is similar to the patient passport discussed earlier.

21.5.2   Recommendations:

- ECNs and local ID patient services should collaborate to develop policies, procedures and guidelines for the care of ID patients who require emergency care and to provide training for ECN staff in the emergency care of patients with ID.
- The availability of resources and links (staff and advice) within and outside the organisation when a person with ID presents to ED needs to be identified for each ECN.

21.6   People with Physical Disability

The infrastructure of each facility in the ECN must meet the needs of patients with a physical disability thus ensuring they are cared for in a safe environment.[6] ED infrastructure should also accommodate patients' family members, carers, ED staff and other hospital staff who have physical disability. Resources relating to disability issues are listed in the References and Resources section of this report. Physiotherapy, occupational therapy or medical social work assessment are more likely to be required by people with disability so as to facilitate their safe discharge.

21.7   People with Language or Communication Problems

Excellent communication is essential to the successful interaction with all patients and their families attending ECN units. Clear information is required on access routes to the hospital, therefore effective road and hospital signage detailing the type of ECN unit is essential. Communication barriers that can impede successful interaction include:

- literacy difficulties;
- not speaking the same language;

- communication barriers in the environment, including poor signage and a noisy environment;

- the inability to access and/or use services or equipment;

- physical disability restricting communication e.g. difficulties with writing;

- a visual or hearing impairment;

- a lack of ability to concentrate and focus on communication.

Patients may present to the ECN with one or a variety of the above barriers to effective communication. Resources to assist with removing and reducing language and communication barriers are listed in the References and Resources section of this report. Speech and Language Therapists can also provide assistance with reducing communication barriers as outlined in Chapter 16. Where a patient doesn't have adequate English skills, the HSE recommends the use of professional interpreting services for clinical examinations or obtaining consent to ensure patient confidentiality. Family, friends and multilingual staff may be used for more basic interpreting such as whether the patient requires analgesia but this may not be appropriate in all circumstances. Patient advice or information leaflets should be provided in the common languages of patients presenting to the ECN.

21.8   Pregnant Women

The Emergency Medicine Programme (EMP) and the Obstetrics and Gynaecology Programme will establish national protocols to ensure the safe management of pregnant women presenting to Emergency Care Network (ECN) facilities. It is envisaged that each ECN facility will have a link to an obstetric service. Key care areas requiring protocols include:

- non-pregnancy-related illness in the pregnant woman;

- the management of Major Trauma in pregnancy;

- early pregnancy conditions, including;

  - treating life-threatening emergency i.e. ectopic pregnancy;

  - threatened miscarriage;

- gestational problems such as hypertension, hyperemesis, blood sugar control, seizures;

- early labour;

- imminent delivery;

- the patient presenting to a facility without on-site obstetric services;

- emergency Caesarean section in a facility without on-site obstetric services;

- postpartum haemorrhage presenting to a facility without on-site obstetric services;

- transfer of mother and child to an obstetric unit;
- stillbirth in a facility without on-site obstetric services;
- concealed pregnancy.

21.9   Management of Alleged Rape or Sexual Assault in the ED

Women, men or children may present to an ED alleging rape or sexual assault. ED staff must consider the physical, psychological and legal issues involved and should be aware of the role of the ED as outlined in the National Guidelines *Recent Rape/Sexual Assault: National Guidelines on Referral and Forensic Clinical Examination in Ireland, 2nd edition* 2010.[7]

- ED staff aim to provide the highest quality service to these patients in a sensitive, appropriate and non-judgemental way.
- The ED focus is always on the safety, physical and psychological needs of patients and their right to privacy and confidentiality.
- The patient's informed decisions must be respected at every stage of their journey in the ED.
- All staff should promote and encourage the patient's sense of personal control.
- Detailed medical records should be completed as they may be required as evidence in a subsequent criminal investigation.
- Children First reporting requirements should be followed for patients under 18 years of age.

Guidance on the management of alleged sexual assault in children is outside the scope of this document and clinicians are advised to seek expert advice in this regard. The following comments relate primarily to adult patients.

21.9.1   Triage

All patients should be triaged and briefly assessed for life-threatening injuries. Injuries and medical conditions requiring immediate attention must take priority. The Consultant in Emergency Medicine should be informed of all such cases at the time of attendance and experienced ED doctors should assess these patients.

21.9.2   Legal and Forensic Issues

A patient's consent should be sought for An Garda Siochána (AGS) to be contacted if not already involved. AGS should be contacted as early as possible once the patient has given consent. It is

important that forensic evidence is preserved (according to the national guidelines) and that forensic and legal procedures are adhered to.

21.9.3 Liaison with Sexual Assault Treatment Units

ED staff should liaise with their nearest appropriate SATU and with the consent of the patient organise transfer of the patient for SATU care, as soon as clinically appropriate. Forensic examination should, ideally, be undertaken in a SATU setting. Patients who do not wish to report the incident to AGS should still be encouraged to consent to referral to a SATU for a health-check. Patients who refuse AGS, SATU or Rape Crisis Centre care should be provided with a health-check and psychological support through the ED, the hospital and their GP. This may involve the Gynaecology on-call team, Infectious Disease service, the patient's GP (with their consent) and hospital social workers. Priorities should include reducing the risk of pregnancy, reducing the risk of transmission of blood borne viruses (Hepatitis B immunisation and HIV Post-exposure prophylaxis post Sexual Exposure), reducing the risk of other sexually transmitted diseases and ensuring psychological support. Detailed clinical records should be kept in case the patient subsequently decides to report the incident to AGS.

21.9.4 Recommendation of the Management of Alleged Rape or Sexual Assault in the ED

- Every ED should have a standard operating procedure or policy for the management of patients who allege rape/sexual assault that is consistent with current national guidelines: *Recent Rape/Sexual Assault: National Guidelines on Referral and Forensic Clinical Examination in Ireland, 2nd edition,* 2010.

Chapter Twenty-Two

22. Emergency Medicine Programme Measures and Value in Emergency Care

22.1   Emergency Medicine Programme Measures

The development of a NECS requires a standardised approach to the measurement of EC workload, efficiency and patient outcomes. The EMP considers that standardised measures are necessary to:

- support a culture of continuous quality improvement;
- understand activity and performance across the emergency care system;
- provide data on which Key Performance Indicators can be constructed as a basis for performance improvement;
- support clinical audit;
- explain variance between units;
- support capacity management;
- ensure the cost-effectiveness of units;
- inform service planning;
- support research.

The EMP has attempted to ensure that its measures:

- are clearly defined;
- are easily measurable across the entire process of care;
- reflect patient care;
- are valid, accurate and reliable;
- are measured across standard time frames (not calendar months);
- will be interpreted in the context of quality of care indicators;
- are not considered an end in themselves;
- do not distort clinical practice;
- are minimally amenable to gaming;
- do not require excessive resources to measure;
- are amenable to recording by EDISs.

22.2 Types of Measures

The EMP requires the following measures:

- EM Activity Measures;
- EM Process Measures;
- Acuity and Casemix Measures;
- Patient Outcome Measures and KPIs;
- Measures of Value in EM.

22.2.1 Activity Measures

The definitions of EM activity will ensure that data can be collected in a standardised manner and is potentially comparable between units. They include basic definitions of EC cohorts of patients (e.g. Paediatric Attendances, New Patient Attendances). The data will help characterise demand on each ED, will support appropriate benchmarking of similar units minimising the risk of "apples and oranges" comparisons and will allow units to monitor changes in their workload over time. The activity measures are outlined in Appendix 17.

22.2.2 Process Measures

The data from these measures reflects time points in the care of patients moving through the ED. They have been outlined in conjunction with the EM Patient Pathway in Chapter 19 and are detailed in Appendix 18. Process measures should occur at each key step across the entire patient pathway to ensure a balanced set of measures is obtained. Without comprehensive and balanced measures, inadvertent distortion of practice may occur, with part of the system playing off another (e.g. delaying ambulance handover to prevent the clock starting for ED total time or moving patients out of ED to inappropriate clinical areas to meet the six hour target).

It is not sufficient for measures to be limited to EDs. Measures of efficiency should extend throughout the hospital from admission to discharge, because we know that the efficiency of an ED depends, to a significant extent, on the efficiency of the later stages in a patient's pathway of care. For example, delays to community care may delay hospital discharge and contribute to ED overcrowding and process delays. Service provider accountability must stretch from the patient's first contact with the emergency system to their discharge to home or community-based care.

22.2.3   Reporting

Data reporting will occur within the governance framework of the NECS. At ED/ECN unit and hospital level detailed reports will be available for data-driven COG meetings to fuel continuous quality improvement activity. It is crucial that ED and hospital governance teams review and sign off on local data so that there is agreement around the validity of all process data. Detailed local-level data will demonstrate progress towards targets and ongoing improvement even after target compliance is achieved. Detailed data will also allow close analysis of any problems or unexpected variance when compared to national norms.

The EMP will produce templates for data reporting at ECN and NCES SG level. It will work to develop ICT solutions to enable data acquisition and analysis.

22.3   Key Performance Indicators

Key Performance Indicators (KPIs) help an organisation define and measure progress toward organisational goals. [1,2] Such indicators can have many purposes ranging from informing patients of the quality of service they can expect from their local hospital[1] to allowing those responsible for the delivery of healthcare to evaluate the effectiveness of resource allocation.[1,3] The Health Information and Quality Authority has developed guidance on the use of KPIs in the Irish healthcare system.[4]

The Donabedian model for quality assurance in healthcare[5] based on structure, process and outcome, which are causally linked, provides a framework for the application of measures and KPIs in emergency care. Structure is defined as the human, physical and financial resources available to provide health care. Process is defined as the care or health service provided to the patient. Outcome is defined as the resulting effect on the health care of the patient or population. Outcome indicators are rare in Emergency Medicine.[1] Most EM outcomes are achieved through the combined efforts of many specialties and services.

The Delphi Consensus method has been used for the development of EM KPIs in the UK[1] and Canada.[6] A group of EM clinicians, drawn from the IAEM and the National Board in Ireland of the College of Emergency Medicine recently developed a study based on the Delphi method to develop a suite of KPIs for use in EM in Ireland. The Delphi method allows for the exploration of ideas and the formation of an informed group judgment.[7] It is based on a structured process for collecting information about a problem from a panel of experts, analysing that information and providing

feedback results over two or three rounds until consensus is achieved.[8] The Irish EM Delphi project has completed three rounds of feedback on proposed KPIs that were derived initially from an extensive literature review and is currently in preparation for publication. The EMP will draw upon this invaluable research to develop current and future KPIs for Irish EM.

22.3.1   Access Key Performance Indicators

Process and activity definitions and measures will provide the data on which access KPIs are based. The EMP will promote four key KPIs, in addition to clinical KPIs that are currently in development.

- Ambulance Handover Times: 95% < 20 minutes
- Total ED Time: 95% < 6 hours (and no patient waits > 9 hours)
- Left without completion of treatment: < 5% of new patient attendances
- CDU length of stay: 95% < 24 hours

There will be no clinical exceptions to these targets. The Access KPIs are outlined in Appendix 19. Few current EDs have ICT infrastructure to allow measurement of the entire set of measures. In the longer-term, a national ICT system should be introduced to enable real-time collection of the process measures. It is likely that there will be data gaps until such time as this resource is provided. A standard minimum data-set for EDIS will be developed which will include demographic data, casemix and acuity measures, ICD10 diagnostic coding and other data relevant to the NECS.

22.3.2   Clinical Key Performance Indicators

A suite of clinical KPIs will be derived from the EMP clinical guidelines and recommendations from the IAEM/INBCEM Delphi project. KPIs from other national programmes will be co-implemented by the EMP in the emergency care setting. ICT development will be required to support the collection of clinical data to support these KPIs.

22.4   Acuity and Casemix Measures

Currently there are no reproducible quantitative or qualitative national measures of ED performance or activity beyond those related to patient attendances and the duration of ED care. Triage category data are often used as a surrogate marker of ED quanta of patient 'sickness' or resource utilization but these are prone to inaccuracy and lack reproducibility. There is no accurate way therefore to benchmark performance between EDs or determine value for money.

The only current measure of casemix and performance in Irish hospitals is via HIPE data[9] which unfortunately only captures inpatient activity and precludes ED activity even where inpatients are boarding within EDs and consuming ED resources. Other health-systems utilize varying methods of retrospectively measuring ED acuity, which in turn allows proper analysis and comparison of ED performance. The USA, perhaps due to its healthcare being funded on a private individual patient insurance basis, has highly evolved US Billing Codes[10] based on the intensity of patient interventions (Low, Mid, High and Critical), resources consumed (staff time, staff grade and interventions), and diagnostic coding ICD-10.[11] The Agency for Healthcare Quality & Research (AHQR)[12] collates this data nationally to produce an ED Cohort Scheme (Low and High Acuity ED designation) and determines defined elements of Emergency Service Units (ECGs per 100 patients seen, CT/MRI/US per 100 patients seen) as well as ED boarding loads to allow benchmarking of EDs.

The NHS utilizes A&E (sic) Clinical Codes, which are completed at the end of a patient episode, recording diagnosis (ICD-10), interventions and treatment by means of individual numerical number codes (OPCS-4.5, Office of Population, Censuses and Surveys Classification of Surgical Operations and Procedures (4th revision)[13] or (SNOMED-CT Systematized Nomenclature of Medicine - Clinical Terms).[14] This again allows audit and benchmarking with allocation of resources in an effective fashion.

The EMP intends to develop a national measure of ED acuity in order to determine resource allocation in an equitable and effective manner. This will also ensure clinical justice for patients and allow an assessment of value and efficient practice across networks. It will be highly relevant to the development of staffing models for the NECS. Pilot sites will be identified to undertake research and development of a simple and reproducible acuity measurement tool appropriate for all EMP networks. ICT resources will be required to facilitate these projects.

22.5 Value in Emergency Care

22.5.1 Background

Value in healthcare can be defined as patient outcomes per unit of spending.[15] If value improves, patients and healthcare providers benefit, while the economic sustainability of the healthcare system increases.[15] Defining patient outcomes is challenging and multiple outcomes including those most relevant to patients should be measured. In EC, patient waiting time is clearly an important outcome from the patient's perspective but it is only one of the ranges of patient outcomes that the NECS must monitor to assure ongoing quality improvement and value for money.

The *Comptroller and Auditor General Special Report, Emergency Departments,* November 2009[16] estimated that the direct costs of ED care in 2008 was €196 million (excluding hospital overheads and services) with pay costs accounting for €164 million of this sum. The Report also noted considerable variance in the cost of ED care between units ranging from €85 to €281 per patient. A number of factors that would allow more accurate and consistent costing were identified and the Report recommended that the HSE review the accuracy of its cost capture systems and design an overhead allocation model. It also recommended that the fixed and variable costs should be identified and that the boundary between hospital and ED costs should be identified. Casemix, ED patient age profiles, streaming systems and the provision of CDU-type activity should also be considered in future costing methods.

ED funding is currently derived from the annual block funding allocation to hospitals. The EMP proposes that future EC funding systems should allocate funding based on service activity and the quality of care provided. This will ensure a more transparent and consistent method of resource allocation and it will be essential to incentivise the development of high- quality, cost-effective EC services. It will also enable the reallocation of spending within the NECS where appropriate. The EMP will encourage a greater awareness of cost effectiveness among all EC staff and will emphasise the importance of effective resource utilisation and the minimisation of waste at all levels within the NECS.

22.5.2 Bed Day Savings

Savings will be delivered through reductions in admission rates and inpatient length of stay. These outcomes will be achieved through a combination of improvements implemented by the EMP and

by related acute care programmes (e.g. the Acute Medicine and Medicine for the Elderly programmes).

Recommendations:

- The Programme will introduce a comprehensive suite of measures and Key Performance Indicators for Emergency Care. These will include access and quality of care KPIs.
- The EMP will advance the development of cost-measurement and resource allocation systems to enable the cost-effectiveness of emergency care to be measured and improved.
- The EMP will standardise care to assist in reducing variance in ED patient costs that was identified in the *Comptroller and Auditor General Special Report, Emergency Departments,* November 2009.
- The EMP will develop activity definitions and acuity and casemix measures to enable benchmarking of ED workloads and appropriate resource allocation.

Chapter Twenty-Three

23. Emergency Medicine Programme Outcomes

This chapter outlines how the impact of the EMP will be measured so that improvements achieved can be monitored, sustained and progressed over time. The Programme's measures are presented in terms of its objectives relating to the quality, access and value in emergency care.

23.1 Develop Models of Care to Improve Patient Access to High-Quality Emergency Care

23.1.1 The National Emergency Care System

Define a National Emergency Care System comprised of networks of EDs fully integrated with pre-hospital and hospital-based services, ensuring a standardised approach to the delivery of high-quality emergency care.

Indicators:

- Number of EDs operating within and contributing to ECNs.
- Number of ECNs in the NECS.

23.1.2 Patient Access to Consultant-provided care

Increase patient access to Consultant-provided care through increased Consultant numbers and expanded hours of Consultant presence in EDs.

Indicators:

- Hours of Consultant presence in EDs.
- Number of patients receiving direct care from Consultants (when ICT system allows).

23.1.3 Governance

Implement and sustain new clinical governance structures.

Indicators:

- Establishment of NECS Steering Group.

- Number of EDs with established CO groups that meet monthly.

- Number of EDs with nominated Lead Consultant for EMP Implementation.

- Number of ECN CO groups reporting to EMP Operational Group.

23.1.4   Workforce Model

Develop expanded roles for all members of the ED multidisciplinary team. This will include nursing staff, Advanced Nurse Practitioners, Therapy Professionals, Medical Social Workers and other ED staff groups. It will also include a detailed medical workforce plan for Emergency Medicine.
Indicators:

- Progress in regard to ED staffing against staffing baseline identified by EMP staffing survey 2010.

- Adoption of expanded roles by multidisciplinary staff members as reported to ED/ECN COG meetings.

- Completion of a medical workforce plan for EM.

23.1.5   The Emergency Medicine and Primary Care Interface

Develop new roles for GPs to work in EDs and enhance links with Primary Care.
Indicators:

- Number of new GP sessional posts implemented in ECNs.

- Development of training collaborative between EM and ICGP.

External dependencies:

- Agreement by stakeholders and resourcing of GP sessions.

- Interface of specialty training bodies in regard to GP and EM training.

23.1.6   Coordinated Implementation of the EM and Related Programmes

Integrate implementation of the EMP with all relevant programmes, particularly Acute Medicine, Surgery, Critical Care, Medicine for the Elderly and Diagnostic Imaging.
Indicators:

- The number of EDs that have implemented Care Bundles/Pathways/Guidelines from other DCSP programmes.

Measures:

- Time from Disposition Decision to Seen by Admitting/Consulting team for ED patients with acute medical presentations.
- Time from Disposition Decision to ED Departure as a measure of acute hospital access.
- Clinical KPIs that include time to Diagnostic Imaging.
- ED-relevant KPIs from other programmes (e.g. Coronary reperfusion time for ED-presenting STEMI patients).

23.1.7   Hospital Major Emergency Planning

Collaborate with the HSE Emergency Planning Unit to develop a national Hospital Major Emergency Plan Template.

Indicator:

- Number of hospitals that have practised a Major Emergency Plan according to national template.

23.2   Ensure Continuous Quality Improvement Across the NECS

23.2.1   Develop National KPIs for Clinical Quality and Process Efficiency

Indicators:

- KPIs for clinical quality and process efficiency implemented.
- Number of EDs that have implemented EMP clinical KPIs.

23.2.2   Agree National Process Measures and Standard ED Data Sets

Indicators:

- Number of EDs complying with national process measures.
- ED compliance with standard ED dataset.

23.2.3   Implement National Clinical Guidelines for the Top 20 Emergency Conditions

Indicators:

- Number of guidelines available on EMP website.
- Number of guidelines implemented and audited in ECNs.

23.2.4   Disseminate Existing Good Practice Identified through Regional Workshops

Indicators:

- Number of good practice initiatives that have been reviewed and disseminated.

- Ongoing reporting of good practice implementation by ECNs.

23.2.5   Develop Tools to Measure Patient Experience of Emergency Care

Indicator:

- Number of ECNs implementing patient experience tool when developed and validated.

Measure:

- Monitoring of patient experience report data from ECNs.

23.3   Improve Patient Access to Emergency Care

23.3.1   Implement the 6-hour Target and Associated ED Measures

Indicators:

- Number of EDs returning Total ED Time data to DCSP through data download.

- Number of hospitals returning full National ED Process Dataset.

- Number of hospitals demonstrating the implementation and development of strategies to reduce ED overcrowding as directed by the DCSP and Special Delivery Unit.

- Number of hospitals implementing on-call rosters and practices to enhance the timeliness of patient assessment by admitting teams.

External dependencies:

- Access to inpatient beds.

- Reductions in delayed hospital discharges.

- Access to outpatient and community services as alternatives to hospital admission.

Measures:

- Total ED Time monitored through enhanced ICT systems.

- Number of EDs measuring Ambulance Patient Handover Times and Left Before Completion of Treatment (LBCT) rates and data reports.

- Number of hospitals with policies to enable ED patients to be transferred to ward areas for assessment by on-call teams.

- Proportion of patients assessed by admitting teams within two hours of the disposition decision.

- Proportion of ED patients transferred to a ward bed within one hour of request for patients assessed by admitting teams in ED.
- Reduced numbers of inpatient boarders (trolley waits) as a measure of the effectiveness of hospital strategies to reduce ED overcrowding.

23.3.2   Improve the Efficiency of ED Processes including Triage, Rapid Assessment & Treatment (RAT) and Patient Streaming

Indicators:

- ED reports of implementation of standardised care processes through ECN Clinical Operational meetings.
- ED Clinical Operational groups set up operational links with on-site laboratory medicine and Diagnostic Imaging services to enhance the timeliness of diagnostics.

External dependencies:

- Roll-out of NIMIS.
- Participation of hospital laboratory systems.

Measures:

- Real time measurement of process intervals enabled by ICT or sampled by EDs.
- Audit of ED laboratory turnaround times indicating compliance with maximum two hour time frame.
- Audit data of turnaround times for reporting of plain X-ray for ED patients.

23.3.3   Optimise the Work of Clinical Decision Units

Indicator:

- To be developed through review of baseline CDU activity in NECS.

Measures:

- Number of patients admitted to CDUs.
- Casemix of patients admitted to CDUs (when measures available).
- Length of Stay (LOS) for CDU patients.

23.3.4   Maximise the Cost-effectiveness of Emergency Care

Indicators of improved cost-effectiveness of EC will include:

- reduced ED LOS;

- reduced numbers of patients leaving before completion of treatment;

- reduced admission rates through enhanced use of diagnostics in ED;

- enhanced use of CDU care;

- reduced variability in costs between EDs;

- implementation of new measures of cost capture in emergency care.

The EMP will contribute to the overall reductions in LOS to be delivered through the suite of national clinical programmes.

Recommendation:

- Defined outcome measures for the effectiveness of implementation of the Emergency Medicine Programme will be monitored.

Appendix 1

Acknowledgments

National Emergency Medicine Programme

National Emergency Medicine Programme Working Group

Dr. Una Geary	Consultant in Emergency Medicine, St James's Hospital, Dublin, Programme Lead.
Ms. Fiona McDaid	Clinical Nurse Manager 3, Emergency Department, Naas General Hospital, Nursing Co-lead.
Ms. Mary Forde	Clinical Nurse Manager 2, Emergency Department, Cork University Hospital, Nursing Co-lead.
Ms. Val Small	Advanced Nurse Practitioner, St James's Hospital, Dublin, ANP Lead.
Ms. Maire-Bríd Casey	Senior Physiotherapist, Mater Misericordiae University Hospital, Therapy Professionals Representative, July 2010 to May 2011.
Ms. Rosie Quinn	Therapy Professionals Representative, May 2011 to date.
Dr. Geoff King	Medical Director, Pre-hospital Emergency Care Council.
Dr. Cathal O'Donnell	Medical Director National Ambulance Service.
Prof. Ronan O'Sullivan	Consultant in Paediatric Emergency Medicine, Our Lady's Children's Hospital, Crumlin, PEM Lead.
Mr. John McInerney	Consultant in Emergency Medicine, Mater Misericordiae University Hospital, representing Dublin EDs.
Ms. Susanna Byrne	Interim Director, Nursing & Midwifery Planning and Development, HSE.

211111

National Emergency Medicine Programme Report

National Emergency Medicine Programme Regional Leads

Mr. Fergal Hickey — Consultant in Emergency Medicine, Sligo Regional Hospital.

Dr. Gareth Quin — Consultant in Emergency Medicine, Limerick University Hospital.

Dr. Gerry McCarthy — Consultant in Emergency Medicine, Cork University Hospital.

Mr. Mark Doyle — Consultant in Emergency Medicine, Waterford Regional Hospital, Major Emergency Planning Lead.

Mr. Conor Egleston — Consultant in Emergency Medicine, Our Lady of Lourdes Hospital, Drogheda.

National Emergency Medicine Programme Management Team

Mr. Kieran Tangney — Programme Manger, July 2010 to June 2011.

Ms. Sinead O'Connor — Programme Manager, July 2011 to date.

Ms. Caroline McGuinness — Programme Administrator, July 2010 to June 2011

Ms. Niamh Keane — Programme Administrator, July 2011 to date.

National Emergency Medicine Programme Advisory Group

Mr. Aidan Gleeson — Consultant in Emergency Medicine, Beaumont Hospital, Dublin.

Mr. James Binchy — Consultant in Emergency Medicine, Galway University Hospital.

Dr. John Cronin — Specialist Registrar in EM, Our Lady's Children's Hospital, Crumlin. NCHD Representative.

Mr. Niall O'Connor — Consultant in Emergency Medicine, Our Lady of Lourdes Hospital, Drogheda.

Dr. Peadar Gilligan — Consultant in Emergency Medicine, Beaumont Hospital, Dublin.

Mr. Rob Eager — Consultant in Emergency Medicine, Midlands Regional Hospital, Tullamore.

Prof. Stephen Cusack — Consultant in Emergency Medicine, Cork University Hospital.

Mr. Michael Brophy — Lay Member of the National Board for Ireland of CEM; Patient Representative.

Appendix 1

354

Directorate of Clinical Strategy and Programmes

Dr. Barry White	National Director, Clinical Strategy and Programmes.
Mr. Tony O'Brien	Former Director of Operations, Directorate of Clinical Strategy and Programmes (DCSP).
Mr. Paul Rafferty	Programme Manager, DCSP.
Ms. Margaret Kelliher	Personal Assistant to Dr White, Directorate of Clinical Strategy and Programmes.

Emergency Medicine Training and Representative Bodies

Irish Committee for Emergency Medicine Training.

Irish Association for Emergency Medicine.

National Board for Ireland of the College of Emergency Medicine.

Emergency Nursing Interest Group

Irish Association of Directors of Nursing and Midwifery

Directors of Nursing and Midwifery Reference Group (National Clinical Programmes)

Therapy Managers Advisory Group

Therapy Professionals ED Subgroup

Emergency Department Interest Group of Irish Association of Social Workers

Academic Committee of the Irish Association for Emergency Medicine

The EMP working group would like to thank the Academic Committee of IAEM for their work in developing and assessing clinical guidelines for the programme.

Prof. Ronan O'Sullivan (Chair)	Consultant in Paediatric Emergency Medicine, Our Lady's Children's Hospital, Crumlin.
Dr. Abel Wakai (Secretary)	Consultant in Emergency Medicine, Midlands Regional Hospital, Mullingar.
Dr. John Cronin	Specialist Registrar in EM, Our Lady's Children's Hospital, Crumlin.
Mr. Fergal Cummins	Consultant in Emergency Medicine, Limerick University Hospital.
Prof. Stephen Cusack	Consultant in Emergency Medicine, Limerick University Hospital.
Dr. Peadar Gilligan	Consultant in Emergency Medicine, Beaumont Hospital, Dublin.
Dr. Trish Houlihan	Consultant in Emergency Medicine, Beaumont Hospital, Dublin.
Dr. Geraldine McMahon	Consultant in Emergency Medicine, St James's Hospital, Dublin.
Dr. David Menzies	Specialist Registrar in Emergency Medicine, Cork University Hospital.
Mr. John O'Donnell	Consultant in Emergency Medicine, Galway University Hospital.
Dr. Sinead O'Gorman	Consultant in Emergency Medicine, Letterkenny General Hospital.
Prof. John Ryan	Consultant in Emergency Medicine, St Vincent's University Hospital, Dublin.

Thanks are also due to the Clinical Guidelines Sub-group of the Emergency Nursing Interest Group for their contribution to guideline development.

Ms. Valerie Small	Advanced Nurse Practitioner, St James's Hospital, Dublin.
Ms. Fiona Brady	CMN 3, Connolly Hospital, Dublin.
Mr. Gerard White	Advanced Nurse Practitioner, Mercy University Hospital, Cork.
Ms. Ann Calvert	CMN 3, Midlands Regional Hospital, Tullamore.
Ms. Aine Lynch	Nurse Practice Development coordinator, Tallaght Hospital

Other Contributors

The EMP working group would also like to thank contributors to the Programme Report, who collaborated with the working group in the development of the following sections of the report. The following people were primary authors for the sections listed or contributed work to the development of these sections.

Report Chapter	Contributor
Academic and Undergraduate Emergency Medicine	Prof. Ronan O'Sullivan, Dr. Gareth Quin, Prof. Stephen Cusack, Consultants in Emergency Medicine.
Clinical Decision Unit	Dr. James Gray, Consultant in Emergency Medicine, Tallaght Hospital.
Document Editing	Mr. Kevin Molloy, Regional Manager, DNE HR, HSE.
Major Emergency Planning	Mr. Mark Doyle, Consultant in Emergency Medicine.
Medical Informationist	Ms. Maura Flynn who provided literature searches for this report.
Patient Participation	Mr. Michael Brophy, Patient Representative. Ms. June Bolger, National Lead, Service User Involvement, National Advocacy Unit, HSE.
Photography	Mr. Anthony Edwards, Senior Clinical Photographer, Trinity Centre for Health Sciences, St James's Hospital. Prof. Ronan O'Sullivan, Consultant in Paediatric Emergency Medicine, Our Lady's Children's Hospital, Crumlin.
Pre-hospital Care as an EM Subspecialty	Prof. Stephen Cusack, Consultant in Emergency Medicine, Cork University Hospital.
Primary Care Interface	Mr. John McInerney, Consultant in Emergency Medicine. Dr. Peadar Gilligan, Consultant in Emergency Medicine. Dr. Brendan McCann, Consultant in Emergency Medicine. Dr. Joe Clarke, Primary Care Programme.
Process Maps	Ms. Gillian Conway, Heart Failure Programme, who provided a Visio Template for Appendix16.

Other Contributors continued

Report Chapter	Contributor
Psychiatry	On behalf of the Liaison Psychiatry Faculty of the College of Psychiatry of Ireland: Dr. Eugene Cassidy, Consultant Psychiatrist, Cork University Hospital; Dr. John Cooney, Consultant Psychiatrist, St James's Hospital, Dublin; Dr. Siobhan McHale, Consultant Psychiatrist, Beaumont Hospital, Dublin. On behalf of IAEM: Dr. Emily O'Conor, Consultant in Emergency Medicine, Connolly Hospital.
Public Health	Dr. Aidan Ryan, Public Health Specialist, HSE North West, Sligo.
Staffing Survey	Mr Glenn Hustler, Administrator, HSE.
The EM Care of Patients with Intellectual Disability	Ms. Lasarina Maguire, Nurse Practice Development Coordinator, Stewarts Hospital, Palmerstown, Dublin.
Trauma Care	Mr. Abel Wakai, Consultant in Emergency Medicine, Midlands Regional Hospital, Mullingar.

EMP ICT Subcommittee

Dr. Tony Shannon	Consultant in Emergency Medicine, Leads NHS Trust
Ms. Fiona Brady	CNM 3, Emergency Department, Connolly Hospital
Ms. Helen Kiernan	Emergency Department Information System Administrator, Tallaght Hospital.
Dr. Gemma Kelleher	Consultant in Emergency Medicine, Cork University Hospital and members of the EMP Working Group.

Consultation with Other National Programmes and Clinical Specialties

- Acute Coronary Syndrome – Prof. Kieran Daly
- Acute Medicine – Prof. Shane O'Neill and Prof. Garry Courtney
- Acute Surgery – Mr. Ken Mealy
- Anaesthesia – Dr Bairbre Golden
- Asthma – Dr. Pat Manning
- Care of the Elderly – Dr. Diarmuid O'Shea
- Chronic Obstructive Pulmonary Disease – Dr. Tim McDonnell
- Critical Care – Dr. Michael Power
- Dermatology – Prof. Louise Barnes
- Diabetes – Prof. Richard Firth and Dr. Diarmuid Smith
- Epilepsy – Dr. Colin Doherty
- Healthcare Acquired Infection – Dr. Fidelma Fitzpatrick
- Heart Failure – Prof. Ken McDonald
- Mental Health – Dr. Ian Daly
- Neurology – Prof. Tim Lynch
- Neurosurgery – Mr. Donncha O'Brien
- Obstetrics and Gynaecology – Prof. Michael Turner
- Outpatient Intravenous Therapy - Prof. Colm Bergin
- Ophthalmology – Mr. Paul Moriarty
- Orthopaedics – Mr. Paddy Kenny and Mr. David Moore
- Paediatrics – Prof. Alf Nicholson
- Palliative Care – Dr. Karen Ryan
- Pathology – Dr. Gerard Boran
- Primary Care – Dr. Joe Clarke (HSE) and Dr. Barbara Kearns (ICGP)
- Radiology – Dr. Risteard O'Laoide, Dr. Peter Kavanagh and Dr. Niall Sheehy
- Rehabilitation Medicine – Dr. Aine Carroll
- Rheumatology – Prof. Oliver Fitzgerald
- Stroke – Dr. Joe Harbison and Prof. Peter Kelly
- Surgery – Prof. Frank Keane and Mr Ken Mealy

Consultation

Consultation feedback was sought from the following organisations and groups:

- College of Emergency Medicine, UK.
- Emergency Nursing Interest Group.
- Department of Health.
- Directors of Nursing and Midwifery Strategic Reference Group (Clinical Care Programmes).
- Emergency Department Medical Social Work Interest Group.
- Health Service Executive.
- Health Information and Quality Authority.
- Health Intelligence Ireland.
- Health Management Institute.
- Hospital Pharmacists Association of Ireland.
- Joint Faculty of Intensive Care Medicine of Ireland.
- Irish Association for Emergency Medicine.
- Irish College of General Practitioners.
- Irish Heart Foundation.
- Irish Hospital Consultants Association.
- Irish Medical Organisation.
- Irish Nurses and Midwives Organisation.
- Liaison Psychiatry Faculty, College of Psychiatry of Ireland.
- Mr Michael Brophy, Patient Representative.
- National Clinical Programmes.
- National Ambulance Service.
- Office of the Nursing and Midwifery Services Director (HSE).
- Royal College of Surgeons in Ireland.
- Royal College of Physicians of Ireland.
- The State Claims Agency.
- The Association of Anaesthetists of Great Britain and Ireland.
- The College of Anaesthetists of Ireland.
- The Therapy Managers Advisory Group.

Appendix 2

Illustrative Examples of Emergency Care Network Signage

XX Emergency Care Network

Emergency Department

Figure 1: Signage for a 24/7 ED (Type A ED)

XX Emergency Care Network

Local Emergency Unit

08:00 – 18:00

Every Day

Figure 2: Signage for a Local Emergency Unit (Type B Unit)

XX Emergency Care Network

Local Injury Unit

08:00 – 18:00

Every Day

Figure 3: Signage for a Local Injury Unit (Type C Unit)

Appendix 3

Conditions Suitable and Unsuitable for Care in a Local Injury Unit

Overview:

Local Injury Units (LIUs) will treat patients with injuries that are not life-threatening and unlikely to result in serious long-term disability. LIUs will not treat medical conditions, pregnancy-related or gynaecological problems, injuries to the chest, abdomen or pelvis and serious head and spine injuries. Lists are provided to try to direct patients with single, isolated and uncomplicated injuries to these units. These are not exhaustive lists and patients should be advised to contact their LIU or General Practitioner for guidance if they are uncertain whether or not to attend an LIU or Emergency Department.

Notes:

1. These attendance protocols are intended for use in LIUs, linked to Emergency Departments, and operating within the governance of an Emergency Care Network.

2. The protocols are intended as guidance to Lead Consultants in Emergency Medicine for LIUs and should be adapted for local use. Patient information leaflets produced on the basis of these protocols should use patient-appropriate language.

3. There should be transfer protocols in place for patients who inadvertently attend LIUs when their care needs cannot be met in this clinical environment.

4. The protocols should be supported by ECN and national clinical guidelines. Doctors, Advanced Nurse Practitioners and Nurses working in LIUs should have direct access to clinical advice from a Consultant in Emergency Medicine from the lead network ED.

5. The appropriate age for Paediatric LIU attendances may be determined by the ECN Lead/Paediatric Emergency Medicine Lead depending on local practice but should not be younger than five years.

6. Audit of patient outcomes and monitoring of LIU workload will indicate the need for review of these lists, as part of the governance function of the network.

Adult Patients:

Conditions Suitable and Unsuitable for Care in a Local Injury Unit

What the Local Injury Unit may treat	What the Local Injury Unit may NOT treat
✔ Suspected broken bones to legs from knees to toes	X Conditions due to medical illness e.g. fever, seizures, headache.
✔ Suspected broken bones to arms from collar bone (clavicle) to finger tips	X Suspected serious injury or inability to walk following a fall from a height or a motor vehicle collision. Patients with neck pain or back pain that started on the day of injury should attend an ED rather than a Local Injury Unit.
✔ All sprains and strains	
✔ Minor facial injuries (including oral, dental and nasal injuries)	
✔ Minor scalds and burns	X Injury causing chest pain, abdominal pain or shortness of breath
✔ Wounds, bites, cuts, grazes and scalp lacerations	X Serious head injury
✔ Small abscesses and boils	X Chest pain
✔ Splinters and fish hooks	X Respiratory conditions
✔ Foreign bodies in eyes/ears/nose	X Abdominal pain
	X Gynaecological problems
✔ Minor head injury (fully conscious patients, who did not experience loss of consciousness or have more than one episode of vomiting after the head injury)	X Neck/back pain
	X Pregnancy related conditions
	X Pelvis or hip fractures
	X Injuries due to self-harm

Paediatric Patients:

Conditions Suitable and Unsuitable for Care in a Local Injury Unit

What the Local Injury Unit may treat	What the Local Injury Unit may NOT treat
Any child aged five years or older with:	*X* **Any child of any age with a medical illness e.g. fever, seizures, respiratory symptoms**
✔ Suspected broken bones to legs from knees to toes	*X* **Any child younger than five years**
✔ Suspected broken bones to arms from collar bone (clavicle) to finger tips	*X* **Any child aged five years or older with:**
✔ Any sprain or strain	*X* Non-traumatic limp or non-use of a limb
✔ Minor facial injuries (including oral, dental and nasal injuries)	*X* Injuries following a fall from a height or a motor vehicle collision
✔ Minor scalds and burns	*X* Serious head injuries
✔ Wounds, bites, cuts, grazes and scalp lacerations	*X* Abdominal pain
✔ Splinters and fish hooks	*X* Gynaecological problems
✔ Foreign bodies in eyes/ears/nose	*X* Injuries due to self-harm
✔ Minor head injury (fully conscious children, who did not experience loss of consciousness or vomit after the head injury)	*X* Neck pain or back pain

Appendix 4

Template Job Description for a Consultant in Emergency Medicine Post

Job Title and Grade	Consultant in Emergency Medicine
Description of the Hospital's Emergency Medicine Service, including Workforce, Infrastructure and Related Services.	
Reporting Relationship	The Consultant's reporting relationship and accountability for the discharge of his/her contract is to the Chief Executive Officer/General Manager of the hospital through his/her Clinical Director. *(Insert any alternative reporting relationships specific to the post).*
Purpose of the Post	To provide high quality care in Emergency Medicine (EM) for patients who present to the hospital's Emergency Department (ED) and contribute to the development of emergency care services for the hospital's catchment area population and the HSE region.
Principal Duties and Responsibilities	**Standard Duties and Responsibilities** To undertake and participate in the development of all duties and functions pertinent to the areas of professional competence of a Consultant in EM as set out in the Clinical Directorate Service Plan and in line with policies as specified by the Employer. **1. Core Clinical Care:** a. Clinical management and direction of the ED, in conjunction with other Consultant in EM colleagues. The precise division of responsibilities between the Consultants in EM will be agreed between the Consultant, the Clinical Director and the CEO/GM or their appropriate delegate. These responsibilities will be reviewed on an annual basis. b. Responsibility for the development and oversight of systems of care for all EM patients attending the ED and linked Emergency Care Network (ECN)

units. This may be delivered personally or by supervision of other clinical staff.

c. Responsibility for the care of patients admitted under the care of the Consultants in EM to the ED Clinical Decision Unit / EM Observation Ward or Chest Pain Assessment Unit, if available on site. This may entail daily ward rounds, including weekends, on a rostered basis and cross-cover of patient care on a pre-agreed or on-call basis.

d. To undertake essential supporting duties for clinical care including *inter alia* risk management, critical incident investigation and oversight of rosters.

e. To ensure that duties and functions are undertaken in a manner that minimises delays for patients and possible disruption of services.

f. Undertake Child Protection duties associated with the role of Consultant in EM and services provided at the hospital. The Consultant in EM will play a lead role in ensuring systems are in place for the care of other at-risk or vulnerable ED patient groups.

g. Ongoing participation in Major Emergency Planning for the ED and the hospital.

h. Participate in Major Incident and structured Pre-hospital responses outside the hospital as appropriate to one's professional competency and skills in this area.

2. Staff Supervision and Training:

a. The selection, supervision and training of Non-Consultant Hospital Doctors (NCHDs) and the allocation of duties to them.

b. Contribute to the provision of structured training and situational learning opportunities for NCHDs on recognised training programmes and support the clinical and professional development of medical staff in the ED.

c. Provide training and clinical support, if requested, to non-medical clinical staff in the ED and ECN, including Advanced Nurse Practitioners, Nurses and other healthcare providers.

d. The supervision of students in medical, nursing and allied health professions assigned to the ED.

3. Academic Duties:

a. Active participation in ED and hospital educational activities and the development of training and education in emergency care in the hospital and ECN.

b. Involvement in research activities as appropriate to a Consultant in EM post in the hospital.

c. A willingness to develop special interest aspects of EM as appropriate to one's competencies, the ED and the hospital.

4. Clinical Governance:

a. To formally review the execution of the Clinical Directorate Service Plan with the Clinical Director / Employer periodically. The Clinical Directorate Service Plan shall be reviewed periodically at the request of the Consultant or Clinical Director / Employer. The Consultant may initially seek internal review of the determinations of the Clinical Director regarding the Service Plan.

b. To participate in the Clinical Directorate structure. The Consultant shall receive training and support to enable him/her to participate fully in such structures.

c. To meet on a specified basis and as required with the Clinical Director to confirm, review and develop an agreed job plan for the post that addresses the needs of the service and conforms to the terms and conditions of the Consultant Contract.

d. Contribute to clinical governance and clinical operations improvement activities in the ED and for the ECN to which the ED contributes.

e. Participate in the collection, analysis and the reporting of data necessary for quality assurance activities in the ED and for other hospital and ECN services.

f. Engage in clinical audit activity and provide leadership in multidisciplinary clinical audit in the ED.

g. Promote effective team working within the ED and the ECN.

h. Ensure optimal communication with all medical, management and support services in the hospital, General Practitioners, Community Care Services and external agencies relevant to emergency care.

i. Attendance at management and service development meetings at departmental, hospital, ECN, regional or national level of strategic importance to the department or hospital. This may include participation in other professional and administrative groups as appropriate to the role of Consultant in EM.

j. Participation in the selection of staff involved in service provision the ED.

k. Actively engage in Continuing Professional Development and comply with Professional Competence Assurance requirements.

	The above Job Description is not intended to be a comprehensive list of all duties involved and consequently, the post holder may be required to perform other duties as appropriate to the post and in keeping with development of the post through scheduled review of the Consultant's job plan with the Clinical Director.
Eligibility Criteria	**Professional Qualifications:** Registration or eligibility for registration as a specialist in the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council of Ireland in the specialty of Emergency Medicine. For the purposes of eligibility for entry to any competition or recruitment process associated with this post, a candidate cannot be appointed as a Medical Consultant unless (s)he is registered as a Specialist in the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council of Ireland. Successful candidates must be registered as a Specialist in the relevant Specialty on the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council of Ireland within 180 days of the day of interview. Should the successful candidate not be registered as a Specialist at that time, the post may be offered to the next suitable candidate (or, in the case of HSE posts, the Public Appointments Service may choose not to recommend that candidate to the employer). Should no suitable candidate exist, a further recruitment process may be initiated. *(EMP note: As per current HSE guidance 2012)*

Amendments Specific to a Consultant in Paediatric Emergency Medicine Post

Eligibility Criteria Qualifications and/ or experience	Professional Qualifications, experience, etc:
	(a) Registration or eligibility to be registered as a specialist in the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council of Ireland in the specialty of Emergency Medicine.
	and
	(b) Two years postgraduate training and experience in related paediatric specialties of which one year must be full time training in Paediatric Emergency Medicine.
	or
	(a) Registration or eligibility to be registered as a Specialist in the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council of Ireland in the specialty of Paediatrics
	and
	(b) Two years postgraduate training and experience in related emergency specialties of which one year must be full time training in Paediatric Emergency Medicine.
	For the purposes of eligibility for entry to any competition or recruitment process associated with this post, a candidate cannot be appointed as a Medical Consultant unless (s)he is registered as a Specialist in the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council of Ireland. Successful candidates must be registered as a Specialist in the relevant Specialty on the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council of Ireland within 180 days of the day of interview. Should the successful candidate not be registered as a Specialist at that time, the post may be offered to the next suitable candidate (or, in the case of HSE posts, the Public Appointments Service may choose not to recommend that candidate to the employer). Should no suitable candidate exist, a further recruitment process may be initiated.
	(EMP note: As per current HSE guidance 2012)

Appendix 5

Patient-friendly Programme Summary

Introduction

Emergency care is a vital part of our health care system and includes pre-hospital (ambulance) systems, Emergency Departments (ED) and acute hospitals. Patients, their families and communities should receive high quality emergency services no matter when or where they seek emergency care and patients should not experience delays to emergency care or hospital admission. There were more than 1.1 million patient visits to EDs in Ireland in 2010. We, or someone we know, are likely to need ED care at some stage in the future – it should be important to everyone therefore that ED care is as good as it can possibly be.

Programme Development

The national Emergency Medicine Programme (EMP) was begun in July 2010 by the HSE Director of Clinical Strategy and Programmes, Dr. Barry White, with the aim of improving the safety and quality of patient care and reducing waiting times for patients in EDs.

The programme is led by a group that includes ED nurses and doctors, a physiotherapist, other healthcare professionals and doctors who work with the ambulance service. It has links with GPs and other programmes, including the Acute Medicine programme. ED staff from all regions of the country have been involved in the programme through workshops that were undertaken so we could include the knowledge and experience of people providing patient care in our EDs in the programme plan. Patient representatives are also invited to contribute to the group's work and their input will be very important so that, in future, our EDs meet the expectations and care needs of the patients they serve.

What the Programme Aims to Achieve:

We, patients, families, communities and ED staff, know that great improvements are needed in how patients are treated when they have to attend EDs and everyone involved in the programme is determined to make these improvements happen.

Better Organisation of EDs:

The EMP will introduce a national emergency care system so that it is clear what conditions should be cared for in each ED. Smaller EDs will be linked to larger units, so that if a patient needs more complex care than a small hospital can provide, they will be moved without delay to where they need to be. It will not be possible for every current ED to safely provide all emergency services. Some units will only provide minor injury care but this will be delivered in a highly efficient way. Every ED will take the same approach to sorting out common emergency conditions through the use of the same guidelines for nurses and doctors in every ED in the system. This will mean that patients can get the same high quality care no matter where they attend an ED. Emergency services for children will receive special consideration in the EMP.

Reducing Delays for ED Patients:

The programme will insist that there should no longer be delays for patients arriving by ambulance at EDs. All ED patients will have to be seen, discharged or admitted from the ED within 6 hours of arrival. New ways of working will be introduced to EDs to help them run as efficiently as possible. Most of the reasons why patients wait for long periods on trolleys in EDs relate to problems in the hospitals and across the health system and are not due to problems within the ED itself. Other programmes, particularly the Acute Medicine Programme and other projects in the HSE, will tackle the root causes of ED overcrowding. The EMP supports these programmes and projects because the success of our work will be undermined unless ED overcrowding is eliminated.

Building the ED Team to Deliver Better Care:

Emergency care is best provided by doctors who are fully trained specialists in Emergency Medicine. We do not have enough specialist Consultants in Emergency Medicine in Ireland, compared to other countries. Increased numbers of Consultants are needed so that more patients can be seen by senior doctors rather than by doctors who are training to be specialists. The nurses

working in our EDs need to have special skills and they should have additional training to be able to provide as much patient care as possible, including for example, requesting X-rays, putting in intravenous lines and wound care. The programme will also recommend that more nurses are trained to become Advanced Nurse Practitioners (ANP) as research has shown that patients rate ANP care very highly. The EMP will also enable GPs to work in EDs. It will work with physiotherapists, occupational therapists, other allied health professionals and medical social workers to ensure that patients can get these services in EDs when they need them. EDs will link with GPs and community services to ensure GPs know what has happened when their patients have gone to the ED and that patients can be safely discharged to the care of their GPs and or community services.

Measuring and Improving What We Do:

The programme will introduce standard ways of recording, measuring and monitoring ED activity so that EDs can continuously improve the efficiency of their work and prevent patient delays. There will be clear targets for patient waiting times in EDs. The quality of care will be measured through audit e.g. examination of how clinical guidelines are used.

All ED staff want to provide the best care possible for their patients and the programme will support EDs in achieving this. The programme is not a "once-off plan" but is about continued improvement into the future. The programme is still in development, so it is important that patient representative views are sought and included in the programme now.

Appendix 6

Ambulance Diversion

Position Paper of the EMP regarding Ambulance Diversion in Dublin and other Regions

Consultants in Emergency Medicine (EM) from Dublin Emergency Department (EDs) were asked their views on Ambulance Diversion i.e. the unscheduled closure of an ED to ambulance-borne patients for a limited period of time. The following is a summary of the views expressed. It is possible that ambulance diversion might be considered in other areas so these comments are relevant to all regions.

1. **Ambulance diversion may be needed in the following situations:**

    a. a Major Emergency;

    b. pre-arranged episode of ambulance diversion due to major planned infrastructural works in an ED or hospital;

    c. an unanticipated hospital safety issue (e.g. fire in a hospital);

    d. an unanticipated sudden demand on ED resuscitation capacity requiring a brief recovery period but not a Major Emergency response (e.g. one to two hours following reception of multiple major trauma patients).

2. **Ambulance diversion, for any reason, is associated with clinical risk for patients. These risks include:**

    a. delays to ED resuscitation for critically ill patients – the most ill patients may be most vulnerable to diversion;

b.   patients with exacerbations of chronic illness being brought to hospitals that do not have access to the patients' care records. This may result in unnecessary duplication of imaging and other clinical investigations. It also interferes with the continuity of care provision for complex patients and results in increased work for all clinical teams in trying to coordinate care over two hospitals;

c.   families being uncertain which ED to attend in emergency situations thus contributing to their distress;

d.   ambulance resources being used in diversion to more distant EDs resulting in prolonged ambulance response times for other emergency patients in the community.

3.   Proposed ambulance diversion in the context of ED overcrowding:

a.   ED overcrowding is associated with a proven increased clinical risk for patients. All ED patients should be cared for in a safe environment and ED staff should not be obliged to accept additional patients into an unsafe clinical environment. However, a balance must be achieved between the risks to patients from being diverted from an ED versus the risks associated with being cared for in an overcrowded ED.

b.   Overcrowding represents an overall failure of acute hospital services that impacts negatively on emergency services. Ambulance diversion and ambulance patient off-load delay transfer some of the risks caused by inadequate capacity management in hospital-based services to the pre-hospital environment. This should be unacceptable to the entire emergency care system.

c.   All EDs and hospitals should have reserve capacity to respond to surges in demand. ED overcrowding should be resolved as a matter of urgency to ensure that hospitals accommodate demand surges without resorting to ambulance diversion.

d.   The Escalation Framework and Full Capacity Protocol should be fully implemented in a hospital before ambulance diversion is considered. Patients in ambulances are likely to be at greater clinical risk than those patients in EDs who have been fully assessed and are ready for ward admission.

e. Notwithstanding the Escalation Framework strategy, there is a danger that in the use of ambulance diversion as a response to ED overcrowding, non-ED hospital functions could continue with business as usual while some of the most vulnerable patients in the healthcare system are diverted from the ED. All hospital clinicians and managers must have ownership of the problem of acute hospital capacity management, rather than allowing emergency patients from their catchment area to be transferred to other hospitals.

f. International experience (e.g. in Toronto) indicates that ambulance diversion in the context of multiple overcrowded EDs has a knock-on effect across the hospital system. This can result in a succession of EDs going off call until all EDs are closed and all EDs have to go back on call.

4. Ambulance Diversion in the context of Quality Improvement in Emergency Care:

a. Off-load delays: the current ambulance off-load delays in some Dublin EDs are causing significant problems for the Dublin Fire Brigade and National Ambulance Service. Off-load delay should not be tolerated. The EMP advocates a 20 minute target time for ambulance patient hand-over to ED staff. Ambulance diversion (outside the circumstances listed in Section 1 and in response to rare and unforeseeable events) cannot be tolerated in the context of national targets for ambulance patient hand-over times as it would distort target performance across the emergency care system.

b. The 6-hour target for total ED time is an accepted HSE standard. The EMP sees its importance as the primary access measure for emergency care. Ambulance off-load delay is a recognised method of gaming ED waiting time targets by delaying the start of ED waiting time measurement. Ambulance diversion would be a way for poorly performing hospitals to divert workload and undermine the performance of better performing units at the cost of the potential clinical risk to the diverted patients.

c. Pre-hospital response targets: the stringent ambulance response targets set by HIQA for the NAS will be even more difficult to achieve if the ambulance services have to cope with diversion on a frequent basis.

5.   Future proposals:

6.

Emergency services by their very nature must be prepared to respond to unforeseeable crises and it is likely that ambulance diversion may be required in exceptional circumstances in areas, at times. There must be timely notification of all acute units of any changes in ambulance services. Whereas the frequent or routine use of diversion to respond to ED and acute hospital capacity deficits cannot be supported, all ED clinicians recognise the need for ambulance diversion in the circumstances listed above and in other exceptional situations. Ambulance diversion is most likely to occur in the Dublin area and Consultants in EM would welcome a review of policy and procedures in relation to ambulance diversion, in conjunction with the ambulance services, hospitals and HSE to ensure a consistent approach between hospitals in the Dublin area.

Appendix 7

Clinical Decision Unit Length of Stay Key Performance Indicator

Clinical Decision Unit Length of Stay		
Description	The Clinical Decision Unit (CDU) length of stay is measured from the time of CDU admission to the time of CDU departure.	
Aim	To monitor the duration of CDU patient admissions	
Measures	Primary measure: percentage of patients spending less than 24 hours in CDU. Secondary measures: mean, median lengths of stay.	
Target	95% of patients to stay in CDU for less than 24 hours	
Rationale	• CDU care is based on focused, evidence-based patient assessment, delivered within a limited timeframe by Consultants in EM. It requires timely access to CDU beds for patients requiring this service. • The CDU length of stay target aims to protect access to CDU beds by monitoring patient length of stay and identifying patients who experience prolonged duration of CDU admission. • Prolonged CDU admission may be indicative of inappropriate CDU referral or poor access to other services, including inpatient admission under the care of other specialist teams or transfer to another hospital setting.	
What this KPI means for patients	Patients want to be admitted to CDU or any hospital facility for the shortest possible appropriate time. This KPI will monitor CDU patient access to follow-on services.	
KPI Collection frequency	Daily for each patient episode	
KPI reporting frequency	For 28-day periods commencing on national implementation start date for Emergency Care Network and National analysis. Weekly for hospital-level analysis.	
KPI Calculation	Numerator	Number of CDU patients admitted for < 24 hours
	Denominator	All CDU patients admitted under the care of a Consultant in EM
	Inclusion criteria	CDU patients admitted under the care of a Consultant in EM
	Exclusion criteria	Patients boarded in CDU (i.e. those not admitted under the care of a Consultant in EM)
	Data report presentation	Percentage of CDU patients admitted for < 24 hours Mean CDU length of stay for seven and 28 day periods Median CDU length of stay for seven and 28 day periods
Reporting Aggregation	a. National b. Emergency Care Network level c. Hospital level	
Data Sources	EDIS or hospital PAS	

Minimum Data Set	Unique National Patient Identifier	When developed
	ED patient Identifier	ED number
	Local service user identifier	Hospital number
	Time of CDU admission	The time the patient arrives in the CDU.
	Time of CDU departure	The time the patient leaves the CDU.
International Comparison and Evidence Base	a. The College of Emergency Medicine. The Way Ahead 2008 – 2012. Available at http://www.collemergencymed.ac.uk. b. Victorian Government Department of Human Services Melbourne, Victoria, Australia. Observation Medicine Guidelines 2009. http://www.health.vic.gov.au/emergency/models.htm#observation	
Implementation Date	As per EMP implementation start date	
Review Date	12 months after EMP implementation start date	
Related KPIs	Total ED Time	EDs that do not have CDUs may be disadvantaged in achieving TEDT targets.
Action Trigger	>5% patients admitted for > 24 hours requires action.	
Additional Measures to be Recorded at Hospital Level	Total ED Time for patients subsequently admitted to CDU	Monitors how quickly appropriate patients are moved to a CDU setting.
	CDU admission rates	Monitors use of CDU facility and enables benchmarking between units across the National Emergency Care System. CDU admissions should be measured in a similar method to AMU admissions by hospital administration systems.
	Rates of CDU patient admission to other wards	Monitors the onward referral of CDU patients to other inpatient services. High rates may indicate inappropriate use of CDU when referral to other services would have been more appropriate or lack of access to suitable outpatient pathways of care.
	HIPE casemix for CDU admissions	Monitors CDU casemix and length of stay. Contributes to hospital casemix returns.

Appendix 8

EDIS Requirements for Closed-loop Prescribing and Innovations in Technology in an Emergency Department Information System

Requirements for Closed-loop Prescribing

Medication Order Entry

- Pharmacy is able to manage medication orders within the system. Orders generate a Medication Administration Record (MAR) that is then used for documentation of medication administration. It is anticipated that most orders will originate through Computerised Physician Order Entry (CPOE). Orders can also originate from departmental systems e.g. rules can be generated by the system in response to a condition, value or result and these can be used to send orders without any intervention.

- The order entered into the Pharmacy application is displayed on an integrated electronic medication administration record (eMAR). The eMAR is updated through the clinical documentation process to reflect appropriate data regarding the administration of the medication(s).

- Orders can be configured to a hold status pending review/validation by Pharmacy.

- The Pharmacy formulary is shared with the Orders module so an update to the formulary updates the Orders module automatically. The formulary is shared not duplicated between applications.

- The system supports the ability to do investigational drug studies.

- The pharmacist is able to review medications that the patient is on prior to admission to perform medication reconciliation.

- Order sets are available for the pharmacist to configure and use to enhance order entry. The capability to delete, modify or define new order-sets is a feature of the system.

- Intravenous sets are available for the pharmacist to enhance order entry.

- The system captures pharmacist clinical intervention data for use with both clinical and operational (productivity) needs.

- The system allows the pharmacist access to all clinical documentation (e.g. for pharmacokinetic consults etc.).
- The system supports the medication reconciliation process.
- The system provides alerts to ensure a consistent approach to medication administration.
- The system provides security to validate the appropriate staff level is administering the medication.

Outpatient Prescriptions

- The routing of prescriptions electronically to an Out-patient pharmacy is supported.
- The ability to print medication orders/prescriptions is supported.
- The drug formulary can include additional drugs which apply to outpatients only.
- The system provides alerts when a non-schedule formulary item is ordered.
- The system is able to do on-line adjudication with third party payers.
- The system is able to print patient education information sheets.
- The system is able to interface with out-patient pharmacy technology.

Electronic Medication Administration

- The system supports on-line documentation of medication administration.
- The eMAR is updated as new medication orders are entered to the system and reflects the status of medications orders (ordered, pending validation etc.).

Record (eMAR)

- Patient allergy information is integrated with the eMAR.
- Charge capture can occur at the documentation of medication administration stage.
- The software supports client configuration of the eMAR – e.g. ED medications are grouped separately from other categories of medications (e.g. chemotherapy).
- National Patient Safety medication reconciliation standards are done online.

Dosing Management

- The system supports dose range checking i.e. dose, day, interval and course of therapy.
- The system has the ability to map the order against the drug product.
- The system is required to support weight based and body surface area calculations; weights are annotated with actual vs. estimated and date/time-stamped.
- The system is able to do age based calculations (gestational and after birth).
- Appropriate information will be interfaced to the dispensing system (if used).
- The system is able to customise administration instructions at the product level.

- The system supports minimum/maximum checking.
- Information from the dispensing system is displayed / viewed to the pharmacist for appropriate location dispensing.
- The system supports lifetime cumulative dosing.

Formulary / Inventory Management

The system provides:

- the ability to create, maintain and share a paediatric formulary;
- the ability to maintain perpetual inventory for all pharmaceutical products;
- the ability to assign cost based upon either average wholesale price or acquisition cost;
- the ability to support pricing formula for inpatient and outpatient services;
- the ability to support bar coding of the entire pharmacy supply chain;
- the ability to access and integrate with third party formulary.

Substitution / Cost Management

The system provides:

- the ability to support intravenous to oral medication substitution;
- the ability to automate formulary / therapeutic substitutions;
- the ability to suggest substitutions based on the cost of therapy.

Positive Patient Identification

- Alternative technologies such as bar coding and Radio-Frequency Identification (RFID) can be supported to scan the patient, the caregiver and the medication to ensure that the '5 rights' of medication administration are upheld. An assumption that could be made is that EDs may use bar coding for patient identification. The actual identification code for the drug administered to the patient is captured and passed to the accounting system for licensed drugs.

Drug Interactions

- Alerts are provided for interactions:
  - Drug-to-drug;
  - Drug-to-food;
  - Drug-to-herbal product;
  - Drug-to-allergy;
  - Drug-to-comorbidity;
- Access to Drug Knowledge Databases
  - The ability to access a third party drug knowledge database;

- The ability to maintain local customisation that does not get overwritten by routine maintenance or upgrades.

- Robot Interface

  - The ability to interface with commonly available pharmacy robots.

- Pharmacy Robot

  - Vendor provides pharmacy robot (for picking, packing and/or delivery).

- Automated Dispensing

  - The system supports standard uni-directional or bi-directional interface to leading automated dispensing systems, bi-directional interfaces being preferred.

  - The system accommodates charging on dispensing from the foreign system.

  - The system accommodates the crediting of medications from information passed from the foreign system.

Innovations and Newer Technologies in EDIS

Further developments in EDIS that facilitate more efficient and sophisticated ED operational capabilities include:

- **Hand-held Computers**: Doctors in EDs are able to access and enter information at the patient's bedside with their wireless devices.

- **Telematics**: This is the blend of computers and wireless telecommunication technologies that transmits data over vast networks. It can also include real-time video and data links between EDs and ambulances that allow for remote assessment of patient condition, motor vehicle collision notification and hazardous material alerts to better prepare for immediate attention and treatment.

- **Portable Computers to Register at Bedside**: These allow ED patients to be taken to trolley spaces immediately with clerical staff registering them onto the system via a wireless portable computer.

- **Bedside Ultrasound**: Ultrasound examination to assess a patient's condition in a highly focused and goal-directed procedure to answer a select set of questions instantaneously, at the patient's bedside.

- **Physiologic Monitoring Stations**: This equipment measures cardiac rhythm, pulse, blood pressure and blood oxygen saturation level and captures them in real-time on EDIS (allowing alerts for physiological monitoring and audit).

- **Radio Frequency Identification Tags (RFID)**: A method of remotely storing and retrieving data using devices called RFID tags/transponders. A RFID tag is a small object such as an adhesive sticker that contains antennae to enable it to receive and respond to radio-frequency queries from a RFID transceiver.

- **VoIP:** (Communications Technology over Internet Protocol networks) provides a two-way messaging interface with Hospital Information and Nurse Call Systems. The portable handset supports prioritised messaging, instant message display and broadcast messaging to ensure an appropriate response to urgent situations.

Appendix 9

Irish Association for Emergency Medicine

Development of Clinical Guidelines
- A Guide for Clinicians

Approved by the Academic Committee

of the Irish Association for Emergency Medicine

This guide is intended for use by clinicians in Emergency Medicine in Ireland as a tool for developing or reviewing Clinical Guidelines.

Last Updated: May 2012

For more information, contact:
Prof. Ronan O'Sullivan
Chair, Academic Committee
Irish Association for Emergency Medicine
T: +353 1 4096324
e: academicchair@iaem.ie

Introduction

Clinical Guidelines, also known as Clinical Practice Guidelines (CPGs) are:

- 'Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances';[1]

- Based on a 'thorough evaluation of evidence' [1-4] and are defined as the way a procedure is done or a condition is managed;

- In addition, guidelines can play an important role in health policy formation and have evolved to cover topics across the health care continuum (e.g. health promotion, screening, diagnosis).

In contrast to **policy**, which reflect an organisation's position regarding an issue and must be adhered to, guidelines allow flexibility on the part of the clinician based on the specific patient they are caring for.

A **protocol** is a written plan that specifies procedures to be followed in defined situations; a protocol represents a **standard** of care that describes an intervention or set of interventions. Protocols are more explicit and specific in their detail than guidelines; they specify who does what, when and how. Protocols are most typically used when developing instructions for drug prescription, dispensing and administration, i.e. drug protocols. Thus, the Irish Association for Emergency Medicine (IAEM) will often produce a standard which may be a guideline e.g. the IAEM standard for ED management of suspected subarachnoid haemorrhage is the GEMNet guideline for SAH.

Further complexity can be introduced with the use of **Integrated Care Pathways**, which are sometimes misinterpreted as clinical guidelines. An integrated care pathway (ICP) is a multidisciplinary outline of anticipated care, placed in an appropriate timeframe, to help a patient with a specific condition or set of symptoms move progressively through a clinical experience to positive outcomes. ICPs can be used as a tool to incorporate local and national guidelines into everyday practice but are not guidelines in themselves. In fact, ICPs typically need a guideline as a template/basis.

The IAEM Academic Committee (hereafter the Committee) supports CPG development through two primary processes:

1. Guideline Clearinghouse;

2. New Guideline Development.

The Guideline Clearinghouse function of the Committee is initially proposed as the main method of endorsing and producing EM-specific guidelines for the specialty in Ireland. New CPG development, at a national level, is a significant undertaking and is a core strategic objective of the Committee. We offer guidance in this document to authors/stakeholders who wish to develop new guidelines.

Why contribute to the development of Clinical Guidelines for Emergency Medicine in Ireland?

Contributing to IAEM Clinical Guidelines will help us to achieve consistent quality guidelines based on best evidence that are relevant to your practice as a clinician working within your Emergency Department (ED) and across the specialty of Emergency Medicine (EM) in Ireland.

Web Site

The IAEM Clinical Guidelines site operates on the IAEM website.

About Writing Clinical Guidelines

All Clinical Guidelines should follow a specific format. This is to:

a) Maintain a consistency to the guidelines;

b) Assist clinicians to familiarise themselves with the format of the guidelines;

c) Enable clinicians to access the guidelines readily and easily.

Enclosed in this pack:

1. Process for content development
2. Guideline for content development
3. Guideline for writing Clinical Guidelines
4. Guideline Clearinghouse (Review Process)
5. Clinical Guideline Development Tools
6. Appendices

    I.   *IAEM-AGREE* appraisal tool

    II. IAEM Standards Document

    III. Guideline Template

    IV. Level of Evidence Table

    V. Guideline Implementation Plan

    VI. Guideline Development Form

The Process for Content Development

Step 1   Determine topic and identify author(s).

Step 2   Author discusses proposed topic with Guideline development team

- At national level, this will be the IAEM Academic Committee
- At local level, this will likely be a departmental team.

Step 3   Download the Clinical Guideline Development Tools from the Clinical Guidelines section of the IAEM website including: A guide for clinicians, guideline template, evidence table, checklist for the guideline development and implementation.

Step 4   Consult with appropriate key stakeholders (medical, allied health, nursing and consumers).

Step 5   Review guideline websites and current practice.

Step 6   Complete a literature search and evaluate evidence using the evidence table.

Step 7   Author meets with Guideline Team to present evidence.

Step 8   Attend next available guideline development meeting.

Step 9   Formulate draft, utilising feedback from key stakeholders

- If the guideline is an endorsement of an existing guideline, then the draft should be in the format of the IAEM Standards document (Appendix II).
- If it is a new guideline, then the IAEM template (Appendix III) should be used.

Step 10   Guideline team review draft content using IAEM-AGREE tool.

Step 11   IAEM Academic Committee approval, once suggested changes are made to satisfactory level.

Step 12   IAEM Academic Committee Approved (signed off by Chair & Secretary of Academic Committee).

Step 13   Guideline published on the Clinical Guidelines section of the IAEM website and reviewed every three years +/- audit.

Guideline for Content Development

Before Writing:

If you are intending to develop a guideline, contact Chair of Academic Committee (academicchair@iaem.ie) to learn more about the process.

Steps in guideline development

1. Think about the purpose of the guideline

- Does the guideline address a problem or concern in the clinical setting?
- Will it be utilised as a resource that facilitates the management of patients in the clinical setting?
- Is there variation in clinical practice?

2. What is the goal of the clinical guideline?

- To better inform clinicians of current evidence based practice?
- To decrease duplication of educational resources and promote consistent practice in the clinical setting?
- To update an existing guideline?

3. Who are the key stakeholders?

Key stakeholders are representatives of all relevant groups within the multidisciplinary healthcare team and patients and their parents/carers. Engaging key stakeholders encourages the expression of diverse interests and experiences to deliver better health outcomes.

To determine who needs to be involved in the development of the guidelines you need to:

- Identify the applicable patient group
- Establish who are the specialists working in the field
- Establish who will utilise the guideline

The development of the guideline must include collaborative input from clinicians, specialists in all clinical areas and nominated patients and their parent/carers associated with the guideline topic. The identification and involvement of key stakeholders that represent these various interest groups ensures the relevance of the guideline.

Patient and family-centred care is an innovative approach to the planning, delivery and evaluation of health care that is grounded in mutually beneficial partnerships among healthcare patients, families and providers.

4. What is the role of the author(s)?

- Research the guideline topic
  - What guidelines and educational resources already exist (local/national/international)?
  - What current research is available and what is the latest evidence-based practice that will be reflected in the Clinical Guideline?
- Record all sources of evidence used to develop the guideline on the evidence table.
- Identify what content needs to be covered by the guideline. Specialty areas or specific procedures may require a separate section within the guideline or a separate guideline.
- Identify and involve Key Stakeholders in guideline development and review process.
- Develop guideline drafts according to IAEM template including references, authors and reviewers.
- Ensure that the content of the clinical guideline represents the relevant disciplines and reflects current evidence based practice.

- Return the guideline to the IAEM Academic Committee with the name of author(s) and key contributors and the evidence table.

5. How to research the topic?

Identify clinical questions to identify key search term using Population/Intervention/Comparator/ Outcome (PICO) format to complete a thorough literature search e.g.

- **Population** – e.g. in children with bronchiolitis
- **Intervention** – e.g. do bronchodilators work?
- **Comparator** – e.g. compared with placebo or other treatments e.g. glucocorticoids
- **Outcome** – e.g. show improved clinical scores, reduced hospital stay etc.

Search Existing Material

Review relevant current practice, guidelines, clinical pathways, standard treatment orders and educational resources relating to the topic within the hospital.

Perform a Literature Search

- Search *The Cochrane Database of Systematic Reviews.* Focus first on *Cochrane Reviews* for systematic reviews of the guideline topic. The *DARE* (Database of Abstracts of Reviews of Effects) and *HTA* (Health Technology Database) databases should also be searched.
- Take note of the review *Search Strategies* i.e. databases searched and time line of search e.g. if Medline Jan 1966 – Mar 2003 then search Medline Mar 2003 – on for the latest evidence.
- Search *Medline* (1996 – onwards), *CINAHL* (1996 – onwards) and *EMBASE* (1996 – onwards), if no evidence is found through Cochrane.
- Search other relevant databases: include *EBM* (Evidence Based Medicine) and *American College of Physicians (ACP) Journal Club* for individual studies and reviews of current research.

Review Clinical Guideline Sites

- Search evidence based CPG websites nationally and internationally for guideline topic.
- Critique Guidelines: Take note of the level of evidence used to develop guideline content and recommendations and the method of evidence collection utilised by the guideline site.

- Determine the last date of evidence used, if possible, and search for latest evidence from this date on.

Consider specifically these sites:

- College of Emergency Medicine Guidelines in Emergency Medicine Network (GEMNet)
- National Guideline Clearing House (USA)
- National Institute for Health and Clinical Excellence (NICE (UK))
- Australasian College for Emergency Medicine
- New Zealand Guidelines Group
- Scottish Intercollegiate Guidelines Network (SIGN)
- British Medical Journal
- Royal Australian College of Physicians
- UK National Health Service
- National Institute of Clinical Studies
- National Health and Medical Research Council
- Cork Emergency Medicine Handbook
- Our Lady's Children's Hospital, Crumlin Clinical Guidelines
- Royal Children's Hospital Melbourne Clinical Practice Guidelines

Grade and record evidence on the evidence table

Finally

- Complete Implementation and Evaluation Form (Appendix V) and Guideline Development Form (Appendix VI).
- Return these forms with Clinical Guideline and completed evidence table via email to academicchair@iaem.ie.

Guide to Writing a Guideline

During Writing:

1.   Format

- Use template (Appendix III) to structure the guideline. This encourages uniformity but it can be modified slightly to suit guideline content requirements.
- List all sources of evidence/research utilised in guideline content and recommendations in the evidence table (Appendix IV).
- Record all guideline authors, contributors and key stakeholders who have had input into the guideline on the guideline development form.

2.   Content

- Keep the *audience* in mind when writing guidelines. Guideline topics are rarely restricted to one discipline so they must be relevant to medical staff, nursing staff and allied health professionals. The guideline also needs to include content specific to the variety of settings in which the target patient group or clinical practice is present. For example, does the guideline include management in the community, in the ward environment and/or the acute care setting?
- Work out what content is *essential to the guideline* and what content can be part of a *resource document*, a *link* to another site or a link to a PDF document etc.
- Keep guidelines *clear*, *concise* and *comprehensive*. They should represent best available evidence but be accessible and user friendly.
- If a consensus of expert opinion is used to determine Guideline content due to an absence of available evidence or if there is discrepancy in evidence, this should be stated in the Guideline.
- Guideline topics may overlap. Do not reproduce current guidelines. If necessary, an updated version may be required. Links between guidelines are often appropriate.

3.   *Prepare content to be web-friendly*

- Guidelines must be easily accessible.
- Use the IAEM template and keep headings to a minimum.
- Use sub-headings, keep paragraphs short and use bullet points;
- Remember that Guidelines are listed in alphabetical order. Create the title accordingly, for example: 'Asthma ....', not 'Management of the patient with ...' etc.
- Don't use the Tab key to indent text in an MS Word document as it does not convert to the web version of that document.
- Use clearly labelled diagrams or photos where appropriate. Please contact the Academic Committee to discuss the use of images. Ensure photos have appropriate consent and that images are not copyrighted.

4.   *With what will the Academic Committee assist you?*

- Researching guideline topic;
- Identifying and involving Key Stakeholders and setting up meetings;
- Editing Guideline draft and transposing to IAEM Clinical Guideline format;
- Facilitating the review of the final draft by the Academic Committee.

Finally

Once the Guidelines are *reviewed*, *approved and signed off* by the appropriate parties, they will be published on the Clinical Guidelines section of the IAEM website by the Academic Committee.

Clinical Guideline Clearing House (Review Process)

This is envisaged to be the primary process through which IAEM will endorse clinical guidelines in the first instance. It will differ from the process of new guideline development and is predicated on the existence of many excellent EM guidelines from local, national and international sources. The Committee is anxious to utilise established guidelines and not re-invent the wheel where possible. The purpose of the clearing house function is to proof existing guidelines for an Irish EM context.

1.   *What is the process of Clinical Guideline review?*

- The draft Clinical Guideline should be circulated to relevant stakeholders for feedback and approval. In general, regular meetings may be more successful in achieving this aim. The relevant stakeholders should include expert clinicians from the nursing, medical and allied health professions.

- All those involved in the draft development and revision of Guideline drafts should be recorded on the development form.

- An IAEM Standards document (see Appendix II) should be created.

- The final draft is returned to the Committee and reviewed using the EM-AGREE tool to appraise the content of the Guideline.

- Feedback from the appraisals is presented to the author and recommendations for amendments will be made, if necessary.

- The Standards document is then reviewed and signed off by the Chair and Secretary of the Committee.

- If approved and signed off, the Standard will then be published on the Clinical Guidelines Section on the IAEM website.

2.   *The 'AGREE II' Tool – Appraisal of Guidelines for Research and Evaluation*

The potential benefits of guidelines are only as good as the quality of the guidelines themselves. Appropriate methodologies and rigorous strategies in the guideline development process are important for the successful implementation of the resulting recommendations. The quality of guidelines can be extremely variable and some often fall short of basic standards.

The *Appraisal of Guidelines for Research and Evaluation (AGREE) Instrument* is a tool that assesses the methodological rigour and transparency of the process through which a guideline is

developed. The AGREE tool originated from an international collaboration of researchers and policy makers designed to improve the quality, uniformity and effectiveness of Clinical Guidelines. The AGREE Collaboration[5] started in 1998 as a research project *Appraising clinical guidelines* under the *Biomedicine and Health Research* (*BIOMED 2*) *Programme* funded by the European Union. The original AGREE instrument (2001) has been refined, resulting in the new AGREE II (2009).

The purpose of the AGREE II is to provide a framework to:

1. assess the quality of guidelines;
2. provide a methodological strategy for the development of guidelines; and
3. advise what and how information should be reported in guidelines.

The AGREE II replaces the original instrument as the preferred tool and can be used as an objective way to promote evidence based care. We have adapted and modified AGREE II to produce the IAEM-AGREE tool that shall be used for assessment of guidelines for IAEM.

Clinical Guideline Development Resources

To facilitate the development of Clinical Guidelines the following tools have been developed. Please follow the links to down load or print out.

1. IAEM Standards Document
2. Clinical Guideline Template
3. Clinical Guideline Evidence Table
4. Clinical Guideline Development Form
5. Clinical Guideline Implementation and Evaluation Form

Link to Clinical Guideline Development

All documents can be downloaded from the Clinical Guidelines section on the IAEM website. All documents can be filled in electronically and saved with the guideline and emailed to academicchair@iaem.ie.

Utilising these resources assists those developing guidelines and maintains consistency in the standards, content and format of the completed guidelines. To facilitate the guideline review and approval process, it is important to complete these forms and return them to the Committee along with the Clinical Guideline.

For any concerns or support required for the development of Clinical Guidelines, please contact the Chair of the Academic Committee.

For guideline feedback or suggested topics please go to the Clinical Guideline section of the IAEM website.

Thank you for your time and contribution to IAEM Clinical Guidelines.

References

1. Institute of Medicine (1990). Clinical Practice Guidelines: Directions for a New Program, M.J. Field and K.N Lohr (eds.) Washington, DC: National Academy Press (page 38).
2. National Health and Medical Research Council (NHMRC, Australia) 1999. A guide to the development, implementation and evaluation of clinical practice guidelines. Available at: http://www.nhmrc.gov.au/guidelines/publications/cp30. Accessed 10th May 2012.
3. National Health and Medical Research Council (NHMRC) 2000. How to use the evidence: assessment and application of scientific evidence. Available at: http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp69.pdf?q=publications/synopses/_files/cp69.pdf.Accessed 10th May 2012.
4. National Health and Medical Research Council (NHMRC) 2000. How to put evidence into practice: implementation and dissemination strategies. Available at: http://www.nhmrc.gov.au/guidelines/publications/cp71. Accessed 10th May 2012.
5. Agree Collaboration. http://www.agreetrust.org/about-agree/agree-research-teams/agree-collaboration/. Accessed 28th May 2012.

Appendix I. The IAEM-AGREE Tool: A Tool for Evaluation of IAEM Clinical Guidelines

(Based on the *Appraisal of Guidelines for Research and Evaluation* (AGREE II) *instrument*, The Agree Collaboration, London: 2009)

Guideline Topic:

Domain	Item	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
Scope and purpose	1. The overall objective(s) of the guideline is (are) specifically described.							
	2. The health question(s) covered by the guideline is (are) specifically described.							
	3. The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described.							
Stakeholder involvement	4. The guideline development group includes individuals from all the relevant professional groups.							
	5. The views and preferences of the target population (patients, public, etc.) have been sought.							
	6. The target users of the guideline are clearly defined.							
Rigour of development	7. Systematic methods were used to search for evidence.							
	8. The criteria for selecting the evidence are clearly described.							
	9. The strengths and limitations of the body of evidence are clearly described.							
	10. The methods for formulating the recommendations are clearly described.							
	11. The health benefits, side effects and risks have been considered in formulating the recommendations.							
	12. There is an explicit link between the recommendations and the supporting evidence.							
	13. The guideline has been externally reviewed by experts prior to its publication.							
	14. A procedure for updating the guideline is provided.							
Clarity of presentation	15. The recommendations are specific and unambiguous.							
	16. The different options for management of the condition or health issue are clearly presented.							
	17. Key recommendations are easily identifiable.							

Domain	Item	AGREE II Rating						
		1 *Strongly* *Disagree*	**2**	**3**	**4**	**5**	**6**	**7** *Strongly* *Agree*
Applicability	18. The guideline describes facilitators and barriers to its application.							
	19. The guideline provides advice and/or tools on how the recommendations can be put into practice.							
	20. The potential resource implications of applying the recommendations have been considered.							
	21. The guideline presents monitoring and/or auditing criteria.							
Editorial independence	22. The views of the funding body have not influenced the content of the guideline.							
	23. Competing interests of guideline development group members have been recorded and addressed.							
Overall Guideline Assessment	1. Rate the overall quality of this guideline.	**1** *Lowest* *possible* *quality*	**2**	**3**	**4**	**5**	**6**	**7** *Highest* *possible* *quality*
Overall Guideline Assessment	2. I would recommend this guideline for use.	*Yes*	*Yes, with modifications*					*No*

Appendix II: Example of an IAEM Standards Document

IAEM Standards Document

IAEM National Standards Document for Patients Presenting to Departments of Emergency Medicine with ...

Reference: IAEM Standards (year)

Purpose

Integration of guidelines for the early emergent management of patients with suspected ......

Scope

Primary care; Ambulance service; Emergency Departments; referring hospitals and specialist centres.

Clinical suspicion

Confirmation of diagnosis

Diagnostic Modalities

Management
Pre-hospital:
ED:
Hospital:

Disposition

References

Created: (date)

IAEM Review: (date)

Appendix III: IAEM Academic Committee Clinical Guideline Template

Guideline Title:

Introduction

Primary definition of the guideline topic

Parameters of the Guideline

- target audience

- patient population

- patient groups specifically excluded from guideline

- contra-indications

Aim

The aim of the guideline is the anticipated outcome that is intended or that guides your planned actions

Definition of Terms

Define any terms referred to in the policy that are not commonly understood/ need to be clarified in the context of the guideline

Assessment

Patient History (if relevant)

Physical Examination

- initial acute

- ongoing assessment

Investigations – biochemistry, procedures

Social history/issues

Nutrition

Management (consider using clinical algorithms)

Acute

- acute management
- consider community management of acute conditions

Ongoing management

- ongoing management
- potential complications/complications
- management complications/troubleshooting
- community-based management

Follow-up / Review

Special Considerations

- Infection control
- Patient safety alerts

Companion Documents

- Patient/parent information
- Procedures
- Assessment tools
- Staff training and learning packages

Links

Include link

- related web sites (consumer, clinician)
- parent support groups
- national / professional bodies

Administration

- Please complete Evidence Table, Guideline Development Form, Implementation and Evaluation Checklist and submit electronically to academicchair@iaem.ie with final guideline draft.

Appendix IV: Level of Evidence for IAEM Academic Committee Clinical Guidelines

The Hierarchy of Evidence

The Hierarchy of evidence is based on the *National Health and Medical Research Council* (2000) and *Oxford Centre for Evidence-based Medicine Levels of Evidence* (May 2001).

I   Evidence obtained from a systematic review of all relevant randomised control trials.

II   Evidence obtained from at least one properly designed randomised control trial.

III-1 Evidence obtained from well-designed pseudo-randomised controlled trials (alternative allocation or some other method).

III-2 Evidence obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomised, cohort studies, case control studies or interrupted time series with a control group.

III-3 Evidence obtained from comparative studies with historical control, two or more single-arm studies or interrupted time series without a parallel control group.

IV   Evidence obtained from case-series, either post-test or pre-test and post-test.

V   Expert opinion without critical appraisal, or based on physiology, bench research or historically based clinical principles.

Clinical guidelines are based on reviews of the best available evidence. **Level 1 evidence represents the gold standard for intervention studies;** however it is not available for all areas of practice and for some guidelines it may be appropriate to utilise results from studies with lower levels of evidence. Some clinical guidelines may also be informed by experts in the field, locally (hospital/institution) and internationally (Journal articles, expert opinion) etc. This *NHMRC* Hierarchy can be used to grade evidence. Please record details on the evidence table and return to Hospital Clinical Guidelines Committee with guideline

draft. The Evidence Table can be filled out electronically or printed and used as a hard copy.

Please contact Prof. Ronan O'Sullivan (Chair, IAEM Academic Committee) at academicchair@iaem.ie *if you have any concerns or require assistance.*

Appendix IV: IAEM Clinical Guidelines Evidence Table

Guideline Topic:

Please record all references used in developing the clinical guideline. This form must be filled out electronically and emailed to academicchair@iaem.ie

Reference *(include title, author, journal title, year of publication, volume and issue, pages)*	Method	Evidence level (I-V)	Summary of recommendation from this reference (point form)
Example: *Bloggs, J. Who's laughing now? A systematic review. Journal of Hilarity, 2004, 3 (2), 1-15*	*Systematic review of effectiveness of laughter as the best medicine*		• *There are few studies in this area.* • *Moderate to strong evidence exists to support laughter as promoting wellbeing and overall health.* • *Type and amount of laughter: no current available evidence.*

Appendix V: Implementation and Evaluation Plan

IAEM Academic Committee Clinical Guidelines

Implementation and Evaluation are two key elements of guideline development. The author(s) should inform the target audience that the guideline has been developed and when it will be available for implementation into practice. There is a need to ensure the guideline is made accessible to all clinicians and to work with them to implement appropriate strategies for required changes to practice. Evaluation is essential in determining if there has been a difference made to clinical practice and patient outcomes. Assessing the validity and effectiveness of the guideline in practice is an important part of development.

Please complete and return this form electronically with your draft guideline.

1. Identify and list any areas of practice within the new guideline that will differ significantly to current/accepted practice (e.g. a new technique/treatment is introduced)	*Changes to Practice* * * *
2. Identify any foreseeable barriers to implementation (e.g. need for training/education, limited availability of necessary equipment)	*Identified Barriers* * * *

3. Identify existing/available resources (e.g. a core group of staff are available to train others; all necessary equipment is readily available)	*Resources* * * *
4. Outline your plan for implementation of the guideline. Ensure that this plan takes into consideration the major barriers and resources that you identified above (e.g. if equipment is not available, how can you increase its availability?) Strategies might include: information packs, reminders, in-service training, providing resources.	*Plan for Implementation* * * *

5. Consider how you will evaluate the use of the guideline? Contact academicchair@iaem.ie for assistance.

Appendix VI: IAEM Academic Committee Clinical Guideline Development and Review Form

Refer to the following guide and fill in the required details as you develop the clinical guideline.

Please submit this form with your guideline to the IAEM Academic Committee which will review the guideline in conjunction with the development form and ensure the correct process has been followed.

This form can be completed electronically and emailed to academicchair@iaem.ie or kept with guideline drafts until complete and submitted to the Committee.

Development process	Guideline
1. Determine the topic of the clinical practice guideline (CPG)	**Topic**
2. List the guideline's intended user (clinicians) and patient group(s)	**Target audience and patient population**

Key stakeholders		
3. Identify all disciplines/departments involved with patient group/clinical area. Select a group of key stakeholders and inform them the guideline is being developed.	**Name**	**Date notified**

Key stakeholders should contribute to content development and the reviewing of the draft guidelines and must represent experts within the multidisciplinary healthcare team, including consultants, educators and clinicians.

4. Contact the Committee to discuss the proposed topic and to determine if a guideline for the selected topic already exists or is in development. Check other resources e.g. GEMNet

Date contacted:

Author(s)

5. List author(s)

6. Identify clinical questions to complete a thorough literature search via *Cochrane Collaboration*, *Medline*, *CINAHL* etc. Search Guideline websites. *A copy of your search strategy and results must be submitted to the Committee with this form.*

Where did you search externally for the evidence?

7. Complete Evidence Table, including key results, to be submitted (electronically or hard copy) with the draft guideline and this form.

8. Complete 'Implementation Plan', showing how you/other stakeholders plan to support the implementation/use of this guideline in practice.

9. Consult with key stakeholders in development of guideline e.g. regular review and feedback of drafts.

10. Incorporate feedback as appropriate and finalise the CPG draft.

11. Submit: * Final draft * Evidence Table * This form to the Academic Committee or email to academicchair@iaem.ie	The draft will be reviewed in the first instance by the IAEM Academic Committee. The content, layout and evidence-base of the guideline will be appraised. Changes will be identified to authors and key stakeholders for amendment. Once the final draft has been approved by the Committee, Authors and key stakeholders, the draft will be signed off by the Chair and Secretary of the Academic Committee. The guideline will be published on the Clinical Guidelines section of the IAEM website and the authors will be notified.

Academic Committee use only (Approval of Guideline)

Primary Guideline Author	**Date signed**

Chair/Secretary of Academic Committee	**Date signed**

Guideline publication

Appendix 10

Levels of Critical Care

Acute Care	Level 0	Hospital ward clinical management
	Level 1	Higher level of observation e.g. Post Anaesthesia Care Unit (PACU)
Critical Care	Level 2	Active management by critical care team to treat and support critically ill patients with primarily single organ failure
	Level 3	Active management by critical care team to treat and support critically ill patients with two or more organ failures
	Level 3 S	Level 3 with regional / national service

Table Appendix 10:   National Standards for Adult Critical Care Services 2011. Joint Faculty of Intensive Care Medicine of Ireland (JFICMI) in association with The Intensive Care Society of Ireland (ICSI).

Appendix 11

Diagnostic Imaging Requirements

Clinical Priority	Imaging Modalities	Recommended Timeframe for Availability of Report
Priority 1: Time-critical Diagnosis of Life-Threatening Emergency	Chest X-ray (portable/departmental) Plain Film of Abdomen	Immediately and continuously available (24/7/365)
	CT Brain CT Pulmonary Angiogram CT Thoracic Aorta	Next immediate patient imaging slot from 08:00 to 20:00hrs and within one hour on-call
Priority 2: Imaging necessary for safe discharge from ED/CDU/AMU/AMAU/MAU <u>or</u> Influences admission or discharge decision making <u>or</u> Influences need for sub-specialty referral or inter-hospital transfer	CXR departmental Plain Film of Abdomen Other X-ray films as indicated	Available within two hours 24/7/365
	CT Brain CT Pulmonary Angiogram CT Thorax US Abdomen Venous Doppler Carotid Doppler	Ideally, available from 08:00 to 20:00hrs, seven days a week. Must have allocated slots in daily schedule for predictable demand. On-call: as per condition-specific protocols or following discussion between Senior Clinician and Radiologist on-call for cases not covered by existing protocols.
	MRI Bone scan Interventional Radiology	These services may require inter-hospital transfer.
Priority 3: Imaging scheduled for out-patient follow-up after AMU/AMAU/MAU assessment	As per Priority 2	Allocated slots in daily schedule for predictable demand
Notes: List of imaging modalities above is not exhaustive. Vascular surgery services may provide venous and carotid Doppler scans in some hospitals.		

Table 1: Prioritisation of Diagnostic Imaging for the ED/CDU/AMU AMAU, MAU

Type of ECN unit	Imaging Requirements
Type A1 ED	24/7 immediate access to XR, US, MRI. X-ray and CT co-located within ED. Interventional Radiology capability within 60 mins.
Type A2 ED	24/7 immediate access to plain XR in a co-located, dedicated suite. Immediate 24/7 access to CT and US. Emergency MRI and Interventional Radiology access 24/7 within the HSE region via protocolised transfer/retrieval.
Type A3 ED	On-site immediate access to all plain X-ray in a co-located dedicated suite. Ultrasound access from 08:00 to 20:00 weekdays and on-call thereafter and at weekends. Emergency CT within 30 mins of request, with real-time hot-reporting of images through networked systems and linkage to relevant centre (e.g. neurosurgical centre). Emergency MRI access 24/7 within the HSE region via protocolised transfer/retrieval.
Local Emergency Units (Type B unit)	On-site immediate access to plain X-ray, Ultrasound and CT from 08:00hrs to 20:00 hrs seven days a week. Reporting of images through network.
Local Injury Units (Type C units)	On-site immediate access to plain X-ray, ultrasound and CT from 08:00 to 20:00 hrs, seven days a week. Reporting of images through network.

Table 2: Diagnostic Imaging requirements for EDs and other ECN units

Appendix 12: EMP National Workforce Survey 2010

Emergency Department National Workforce Survey December 2010

Introduction

A survey was developed by the EMP Working Group to collect national data pertaining to workforce, support and infrastructural resources in EDs and Minor Injury Units across the country. The survey was conducted in December 2010 and included 39 hospital sites. The adult and paediatric units at Tallaght hospital were analysed separately giving a total of 40 units on 39 sites. The data will be used to determine the baseline level of existing resources and to support the development of a workforce plan to determine the appropriate numbers, grade and mix of staff required for the National Emergency Care System.

1. Summary of Findings

1.1 Staffing Resources

1.1.1   Nursing Workforce

- There were 1,413 nurses (WTE 1183.8) employed in EDs and other units, 70% of whom (824.9 WTE) were staff nurse grades.

- There were 40.5 WTE ANPs employed in the system.

- These nurses held a total of 1,161 postgraduate nursing qualifications.

- Two hundred and forty three nurses had a management qualification, including 79% of CNM grades.

- The total number of certificates, including current, expired or instructor status, in Advanced Life Skills courses held by nurses in EDs was 2,233, indicating that many ED nursing staff had completed more than one course. Forty-one nurses held ALS course instructor status.

- Nursing staff in EDs had a range of specialist skills and competencies relevant to their role.

- The type and duration of induction/orientation provided for new staff was inconsistent across the system.

- Three EDs delivered a foundation programme for Emergency Nurses.

1.1.2 Health Care Assistants

- There were 132 (123.3 WTE) Health Care Assistants (HCA) employed.

- 56% (74) were trained to FETAC 5 level

- The ratio of HCAs to nurses employed was 1:9.6.

- Healthcare Assistants skills varied considerably across the units.

1.1.3 Non-clinical ED Staff Resource

- Staffing resources varied between units and not all 24/7 units had continuous receptionist/administrative support.

1.1.4 The Therapy Professions and Medical Social Workers

- Medical Social Workers were employed as members of the ED team in 14 units.

- Nineteen EDs had dedicated Physiotherapist staffing, with 14.7 WTE employed to provide these services. Sixteen of the 40 units surveyed had neither dedicated physiotherapy staffing nor arrangements in place to request physiotherapy support from within the hospital.

- Occupational Therapy was available in six EDs and 4.8 WTE were employed for ED services.

- One ED had a dedicated dietetic service (employing 0.5 WTE).

- Dedicated Speech and Language Therapy services were available in 2 EDs (1 WTE). This service was available on request or referral in 11 other units.

1.1.5 The Medical Workforce

- There were 62.64 WTE Consultants in Emergency Medicine employed in EDs nationally at the end of 2010.

- The Non Consultant Hospital Doctor (NCHD) cadre in Irish EM in December 2010 was 173 Middle Grade doctors (including 20 Higher Specialist Trainees), 230 Senior House Officers (SHOs) and 10 Interns. Updated data indicated that there was a total of 416.5 WTE NCHDs in EM in January 2012, including 201.5 WTE Middle Grades (29 Specialist Registrars, 172.5

Registrars) and 204 SHOs (26 Basic Specialist Trainees in EM, 88 Basic Specialist Trainees in other specialties, 90 SHO posts not on training rotations) and 11 Intern posts.

1.1.6   Staffing Turnover and Service Issues

- The overall nursing turnover from EDs in 2009 was 5.9% (70.2 WTE leavers).
- A total of 120,395 additional nursing hours were required for the first nine months of 2010. This equated to an average of 3,087 hours/week and a total of 82.3 WTE.
- Sick leave was identified as the most common reason for requiring additional hours, followed by maternity leave cover, increased workload and activity and vacancy cover
- There were 66.7 WTE nursing vacancies in emergency units at the end of 2010.

1.2   Infrastructure and Support

1.2.1   Key Roles Supporting Emergency Care

- Bed managers were employed in 32 hospitals.
- ED Business Managers were employed in six EDs.
- Data Managers were available in almost half of all units (49%); the majority of these were not dedicated specifically to the ED but were a shared resource.
- Plaster technicians were available in 14 (35%) units.
- Pharmacy technicians/Pharmacist resources were available to all EDs; 26 sites shared this resource with the rest of the hospital and 14 had dedicated pharmacy support.
- Patient liaison officer personnel were present in 18 units.
- Research staff were available in only one ED.

1.2.2   Diagnostic Imaging

- Units including Clinical Decision Units, observation units and chest pain units were present in 12 EDs. Collectively these inpatient facilities accounted for 95 beds with a range of four to 11 beds per unit.
- Eighteen sites had dedicated X-Ray facilities for the ED, while 34 (87%) units shared X-Ray facilities with other departments in the hospital during evenings, nights and weekends.
- On-site access to CT was available in 37 (92%) sites; 11 sites had daytime access only.
- On-site MRI access was available in just over half of the units (51%) and only four sites had 24/7 MRI access.

1.2.3 Children's Services in Units Where Children and Adults Routinely Attend

- Twenty-eight units provided emergency services to adults and children.
- The cut-off age for paediatric attendances in adult-only EDs varied, set at 14 years in some units and 16 years in others.
- Audiovisual separation of children and adults was present in only seven of the units where both adults and children attended.
- Seventeen sites at which children and adults attended had paediatric qualified nurses (RCN) employed. From one to 11 RCNs were employed per unit.
- A separate Paediatric Medical Assessment Area was available on ten sites.
- A play therapist was available in only one general ED.

1.2.4 Mental Health Services in ED

- Nineteen (47%) units had a dedicated room for patient with mental health/behavioural problems that conformed to the Royal College of Psychiatrists/British Association for Emergency Medicine standards.
- Psychiatry liaison services were available in 32 (80%) units.
- Access to a crisis intervention team was only available to nine units.
- There was resident on-site on-call psychiatric registrar cover available in 17 (42%) sites.

1.2.5 Triage

- The most common triage tool used was the Manchester Triage System (MTS).
- Formal triage training was provided in 34 (85%) sites.

2. Methodology

Data was requested from the 39 hospitals nationally where EDs and Minor Injury Units were located. The paediatric and adult units at Tallaght Hospital were analysed separately. Table 1 lists the hospitals that were surveyed. All surveys were completed and returned representing a 100% response rate. Data was analysed using Microsoft Excel™.

List of Participating Hospitals	418
Bantry General Hospital	Our Lady's Hospital, Navan
Beaumont Hospital	Our Lady of Lourdes Hospital, Drogheda
Cavan General Hospital	Portiuncula Hospital, Ballinasloe
Connolly Hospital, Blanchardstown	Roscommon General Hospital
Children's University Hospital, Temple St.	St. Columcille's Hospital, Loughlinstown
Cork University Hospital	St. James's Hospital
Ennis General Hospital	St. John's Hospital, Limerick
Kerry General Hospital, Tralee	St Luke's Hospital, Kilkenny
Letterkenny General Hospital	St. Michael's Hospital, Dun Laoghaire
Louth County Hospital, Dundalk	St. Vincent's University Hospital
Mallow General Hospital	Sligo Regional Hospital
Mater Misericordiae University Hospital	South Infirmary Victoria University Hospital, Cork
Mayo General Hospital, Castlebar	South Tipperary General Hospital, Clonmel
Mercy University Hospital, Cork	Tallaght Hospital, formerly AMNCH, Tallaght
Midland Regional Hospital, Tullamore	University Hospital Galway
Midland Regional Hospital, Mullingar	University Hospital Limerick, formerly Midwestern
Midland Regional Hospital, Portlaoise	Regional Hospital, Limerick
Monaghan General Hospital	Waterford Regional Hospital
Naas General Hospital	Wexford General Hospital
Nenagh General Hospital	
Our Lady's Children's Hospital, Crumlin	

Table 1: List of participating hospitals

3. Findings

3.1   Types of units

Analysis reveals that there were 24 units nationally that provide combined adult and children's emergency services. These units are primarily located outside the Dublin region. There were ten EDs that provided adult only emergency services. The youngest age of patients seen in these adult only departments varied – five EDs saw from 14 years upwards and the other five departments saw from 16 years upwards. There were three Paediatric only EDs located in Dublin. Three Minor Injury Units (MIU) were also included in the survey.

Department Type	Total
Adult and Children	24
Adult only	10
Children only	3
MIU	3

Table 2: Types of emergency units in 2010

3.2   Attendance Data

New patient ED attendance data for 2010 were obtained from the HSE Business Information Unit. The total number of new patient attendances in 2010 was 1,097,652.

3.3   Nursing Staff

3.3.1   Nursing Staff Profile

Overall there were 1,183.8 WTE nursing staff employed in EDs nationally at the end of 2010. This equates to a head count of 1,413 nurses. The breakdown per grade of staff is presented in Table 3.

Nursing Staff Profile	Total
Staff Nurse	824.87
Clinical Nurse Manager 1	40.56
Clinical Nurse Manager 2	208.43
Clinical Nurse Manager 3	23.9
Clinical Nurse Specialist	11.71
Advanced Nurse Practitioner	40.84
Clinical Education Facilitator	11.68
Emergency Department Coordinator	5.36
General Practice Liaison Nurse	9.8
Other	6.69
Total WTE	1,183.84
Mean (and range) WTE per unit	29.5(4.5 – 64.5)
Total head count	1,413

Table 3: Nursing staff profiles

The largest staff cohort accounting for 70% of all ED nursing staff is staff nurses. The next largest group is the CNM2 grade (18%) followed by ANPs (3%) and the remaining grades <1% to 2%). The 'other' category of staff (6.7 WTE) included psychiatric liaison nurses (3.7 WTE), alcohol liaison (0.5 WTE) nurses and patient liaison (2.5 WTE) nurses.

3.3.2 Nursing Qualifications

3.3.2.1 Postgraduate qualifications

Information in relation to the qualifications held by all nursing staff in EDs was explored. The 1,413 nurses employed in EDs held a total of 1,161 nursing qualifications at postgraduate level, indicating that some nurses held more than one postgraduate qualification. In total 492 nurses in EDs held a Higher Diploma in Emergency Nursing (35% of all staff) and a further 16% (226) held a Certificate in Emergency Nursing, indicating an emergency nursing qualification obtained prior to the introduction of the Higher Diploma programme. Sixty-four (5%) nurses in EDs had a qualification in medicinal prescribing and 63 nurses were qualified to prescribe X-Rays. Seventy-

three nursing staff identified they had a qualification in the 'other' category, primarily Master's qualifications. This category chiefly consisted of the 40.8 WTE (head count 43) ANPs in post who held a Master's qualification as a requirement for their registration as an Advanced Nurse Practitioner. Two hundred and forty-three nurses had a management qualification, representing 17% of all ED nursing staff and 78% of CNM grades (312 headcount CNM1, 2 and 3 in post).

Nursing Qualifications	Total
Total Head Count	1,413
Higher Diploma in Emergency Nursing	492
Certificate/ENB	226
Management Qualification	243
Medicines Prescribing	64
X Ray Prescribing	63
Other	73
Total	1,161

Table 4: Postgraduate qualifications

3.3.2.2   Nursing Advanced Life Support skills

Each ED was required to identify the number of nursing staff who had Advanced Life Support (ALS) skills training in the categories outlined below. It was evident that many nursing staff in EDs have more than one ALS course as 2,233 staff were identified as having either a current certificate, a previous certificate or holding instructor status. Overall, a significant number of nurses had training that had lapsed (474 with expired certification equivalent to 21% of all who held ALS certificates). This may have been related re-attendance being required every two years to keep ACLS certification current and there may have been release/funding issues locally. Forty-one nurses held instructor status on various programmes. The ACLS programme had the largest number of nurses with current/lapsed provider or instructor status (61%), followed by Trauma courses including ATLS, TNCC & ATNC (46%), Paediatric programmes APLS, EPLS and PALS (29%), Neonatal Resuscitation Programmes (13%), Major Emergency Courses HIMMS/MIMMS (4%), the Burns Programme (EMSB) 1%, with the 'other' category (4%) including ALERT, ATT, PHTLS, ATLS observers and BLS instructors.

ALS Course	Total	
Total Head Count	*1,413*	
ACLS	871 (61%)	
Trauma	651 (46%)	
Paeds	412 (29%)	
Neonatal	180 (13%)	
MIMMS/HMIMMS	51 (4%)	
Emergency Management of Serious Burns	14 (1%)	
Other	54 (4%)	
Total	2,233	

Table 5: Advanced Life Support Skills

3.3.2.3   Enhanced nursing skills & competencies

A list of potential skills and competencies relevant to a nurse working in the ED was included in the survey in order to explore the extent of skills and competencies held by ED nursing staff. It was apparent that nursing staff in EDs possessed a significant range of skills and competencies (Table 6). Additional skills identified in the 'other' category included ASSIST training (self-harm), wound management, resuscitation training skills, PHTLS, eye irrigation, female catheterisation, crutch technique demonstration, nail trephening, parental education and Entonox administration.

Skill	Total
Total Head Count	*1,413*
Triage training	1,112 (78%)
Venepuncture	1,087 (77%)
Cannulation	1,014 (72%)
Wound closure	860 (61%)
Defibrillation	844 (60%)
Splinting	842 (59%)
Plaster Casting	737 (52%)
Non-Invasive Ventilation	680 (48%)
First dose Antibiotic Administration	656 (47%)
ECG Interpretation	649 (46%)
Medicines Management	377 (27%)
Suturing	194 (14%)
ABG Sampling	115 (8%)
Other	114 (8%)
Male catheterisation	87 (6%)

Table 6: Enhanced Nursing Skills & Competencies by frequency

3.3.3   Education Initiatives

Participants were asked to identify the education initiatives provided for nursing staff in their departments and to describe how these programmes were delivered.

3.3.3.1   Induction/orientation programme for new staff

The type and duration of induction and/or orientation provided for nursing staff new to the ED was markedly inconsistent across the system. Seven sites identified that they had no formal process in place to support new nursing staff. The duration of induction/orientation programmes in other sites varied from two hours to six months duration. In organisations where a long period of induction/ orientation was identified, this time included the period of continued support after initial induction where the nurse was assessed, supported and monitored until deemed competent to

practise unsupervised. Some sites identified that staff new to the hospital undertook hospital orientation as well as induction to the ED whereas the support required for existing hospital staff moving to the ED was less. Other sites reported that the period of support varied depending on resources available. The degree of support provided for new staff was not related to the size of the unit.

3.3.3.2   Foundation programme for Emergency Nurses

Three EDs in the Dublin region delivered a foundation programme for Emergency Nurses. The duration of these programmes ranged from three months to six months.

3.3.3.3   Level 8 programme in Emergency Nursing

Twenty-one of the 40 sites identified that the Higher Diploma in Emergency Nursing was facilitated in their ED by providing placements for course participants therefore all these sites have established formal links with Higher Education Institutions (HEI) and in some cases links with more than one HEI.

3.3.4   Nursing Rosters

The 'long day' or 12 hour shift was in use in all units. This was the only roster available for Staff Nurses in 25 units with the nurses rotating from long days to nights and only the CNM grades nurses working eight-hour shifts. In MIUs 12 hour shifts were the norm as the units were only open for 12 hours. Twelve units had a variety of shifts available including long days, half days, early shifts, late shifts and twilight shifts. In two EDs the shifts were composed of long days, twilight shifts and night duty.

3.3.5   Handover Procedures

Handover procedures varied across units. In the majority of sites the location of patient handover was either at a white board, in the office/nurses station or was from nurse to nurse in the clinical area or at the trolley side for more critically ill patients. Two sites identified that they had Triage handover for waiting room patients. Telephone handover for patients being admitted to wards took place in some EDs.

In general, patient handover took place formally at changes of shift and informally after meal breaks etc. Some EDs had a short overlap in shifts to accommodate handover of patient information and the overlap ranged from ten minutes to 30 minutes. Updates also occurred throughout the day, as required. Verbal handover was common practice and some sites identified that they supported this with written documentation. One ED identified that handover was supported by their IT system. A further ED identified that they had a tick box system to document care provided e.g. bloods, ECG, referral, X-ray etc.

The person giving handover varied across services and included the CNM, the shift leader and Staff Nurses. In some areas Bed Management Staff, the Divisional Nurse Manager, the GP Liaison Nurse, CNS, Medical Social Worker or CNM 3 received or were routinely present for patient handover.

3.4   Health Care Assistant Staff Profile

A total of 132 (WTE 123.3) Health Care Assistants (HCAs) were employed in EDs around the country. Fifty-six percent of the HCAs employed had a FETAC 5 level qualification and a further 38% had received inhouse training. The vacancy rate was 10.9 WTE HCAs.

Health Care Assistant Profile	Total
HCA approved	134.21
HCA HC in post	132
HCA WTE in post	123.29
Mean (and range of number of HCAs per unit)	3.0 (0-12.5)
Qualifications	Total
FETAC	74 (56%)
Inhouse training	50 (38%)
No training	8

Table 7: Healthcare Assistant Profiles

Nationally the ratio of HCA to staff nurse employed in EDs was 1:6.7. This represented a ratio of 13% unqualified staff to 87% qualified staff. The number of HCAs employed dictated the cover provided but where possible 24/7 cover was provided.

3.4.1 Health Care Assistant Skills in the ED

The skill set of HCA working in ED was explored in this survey with participants asked to identify if HCAs in their ED had training in specific skills and whether they utilised these skills in the workplace. The findings are summarised in Table 8. Additional skills identified included ordering, stocking, decontamination, monitoring patient weights and removal of IV cannulae.

Skill	Total
Head Count	*132*
Patient transport in house	106 *(83%)*
One-to-one care	100 *(76%)*
Log roll team	95 *(72%)*
Patient transport off site	83 *(63%)*
Vital signs	37 *(28%)*
Other	36 *(27%)*
Spinal immobilisation	26 *(20%)*
ECG Recording	10 *(8%)*
Splinting	12 *(9%)*

Table 8: Healthcare Assistant skills by frequency

3.5   Medical Staff Profile

There was a total 62.64 WTE Consultants in Emergency Medicine employed in total in 2010. The Non Consultant Hospital Doctor (NCHD) cadre in Irish EM (December 2010) was 173 Middle Grade doctors (including 20 Higher Specialist Trainees, known as Specialist Registrars), 230 Senior House Officers (SHOs) and ten Interns. Updated data indicated that there was a total of 416.5 WTE NCHDs in Emergency Medicine in January 2012, including 201.5 WTE Middle Grades (29 Specialist Registrars, 172.5 Registrars) and 204 SHOs (26 Basic Specialist Trainees in Emergency Medicine, 88 Basic Specialist Trainees in other specialties, 90 SHO posts not on training rotations) and 11 Intern posts.

3.6   *Non-clinical ED Team Roles*

The extent of the ED non-clinical support staff resource for each unit was explored. A wide range of resources was identified across similar services with a wide variety of arrangements in existence around the country. Many support staff resources are either not present or are not members of the ED team. Some EDs use hospital resources such as domestic, janitor and portering services as opposed to having these support staff as members of the emergency care team. Other units contract services such as cleaning/household and security.

Roles	Total
Reception/Administration	211.4
Mean (and range) of number of staff per unit	5.3 (0 – 16.4)
Office Administration	41.64
Mean (and range) of number of staff per unit	1.0 (0 – 3.8)
Domestic	34.84
Household	25.87
Portering	97.08
Security	41.7

Table 9: Non-clinical ED staff

In larger EDs, administrative support services were available 24/7. Office Administration staff were generally available Monday to Friday during office hours and reception administration staff were available 24/7. A limited administration resource (both reception and office) was available in some smaller units and in these cases nurses registered the patients after 17.00 hrs. Security staff were available during night time hours only in smaller EDs. A significant overlap in roles was identified in some EDs e.g. portering staff performing cleaning duties at weekends and multi-task attendants undertaking domestic, cleaning and portering duties.

3.7 Therapy Profession Staff and Medical Social Workers

Therapy Profession staff and Medical Social Workers were available as part of the ED team that provided Physiotherapy, Occupational Therapy, Dietetics and Medical Social Work services. Medical Social Workers were employed as part of the ED team in 14 EDs (primarily the larger EDs). The range of Medical Social Workers employed in the 14 sites was 0.5 – 0 2 WTE. Dedicated ED Physiotherapy services were provided by 14.7 WTE, consisting of basic and senior grade Physiotherapists. Some EDs employed both grades. This service was available in 19 of the 40 sites. The Physiotherapy resource available did not appear to be directly related to the size of the unit. In 16 units Physiotherapy support was not available through a dedicated resource, nor could it be accessed on request from other parts of the hospital.

Staff	Total
Medical Social Workers	13.7
Physiotherapists	14.75
Occupational Therapists	4.85
Dialecticians	0.5
Others	1

Table 10: Therapy Profession staff and Medical Social Workers

Occupational Therapy was documented as being available in six EDs. The total dedicated resource equated to 4.8 WTE. A limited Occupational Therapy service was available in a further four units by referral. Only one ED had a dedicated dietetic service (0.5 WTE). In the remaining hospitals, clinical nutrition input was provided on a prioritised basis with the service being provided from the general hospital resource. Speech and Language Therapy services were directly available in two EDs (1 WTE) and were available on request/referral in 11 other EDs.

3.8 Service Issues

Information was collected in relation to the number of staff who left employment (resigned or retired) in 2009 in order to get a picture of staff movement or turnover from EDs.

3.8.1   ED Nursing Staff Turnover

The overall nursing turnover from EDs in 2009 was 5.9% (70.16 WTE leavers among 1183.84 WTE in total). Trends in staff movement cannot be determined from a single year's data and ongoing monitoring of staff turnover is planned. Some units underwent reconfiguration in 2009 and this was reflected as a high turnover of staff in those units for that year.

3.8.2   HCA and Other Staff Turnover in EDs

There was minimal turnover identified in the HCA and other support staff categories. Five WTE HCAs left employment in five different units and 3.5 support/reception staff left from three units.

3.8.3   Reasons for Leaving Employment

The reasons for staff leaving employment in 2009/2010 are presented in Table 11. The prime reason for leaving employment was retirement. Retention strategies to address other reasons for leaving may include providing local opportunities for professional development, stress management training, organisational and management support and providing flexible working arrangements for staff where possible.

3.8.4   Use of Nursing Overtime, Bank and Agency

Data pertaining to the use of additional hours (overtime, agency and bank hours) in EDs was collected for the first three-quarters of 2010. The figures were collected for nursing and support staff categories.

3.8.4.1   Additional hours used in nursing

A total of 120,395 additional nursing hours were required nationally for the first nine months of 2010, equating to an average of 3,087 hours/week which is **equivalent to 82.3 WTE** (using standard nursing hours of 37.5 hours/week). Overtime and bank hours combined were comparable to the agency hours used (62,935 agency hours or 52% of all additional hours). Bank hours were 28,122 in total.

Reasons for Staff Turnover	Frequency
Retirement	18
Travel	11
Further education/Professional development	9
Promotion	7
Work in other area of nursing	5
Move to another hospital	5
Career change	5
Overseas employment	4
Transfer within hospital/organisation	3
Personal/family reasons	4
Career break	3
Resignation	2
Moving house	1
End of contract	1
Reduction in hours	1

Table 11: Reasons for staff turnover

3.8.4.2   ED nursing vacancies

There were 66.7 WTE nursing vacancies at the end of 2010. The number of additional hours required in the first three-quarters of 2010 being equivalent to 82.3 WTE suggests that the additional hours would greatly diminish if nursing vacancies were filled.

3.8.4.3   Additional hours used for other ED staff

Additional hours of support staff work used totalled 33,445 hours and provided HCA, porter, office and reception staff duties. This equated to an average of 857 hours used per week or 21.9 WTE (using average of 39 hours /week). In total, 69% of all additional hours used were agency hours, 21% were bank and the remaining 10% were overtime.

Additional hours used – Support Staff	Total
Overtime	3,392
Bank	6,882
Agency	23,171
Total	33,445

Table 12: Additional hours used for support staff

3.8.4.4   Reasons for use of additional hours

The reasons for the requirement for additional hours were explored. A summary of the reasons identified is provided in Table 13. Sick leave was identified as the top reason for requiring additional hours, followed by maternity leave cover, increased workload and activity and vacancy cover. Issues which were cited as contributing to increased activity included patients waiting in ED for admission, inadequate hospital beds for admitted patients, increased numbers of critically ill patients attending, surge e.g. influenza outbreaks and nurses/support staff leaving department to provide escorts. Vacancies were most commonly attributed to the moratorium on recruitment.

Reasons for requirement for overtime, bank or agency work	No of times identified
Sick leave/absenteeism	30
Maternity leave cover	18
Increased workload/activity	17
Vacancies	15
Special leaves (e.g. parental, compassionate)	6
Staff shortages/shortfall in numbers	5
One-to-one observation	4
Long term sick leave	4
Mandatory study leave	3
Annual leave cover	2
Flexible working (staff reduce WTE)	1
Activation of escalation policy	1
Support reconfiguration	1

Table 13: Reasons for the requirements for overtime, bank or agency work

3.9   Infrastructure and Supports

3.9.1   Key Roles Supporting Emergency Care

The survey included an analysis of the availability of key personnel working in non-ED roles that support emergency care. Bed managers were available in 32 hospitals, ED Business Managers were employed in six units and Data Managers were available in almost half the sites (47%). Most Data Managers were not dedicated specifically to the ED but provided a shared resource within the hospital. Three EDs had a dedicated Data Manager resource. Plaster technicians were available in 13 units; of these two were dedicated solely to the ED. Pharmacy technicians/Pharmacist resource were available to all units; 26 sites shared this resource with the rest of the hospital and 14 had dedicated pharmacy support. Patient liaison officer personnel were present in 18 (45%) units; four units had dedicated Patient Liaison Officers. Research staff are available in only one ED.

3.9.2   Support Infrastructure

3.9.2.1   Observation Medicine/Clinical Decision Units

There was significant variance in the levels of support infrastructure in place in different hospitals. Clinical Decision Units, observation units or chest pain units were present in 12 EDs and accounted for 95 beds, ranging from four to 11 beds per unit.

3.9.2.2   Diagnostic Imaging support

Eighteen sites had dedicated X-Ray facilities for the ED while 34 (85%) units shared X-Ray facilities with other departments in the hospital during evenings, nights and weekends. On-site MRI access was available in just over half of the units (52%), the hours available ranged from 24/7 access in four sites with the other 17 sites having access during routine daytime working hours only. On-site access to CT was available in 37 (92%) sites; 24/7 access was available in 26 of these units and access from 09:00-17:00 hrs in the remaining 11 sites.

3.9.2.3   Scheduled Return Clinics

Wound clinics were provided as part of the ED service in 20 sites. Physiotherapy clinics were provided in 14 sites. Nurse-led clinics were provided in 15 sites, usually ANP-led. Other clinics were identified in 14 sites and included Consultant review clinics, trauma clinics, soft tissue review clinics, early pregnancy unit clinic, chest pain assessment clinic, CDU review clinic, plastics clinics, "call-back" clinics and a vaccination clinic.

3.9.2.4   Community Intervention Team access

Access to Community Intervention Teams was available to 16 (40%) units, with hours of access varying from 09:00-17:00 hrs to a 24/7 service.

3.10 Children's Services in Units Where Children and Adults Routinely Attend

Twenty-eight units provided emergency services for both adults and children. The majority of these units were based outside the Dublin area. The availability of resources specific to children's needs in these emergency settings was explored. There was audiovisual separation between children and adults in only seven (25%) general units. A separate Paediatric Medical Assessment Area was available in ten sites (36%). A play therapist was available in only one general unit. The total number of nurses working in general sites who had paediatric qualifications was 45.7 WTE and these nurses were employed across 17 general sites (61% of all general sites). The number of nurses with paediatric qualifications who were employed in general units ranged between one and 11 RCN(s).

3.11 Mental Health Services

The facilities and resources available for patients (of all ages) presenting with mental ill-health to the ED were surveyed. Eighteen (46%) EDs had a dedicated room for patients with mental health/behavioural problems that conformed to RCPsych/BAEM standards. There were Psychiatry Liaison services available in 32 (80%) units. The availability of these services ranged from 24/7 access (seven sites) to core hours Monday to Friday (20 sites), 12 hours Monday to Friday in one site, two days a week in another site to on-call arrangements only in two sites. There was resident on-site on-call psychiatric Registrar cover available in 17 (42%) sites and available on a 24/7 basis in 15 sites. Access to a crisis intervention team was limited and was only available to nine departments. Where available, the hours of access ranged from 24/7 to two days per week. A Psychiatry of Old Age service was available in 16 EDs and was generally available during core working hours Monday to Friday (available 24/7 in two sites and 12/7 in one site). Where not directly available, this service was either accessed via the adult psychiatry referral service, through the on-call Psychiatrist, by transferring the patient to nearest psychiatric hospital or by admitting the patient to the general hospital if it was deemed unsafe to discharge the patient.

Child Psychiatry services were available in 14 (34%) sites. Where not directly available, this service was reported as being accessed through the local Paediatric service/unit/hospital, via the child psychiatric clinic or through referral to community welfare officers, or by providing the child with a place of safety until they could be assessed by the Child and Family care team.

3.12   Triage

The Triage system used by EDs varied. The most common tool used was the Manchester Triage system which was used in 75% (30) sites. This was followed by the Australasian system used in five sites. A modified Cape Triage Score tool was used in two sites. Two other sites (Paediatric EDs) had developed specific paediatric triage tools. One ED did not utilise a formal assessment tool. Thirty-three units had dedicated Triage rooms.

Nursing staff at Staff Nurse and CNM grade performed patient triage. The majority of departments had made it explicit that these nursing staff members should have a minimum amount of experience, should have the appropriate training and have demonstrated competency in performing triage. Formal Triage training was provided in 34 (85%) sites. This training consisted of either in-house departmental training (typically one day), training via foundation or level 9 Emergency Nursing programmes or training provided externally (by another hospital) followed by supervision and clinical assessment. A small number of sites used the Manchester training pack. Some areas monitored the maintenance of competence in performing Triage by undertaking intermittent audit on Triage standards.

Triage training was seen as a requirement in 33 units but was not seen as a requirement in the remaining seven. There were protocols or criteria for conducting Triage available in all but three EDs.

Participants were asked to identify if Triage was carried out before or after registration. Thirty-two units typically carried out Triage after registration. Most sites identified that Triage was routinely carried out before registration for patients who arrived by ambulance and were unstable. Seven EDs always carried out Triage before registration.

Finally, Rapid Assessment and Treatment was available in six EDs. Where it was available, the hours of availability range from 24/7 in three EDs to core hours elsewhere.

Appendix 13:

Emergency Nursing Competency Framework

Definitions

Behavioural Indicators

Behavioural indicators are a set of observable behaviours that indicate that the nurse or midwife has the knowledge, skills, attitudes, values and professional judgment required for effective performance of the competency identified (National Council for Nursing & Midwifery [NCNM] 2010). They have been described as the detailed and working part of an individual competency.

Competence

A complex and multidimensional phenomenon and is defined as the ability of the Registered Nurse (or Midwife) to practise safely and effectively, fulfilling his/her professional responsibility within his/her scope of practice (An Bord Altranais [ABA], 2005).

Competency

A competency describes what is observed when a nurse or midwife combines knowledge, skills, attitudes and judgement to perform role-relevant tasks. A competency is often written as a short descriptive statement called a competency statement (NCNM 2010).

Competency Framework

A competency framework is described as a complete collection of competencies and their behavioural indicators that are central to, and set the standards of, effective performance for a particular client group (NCNM 2010).

Scope of Practice

The scope of nursing practice is the range of roles, functions, responsibilities and activities in which a registered nurse is educated, competent and has authority to perform (ABA 2000).

Domains of Competence

Professional/Ethical Practice

This allows the Emergency Nurse to practice within a framework of professional accountability and responsibility underpinned by legislation, professional regulation and guidelines. It enables the Emergency Nurse to practise within the limits of his/her own scope of practice and competency, encouraging the nurse to develop an ethos of lifelong learning.

Holistic Approaches to Care and the Integration of Knowledge

This enables the Emergency Nurse to conduct a systematic holistic assessment of the needs of the emergency patient and their family/carer that is based on nursing theory and evidence-based practice. It encourages planned nursing care in consultation with patients and their carers taking into consideration the therapeutic regimes of all members of the multidisciplinary team.

Interpersonal Relationships

This encourages the Emergency Nurse to establish and maintain a caring therapeutic and interpersonal relationship with the emergency patient and their family/carers. The Emergency Nurse will actively empower the patient, where possible, and continuously advocate on their behalf through collaboration with all members of the multidisciplinary team.

Organisation and Management of Care

The Emergency Nurse effectively coordinates and manages the patient's journey through the ED, organising the environment so that it is conducive to high-quality patient care, taking into account the patient's cultural, spiritual, religious values and traditions, where possible, while adhering to

legislation and HIQA standards. The Emergency Nurse will work within a multidisciplinary setting, delegating to team members activities commensurate with their level of competence.

Personal and Professional Development

The Emergency Nurse acknowledges the need for professional and personal development to enable him/her to advance from the novice to the expert Emergency Nurse. This is demonstrated through a commitment to on-going professional development and through formal and informal education opportunities in order to enhance and advance their clinical practice. The Emergency Nurse contributes to the learning experience of colleagues and the multidisciplinary team through a supportive and collaborative framework using evidence-based practice.

Domain 1:   Professional/Ethical Practice

Performance Criteria	Behavioural Indicators
Practices within a framework of professional accountability and responsibility.	• Practices within the legislation, professional regulation and guidelines relevant to his/her scope of practice and emergency care setting; • Integrates accurate and comprehensive knowledge of ethical principles and the Code of Professional Conduct within the scope of professional practice in the delivery of emergency nursing care; • Integrates knowledge of, and respects and protects, the rights, beliefs and cultural practices of the emergency patient; • Advocates with and on behalf of the emergency patient to protect their rights. Ensures adequate protection for those emergency patients who are unable to make their own decisions and/or protect themselves, their mental and physical integrity; • Demonstrates knowledge of and implements the philosophies, policies, protocols and clinical guidelines of the healthcare institution and those specific to the Emergency Department; • Responds to and reports all incidences of unsafe or unprofessional practice, deviations from best practice and unethical and illegal practices.
Performance Criteria Practises within the limits of own competence and ensures he/she takes measures to develop own competence	**Indicators** • Determines own scope of practice using the principles in the *Scope of Nursing and Midwifery Practice Framework* document; • Recognises own abilities and level of professional competence; • Critically evaluates and bases practice on best available

	evidence;
	• Accepts responsibility and accountability for consequences of own actions or omissions in caring for the emergency patient;
	• Assumes personal responsibility for maintaining current knowledge to provide evidence-based, best practice emergency nursing;
	• Identifies a mechanism to support continuing professional development to ensure continued competence.

Domain 2:   Holistic Approaches to Care and Integration of Knowledge

Performance Criteria	Indicators
Conducts a systematic holistic assessment of the needs of the emergency patient based on nursing theory and evidence-based practice	• Performs a comprehensive assessment of the emergency patient taking into consideration the life-long continuum; • Performs a comprehensive assessment using validated assessment tools e.g. Manchester Triage System, National Early Warning Score, Glasgow Coma Score, pain assessment tools; • Interprets data accurately and comprehensively leading to appropriate identification of findings; • Integrates and applies knowledge of acute life and limb-threatening conditions into holistic patient assessment; • Incorporates best practice standards and research directly related to caring for the emergency patient.
Performance Criteria Plans care in consultation with the patient, taking into consideration the therapeutic regimes of all members of the multidisciplinary team	**Indicators** • Prioritises care of the emergency patient based on their immediate needs and best evidence-based practice; • Plans for appropriate and timely consultation by members of the multidisciplinary team with reference to patient acuity based on expected outcome for clinical condition; • Utilises specific evidence-based criteria for the evaluation of expected outcomes of acute illness and injury; • Plans for timely, safe, patient discharge or referral to on-call specialist teams and, where appropriate, plans follow up care; • Documents plan of care in a clear, concise manner using recognised terminology that is understood by the entire healthcare team.

Performance Criteria	Indicators
Implements planned nursing care and interventions to achieve identified outcomes	• Provides person-centred and family-centred nursing care in accordance with agreed scope of practice that is safe, comprehensive and effective; • Adheres to professional practice guidelines in the management and administration of all medication; • Supports and educates the patient and their family/carers in the initiation and implementation of planned care; • Adheres to professional practice guidelines in the management of patients who present as result of violence or abuse; • Creates and maintains a safe and comfortable environment that provides for the physical, psychosocial and spiritual needs of the patient. This includes care of the dying/end of life patient; • Maintains the dignity, comfort and privacy of the family/relatives of the deceased patient brought into the Emergency Department.
Performance Criteria Evaluates progress toward expected outcomes and reviews plan of care in consultation with the emergency patient	**Indicators** • Assesses the effectiveness of emergency nursing care in achieving planned outcomes; • Continually evaluates effectiveness of nursing interventions and compares actual with anticipated outcomes; • Provides evidence-based rationale to modify and individualise the care plan according to the evaluation findings.

Domain 3:   Interpersonal Relationships

Performance Criteria	Indicators
Establishes and maintains caring therapeutic interpersonal relationships with the emergency patient, and their family/carers	- Promotes collaborative communication with the emergency patient, their family and carers; - Creates and ensures a calm environment that is conducive to communication, caring and 'knowing the person', where possible; - Communicates meaningfully and sensitively, supporting the emergency patient in the expression of their feelings, fears and expectations; - Provides emotional and social support to the emergency patient, their family and carers; - Ensures the emergency patient and carer receive and understand relevant , current information concerning their healthcare needs on a regular basis and are involved, where appropriate, in decisions of care; - Appreciates the barriers to communication due for example to the critical condition of the emergency patient; - Safeguards and ensures confidentiality, privacy and informed consent; - Accommodates, is respectful of and sensitive to the emergency patient and their carer's cultural and spiritual diversities; - Participates in hospice-friendly initiatives to provide appropriate levels of nursing care and support to palliative care patients; - Following the death of the emergency patient provides support for the carers and facilitates transition into bereavement/support services, if required; - Maintains dignity and privacy following death, accommodating and being respectful of and sensitive to

Performance Criteria	Indicators
	the carers' cultural and spiritual diversities.
Performance Criteria	**Indicators** • Elicits the views of the emergency patient, paying special attention to vulnerable or special needs groups; • Encourages family-centred care in relation to care of paediatric emergency patients; • Encourages and provides opportunities for the emergency patient to exercise their rights and responsibilities, ensuring adequate protection for those people who are unable to make their own decisions and/or protect themselves.
Performance Criteria Collaborates with all members of the multidisciplinary team and documents relevant information	**Indicators** • Establishes relationships with multidisciplinary team members, based on mutual respect and understanding; • Collaborates with multidisciplinary team members in decision-making concerning patient care, based on best practice guidelines; • Communicates verbally with members of the multidisciplinary team to ensure continuity of care through an entire care episode; • Maintains comprehensive, accurate, clear, concise and contemporaneous emergency nursing records within a legal and ethical framework (An Bord Altranais 2002).

Domain 4: Organisation and Management of Care

Performance Criteria	Indicators
Effectively manages nursing care of the emergency patient within the multidisciplinary team	• Contributes to the overall mission and goal of the Emergency Department and organisation; • Collaborates with other multidisciplinary team members in providing best practice and establishes mechanisms for consultation regarding practice and referral; • Organises the environment in such a way as to be sensitive to and respectful of the needs of the emergency patient and their carers including their cultural/spiritual/religious values and traditions, where possible; • Identifies aspects of care important for quality monitoring, for example, triage and waiting times, adverse events, patient safety and risk; • Follows and adheres to Hygiene, Health and Safety, Infection Prevention and Control standards and guidelines.
Performance Criteria Delegates activities to other emergency nurses and multidisciplinary team members commensurate with their competence and within their scope of practice	**Indicators** • Identifies the most appropriate person to deliver care and gives directions for care activities delegated to other multidisciplinary team members, including support staff within their scope of practice, in line with the principles outlined in the *Scope of Nursing and Midwifery Practice Framework*.

Performance Criteria	Indicators
Facilitates the co-ordination of care embracing the emergency patient's choices and involvement	• Involves the emergency patient/carers in decision-making in the organisation and delivery of their care e.g. patient focus groups; • Works with multidisciplinary team members to ensure that care is appropriate, effective, safe and consistent; • Liaises and works with agencies providing care for the emergency patient e.g. liaison psychiatry, crisis intervention team, primary care teams, pre-hospital emergency care services, support agencies.

Domain 5: Personal and Professional Development

Performance Criteria	Indicators
Acts to enhance the personal and professional development of self and others	• Acknowledges the need for professional and personal development; • Demonstrates a commitment to ongoing professional education and life-long learning in the care of the emergency patient; • Recognises own and others' attitudes, values and expectations and their impact on the nursing care of the emergency patient and their carer; • Demonstrates clarity of beliefs and values in caring for the emergency patient; • Contributes to the learning experience of colleagues through a supportive and collaborative framework; • Uses the outcomes of audit and educational initiatives to improve nursing care of the emergency patient; • Develops professional links and networking with other professionals practising in the emergency setting; • Develops a culture of change to advocate for and improve the care of the emergency patient.
Performance Criteria Participates in education and professional development programmes in care of the emergency patient	**Indicators** • Participates in and accepts personal responsibility for ongoing professional development and education in the care of the emergency patient; • Acknowledges and values the existence and uniqueness of a specialised body of knowledge relating to emergency patient; • Practises and develops professional competence and scope of practice on the basis of this specialised knowledge;

	• Collaborates with other multidisciplinary team members with expert knowledge in providing best practice and establishing a forum for delivery of education.
Performance Criteria Develops and integrates a framework to reflect on practice, implementing evidence-based nursing practice to improve the care of the emergency patient.	**Indicators** • Values and establishes reflective practice as an integral part of the nursing care of the emergency patient; • Develops and integrates a framework to reflect on and explore nursing practice in care of the emergency patient; • Acts to develop an environment of enquiry and change in providing best practice in the care of the emergency patient; • Objectively evaluates emergency nursing practice; • Integrates evidence-based practices to improve nursing care of the emergency patient.

Competency Assessment

A competency assessment process is required in order to carry out assessment of clinical competence.

A categorical rating scale based on Patricia Benner's (1984) novice to expert continuum is proposed as the method of assessment for the Emergency Nursing Competency Framework. This process may commence as part of an existing induction or foundation programme for Staff Nurses or may be initiated as part of an in-service professional development plan. Examples of rating scales are contained in *Nurse and Midwife Clinical Competency Determination and Competency Development Planning*, NCNM 2010.

Appendix 14

Specific Nursing Competencies for the National Emergency Care System

The following education and training initiatives are recommended to ensure that all nursing and nursing support staff acquire relevant, clinical competencies for their particular role and scope of practice.

Education and Training – Competency Development

1. All new staff should be facilitated with an induction course to familiarise them with the policies of the hospital and the Emergency Department (ED) prior to initial assignment to the ED.

2. Multidisciplinary teaching and training provided on a weekly basis in the ED.

3. In-service Education – Mandatory Training
   - Healthcare Provider Basic Life Support
   - Fire training
   - Manual Handling and Moving
   - Non-Violent Crisis Intervention
   - Child Protection Training

4. Discipline-specific training and continuing professional development facilitated as required e.g.
   - Advanced Cardiac Life Support
   - Trauma Course
   - Paediatric and Neonatal Life Support
   - Major Incident Medical Management and Support Course

5. Specific in-service ED education and training

- Manchester Triage Score and paediatric triage training and updates
- Pain management and use of medication protocols/oral administration of aspirin
- Intravenous cannulation and phlebotomy
- Intravenous medication / first dose antibiotic / morphine administration
- Arterial Blood Gas sampling
- Intraosseous cannulation
- Orthopaedic Splinting/Casting
- Wound Closure
- Suturing
- ECG Interpretation
- Cardiac and stroke thrombolysis training
- Equipment training and updates
- Non-invasive ventilation
- Intubation as in Rapid sequence induction
- Procedural Sedation

6. Supplementary Training and Education

- Managing difficult clients and challenging behaviour
- Bereavement and dealing with sudden death in the ED
- Health Promotion opportunities in the ED
- Recognition and management of sexual assault & domestic violence in ED
- Management of Paediatric Emergencies
- ASSIST course (Applied Suicide Intervention Skills Training)
- Care of the vulnerable adult

7. Postgraduate nursing education (Level 8)

- Nurse Prescribing of ionising radiation
- Nurse Prescribing of medicinal products
- Postgraduate Diploma Specialist Nursing Programmes

Appendix 15

EMP Best Practice Workshop Feedback

Summary

A series of workshops was held between December 2010 and March 2011 to enable ED staff from all hospitals participate in the Programme's work and to gather information regarding EM patient care from across the country. The workshop brief was to obtain the service providers' perspectives and to identify areas of best practice that could be shared across the emergency care system. Two representatives, from any one of nursing, medical and administrative staff, were invited to participate from each ED. Two additional workshops were held, one for Healthcare Assistants and one for the Therapy Professions, to ensure these multidisciplinary team members' perspectives on EM services were also represented in the Programme. All participants were asked to identify areas of their work that they were proud of, areas that they considered required improvement and areas they thought the EMP should focus on to achieve its overarching aim of improving the safety, quality and timeliness of ED care. An informal voting system was used to determine the priority areas for the EMP from the ED teams' viewpoint.

The workshops were well attended and the EMP working group was heartened by the participants' enthusiasm. Their deep concern for patients' wellbeing, their dedication and their pride in their EDs were clearly evident. The EMP Working Group is most grateful to all those who participated in these workshops and to those organisations that hosted the workshops. The participants' contributions are recorded in this document. Not all contributions are linked to specific EDs and duplicate responses have been edited for brevity.

Participants were asked to look beyond the issues of ED overcrowding and NCHD staffing shortages as barriers to high-quality care, with an acknowledgement that these issues were problematic in most EDs and were outside the control of the EMP to resolve. This feedback not only highlights existing good practice to be evaluated and disseminated but also provides clear direction and priorities for the future work of the Programme.

The lists are not a comprehensive analysis of services in any region but a snap-shot of staff contributions to the workshops. **The inclusion of workshop participants' suggestions for service change in this document does not imply EMP support but what is assured is that the EMP will give all proposals and views due consideration in the course of the Programme's work.**

Key Findings of the Best Practice Workshops

- There was remarkable consistency between regions and EDs with regard to the areas that staff identified as good practice and barriers to providing high-quality care.

- Most EDs had condition-specific care pathways.
  The EMP working group intends to collate, review and disseminate these pathways.

- All staff representatives felt that all EDs, large and small, had a valuable contribution to make to patient care in EM in Ireland.

- There were high levels of concern for patients' experience of EM care, particularly the most vulnerable patient groups.

Priority Areas on which Workshop Participants Wanted the EMP to Focus

1. Introduce national standardised Integrated Care Pathways

2. Improve access to diagnostics

3. Implement ED Information Systems and improved ICT in EDs

4. Develop standardised staffing models for future EDs

5. Ensure equity of resource allocation

6. Implement clinical audit, standardised data collection and key performance indicators.

The top-voted priorities for each region are listed at the end of each region's feedback.

HSE South

Mallow General Hospital, Bantry General Hospital, Mercy University Hospital, Cork University Hospital, South Infirmary Victoria University Hospital, Kerry General Hospital, Wexford General Hospital, St. Luke's General Hospital, Kilkenny, South Tipperary General Hospitals and Waterford Regional Hospital.

List aspects of your ED of which you are particularly proud:

Mallow, Bantry, Mercy Hospitals

- Being a smaller hospital is a positive;

- Patient and nurse contact through the patient journey;

- Short waiting times, timely admission and review;

- Having defined nursing roles;

- Good planning;

- Good nursing care;

- A holistic approach to patient care;

- Providing comprehensive patient assessment;

- Teamwork is good in EM;

- Good GP liaison.

Cork University, Wexford, St Luke's Kilkenny and South Tipperary Hospitals

- Streaming from Triage to MAU /ED, early pregnancy unit;

- Electronic white board for patient tracking;

- South East Trauma Study Days;

- ANP service;

- Nursing roles: Plaster service, IV Cannulation, ACLS skills;

- Door to needle time – Wexford;

- Discharge letters to GPs.

What aspects of your service might you wish to improve?

- Having more permanent staff;

- Improved education to increase skills;

- Standardisation of resource allocation;

- ICT Modernisation and network links;

- Better patient care documentation with integrated storage system;

- Consultation with other specialities in a more timely fashion;

- Improved links to diagnostics – bloods, x-rays, CT scans;

- More effective bed management;

- Purpose built environment;

- Links to Paediatric Services;

- Easier transfer of critically ill and injured patients;

- Network governance to be improved;

- Better transport out of CUH;

- Networked bed management.

What are the barriers to delivering better patient care in your EDs?

- The physical size of the departments;

- Shortage of senior decision makers;

- Early discharge planning;

- Underdeveloped links with Primary Care;

- Delays in specialty consultation.

Are there condition-specific clinical pathways that work well in your ED?

- Stroke Care pathway;

- ACS pathway;

- Easier access to OPD including Fracture clinics;

- Head Injury;

- Psychiatric Liaison Nurse;

- Regional protocols for patients with fractured neck of femur;

- Renal Colic;

- Acute Myocardial Infarction;

- Psychiatry (adult);

- Stroke;

- Falls Prevention;

- First Fit Clinic(Waterford Regional Hospital);

- IV Antibiotic administration;

- DVT Protocol;

- Surgical admissions pathway.

How might Paediatric EM and Geriatric EM be improved in your ED?

Paediatrics

- Having more paediatric trained nurses;

- Having greater Paediatric involvement in the ED;

- Separate paediatrics area (linked to ED);

- Clear Paeds pathways for admissions.

Older Patients

- Access to respite for patients who present to EDs;

- More direct admission to beds for sick elderly to bypass EDs;

- More input from primary care and community hospitals e.g. fluids results, end of life care;

- Time and appropriateness of referral of older patients to EDs;

- Clinical input from geriatricians.

What resources does your ED need to improve?

- ICT Services;

- Links to other EDs in networks;

- Community access to intervention teams and diagnostics;

- Ambulance transfer protocols;

- Senior clinicians in EM;

- Improved education and training;

- Structures for minor injury care;

- More ANPs.

Have you any ideas as to how your ED could be come more efficient and cost-effective?

- Clear pathways/policy/procedures;

- Access to Medical Records;

- Single patient identifier/MRN;

- Computerised notes so other EDs can access.

Are there any particular areas you would like the EMP to focus on?

- Clear patient pathways e.g. IT, paperwork, governance, access to specialities, senior clinicians 24/7 in post;

- EDs working within networks;

- Rotation of staff between EDs;

- Improve skills and education mix;

- Primary Care to prevent admission to EDs;

- Look at rural ED differently in terms of safety of patients and distance of travel;

- Increasing education /training;

- Define scope of practice of EM.

HSE South Best Practice Workshop	Votes *
Access to Diagnostics	10
Patient information systems/IT Systems	9
Clear Patient Pathways	4
Expanded Nursing Roles	4
Standardisation of Resources	3
Building Links with the Community	3
Standardised Protocols	3
ED Networks and Governance	1

*Participants at each workshop had three votes to cast (applied to all regions and workshops).

Table 1: HSE South Staff Priorities for EMP

Dublin and the North East

Our Lady of Lourdes Hospital, Drogheda, Cavan General Hospital, Monaghan General Hospital, Our Lady's Hospital, Navan, Louth County Hospital, Dundalk, Beaumont Hospital, Connolly Hospital and Mater Misericordiae University Hospital.

List aspects of your ED of which you are particularly proud:

- Monaghan General Hospital had first Minor Injury Unit registered in Ireland;

- Pathways for orthopaedic referral, plastics Paeds and adults, ENT and Ophthalmology;

- Monaghan ANP led service;

- Minor Injury protocols in Monaghan;

- Well developed risk management systems;

- PALS/BLS /ACLS training in MIU and ALERT course – provides emergency response if patients or visitors on site unwell;

- Electronic guidelines with hard copies held locally;

- Clinics in Louth MIU: GP referral/direct access to a lesion clinic, dressing clinic; OPD/ED;

- Monaghan MIU provides wound care follow up for patients previously referred to Temple St. and Our Lady's Children's Hospital, Crumlin with minor injuries;

- Access to radiology due to one hour turnaround time in MIU;

- Alcohol liaison services;

- MAU GP and EM patients streamed to MAU 09.00-21.00 hrs;

- Early pregnancy unit;

- Triage streaming of injuries to MIU;

- MIU in Smithfield;

- ANP services;

- Extended roles - ANP, CNS GP Liaison.

What aspects of your service might you wish to improve?

- Communication with community services;

- Rename MIU – MIU name does not accurately reflect caseload;

- Community services – better links re admissions;

- Inadequate access to social services and child protection services; MSW only in community;

- Consistency re closure times: problem if no washout time as closes at 21.00 hrs last patient 21.00 hrs;

- Overcrowding;

- Waiting time to admitting teams access;

- Access to CT imaging and Diagnostic Imaging;

- IT and Data management;

- Access to Plastic Surgery out of hours;

- More Consultants, senior decision makers;

- Better trauma care and trauma audit (UK TARN);

- Education and induction of new staff;

- Time to see ED Clinician;

- Reductions in number of patients leaving before completion of treatment.

What are the barriers to delivering better patient care in your EDs?

- Overcrowding;

- Infrastructure – need purpose build EDs;

- Paeds assessment area / separate waiting area for children;

- Lack of digital X-ray;

- Inadequate recruitment of senior decision makers;

- Work practices and resistance to change/ professional silos;

- Inadequate staff and skill mix;

- Communication problems including access to interpreters.

Are there condition-specific clinical pathways that work well in your ED?

- DVT Diagnostics / Outpatient management;

- PE;

- Paeds Protocols for dehydration etc;

- Respiratory, under development;

- Atrial Fibrillation and Flutter;

- Stroke thrombolysis;

- DKA and Hyperosmolar non-ketotic coma;

- Cellulitis;

- Stable G.I Haemorrhage;

- ACS / PCI for STEMI;

- Chest Pain Assessment;

- CDU care.

What resources does your ED need to improve?

- Improved infrastructure;

- More Paeds trained nurses and facilities for children;

- More ANPs;

- Clerical services for all opening hours;

- ICT support;

- Audit support;

- Network relationships;

- Trauma Systems;

- More publicity as to what's available at each site.

Have you any ideas as to how your ED could become more efficient and cost effective?

- Better access to Community Intervention Teams;

- Improved documentation – should be continued by admitting teams and not duplicated;

- Clear referral protocols;

- Fewer social admissions;

- Better ICT;

- Increased use of care pathways;

- Streaming;

- Education of public expectations regarding EM;

- Change of culture and better team work;

- Integration, Pre-hospital and Primary Care;

- The introduction of Key Performance Indicators for EM;

- Appropriate staffing – joined up thinking and planning to avoid dependence on agency and locums.

HSE Dublin North East Best Practice Workshop	Votes
National/Standardised Care Pathways	11
Audit/Data Collection Standard KPIs	6
National Skill Mix Workforce Plan	6
Integrated Hospital Networks	5
Diagnostic Access	3
Admission Avoidance	1
Infrastructure/Space	1
Clinical Governance	0
Observation Medicine	0

Table 2: HSE Dublin North East Staff Priorities for EMP

Dublin Mid-Leinster:

Midland Regional Hospital Mullingar, Midland Regional Hospital Tullamore, Midland Regional Hospital Portlaoise, Naas General Hospital, St. Columcille's Hospital, St. Michael's Hospital, St. James's Hospital, St. Vincent's University Hospital and Tallaght Hospital.

List aspects of your ED of which you are particularly proud:

- Respiratory / care of the elderly;

- Medical Staff – Training in EM: Students to SpR level; Year 4 Blended Learning Programme; web based Training;

- ACT (Ambulatory Care Team) – ANP/Consultant/HCA;

- RAT – Registrar and Consultant;

- Cardiology ANP;

- Cardiac Catheterisation Service;

- Chest Pain Service;

- IT systems;

- CNS support;

- Transfer protocols;

- Pathways – Stroke thrombolysis and stroke care, GI, SAH/TIA, Cellulitis, DVT;

- Respiratory Nurse access;

- CT Scanner within ED;

- GP Liaison Nurse;

- Neurology – rapid access to prevent admission, same day neurology consult;

- Chest Pain Pathway;

- Trauma bypass;

- CDU rapid access / triage;

- Diagnostics – admission avoidance schemes;

- Psychiatric Liaison Nurse service;

- Student ANPs;

- Advanced nursing roles;

- Nurses prescribing medication;

- Clinical Care Pathways: 10 pathways, well audited;

- Interface with community intervention team;

- Clinical Guidelines – chest pain, PTCA, stroke, trauma;

- Short stay Unit;

- Good ICT system – 1/2 wte ICT manager; great reports; trauma data base;

- Ambulatory care as separate stream – has Staff Grade;

- Postgraduate EM nursing course;

- Six month staff development programme;

- Departmental MSW /patients over 65 yrs get Occupational Therapy assessment;

- Physiotherapy clinics;

- GP Liaison Nurse;

- Rapid access clinics for Falls/TIAs;

- Electronic white board ;

- Access to CNS – Chest Pain, Stroke, Diabetes, Respiratory.

What aspects of your service might you wish to improve?

- Linking ED ICT to lab system;

- Quicker access to specialists;

- Case manager – allocation of patients to doctors to prevent long delays;

- Improve patient understanding of time waiting in ED – good communication;

- Access to Psychiatry services -- need Psychiatric Liaison Nurse 24/7;

- Improved access to child psychiatry;

- Homeless services;

- Frequent attenders;

- More Clinical Pathways;

- Better use of audit to change practice , KPIs – pain management, care of children, ECG;

- Security/threats to staff;

- Challenges in introducing change;

- Lack of senior clinicians/senior decision makers in ED;

- Management support;

- Infrastructure of ED; redecoration of ED;

- Separate Paeds waiting room needed;

- Isolation rooms;

- Bereavement room;

- Better emergency services for palliative care patients;

- Duplication of work;

- Nurse education could be enhanced through nurse clinical facilitator role;

- Moratorium on staff causing problems with ED staffing;

- Short nursing grades including ANP, CNS: CP, Respiratory, Stroke;

- Improved levels of support staff – HCAs;

- Physiotherapy services for review clinics;

- Improved access to urology services;

- Increase access protocols for isolated limb fractures.

What are the barriers to delivering better patient care in your EDs?

- Overcrowding;

- Inadequate ICT;

- Not all units have 24 hour CT access;

- Funding for service improvements e.g. assessment area;

- Patients shouldn't come from OPD to ED to wait for bed;

- Need 24/7 clerical cover; staffing shortages clerical/secretary;

- Pre-hospital call out team – need funding for equipment;

- Obs /Gynae patients should go straight to O&G unit;

- Limited access to Early Pregnancy Unit;

- All admissions should not come through ED;

- Increased Registrar staffing to enable See & Treat ;

- Increase numbers of ANPs.

Are there condition-specific clinical pathways that work well in your ED?

- Stroke;

- ACS /Chest pain;

- PE/DVT;

- Cellulitis;

- Asthma;

- Diabetes;

- TIA;

- Neurology;

- ENT OPD;

- Diagnostics – Fractured neck of femur;

- Pathway for Burns to SJH;

- Acute Urinary Retention (09.00-17.00 only);

- Nurse prescribing medication and X-ray;

- Psychiatric Liaison Service.

-

Have you any ideas as to how your ED could become more efficient and cost-effective?

- Direct admission to hospital;

- Improved ICT;

- Duplication of hospital notes – need paperless electronic notes;

- Time wasting with referrals to other specialists; ED Drs having difficulty with referral;

- Specialists specific referral; quicker access to specialists;

- Clerical support – answering phones etc., data collection;

- Visitor policy;

- Enhance HCA skills training ECG, Casting /Log rolling – improve skills mix;

- Streamlining rosters for staff;

- Communication at triage to explain – what is done, why, what to expect;

- Patients complaints – because of billing;

- Confidentiality while registering;

- ED needs to be clean, pleasant, warm and ensure privacy;

- Regular communication updates for patients in waiting room;

- Texting patients to confirm review appointments;

- Deferred care – appropriate time referral / appointments alternatives;

- Community Intervention Team for Nursing Homes.

Are there any particular areas you would like the EMP to focus on?

- Sharing of pathways – standardise nationally, share expertise, allow local guideline flexibility;

- Improve senior clinician staffing;

- Permanent staffing framework for EDs;

- Network of EDs working closely/staff rotating for experience and education;

- Better communication and documentation of the patient experience;

- IT Systems – every ED/network standardised;

- Electronic patient record;

- Access to PACS in all EDs and networks;

- Equity of resources;

- Standardised national clinical pathways;

- Improving patient journey – rapid assessment;

- Tailored patient care – investigation;

- Reduce anomalies in system;

- National data set /definitions.

HSE Dublin Mid-Leinster Best Practice Workshop	Votes
Pathways - Standardised/Flexible	10
Equity of Resources	9
Senior Decision Maker	7
IT systems EPR	6
Staffing Models	5
Observation Medicine	3
Patient Experience	2
Networks	0

Table 3: HSE Dublin Mid-Leinster Staff Priorities for EMP

HSE Mid-West and West (Galway Hospitals)

Ennis General Hospital, Galway University Hospital, Limerick University Hospital, Nenagh General Hospital, Portiuncula Hospital, Roscommon County Hospital and St. John's Hospital, Limerick.

List aspects of your ED of which you are particularly proud:

- Pathways – Urology, COPD – streamlined care;

- Nursing documentation – standardised documents;

- Never turn anyone away – unique to ED;

- Development ANP role – Nurse Prescribers;

- Timely care – patients attending from outside catchment area;

- Capacity to manage caseload in smaller units;

- Small and efficient units;

- Increased access to diagnostics (smaller units);

- Building fit for purpose – natural daylight;

- Skill mix;

- Patient feedback forms – positive feedback regarding quality of care;

- ADOS – Document Archiving System;

- PACS (not in all units);

- Streaming (bigger units);

- Teamwork – multidisciplinary, open communication, open access, good feedback, no blame ethos;

- Physical environment;

- Paediatric service facilities are separate;

- Patient-centred care;

- Care Pathways;

- Education – internal study days, induction medical /nursing training schemes, regular weekly teaching;

- 27/7 SpR and Registrar cover (larger units);

- Easy access to Consultants;

- Regular meetings with other EDs (good communication).

What aspects of your service might you wish to improve?

- Access to diagnostics – more timely care;

- Recognition of specialty – respect for emergent nature of care;

- Access to senior clinical decision makers;

- Development of ICT Systems – integrated, systems that can talk to each other;

- Ability to transfer images through the system;

- Lack of onsite specialist advice – Orthopaedics (smaller units);

- Appropriateness of GP and Nursing Home referrals (no community Primary Care access);

- Community Intervention Team – increase patient access to this service, particularly in Nursing Homes;

- Increase nurse prescribing of medications and X-rays;

- Shortage of experienced junior doctors (NCHDs);

- Improve major trauma management out of hours;

- Infrastructure: improve environment – space / cramped, still in interim building;

- Ambulance – delays in outward patient transfer, improve information at handover, perception of delays at scene for limited gain;

- 24/7 MAU access for hospital referrals and reduce inappropriate access via ED;

- Inadequate staffing levels – moratorium adversely affecting levels and skills mix, full team required;

- Delay in admitting specialties seeing patients.

What are the barriers to delivering better patient care in your EDs?

- Lack of senior clinical decision makers;

- Inadequate infrastructure, space;

- Administrative staff decreasing in the smaller units;

- Medical and nursing staffing levels;

- Access to diagnostics, CT Scanner closed at lunchtime – Consultant to Consultant request from midnight;

- Lack of access to community care;

- Admission process – too many steps, not patient friendly;

- Workload – stress and decreasing morale of staff, uncertainty;

- Access block to beds – delayed discharges for inpatients;

- Tertiary services – access decreasing, unable to accept common critical conditions vs Cancer admissions;

- Inadequate inpatient bed capacity;

- Inadequate integrated bed management processes – bed managers on one site only;

- Geography – services on two sites leads to transport issues;

- Lack of appropriate ICT – need integrated information and bed management system;

- Lack of ownership (hospital problems);

- Influx of patients from OPD at 17.30hrs to await beds.

Are there condition-specific clinical pathways that work well in your ED?

- Urology;

- Nursing Care Pathways – developed for ED nurses to clinically manage patients;

- DVT;

- COPD;

- Paediatric gastroenteritis;

- First seizure;

- TIA;

- Stroke thrombolysis and stroke care;

- Syncope;

- Head Injury ;

- Maternity (small units with no Obstetrics and Gynaecology);

- Thrombolysis for STEMI;

- Chest Pain;

- Paediatrics;

- AMI;

- Streaming to MAU;

- Cancer Assessment Unit – CAU, in development.

How might Paediatric EM and Geriatric EM be improved in your ED?

Paediatrics

- Need designated space;

- Appropriately trained staff;

- Adherence to Children First Guidelines.

Older Patients

- Need dedicated assessment facilities;

- OPD-like services;

- Care of the Elderly Nurse Specialist link ED/OPD/Hospital and Outreach.

Have you any ideas as to how your ED could become more efficient and cost-effective?

- Integrated ICT Systems, PACS;

- Increase senior clinical decision makers;

- Budget Awareness – link and cost;

- Reimbursement from services users – medical card-holders;

- Improved streaming of patients requiring admission – cut out unnecessary process steps, use direct referral to medical and surgical teams;

- Reduce current workload;

- Improved ways of working – streaming, clinical decision makers, better working across inter-professional boundaries, skill mix appropriate to patient needs;

- Public education and awareness;

- Smarter Working – get rid of waiting room;

- Use MAU appropriately;

- Development ED Clinical Decision Unit;

- Improved range of specialties on site;

- On-call teams should have no other commitments when on call;

- Keep EDs for ED patients – should not accommodate transfers from OPD, other hospitals' patients who need diagnostics;

- GP Liaison Nurse;

- Access to CIT – appropriately funded and resourced;

- ICT to support planning and generate GP letters at discharge;

- Better footprint – purpose-built facility would enable efficiency;

- Patient information;

- Security 24/7;

- Staff replacement for ED as an essential front line services – decrease overtime costs;

- Performance targets;

- Bed Management -- electronic, effective, increase patient flow;

- Devolve budget to ED;

- Admin/Ward Clerk 24/7 – speed up ED journey, real time chart retrieval and admission.

Are there any particular areas you would like the EMP to focus on?

- Improve patient experience;

- Better access to senior clinical decision makers;

- Re-position of EM specialty – What is EM? What is not EM!

- Awareness role and scope of EM service – Patients, GPs, the public, specialties, hospitals;

- Access to diagnostics – 12/7 working week, 24/7 certain services;

- Streamlining interface with General Hospitals -- pre-hospital to inpatient services;

- Standards of care within ED – National Triage, budgets, performance targets;

- Separate facilities /protocols etc for Paeds;

- All EDs to be purpose built;

- National Integrated ICT systems;

- Standard recommended staffing models /numbers/ Skill mix for all disciplines in EM;

- Ownership by hospital of efficient function of ED, shared approach with hospital management, use of escalation policy.

HSE Mid-West and West (Galway Hospitals) Best Practice Workshop	Votes
National Standards of Care (Triage)	8
National IT systems	7
Message of what is EM and the Role of the ED	5
Improving the Patient Experience	5
National Staffing Models	4
Access to Senior Clinical Decision Makers	3
Access to Diagnostics (min 08.00-20.00hrs)	3
Streamlining interfaces to hospital	1
KPIs - already in use by target hospitals	0
Infrastructure Standards	0

Table 4: HSE Mid-West and West (Galway) Staff Priorities for EMP

HSE West Region (North-West Hospitals)

Mayo General Hospital, Letterkenny General Hospital, Sligo General Hospital.

List aspects of your ED of which you are particularly proud:

- Staff are committed;

- Integrated Care Pathways;

- Observation medicine;

- Nurse X-ray prescribing;

- Clinical skills of nurses;

- Induction Programme – NCHD two-day;

- Improved access to diagnostics (CT);

- Improved Consultant presence has increased morale – senior decision maker now available;

- Psychiatric Liaison;

- Physiotherapy service;

- Near Patient testing ;

- Nurse Triage – MTS;

- Review Clinics;

- Paeds – seen directly by Paeds in ED;

- Major Trauma response;

- O&G referrals to Early Pregnancy Unit /direct referral to labour ward;

- Stroke thrombolysis – good Mon-Fri;

- Cardiac Reperfusion access;

- ANP service for minor injuries;

- Clerical/Secretarial support – good in some EDs, ward clerk at main ED duty base 12/7;

- Waiting times – IPMS, ICT systems, computerised pharmacy delivery system;

- Clinical Audit;

- Non-sedation relocation of dislocated shoulder;

- Medication protocol – nurse prescribing;

- Chest pain CNS.

What aspects of your service might you wish to improve?

- Infrastructure – needs improvement to a fit for purpose facility;

- IT Systems;

- Out of hours housekeeping;

- Security;

- Audit – data gathering;

- Improve/expand range of Clinical Pathways;

- Communication with Primary Care – appropriateness of referrals e.g. Nursing Home patients;

- Access to Radiology – no PACS, poor film retrieval, delays in X-ray reporting;

- Access to hospital charts – missing (tracing needs improvement);

- Major incident planning;

- Medical rosters/reduced reliance on locums;

- Increased clinical supervision of NCHD - are reliant on locums;

- Timely access to adult, adolescent and paediatric psychiatry services;

- Improved numbers of senior decision makers in EM;

- Full CPAU service;

- Full MAU service;

- Better access to community hospitals;

- More access to CNS from ED;

- Clinical nurse facilitator.

What are the barriers to delivering better patient care in your EDs?

- Financial constraints – staffing;

- Resources – equipment, layout, geographical location;

- Inadequate ICT;

- Transport – public transport, ambulance;

- Out of hours Social Worker access;

- Admission avoidance – no CIT service;

- On call team NCHDs having conflicting commitments;

- More logical approach to inpatient ward rounds – start in ED;

- Efficient working system for Paeds referrals;

- Inadequate Communication between inpatient teams and ED;

- Access to Diagnostics;

- Staffing levels and skill mix;

- Private practice in public hospitals;

- Infection control;

- Lack of buy in from hospital for ED improvements;

- ED – only admission route;

- People/Culture.

Are there condition-specific clinical pathways that work well in your ED?

- Stroke;

- ACS;

- Bypass -- Paeds service;

- Trauma;

- Resuscitation;

- Asthma;

- ACS;

- DKA;

- COPD;

- Bypass pathways;

- Pronouncing death;

- Chest pain;

- DVT;

- Renal colic;

- Trauma;

- Conscious Sedation;

- Eye emergencies;

- Fractured neck of femur.

How might Paediatric EM and Geriatric EM be improved in your ED?

Paediatrics

- Designated facilities – audiovisual separation;

- Paeds Trained Nurses;

- Simulation training APLS (yearly);

- National child protection register needed;

- Improved primary care interface;

Older Patients

- Falls Service – blackout;

- Communication with nursing homes;

- Transport home;

- Physiotherapy and Occupational Therapy assessment;

- Discharge Facilitation / Coordination.

What resources does your ED need to improve?

- Senior Decision Makers;

- ICT;

- Full integration of NIMIS;

- Access to ICU beds – local and national need;

- Paediatric retrieval and transport;

- Inter-hospital transfers;

- Isolation facilities;

- Business-type thinking;

- Better communication/paperwork tracking;

- Systems that are patient focused;

- Equality;

- ED doing EM work – not inpatient work, leading to complaints.

Have you any ideas as to how your ED could become more efficient and cost-effective?

- More ANPs;

- Improved skill mix;

- Lean initiatives;

- More Senior Clinical Decision makers – weekends especially;

- Administrative staff to recoup charges;

- Reducing investigations;

- Fully integrated ICT systems;

- Standardised staffing across units of a similar size;

- Paediatric Nurses;

- CNSs seeing patient in the ED;

- Access to diagnostics/diagnosticians;

- Hospital buy-in to ED;

- Financial impact for hospitals if patient left on trolleys;

- Timeliness of care.

Are there any particular areas you would like the EMP to focus on?

- Standardisation – data capture, development of integrated IT Systems.

- Standardisation of management of clinical conditions – guidelines, pathways, retrieval systems;

- Standardisation of staff roles and clinical skills;

- Development of CDUs /Observation Unit;

- Increased staffing with Senior Clinical Decision Makers.

HSE West (North-West Hospitals) Best Practice Workshop	Votes
Staffing & standardised model	10
Diagnostics	8
Buy in from hospital	4
Clinical Guidelines	4
Retrieval	4
ICT for ED	1
Efficiencies (support services)	1
Senior Decisions Makers	1
Clinical Decision Unit	0
Optimising Care of Children	0

Table 6: HSE West (North-West Hospitals) Staff Priorities for EMP

Dublin Paediatric Emergency Departments

Children's University Hospital, Temple Street, Our Lady's Children's Hospital, Crumlin and Tallaght Hospital.

List aspects of your ED of which you are particularly proud:

- Paediatric Triage very good;

- Intolerance of long waiting times for child/families;

- Culture management/clinicians;

- Direct admissions – pathways in place for admissions e.g. asthma;

- Good psychiatry liaison support;

- More senior decision maker involvement in ED;

- Smaller units – better communication;

- Holistic approach;

- Inter Hospital Network;

- Communication – clear pathways for patient transfers, Network ED managers;

- Shift leader very important and effective;

- Good team work;

- Good access to clinics and diagnostics;

- Very experienced nurses;

- Pathways – Gastro, Asthma, Croup, pain, dehydration.

What areas would you like to improve?

- Development of clinical guidelines as a safety net and to prevent admission;

- Need to rationalise to improve staff/patient experience;

- Checking of discharge letters, GP Liaison Nurse – child under one automatic discharge letter;

- Safety net – to pick up issues risk ;

- Improved systems for non accidental injury, Social Work input;

- Infrastructure to support better infection control;

- More consultants in PEM – reduce clinical risks;

- Better turn around if increase in PEM and senior clinical decision makers;

- Smaller set of diagnostic tests required to make diagnosis;

- Lack of PEM trained nurses outside Dublin;

- Social aspects of care – Paeds protection, safety nets;

- Staff retention issues due to inflexibility of career structure – nursing night duty onerous;

- Frequency of on-call rotas and frequency of evening, night and weekend working;

- Inequality of rosters EM/Med /Surgery;

- Inadequate Paediatric MSW staffing – essential for PEM, including out of hours;

- Network links needed for child protection, need flagging system in all EDs;

- Number of missing persons being sent to hospital by HSE – need follow up;

- Need for nurses to be trained in child protection;

- Need for child protection register;

- Need improved GP Liaison in some EDs;

- Clerical support for child protection work;

- Ward Clerk;

- Computer generated referral letters;

- GP liaison;

- Improve services for EM patients;

- Clarity as to what HSE wants PEM to deliver;

- Resources to follow patient;

- No casemix measures for EM;

- Primary care – lack of Paediatric focused care;

- Should Triage be replaced by assessment;

- Paeds early warning score;

- Need for 24 hr Registrar staffing;

- Maternity leave cover etc;

- Difficulty transferring patients out of ED to appropriate beds;

- Amount of time taken to 'sort' patient out;

- Access to out of hours child services for returned patients – follow up patients;

- Need for 24/7 child/adolescent psychiatry nursing support;

- Child sexual assault – not really a PEM service but service deficit, no full time unit for Paeds services.

What are the barriers to delivering better patient care in your Emergency Department?

- Specific rare conditions should have their own notes available (parents hold notes);

- Inadequate infrastructure;

- Processing of patients;

- Access to clinics;

- Inadequate streaming of patients;

- Need to concentrate services /resources to high peak times e.g. night-time;

- No cohesive admission policy medical v trauma;

- Need to develop management pathways for other hospital;

- The three Hospitals need to work on guidelines re certain injuries e.g. Head Injury;

- Staffing moratorium.

Are there condition-specific pathways that work well in your Emergency Department?

- Clinical Pathways;

- Asthma;

- Gastroenteritis;

- DKA;

- UTI;

- Croup;

- Dehydration;

- Fractures;

- Bronchiolitis;

- Anaphylaxis;

- Limping child;

- Headache;

- Chest Pain;

- Burns.

Have you any ideas as to how your ED could become more efficient and cost-effective?

- IT Systems - Process and Time dedicated IT person;

- Investigations – reduce;

- Better billing – asking;

- PACS/ Digital imaging;

- Referral link to other hospitals;

- Observe children for hours – appropriate observation unit , CDU;

- Access to charts/medical notes out of hours.

Dublin Paediatric Emergency Departments Best Practice Workshops	Votes
Child Protection / Social Workers	7
More Consultants – Senior Decision Makers	6
Community Liaison / Communication	5
Psychiatric /Mental Health – appropriate placement, review	5
Staffing moratorium – retention, recruitment	2
IT Systems – integrate three sites	2
Observation model for three hospitals	2
Define core EM work – money follows patient	0
Assessment tools – Paeds specific nationalise	0
Infrastructure of units	0

Table 7: Dublin Paediatric Emergency Departments Staff Priorities for EMP

Best Practice Workshop for Health Care Assistants

List the aspects of HCA work that are most important in your ED and that you think help patients the most:

- Good communication with MDT;

- Teamwork;

- Mutual respect;

- Non violent crisis intervention training;

- Communication with patients in waiting room;

- Observing situations /patients;

- Delivery of cardiopulmonary resuscitation (CPR);

- Patient care – clean, dress, wash, make comfortable (talking, listening to patients);

- Assisting with multiple trauma patients;

- Providing a chaperone for doctors;

- Bariatric course – patients with increased BMI;

- Assisting MDT with care of children;

- Good Sterile Supplies Department Management, stores top up.

Are there aspects of the role of HCAs in EDs that might be improved?

- Clarity of roles/job descriptions – too many roles;

- National job description (FETAC level 5);

- Night rosters – develop models;

- Taught skills but not allowed to do them in ED;

- Need for non violent intervention training to be available nationally;

- Need for FETAC ED module to be made national/compulsory;

- Time wasted during transfers – transferring patients off-site for imaging;

- Some HCAs involved in managing stores – some order, some put away;

- HCAs should not do general ED cleaning – clean medical equipment after use only.

Areas for improvement in ED services:

- Should have ANPS on night shifts to manage injured patients;

- Improved access to shower facilities for patients in ED (especially inpatient boarders);

- Improved toilet facilities for patients;

- Education – patients and other medical services as to what ED is for;

- Nursing Home staff should have extended care skills to prevent ED referral e.g. catheters and PEG tubes, replacement, management and treatment of constipation, dehydration;

- Communication from nursing homes re MRSA could be improved;

- End of life planning/care for nursing home patients;

- Management of private beds in hospitals should ensure equity of access;

- Diagnostic imaging – extended hours working ultrasound (11.00-20.00hrs);

- ECG, Cardiac Technician availability in EDs;

- Patients shouldn't be admitted for CT;

- Ambulance transfers out – timeliness;

- Special needs patients should have better care;

- Unacceptable delays to psychiatry assessment/weekend psychiatry cover.

Improving cost-effectiveness:

- Better systems for dealing with aggressive patients – costs involved often not considered;

- Improved inpatient access – use of discharge lounges;

- Waste management – staff health implications;

- Reduction in overstocking – items go out of date;

- Investigate cost of individual consumables;

- Frequent attendees protocols;

- Should reduce use of taxis for blood tests, X-rays and transfers;

- Consider cost savings in patient transfer systems – Ambulances vs Minibus;

- Triaging of ambulance calls;

- Lab/radiology services should be paid by item not by session.

Health Care Assistants Best Practice Workshops	Votes
Job descriptions and rosters	10
Nursing Home patients	7
What is ED for?	4
Psychiatry Services	4
Storeroom Management	3
Waste Management	3
Transfer boards/X-rays	3
End of life planning	1
Bed Management	1
Assessing vital skills	1

Table 8: Health Care Assistants' Priorities for EMP

Therapy Workshop

A Therapy workshop was held on the 2nd March 2011 and was attended by representatives from Occupational Therapy, Physiotherapy, Speech and Language Therapy and Dietetics/Clinical Nutrition. The aim of the workshop was to discuss and present general recommendations from Therapy representatives on how services could be enhanced for patients presenting to EDs. The roles of Therapy professions in the management of patients presenting to the ED was also considered.

Suggestions from the Therapy Professions relating to prevention of hospital admission from the ED

- Early Assessment by Therapy professions in the ED and onward referral to available services in PCCC (resource dependent).

- Integration and collaboration with other members of MDT at the earliest opportunity.

- Outreach Services e.g. COPD Outreach – home antibiotics, home oxygen, fast track to pulmonary rehabilitation.

- Improved knowledge of PCCC services – development of web resource/database could facilitate this.

- Secure electronic referral pathways and means of sharing information between hospital and PCCC.

Suggestions from the Therapy Professions relating to prevention of attendance at the ED in the first instance

- Falls Prevention

- Identification of patient's falls risk by GP, nursing home staff or respite services and referral to Falls Prevention Programme, as appropriate. Use of Standardised Care Pathways for those identified as being at high risk of falls;

- Identification of the need for additional community resources such as home help and Meals on Wheels;

- Involvement of teams such as the Community Response team (Co Louth), which provides acute intervention for three weeks and onward referral to PCCC services if required.

Additional involvement of Therapy staff within Community Intervention Team (currently in operation in the Dublin area).

- Malnutrition screening by GP, Public Health Nurse, Nursing Home staff or Respite provider and referral to PCCC Dietetic services as appropriate. Use of a standardised tool and education of a broad spectrum of staff on the use of this tool.

- Provision of PEG clinic for problems with PEG feeding tubes.

- PEG replacement course for nursing staff in long stay facilities and acute hospitals to reduce admission/attendance at ED.

- Issues highlighted by Speech and Language Therapists:

- Establishment of education networks for the management of chronic swallowing problems in the community;

- Swallowing screening;

- Pre admission discussion re management of end of life and/or progressive conditions. In some areas there are community geriatric services liaising with PCCC/ family and GPs.

- Education sessions from Therapists at Day Centres.

- Establishment of more LIUs with appropriate Therapy Staffing provided.

- Expansion of PCCC services to include better management of chronic conditions and people who have difficulty coping in the community.

- Improved support for carers and families – respite, allowances.

- Convalescence/Interim beds with rehabilitation/therapy supports in place.

- Expansion of convalescence to include those less than 65 years of age.

Role of the Therapy Professions in improving patient care within the ED

- Therapy Led clinics and advancing the scope of practice of Therapy Professionals would lead to improvements in quality, access and cost in the ED.

- Secondary triage by Therapists could assist with decision-making and early identification of issues that may prevent discharge home. An example of this is the SWOT (Social Work and

Occupational Therapy) screening and triage of patients in Tallaght Hospital (formerly AMNCH).

- Early involvement of Therapy professionals in decision-making regarding discharge home or need for admission.

- Appropriate Therapy staffing of Clinical Decision Units in order to ensure discharge planning starts before patient is admitted to a ward.

- Joint Multidisciplinary Team assessment to improve efficiency. This could ideally include integrated documentation (a well-designed ICT system should improve this further).

- Access to a Community Liaison Nurse to link with the appropriate teams/professionals following discharge.

- Dietetic/Clinical Nutrition services should be requested in the event of a PEG problem. Family or long stay facility staff should be trained in PEG management or identified for training in the future. Dietician to facilitate link with PEG clinic or PCCC Dietetic service.

- Swallowing screening by SLT or trained professional within the ED.

Barriers to the provision of efficient services in the ED

- Absence of ICT systems to assist with sharing of information between hospitals and PCCC.

- Lack of appropriate space within the ED to safely complete Therapy assessments and interventions.

- Establishment of MDT meetings and other forums for communication could ensure more timely decision making.

- Access to computerised clinical notes is not available in all EDs.

- There is significant variation in services provided within PCCC. This is based on geographical area. There is also variation in the response times within PCCC.

- There is difficulty with onward referral to Diagnostic Imaging and other medical specialities for Therapy professionals.

- The current level of Therapy staffing allocated to EDs is varied and lacking in many sites.

- There is geographic variation in patient access to rapid response care packages with MDT input.
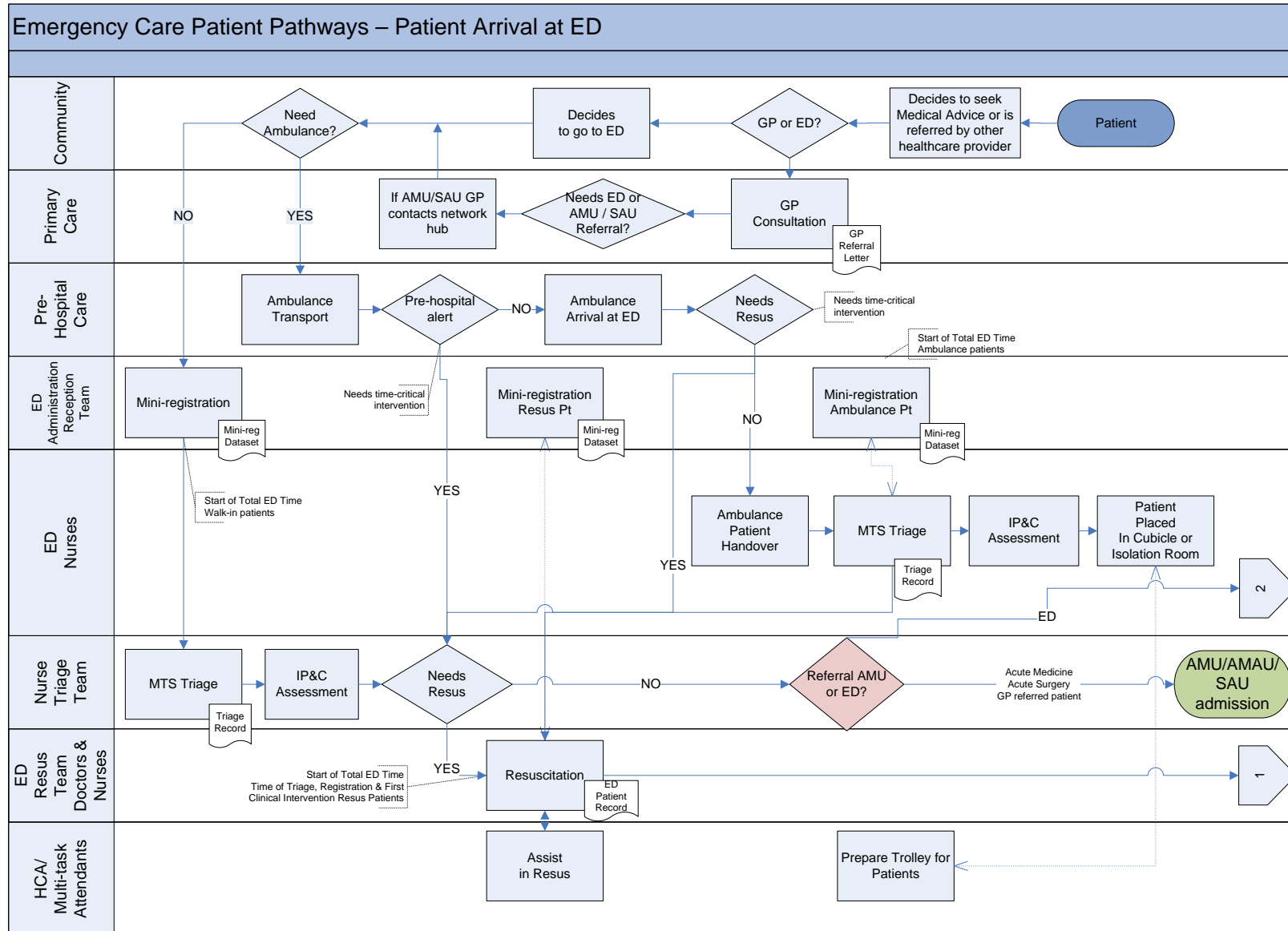
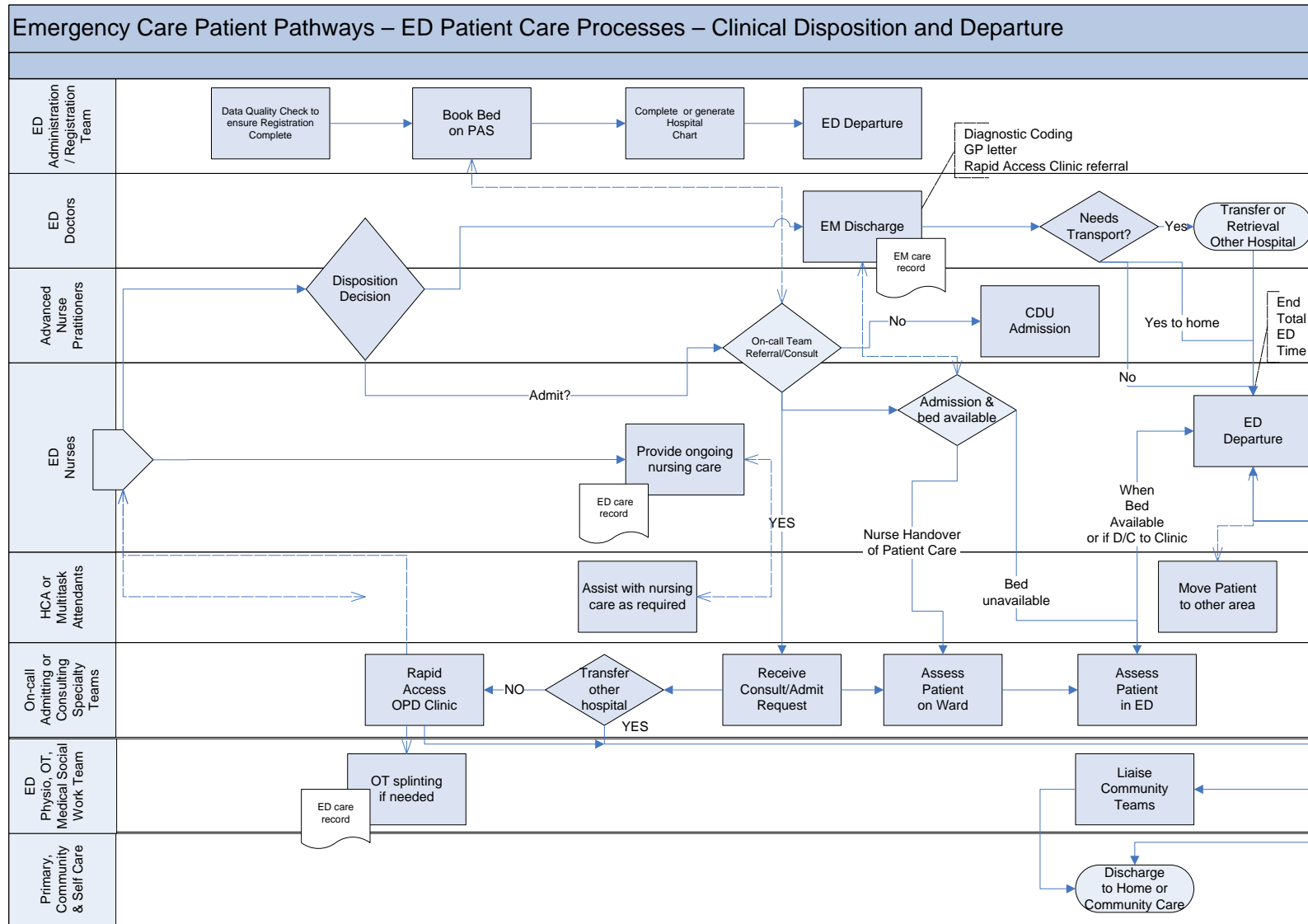## Short-term deliverables aimed at improving quality, access and cost

- Introduction of Therapy Led Clinics in the areas of Physiotherapy and Occupational Therapy – patients assessed and management by an experienced Therapy Professional thereby releasing Consultants in EM and NCHDs.

- MDT education – involvement of Therapy professions in regular education sessions in the ED.

- Clinical Mentorship of Advanced Therapy Professionals by Consultants in EM with annual review of professional development.

- Involvement of MDT in Advanced Triage process would facilitate early identification of patients who need Therapy input. This would also help identify patients who may require OPD or PCCC services and could facilitate early discharge from the ED. A project is currently underway in AMNCH with Occupational Therapist and Medical Social Worker referral by nurses immediately after ED triage.

- Rotation of Therapy Staff between hospital and PCCC sites would enhance communication, knowledge of services and educational opportunities.

- Integrated documentation for Therapy professions would allow more efficient assessments of patients and improved access to information for all involved.

- Introduction of standardised procedures for referral to Therapy professions.

- Development of HSE website to illustrate availability and contact details of PCCC services.

Long-term deliverables aimed at improving quality, access and cost

- Introduction of First Contact Therapy Practitioners working alongside ANPs and Medical staff in ED and LIUs.

- PCCC service development including inreach and outreach services.

- Improved support packages for carers.

- Integration of hospital and PCCC IT systems.

- Introduction of MDT Rapid Response Teams in Australia has been shown to reduce ED presentations and improve communication with other community and health providers.

Appendix 16 Diagrams of Emergency Care Patient Pathways

Emergency Care Patient Pathways – Patient Arrival at ED

Emergency Care Patient Pathways – ED Patient Care Processes – Clinical Disposition and Departure

Emergency Care Patient Pathways – Local Injury Unit Patient Care Processes
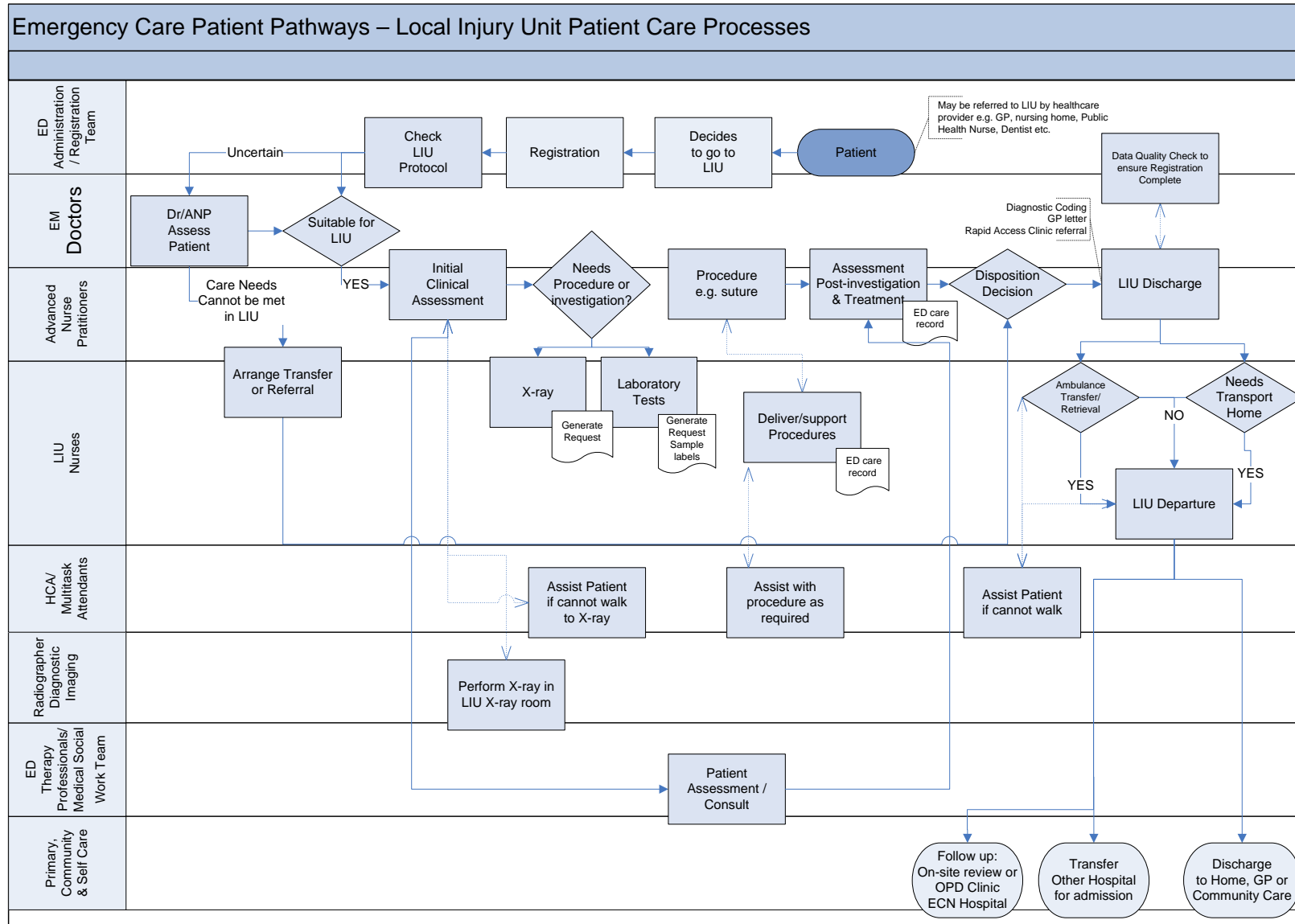
ED Processes and Measures

1 -9 SDU National ED Process Data Points
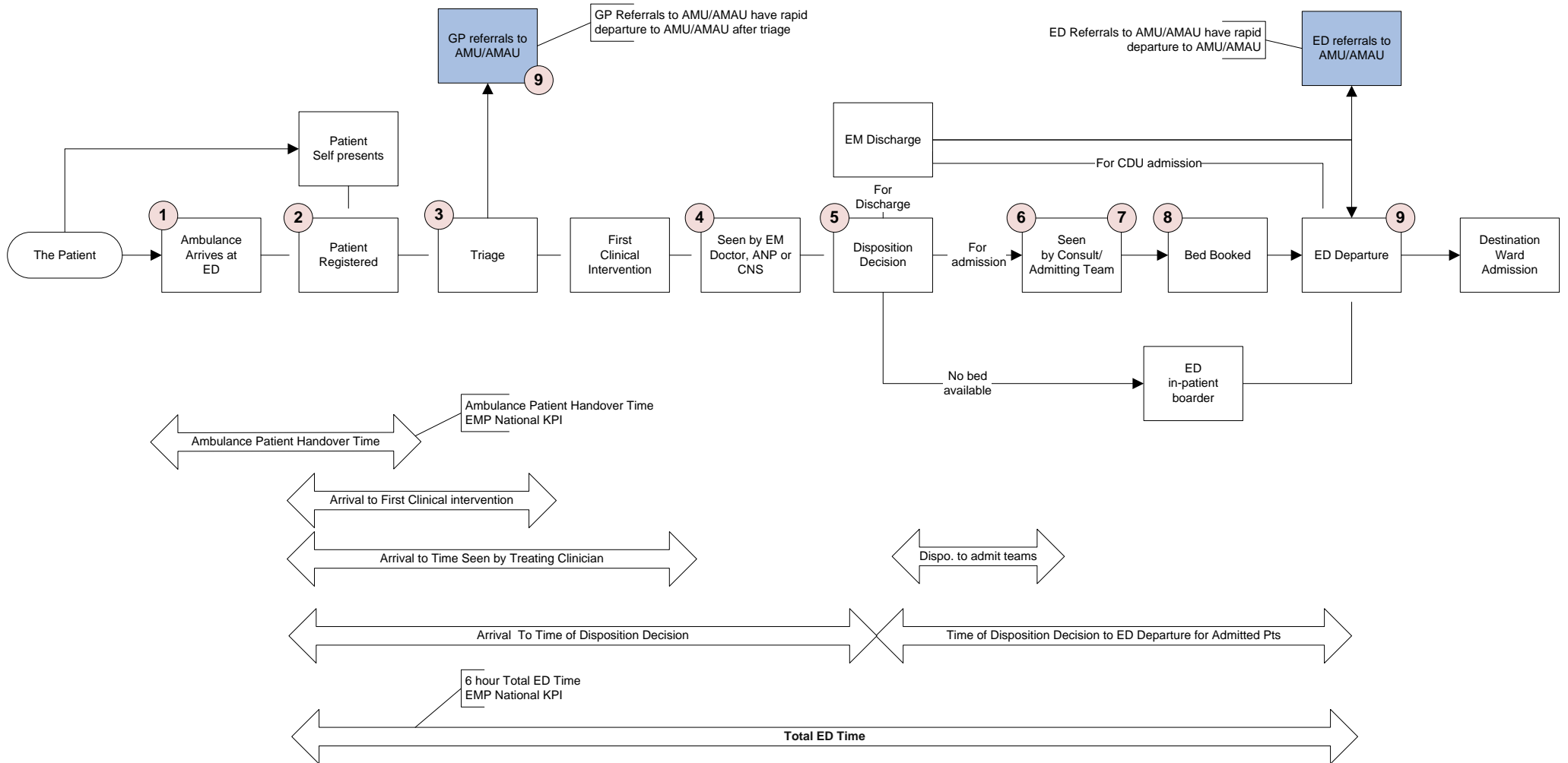
Appendix 17

Emergency Care Patient Cohort Definitions

		Patient Cohort Definitions
1	New ED Patient Attendance	A patient who attends ED requesting emergency care for the first time with a particular condition and any patient transferred to or admitted through an ED who requires EM clinical care or resources. This includes unscheduled return patients.
2	Paediatric Patient	Patients aged younger than 16 years. (This is an operational designation; the programme recognises that the legal definition of a child is a person aged younger than 18 years).
3	Older ED patient	Any patient aged 65 years or older.
4	Older ED patient aged 80 or older	Any patient aged 80 years or older.
5	Scheduled Return	A patient for whom a subsequent ED visit is arranged but who remains under the care of EM. This may include patients attending EM review clinics.
6	Unscheduled seven day ED Return Patient	A patient who returns with the same condition within seven days of the initial ED visit. This includes patients who re-attend frequently. This early return group is expected to more closely reflect EM practice than the later unscheduled return group. This group will also more closely reflect true unscheduled returns in the paediatric patient cohort. For all unscheduled care return data two subgroups should be identified – EM patients and patients who re-attend after discharge by other clinical teams.
7	Unscheduled 28 day ED Return Patient	A patient who returns with the same condition within 28 days of the initial ED visit. This includes patients who re-attend frequently. Two subgroups should be identified – EM patients and patients who re-attend after discharge by other clinical teams. Unscheduled seven-day returns will be included in the 28 day return data.

8	LBCT: left before completion of treatment	A patient who registers but leaves the ED before discharge by a clinician. It includes patients who leave against medical advice (AMA) or before being seen.
9	AMU GP referral	Patients who have been referred by their GPs for AMU assessment cannot be considered to be ED attendances unless they require EM care or resources other than triage.
10	AMU referrals from ED	Patients who self-present to ED may be subsequently referred to an AMU. This patient group should be identified in hospital admission data.
11	Number of admissions through ED	The total of New and Unscheduled Return patients admitted to the same hospital including patients admitted from EM Review Clinics.
12	Clinical Decision Unit Admission	A patient referred for admission under the care of a Consultant in Emergency Medicine to a dedicated EM CDU or under the care of a Consultant in PEM in a PEM CDU.
13	Patients referred but not admitted	A proportion of patients referred for admission may not be admitted. This will be specialty dependent and should be analysed per specialty.
14	Patient Transferred to Other Hospital	An EM patient who is transferred to another hospital because their care needs cannot be met in the same hospital or their care needs can be better met in another healthcare facility within the hospital network (excludes nursing or residential homes).
15	Patient Follow-up Care	The follow-up care arrangements for each patient should be recorded at the time of EM discharge (e.g. Discharge to GP, nursing home, self-care etc).

Table 1: Patient Cohort Definitions

Notes on Emergency Care Patient Cohort Definitions

1. New ED Patient Attendance:

- This includes any patient who attends an ED or who is transferred into the ED and requires EM care or resources. The following subgroups should be recorded as new patient attendances but should be identifiable on the ED IT system to assist analysis of new attendance data (e.g. by drop-down menu):

    1. EM patients:

    1.1.   Unscheduled attendances

    1.2.   Patients transferred into ED according to regional transfer protocol (e.g. Trauma Protocol).

2.   Non-EM patients:

    2.1.   Patients accepted by other inpatient teams for whom ED is the appropriate site of presentation (e.g. unstable surgical patient, GP-referred AMU patient who unexpectedly requires resuscitation).

    2.2.   Patients accepted by other inpatient teams who wait in ED, though this is an inappropriate clinical environment for them, because of non-availability of a more appropriate clinical area. (Boarding of non-EM patients in ED is unacceptable and must be recorded if it occurs.)

- The following should not be considered to be new patient attendances:

1.   Patients who are scheduled EM returns.

2.   Patients accepted by other inpatient teams but who only use registration facilities at the ED and who do not require EM clinical resources (e.g. nursing care).

- New ED patient attendance also includes patients who present to ED in an unscheduled manner following hospital inpatient discharge.

2. Paediatric Patient:

- The EMP recommends that children < 16 years are considered Paediatric patients. This definition should be used as a cut-off for EM process and demographic data purposes in future. Although many EDs currently use 14 years as a cut-off for referral to Paediatric care, the EMP recommends that all EDs should transition to using < 16 years as the operational definition for referral to Paediatric care. This does not relate to the legal definition of a child.

3,4.Older Patients and Older Patients aged 80 years and Older:

- Irish research has indicated increased admission rates for patients aged 65 and older.
- Research indicates that older patients require additional EM resources. The attendance rates of older patients aged 80 and older at EDs should be monitored. Eighty years is consistent with the WHO definition for the Oldest Old.

5. Scheduled Returns:

A patient for whom a subsequent ED visit is arranged for care under a Consultant in EM. This may include patients attending EM review clinics or therapist-led clinics in the ED.

6,7. Unscheduled Return Patients:

- This should never approach zero as it is entirely appropriate for some patients who experience unanticipated deterioration in their condition post-discharge to return to the ED and patients are encouraged to do this. Measurement of rates will allow benchmarking across hospitals and prompt local investigation and audit if rates vary greatly from national norms.

- A patient who returns with the same problem within a specified time period. There is variance in the medical literature as to the most appropriate cut-off time to define unscheduled re-attendance with ranges from 48 hours to 28 days. The EMP recommends recording unscheduled returns at seven and at 28 days on an interim basis. The 28 day data will include those who re-attended at seven days. The earlier return date is included to comply with College of Emergency Medicine quality indicators and to allow benchmarking with UK practice. The most appropriate unscheduled return interval to monitor has been identified as an area for research in Irish EM. Audit of clinical records will be required to determine that patients who return have done so because of the same clinical problem until such time that electronic coding of discharge diagnosis facilitates this.

- A number of unscheduled return subgroups should be identifiable. The following is not an exclusive list and may be further developed:
    1. EM patients who return after discharge from the ED
    2. Patients who return after discharge from the ED by other clinical teams
    3. Recently admitted patients who return (i.e. failed discharges)
    4. Patients who re-attend frequently. There is no consensus in the literature regarding the number of attendances which might be considered noteworthy and re-attendance rates vary between adult and paediatric EM patients. This is an area for future research.

8. Left Before Completion of Treatment:

- This includes patients who leave against medical advice, between registration and triage, after triage but before a clinician has completed their treatment. This is an accepted measure of EM performance. National rates in the US are quoted as 1.7 per 100 visits each

year but with marked inter-site variation (0.84% to 15%). A rate of 3.6% is reported for the UK. An arbitrary target of <5% is proposed.[1] .

9. AMU GP Referrals:

- Patients referred to AMU are not considered ED attendances. These patients should have basic triage at the point of entry to the hospital at a shared entrance with the ED.

- It may be appropriate for this patient group to use the patient registration facilities at the ED but these patients are not ED patients, unless they require resuscitation or clinical resources (other than a brief triage).

10. AMU Referrals from ED:

- Patients who self-present to ED may subsequently be referred to an AMU. This patient group should be identified in hospital admission data.

11. The Number of Admissions through ED:

- The total number of admissions should be monitored.

- This proportion of new patient admissions to new patient attendances should be measured and the admission rate for unscheduled return patients should also be determined (i.e. number of unscheduled return patients admitted/number of unscheduled return patient attendances per time interval).

- The proportion of scheduled return patients admitted should also be monitored.

12. EM Clinical Decision Unit Admission:

- CDUs are inpatient areas separate to but co-located with EDs.

- CDU admission rates should be monitored.

- The total ED time for CDU admissions should be measurable as should CDU length of stay.

---

[1] Acad Em Med 2009:16:949-955; Acad Em Med 2006;13:1074-1080. Draft proposal UK emergency care quality and outcomes measures (A&E HES)

13. Patients referred but not admitted:

- A proportion of patients referred for admission may not be subsequently admitted. This should be monitored at departmental level.

- It should be possible to identify from which specialty these patients are discharged after referral and unscheduled attendance rates for this cohort should be monitored.

14. Patients transferred to other hospital:

- This includes patients transferred for ongoing acute care (including inpatient psychiatric care) or for escalating levels of care. It excludes patients transferred to non-acute hospital healthcare facilities (e.g. nursing homes).

15. Patient Follow-up Care:

- The follow-up care arrangements for each patient should be recorded and this data analysed to determine the availability and use of post-ED attendance care options (e.g. Primary Care, OPAT, Rapid Access Clinics etc)

- EDs with good access to structured clinical pathways as alternatives to hospital admission may refer significant numbers of patients directly to outpatient care from the ED without the need for consultation with or referral to inpatient specialty teams.

- The list of discharge/follow up options will *inter alia* include:

  1. Admitted to specialty ward

  2. Admitted to CDU

  3. Admitted to Acute Medicine Unit

  4. Admitted to ICU/HDU

  5. Admitted to psychiatry unit

  6. Discharged/transferred to other hospital (list of hospitals to which transferred)

  7. Discharged/transferred to paediatric hospital

  8. Transferred to network ED/CDU

  9. Discharged to Primary Care

  10. Discharged home – no follow-up

  11. Discharged to nursing home

  12. Discharged to Garda custody

  13. Discharged and referred to routine OPD clinic

  14. Discharged and referred to Rapid Access Clinic

  15. Discharged to outpatient home care (e.g. OPAT)

16. Discharged and referred for ED review/scheduled return/deferred care

17. Discharged to Community Intervention Team

18. Discharged and referred to attend Public Health Nurse /Integrated Service Area clinic

19. Left without completion of treatment/ AMA

20. Discharged to other place/service not specified

21. Died in ED

Discharge/follow-up options should be defined in a NECS minimum dataset.

Emergency Care Activity Data to be reviewed at ECN level

	Measure	Description	Measured as
2.1	New ED Patient Attendances	New patient attendances at the ED (including unscheduled returns – below)	count
2.2	New ED patients transferred into ED	New patients transferred into the ED per protocol / network	count % total new patient attendances
2.3	Paediatric Patient Attendances	New patient attendances aged younger than 16 years.	% total new patient attendances
2.4	Number of Older ED Patient Attendances	New patient attendances aged 65 years or older	% total new patient attendances
2.5	Number of Older patients aged 80 and older ED Patient Attendances	New patient attendances aged 80 years or older	% total new patient attendances
2.6	Number of Scheduled Return Patients	Number of patients for whom a subsequent ED visit was arranged.	% total new patient attendances
2.7	Number of seven day Unscheduled ED Return Patients	Number of patients returning with the same clinical complaint within seven days of the initial ED visit.	% total new patient attendances
2.8	Number of 28 day Unscheduled ED Return Patients	Number of patients returning with the same clinical complaint within 28 days of the initial ED visit.	% total new patient attendances
2.9	LBCT: left before completion of treatment	Number of patients registering but leaving the ED before discharge by a clinician or against medical advice. **Target <5% of all new patient attendances**	% total new patient attendances
2.10	Total admissions through ED	The total of New and Unscheduled Return patients admitted to the same hospital or transferred to another hospital for escalating care needs.	% total New and Unscheduled Return patients

2.11	Clinical Decision Unit Admission Rate	Number of patients admitted to a CDU and rate as a % of New and Unscheduled Return Patients.	% total New and Unscheduled Return patients
2.12	Number of admissions through ED to same hospital	The total of New and Unscheduled Return patients admitted to the same hospital and the rate as a % of total New and Unscheduled Return patients.	% total New and Unscheduled Return patients
2.13	Number of ED Patients Transferred to Other Hospital	Number of patients whose care needs could not be met at the site of presentation, but who required ongoing acute care or escalating levels of care.	% total New and Unscheduled Return patients.

Table 2: Emergency Care Activity Data to be reviewed at ECN level

Detailed Emergency Care Activity Data to be reviewed at ED/ECN unit level.

	Measure	Description	Measured as
1	New ED Patient Attendances	New patients attending the ED.	count
2	New ED patients transferred into ED	New patients transferred into the ED per protocol/network.	• count • % total new patient attendances
3	Paediatric Patient Attendances	New patient attendances aged younger than 16 years.	• count • % total new patient attendances
4	Paediatric Patients aged < 1 year	New patient attendances aged younger than 16 years.	• count • % total new patient attendances
5	Number of Older ED patient Attendances	New patient attendances aged 65 years or older.	• count • % total new patient attendances
6	Number of patients aged 80 and older ED patient Attendances	New patient attendances aged 80 years or older.	• count • % total new patient attendances

7	Number of patients seen by a senior doctor*	New patient attendances assessed initially or subsequently reviewed by Consultant in EM or a Specialist Registrar (year 4 or 5).	• count • % total new patient attendances • % for diagnostic group[2]
8	Number of Scheduled Return Patients	Number of patients for whom a subsequent ED visit was arranged.	• count • % total new patient attendances
9	Number of seven day Unscheduled ED Return Patients*	Number of patients returning within 28 days of the initial ED visit with the same medical problem.	• count • % total new patient attendances
10	Number of 28 day unscheduled ED Return Patients*	Number of patients returning within 28 days of the initial ED visit with the same medical problem.	• count • % total new patient attendances
11	LBCT: left before completion of treatment	Number of patients registering but leaving ED before discharge by a clinician or against medical advice.	• count • % total new patient attendances
12	Total admissions through ED	The total of new, unscheduled return and scheduled return patients admitted to the same hospital and transfered for escalating care needs.	• count • % total new, unscheduled and scheduled return patients
13	Number of ED patients admitted to same hospital	The total of new, unscheduled return and scheduled return patients admitted to the same hospital.	• count • % total new, unscheduled and scheduled return

14	Number of ED Patients Transferred to Other Hospital	Number of patients whose care needs could not be met at this unit. List hospitals to which transferred	• % total New and Unscheduled Return patients.
			patients
15	Number of scheduled return patients admitted	Admission rates for scheduled returns	• count • % total scheduled return patients
16	Number of 7 day unscheduled return patients admitted*	Admission rates for unscheduled returns	• count • % total 7 day unscheduled return patients
17	Number of 28 day unscheduled return patients admitted*	Admission rates for unscheduled returns	• count • % total 28 day unscheduled return patients
18	Number of admissions to each in-house specialty*	Number of patients admitted by each on call specialty	• Count • % all admissions
19	Number of patients referred for consultation* or for admission who were discharged	The total of new, unscheduled return and scheduled return patients who were referred to other teams and subsequently discharged	• Count • % all admissions • List specialties
20	Clinical Decision Unit Admissions	Number of patients admitted to a CDU.	% total New and Unscheduled Return patients

21	AMU referrals from ED	Number of patients who self-present to ED and are subsequently referred to AMU.	% total new patient admissions % total new patient attendances
22	Patient follow-up care	Patients who are referred to outpatient pathways of care. List follow-up options.	% to each care pathway.
*= Cannot be measured on most current IT systems.			

Table 3: Detailed Emergency Care Activity Data to be reviewed at ED/ECN unit level

Appendix 18

EMP Process Measures

Emergency Care Process Time-Point Definitions

National ED Process Dataset

	Time point	Definition:
1	Ambulance Arrival Time*	The time the paramedic staff record they arrived at the hospital.
2	ED Arrival Time	The first documentation of a patient's presence in the department is taken as the arrival time.
3	Triage Time	The time that triage is started.
4	Time Seen by Treating Clinician	The time a patient is first examined by a doctor or an Advanced Nurse Practitioner.
5	Time of Disposition Decision	The time the treating clinician decides on a patient's further management. It is the same time as Decision to Admit for patients who are subsequently admitted.
6	Time Seen by Admitting/Consulting team	The time a patient is seen by a doctor on behalf of the admitting Consultant or by a doctor providing a non-EM specialist opinion.
7	Time of Completion of Admitting/Consulting Team Assessment	The time that admitting/consulting teams have completed their assessment of a referred patient.
8	Time bed requested on PAS	The time that an inpatient bed is requested on the hospital's computerised Patient Administration System.
9	ED Departure Time	The time that a patient physically leaves the ED.
*Ambulance arrival time to be recorded manually and retrospectively pending National Ambulance Service ePCR development.		

Table 1: National ED Process Dataset

Additional EMP Measures:

Two additional ED process time points are recommended by the EMP to be captured by EDIS to support local analysis of ED process efficiency and EMP quality measures and two CDU time points.

ED Process Time Points:

These are (a) the Time of First Clinical Intervention (e.g. ECG performed) and (b) the Time of Emergency Medicine discharge. These data points are not necessary for national monitoring of ED process efficiency and are therefore not included in the national ED process dataset.

	Time Point	Definition
a	Time of First Clinical Intervention	The time diagnostic or therapeutic processes are commenced for a patient.
b	Time of Emergency Medicine Discharge	The time a patient is ready for departure; this indicates the end of the EM care process.

Table 2: Additional ED Process Time Points Recommended by EMP

Clinical Decision Unit Measures:

The EMP requires that the time of patient arrival in CDU to time of CDU discharge is recorded by the EDIS to support monitoring of the CDU Length of Stay Key Performance Indicator i.e. that patients will be admitted to CDUs for less than 24 hours after which time they will be discharged, if appropriate, or admitted for ongoing inpatient care to other hospital specialties.

	Time Point	Definition
a	Time of CDU Admission	The time a patient is recorded on the EDIS or PAS as being admitted to the CDU.
b	Time of CDU Departure	The time a patient leaves the CDU for discharge home, in-hospital admission under the care of a non-EM specialist or for transfer to another healthcare setting.

Table 3: CDU Time Points

Ambulance Arrival Time:

Definition: The time the paramedic staff record they arrived at the hospital.

Data capture: Manual retrospective input to ED Information System (EDIS) by nurse or receptionist.

Rationale: Ambulance Patient Handover Time is an EMP Key Performance Indicator. It is to be measured from the time the ambulance arrives at the ED to the time patient handover occurs from the ambulance crew to nursing or medical staff in the ED. The time of handover is the time of triage for ambulance patients. The target is 95% of all patients to be handed over within 20 minutes of ambulance arrival at the ED.

Work-practice issues: The Ambulance Service will record the time of ambulance arrival. The time this occurs should be documented on the Pre-hospital Care Report by the nurse or doctor who first takes over care of the patient. A copy of the Pre-hospital Patient Care Record forms part of the patient's ED record. Patient transfer from an ambulance stretcher to an ED trolley must occur at the time of clinical handover. The time of patient handover (off trolley) will be manually recorded until such time that electronic means are developed to enable this. The time of ambulance arrival will need to be entered retrospectively into the EDIS.

ED Arrival Time:

Definition: The first documentation of a patient's presence in the ED is taken as the arrival time.

Data capture: Real time at registration on EDIS (with retrospective recording possible for Resus patients).

Work-practice issues: The EMP recommends that registration (or mini-registration) should occur before triage. Patient treatment is likely to have resuscitation commenced before the patient is formally registered on EDIS so retrospective registration and entry of arrival time must be possible.

Triage Time:

Definition: The time that triage is started.

Data capture: Real time on EDIS at start of nurse triage.

Rationale: This is a measure of access to nurse triage.

Work-practice issues: Registration or mini-registration should be measured before or at the same time as triage, except in resuscitation cases, where treatment takes precedence. Manchester

Triage is the recommended system to be used for adult patients. A national paediatric triage tool is in development. Patients attending Local Injury Units will not be formally triaged.

Time Seen by the Treating Clinician:

Definition: The time a patient is first examined by a doctor or an Advanced Nurse Practitioner.

Data capture: Recorded real-time on EDIS by treating clinician (retrospective recording needed for Resus patients).

Rationale: The time from arrival to *Time seen by the Treating Clinician* is a measure of patient access to an EM clinical decision maker.

Note: The clinician referred to here must be someone who can make the discharge or admission decision for the patient therefore an EM doctor or an ANP.

Time of Disposition Decision:

Definition: The time the treating clinician decides on a patient's further management. It is the same time as *Decision to Admit* for patients who are subsequently admitted.

Data capture: Recorded on EDIS by treating clinician.

Rationale: The time from Disposition Decision to *ED Departure Time* for patients admitted is a measure of inpatient bed access.

Notes: (1) Disposition Decision signals the end of the EM assessment process but EM clinical management may continue beyond this point. (2) A request for an inpatient bed should be made at this time. (3) The disposition options may include: admission; plan to discharge from ED; transfer for care at another hospital or healthcare site; a request for on-call specialty or regional specialty team consultation to agree as to the patient's appropriateness for a specialty-specific outpatient pathway of care; plan for deferred care (i.e. a patient is advised to attend at a designated future time). (4) It is accepted that not all referred patients will be admitted but the numbers not subsequently admitted are likely to be small. The number of patients referred for admission but not subsequently admitted should be monitored at departmental level. The number of patients referred for consultation should be monitored as rates may reflect access to outpatient care pathways such as rapid access clinics, home care, chronic disease management teams etc. The number of patients referred for consultation only who are subsequently admitted should also be monitored at departmental level. This is a quality of care issue.

Time Seen by Admitting or Consulting team:

Definition: The time a patient is seen by a doctor on behalf of the admitting Consultant or by a doctor providing a non-EM specialist opinion.

Data capture: Admitting/consulting teams should record this time on the EDIS.

Rationale: *Disposition Decision Time* to *Time Seen by Admitting or Consulting Team* indicates the responsiveness of non-EM specialty teams to requests for admission or consultation.

Notes: In cases where a patient is admitted directly from the ED to a ward to be seen by the admitting team there, the *ED Departure Time* will be considered equivalent to this time-point.

Time of Completion of Admitting/Consulting Team Assessment:

Definition: The time that admitting/consulting teams have completed their assessment of a referred patient.

Data capture: Admitting/consulting teams should enter the data on the EDIS.

Rationale: The interval between the start and completion of assessment by admitting/consulting teams will measure delays in the admitting/consulting team process of care that could contribute to admission delays for patients.

Notes: (1) This time-point will not be measured for patients who are admitted directly from ED to a ward to be seen by the admitting team there. (2) If inter-specialty referral or consultation occurs this time will be taken at the completion of the last patient assessment.

Time Bed Requested on PAS:

Definition: The time that an inpatient bed is requested on the hospital's Patient Administration System (PAS).

Data entry: An administrative staff member may make this request directly onto PAS or via an EDIS that links to the hospital PAS.

Rationale: This enables the time of bed request to be related to the time of patient admission to a ward bed.

ED Departure Time:

Definition: The time that a patient physically leaves the ED.

Data capture: Real time data entry by ED nurses as soon as the patient leaves for ward or is discharged.

Rationale: It is the end point for the 6-hour Total ED Time standard.

Additional EMP Measures:

The additional ED process time points recommended by the EMP to be captured by EDIS to support local analysis of ED process efficiency and EMP quality measures but excluded from the National ED Process Dataset are described below. These are (a) the *Time of First Clinical Intervention* (e.g. ECG performed) and (b) the *Time of Emergency Medicine Discharge*. These data points are not necessary for national monitoring of ED process efficiency and are therefore not included in the national ED process dataset.

Time of First Clinical Intervention:

Definition: The time diagnostic or therapeutic processes are commenced for a patient. It does not include recording of vital signs. It may be the same as arrival time for resuscitation patients.

Data capture: Real time data entry by ED clinicians.

Rationale: After triage, clinical intervention begins with any treatment, diagnostic test, procedure or review by an EM clinician that contributes to the patient's diagnosis and clinical management i.e. it improves the quality of care and reduces delay to disposition decision. International literature supports the benefit of this type of early intervention in reducing waiting times for patients. This time point is particularly important for condition-specific patient cohorts e.g. patients with suspected ACS who require an ECG.

Notes: Doctors, ANPs or nurses with appropriate skill sets (eg X-ray requesting) may contribute to this early assessment step. This time-point may also record the time of Rapid Assessment & Treatment (RAT) by EM doctors.

Time of EM Discharge:

Definition: The time a patient is ready for departure; this indicates the end of the EM care process.

Data capture: Real time data entry by ED nurses or doctors as soon as the patient is ready to leave for a ward or is discharged.

Rationale: EM Discharge Time is the time that EM care is complete (i.e. including documentation, prescription, nursing care) and the patient is ready to leave the ED. Patients who are discharged from EM may be delayed if they have to wait for transport to be transferred to another healthcare setting or to go home. This delay is likely to be beyond the control of the EM team.

Note: *Time of EM Discharge* and *ED Departure Time* should be considered the same for admitted patients because EM has an ongoing duty of care to inpatients should they require further emergency care before they leave for a ward.

Clinical Decision Unit Measures:

The EMP requires that the *Time of Patient Arrival in CDU* to *Time of CDU Discharge* is recorded by the EDIS to support monitoring of the CDU Length of Stay KPI i.e. that patients will be admitted to CDUs for less than 24 hours after which time they will be discharged, if appropriate, or admitted for ongoing inpatient care to other hospital specialties.

Time of CDU Admission:

Definition: The time a patient arrives in the CDU.

Data capture: Real time data entry by CDU nursing staff on the EDIS or PAS.

Rationale: This time-point indicates the start of the CDU episode of care. It allows measurement of the length of stay for CDU patients and monitors compliance with the CDU length of stay KPI. CDU length of stay must be monitored to optimise CDU patient access through avoidance of delayed patient transfer out of the unit or delayed discharge. 95% of CDU patients should be discharged or transferred within 24 hours of CDU admission.

Time of CDU Departure:

Definition: The time a patient leaves the CDU for discharge home, in-hospital admission under the care of a non-EM specialist or for transfer to another healthcare setting.

Data capture: Real time data entry by CDU nursing staff on the EDIS or PAS.

Rationale: This time-point marks the end of the CDU episode of care.

Emergency Care Process Interval Measures

	Name of measure	Denominator	Reporting criteria	Rationale	Source Data
1.1	Ambulance Patient Handover Time	All patients arriving by ambulance to ED	Measure % of total < 20 minutes, median and 95th centile if standard unmet. **Standard: 95% < 20 mins**	• Access to ED for ambulance patients • Compliance enhances access to ambulance service for community.	Ambulance Service/ Manual record in EDIS (ED information system)
1.2	Total ED Time – Arrival to ED Departure Time	(a) All new ED patients (b) All new ED patients who are subsequently admitted (c) All new ED patients who are discharged by an EM clinician (d) All new ED patients who are discharged by a non-EM clinician (d) All scheduled returns	Primary measure: % of total > 6 hours **Standard 95% < 6 hours** Secondary measure: Median, mean, 75th and 95th centile	• Measures the timeliness of care for all patients • Indicates access to inpatient beds for admitted patients • Secondary measures demonstrate progress towards target and indicate duration of delay for the most delayed 10% of patients.	EDIS
1.3	Arrival to Time Seen by Treating Clinician	All new ED patients	Median, mean, 75th and 95th centile	• Indicates access to EM clinicians	EDIS

1.4	Arrival Time to Disposition Decision Time	All new ED patients	Median, mean, 75th and 95th centile	• Indicates duration of EM assessment phase as a component of Total ED time	EDIS
1.5	Time of Disposition Decision to ED Departure Time for Admitted Patients	All new ED patients who are subsequently admitted	Median, mean, 75th and 95th centile	• Indicates delays after EM assessment which may reflect access to on-call team assessment or access to inpatient beds	EDIS
1.6	CDU Length of Stay	Time of arrival in CDU to time of CDU departure	Median, mean time % of total > 24 hours **Target 95% < 24 hours**	• Duration of CDU care	EDIS
This level of analysis is only anticipated to be undertaken where there is sufficient ED ICT functionality to support it.					

Table 4: Emergency Care Process Interval Measures

Notes on EC Process Time Interval Definitions

Total ED Time:

Total ED Time is *ED Arrival Time* to *ED Departure Time* and should be measured for:

(a) all new ED patients (including unscheduled returns)

(b) all new ED patients who are subsequently admitted

(c) all new ED patients who are discharged by an EM clinician

(d) all new ED patients who are discharged by a non-EM clinician

(d) all scheduled returns (not included in new patient data)

ED Arrival Time to EM Discharge Time and ED Total Time:

Arrival to EM Discharge time measures the duration of EM care whereas ED Total Time measures ED Arrival Time to EM Discharge Time plus EM Discharge Time to ED Departure Time. EM Discharge to ED Departure time should be measured for discharged patients only.

Emergency Care Process Measures to be Reviewed at ED/ECN Unit Level

	Name of measure	Denominator	Reporting criteria	Rationale	Source Data
3.1	Ambulance Handover Time	All patients arriving by ambulance to ED See notes on definition	Measure % of total < 20 minutes, median, mean, 75th and 95th centile if target unmet. **Target: 95% < 20 mins**	Access to ED for ambulance patients	Ambulance Service
3.2	Total ED Time – Arrival to ED Departure Time	(a) All new ED patients (b) All new ED patients who are subsequently admitted (c) All new ED patients who are discharged by an EM clinician. (d) All new ED patients who are discharged by a non-EM clinician (e) All scheduled returns (f) All CDU admissions (g) All new patients aged < 16 years (h) All new patients aged < one year (i) All new patients aged 65 and older	Primary measure: % of total > 6 hours Secondary measure: Median, mean, 75th and 95th centile Data per day of week for a quarter (run charts) and measure of variance.	• Measures the timeliness of care for all patients • Target 95% < 6 hours • Indicates access to inpatient beds for admitted patients • Secondary measures demonstrate progress towards target and indicate duration of delay for most delayed 10% of patients • Groups of interest • Patients with mental health	EDIS

		(j) All new patients aged 80 years and older (k) All new patients identified as presenting primarily due to mental health problems		presentations accounted for most breaches of UK target.	
3.3	Arrival to Triage Start Time[*]	All new patients	% < 15 mins target time	Indicates access to triage	EDIS
3.4	Arrival Time to First Clinical Intervention[*]	All new ED patients	Median, mean, 75th and 95th centile	Access to first diagnostic or treatment milestone on patient journey	EDIS
3.5	Arrival to Time Seen by Treating Clinician[2]	All new ED patients	Median, mean, 75th and 95th centile	Access to EM clinicians	EDIS
3.6	Arrival Time to Time of Disposition Decision[*]	All new ED patients	Median, mean, 75th and 95th centile	Duration of EM assessment phase	EDIS
3.7	Disposition time to start seen by consulting /admitting team[*]	All new ED patients referred for admission or consultation	Median, mean, 75th and 95th centile. Target 1 hour for Acute Medicine	Access to admitting teams	EDIS
3.8	Time of Disposition Decision to ED Departure Time for Admitted Patients[*]	All new ED patients who are subsequently admitted	Median, mean, 75th and 95th centile	Access to inpatient beds	EDIS

3.9	EM Discharge Time* to ED Departure Time for Discharged patients	All new ED patients who are subsequently admitted	Median, mean, 75th and 95th centile	Access to transport	EDIS
3.10	EM Discharge Time to ED Departure time for patients transferred to other hospital	All new ED patients who are subsequently transferred	Median, mean, 75th and 95th centile	Access to inter-hospital transport or retrieval	EDIS
3.11	CDU Length of Stay	Time of CDU admission to CDU departure time	Median time, mean % of total > 24 hours **Target 95% < 24 hours**	Duration of CDU care. Access to other specialty care for patients requiring longer admission	EDIS
This level of analysis is only anticipated to be undertaken where there is sufficient ED ICT functionality to support it. *= Cannot be measured on most current IT systems.					

Table 5: Emergency Care Process Measures to be Reviewed at ED/ECN unit level

Appendix 19

Access Key Performance Indicators

	Total Emergency Department Time
Description	Total Emergency Department Time (TEDT) is measured from Arrival to ED Departure Time.
Aim	To monitor the timeliness of care and ensure that patients do not experience excessive waiting times in EDs and other Emergency Care Network (ECN) units.
Measures	Primary measure: Percentage proportion of all new ED patients who wait less than 6 hours. Secondary measures: No patient to spend more than 9 hours in an ED. Median, mean, upper and lower 75th and 95th centiles
Target/Standard	**Standard 95% of all patients to wait < 6 hours**
Rationale	a. A 6-hour limit for ED waits has been included in the HSE service plan for a number of years and Patient Experience Time, which is equivalent to TEDT, has been collected at a number of EDs since 2010. b. TEDT includes both productive clinical time and delays. This indicator aims to reduce the delays without compromising on quality of care.[1] c. Prolonged durations of stay in EDs are associated with poorer patient outcomes.[2,3] d. Research in an Irish ED demonstrated that patient mortality increased exponentially after 6 hours total time spent in the ED.[4] e. Prolonged waiting times are associated with adverse outcomes for patients discharged from EDs.[5] f. Patients waiting more than 6 hours should be cared for in a more appropriate care setting than an ED. g. Patients who have completed their period of EM care draw on nursing and other ED resources that would be more effectively directed at new patients who require timely initial clinical assessment and nursing care. h. This indicator sets an upper limit on the duration of ED patient care. However, a small minority of patients may require longer than 6 hours care in an ED setting due to the complexity of their presenting problems. This is why a 95% compliance target has been set. i. An upper absolute limit of 9 hours is set to ensure that the 5% of patients who may not comply with the 6 hour target do not go on to have protracted waiting times. j. Monitoring the median, mean and upper centiles will allow EDs that do not achieve the target initially to monitor the timeliness of the care they provide, to better understand performance and demonstrate improvement towards achievement of the target. Secondary measures will also allow hospitals that meet the target to demonstrate exemplary performance in further reducing waiting times and will support benchmarking of hospital performance. k. The centile measures will also demonstrate any potentially unfavourable distortions in practice such as a rush to discharge or admit a disproportionate number of patients close to the 6-hour target time. l. Efficient care should not be rushed. Comparison of median and 75th centile data

	between similar EDs will indicate if a particular unit is managing patients at an unexpectedly quick rate. This will flag the need to investigate whether this variance represents more efficient or unacceptably rushed care.	
What this KPI means for patients	Patients want to be managed in an efficient manner in EDs and do not want to experience avoidable delays. This KPI will demonstrate to patients that hospitals are responding to this expectation.	
KPI Collection frequency	Daily for 24 hours from midnight	
KPI reporting frequency	For 28 day periods commencing on national implementation start date	
KPI calculation	Numerator	All new ED patients who are admitted to a ward or discharged in less than 6 hours from their Arrival Time.
	Denominator	All new patient attendances at EDs, Local Emergency Units and Local Injury Units within Emergency Care Networks.
	Inclusion criteria	All new patients attending units listed above.
	Exclusion criteria	Scheduled return patients.
	Data report presentation	(a) all new ED patients and unscheduled returns (b) all (a) who are subsequently admitted (c) all (a) who are discharged by an EM clinician (d) all (a) who are discharged by a non-EM clinician (b) to (d) = level II data for EMP
	For data definitions see EMP Report Appendix 17.	
Reporting Aggregation	Hospital, ECN, NECS governance meetings.	
Data sources	Administrative data PAS for unit (some EDs do not currently have PAS systems which record this data – for further work) EDIS implementation required to allow subgroup analysis	
Minimum Data Set	Emergency Care Network Unit Identifier	ID of hospital (to be confirmed or included in EMP dataset)
	Local service-user identifier	
	UHI	Unique Health Identifier (not yet applicable)
	Patient attendance	Data set identifier new and unscheduled returns
	Date patient presents	ED dataset
	Time patient presents	Arrival Time
	Time patient admitted	ED Departure Time for patient
	Time patient discharged	ED Departure Time for patient
	ID of EM clinician who discharged patient	Propose Irish Medical Council Registration Number
	ID of non-EM clinician who discharged patient	Propose Irish Medical Council Registration Number
International Comparison & Evidence Base	1. A&E Clinical Quality Indicators. Department of Health 17th December 2010. Available at http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_122868. Accessed 13th January 2011 2. Sprivulis PC, Da Silva J-A, Jacobs IG, Frazer ARL, Jelinek GA (2006) The Association between hospital overcrowding and mortality among patients admitted via Western Australian Emergency Departments MJA 184 (5): 208. 3. Richardson DB (2001) The access-block effect: relationship between delay to reaching an in-patient bed and in-patient length of stay MJA 177:49 4. Plunkett PK, Byrne, DG, Breslin T et al. Increasing wait times predict increasing mortality for emergency medical admissions. Eur J Emerg Med 2011 Aug;18(4):192-6.	

International Comparison & Evidence Base continued	5. Guttman A, Schull MJ, Vermullen MJ, Stukel TA. Association between waiting times and short term mortality and hospital admission after departure from emergency department: population based cohort study from Ontario, Canada. BMJ 2011;342:d2983doi:10.1136/bmj.d2983. 6. A six hour target for ED attendances is being used in New Zealand. New Zealand Ministry of Health. Available at http://www.moh.govt.nz/moh.nsf/indexmh/ed-target. Accessed 13th January 2011	
Implementation /Review dates	EMP Implementation start date	
Related KPIs and Measures	Ambulance Patient Handover Time	The timeliness of APHT together with the Total ED time reflects a continuum of care for patients who arrive by ambulance. The APHT and Total ED time measures should be reviewed together
	Inpatient admission rates	Patients should not be admitted or moved to inappropriate clinical areas to meet TEDT targets. Inpatient admission rates (IPAR) need to be reviewed in association with TEDT.
	Left before completion of treatment rate	Prolonged TEDT is likely to increase rates of patients leaving before completion of treatment.
	CDU admission rates	CDU admissions should be monitored in the context of TEDT for the same reasons as IPAR.
	Arrival to Clinician Time	This indicates whether delays are occurring for reasons relating to access to clinicians or delays in subsequent patient care processes.
Action Trigger	Upper 95th centile > 6 hours requires investigation Any patient waiting more than 9 hours requires investigation	
Additional Measures to be Collected at Hospital Level	The following measures should be collected at hospital level to support local understanding of the timeliness of care for subgroups of ED patients. This will enable continuous performance improvement in relation to this KPI. The recommended review periods are every 14, 28 days and quarterly (13 weeks).	
	Measure	Rationale
	All scheduled returns	Demonstrate that return patients are being assessed efficiently
	All CDU admissions	Patients should be moved efficiently to CDU
	All new patients aged < 16 years	Indicator of timeliness of PEM care
	All new patients aged < 1 year	Indicator of timeliness of care for young babies (a high-risk group)
	All new patients aged 65 and older	The elderly are at greater risk due to delays in care due to complex needs
	All new patients aged 80 years and older	The older elderly are at even greater risk of experiencing delays and the adverse effects of delays
	All new patients identified as presenting primarily due to mental health problems	Mental health patients were identified as the commonest group to breach timeliness of care targets in the UK.

	Ambulance Patient Handover Time in ED
Description	Ambulance Patient Handover Time in ED (APHT) is measured from the time the ambulance arrives at the ED to the time patient handover occurs from the ambulance crew to nursing or medical staff in the ED. Patient transfer from an ambulance stretcher to an ED trolley must occur at the time of clinical handover.
Aim	To monitor the timeliness of patient handover by ambulance crews to ED staff and prevent delays for patients who arrive by ambulance in accessing ED care and accommodation.
Measures	Primary measure: Percentage of all patients who arrive by ambulance and wait <20 minutes for handover to an ED nurse or doctor. Secondary measures: Median, mean, upper 75th and 95th centiles
Target	**Target 95% of all patients to wait < 20 minutes**
Rationale	a. Delays handing over patients at EDs are a measure of inadequate access to ED accommodation and may be an indirect measure of access to inpatient beds. b. Delays to ED treatment are associated with poorer clinical outcomes for patients c. Delays cause discomfort to patients. d. Delays for ambulances at EDs mean the vehicles and crew are operationally unavailable. Increased ambulance response times result, causing increased clinical risk to patients in the community who need ambulances. e. Delays for ambulances at EDs wastes healthcare resources f. Experience in other countries points to ambulances being delayed to delay the start of measurement of total time in the ED. This is unacceptable and must be prevented through the combined introduction of AHT and total time in the ED performance indicators. g. The ambulance crew should be able to leave the patient in the ED once the handover has occurred.
What this KPI Means for Patients	Patients will not experience delays on ambulance trolleys at EDs. Patients in the community will be able to access ambulances sooner, as none will be avoidably delayed at EDs.
KPI Collection Frequency	Daily for 24 hours from midnight
KPI Reporting Frequency	For 28 day periods commencing from national implementation date

KPI Calculation	Numerator	All ED patients who arrive by ambulance and undergo handover in < 20 minutes.
	Denominator	All ED patients who arrive by ambulance.
	Inclusion criteria	All patients arriving by ambulance at an Emergency Care Network facility (i.e. EDs or Local Emergency Unit). Local Injury Units should not accept ambulances and will be excluded from this indicator. Inter-ED transfers will be included in this indicator.
	Exclusion criteria	Patients who do not arrive by ambulance.
	Data report presentation	Percentage of ambulance arrivals handed over within 20 minutes.
	For data definitions see EMP Report Appendix 17.	

Reporting Aggregation	Hospital, ECN and NECS governance meetings.
Data Sources	The Ambulance Service will record the time of ambulance arrival. Clinical handover and patient transfer to a hospital trolley should occur concurrently. The time this occurs should be documented on the Pre-hospital Care Report by the nurse or doctor who accepts the patient. A copy of the Pre-hospital Care Report forms part of the patient's ED record. The time of patient handover (off trolley) will be manually recorded until such time that electronic means are developed to enable this. Ambulance arrival time will need to be entered retrospectively in the ED PAS and included in the EMP Minimum

	Dataset. The time of handover is the time of triage for ambulance patients. The interval between ambulance arrival and patient handover is the Ambulance Patient Handover Time (APHT).	
Minimum Data Set	Emergency Care Network Unit Identifier	To be included in EMP minimum dataset
	Local service-user identifier	As available
	UHI	Unique Health Identifier (not yet applicable)
	Date patient/ambulance presents	
	Time of ambulance arrival	Manual record
	Triage time	EDIS or manual record.
International Comparison & Evidence Base	1. Schull MJ, Lazier K, Vermeulen M et al., Emergency Department Contributors to Ambulance Diversion: A Quantitative Analysis Ann Emerg Med. 2003;41:467-476. 2. Fatovich DM, Nagree Y, Sprivulis P. Access block causes emergency department overcrowding and ambulance diversion in Perth, Western Australia. Emerg Med J. 2005 May;22(5):351-4.	
Implementation Date	As per EMP implementation start date	
Review Date	12 months after EMP implementation start date	
Related KPIs	Total Emergency Department Time	The timeliness of APHT together with the Total ED Time reflects a continuum of care for patients who arrive by ambulance and is an indicator of access to care and service quality for patients.
	Pre-hospital Emergency Care Response Time KPIs	APHT delays at EDs may impair ambulance service performance against Pre-hospital Emergency Care Key Performance Indicators for Emergency Response Times.
Action Trigger	95th centile > 20 minutes requires local and network-level investigation	
Additional Measures to be Recorded at Hospital Level	The APHT times for the median, mean upper 75th and 95th centile should be recorded to enable investigation if the overall target is unmet.	

Left Before Completion Of Treatment Rate	
Description	Patients who register but leave an ED or other Emergency Care Network (ECN) unit before discharge by a clinician. This includes patients who leave against medical advice and those who leave after registration or triage but before they have been seen by a clinician.
Aim	To improve patient access to emergency care in EDs and other ECN Units, reduce the clinical risks for patients and the system's resource waste inherent in these events.
Measures	Percentage of all new ED patients who leave before completion of treatment
Target	**< 5% of new patient attendances**
Rationale	a. Patients who leave the ED before being fully assessed, treated and formally discharged by a clinician may experience adverse clinical outcomes. b. More patients are likely to leave without assessment if there are prolonged ED waiting times. This is therefore a measure of patient access to care and a quality of care indicator. c. There is evidence to indicate that patient factors and hospital characteristics influence LBCT rates and that a proportion of these patients need subsequent urgent treatment.[1] d. This measure includes patients who leave against medical advice, between registration and triage or after triage but before a clinician has completed their treatment. e. The right of a competent patient to leave against medical advice (AMA) is recognised, but this patient cohort is included in the measure as high rates of patients leaving against medical advice may point to poor customer service in the ED or other community factors requiring health service intervention. Patient compliance with treatment is a factor in this measure. f. Review of data at departmental level may point to individual patients who habitually attend but do not wait. These patients may need additional health or social care support and all EDs should have processes in place to identify such patients and organise appropriate care for them.
What this KPI Means for Patients	Many factors may contribute to a patient's decision to leave an ED after initially seeking care, but patients who perceive that they are receiving good quality, timely care are less likely to leave before completion of treatment.
KPI Collection Frequency	Daily i.e. for 24 hours from midnight
KPI Reporting Frequency	For 28-day periods commencing on national implementation start date

KPI Calculation	Numerator	The number of patients who have left an ED or ECN unit before formal discharge by a clinician
	Denominator	All new ED patients and unscheduled return patients
	Inclusion criteria	All new ED patients and unscheduled return patients
	Exclusion criteria	Scheduled return patients

Reporting Aggregation	Hospital, ECN, NECS governance meetings	
Data Sources	Administrative data PAS for unit (some EDs do not currently have PAS systems which record this data – for further work)	
Minimum Data Set	Emergency Care Network Unit Identifier	ID of hospital (to be confirmed or included in EMP dataset)
	Local service-user identifier	
	UHI	Unique Health Identifier (not yet applicable)
	New patient attendance	Data set identifier
	Unscheduled patient attendance	
	Date patient presents	
	Time patient presents	Arrival Time

	Discharge disposition	Confirm in data set – AMA, LBCT
	ID of EM clinician who discharged patient	Code for LBCT
International Comparison & Evidence Base	National rates in the US are quoted as 1.7 per 100 visits each year but with marked inter-site variation (0.84% to 15%).[1] A rate of 3.6% is reported for the UK, with a range of 0-22% between EDs. A rate of 5% has been recommended in the UK but this excludes patients who have been seen by a decision maker and leave afterwards.[2] The current UK target that is comparable to Total ED Time is for 95% compliance at 4 hours. The LBCT KPI for Ireland includes patients who leave after being seen by a clinician and a longer TEDT; a target of 5% will be more difficult to achieve. 1. Acad Em Med 2009:16:949-955; Acad Em Med 2006;13:1074-1080. 2. A&E Clinical Quality Indicators. Department of Health 17th December 2010. Available at http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_122868. Accessed 13th January 2011.	
Implementation Date	As per EMP implementation start date	
Review date	12 months post implementation start date	
Related KPIs	Total Emergency Department Time	(a) The timeliness of care in the ED reflected in the *Total ED Time* will influence the rate of patients leaving before completion of treatment. (b) Patients who leave before completion of treatment will be included in the population for which *Total ED Time* is measured; it is important to know how many patients left before completion of treatment as the times at which these patients leave may influence the *Total ED Time*.
Action trigger	> 5% new patients LBCT should prompt local investigation	
Additional Measures to be Recorded at Hospital Level	• Proportion of patients leaving against medical advice • Proportion registering but leaving before triage • Proportion leaving between triage and time seen by treating clinican.	

Appendix 20

Glossary of Terms

A

AAP: American Academy of Pediatrics (Paediatrics).

ACEMT: Advisory Committee on Emergency Medicine Training, renamed the Irish Committee for Emergency Medicine Training (ICEMT) in May 2011.

Acuity Measurement Tools: Clinical decision making aids which assess the severity or acuity of a patient's presenting complaint.

Acute Floor: An area of the hospital designed to facilitate the seamless provision of patient-centred care across the range of specialties involved in the early management of acutely and critically ill patients. Ideally, in larger hospitals, this area should accommodate a co-located Emergency Department and Clinical Decision Unit, Acute Medical Unit, Acute Stroke Unit, Acute Surgical Assessment Unit, Intensive Care Unit, High Dependency Unit, Coronary Care Unit, Interventional Cardiology Suite (if present on site) and diagnostic imaging department.

Acute Medicine Programme (AMP): A clinician-led initiative between the Royal College of Physicians of Ireland (RCPI), the Irish Association of Directors of Nursing and Midwifery (IADNAM), the Therapy Professions Committee (TPC), the Irish College of General Practitioners (ICGP) and the Directorate of Clinical Strategy and Programmes (DCSP), HSE which provides a framework for the delivery of acute medical services which seeks to substantially improve patient care.

Advanced Cardiac Life Support (ACLS): An American Heart Association/ Irish Heart Foundation Course to teach doctors and nurses Cardiac Resuscitation skills.

Advanced Paediatric Life Support (APLS): A course to teach doctors and nurses Paediatric Resuscitation skills.

Advanced Trauma Life Support (ATLS): An American College of Surgeons course to teach doctors Trauma Resuscitation skills.

Advanced Triage: Term used to describe the initiation of diagnostic, therapeutic and management protocols by nursing staff based on the patients' presenting symptom. This process may also be called Rapid Assessment and Treatment.

AEP: Associate Emergency Physician is a non-training grade of senior Emergency Medicine doctor. This grade is likely to be referred to as a **Staff Grade** doctor.

Aeromedical Transport Service: A facility for the rapid transfer of critically ill patients to hospital by aeroplane or helicopter.

Allied Health Professional (AHP): A health service professional belonging to one of the professions allied to Medicine e.g. Physiotherapy, Occupational Therapy, Speech and Language Therapy.

Acute Medicine (AM): The part of General (Internal) Medicine concerned with the immediate and early specialist management of adult patients suffering from a wide range of medical conditions who present to, or from within, hospitals who require urgent or emergency care.

Acute Medical Unit (AMU): A facility whose primary function is the immediate and early specialist management of adult patients (i.e. aged 16 and older) with a wide range of medical conditions who present to a *Model 4* (tertiary) hospital. Its aim is to provide a dedicated location for the rapid assessment, diagnosis and commencement of appropriate treatment.

Acute Medical Assessment Unit (AMAU): An AMU with the following modifications. It will be located in a *Model 3* (General) hospital; the hours of operation may vary from 12 to 24 hours, 7 days per week, depending on service need and will not have contiguous short stay medical beds.

AMU/AMAU lead physician: A Consultant Physician with a special interest in acute medicine who has overall responsibility for the effective management of the AMU/AMAU.

Ambulatory Care: Clinical care which may include diagnosis, observation, treatment and rehabilitation that is not provided within the traditional hospital bed base or within traditional outpatient services and can be provided across the primary/secondary care interface.

An Bord Altranais: The Irish Nursing Board which is responsible for the regulation of the nursing profession in Ireland.

ANP: Advanced Nurse Practitioner.

AP: Advanced Paramedic.

APHT: Ambulance Patient Handover Time.

ASHICE: Ambulance information system acronym for collating important patient details:

Age — patient's age;

Sex — gender;

History — what has happened to the patient (e.g. collapsed in street);

Injuries/illness — what injuries have been sustained or what illness symptoms are presenting;

Condition — observations of the patient (pulse, BP etc.), interventions used (cannulation, intubation etc.);

E – Estimated time of arrival to hospital.

B

Board Round: A desktop review by senior medical and nursing staff of the status of patients with a view to potential interventions including discharge.

BST: Basic Specialist Training.

BSTEM: Basic Specialist Training in Emergency Medicine is the initial phase of training for doctors intending to become specialists in EM. It is a three year training programme during which doctors rotate through six month posts at SHO level in EM and other specialities relevant to the practice of EM.

C

CAG: Comptroller and Auditor General of the Civil Service.

Care Pathway (CP): A care pathway is a multidisciplinary outline of anticipated care placed in an appropriate timeframe to help a patient with a specific condition or set of symptoms move progressively through a clinical experience to positive outcomes.

CCBST: Certificate of Completion of Basic Specialist Training.

CCT: Certificate of Completion of Training.

CCU: Cardiac Care Unit.

CDM: Clinical Decision Making.

CDU: A Clinical Decision Unit is an inpatient facility adjacent to the ED managed by Consultants in Emergency Medicine. CDUs may also include Chest Pain Assessment Units and have been previously termed ED Observation Wards in some hospitals. The purpose of a CDU is to make safe, economical and timely clinical decisions on patients who present to the ED with specific emergency conditions whose length of stay is likely to be no longer than 6-24 hours duration.

CEM: College of Emergency Medicine. The College of Emergency Medicine sets and maintains the standards of training for the specialty of EM in the United Kingdom.

CF: Clinical Facilitator.

CFCC: Child and Family Centred Care.

CIT: Community Intervention Team.

Clinical Audit: A process of quality improvement that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change.

Clinical Governance: A framework through which healthcare organisations are accountable for continually improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish. This embodies three key attributes: recognisably high standards of care, transparent responsibility and accountability for those standards and a constant dynamic of improvement.

Clinical Guidelines also known as **Clinical Practice Guidelines (CPGs)**: Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances which are based on a thorough evaluation of evidence and are defined as the way a procedure is done or a condition is managed.

Clinical Justice: The application of the same principles of equity of access to senior clinical decision makers and diagnostic resources for all patients across the acute floor.

CNM: Clinical Nurse Manager.

CNS: Clinical Nurse Specialist.

Consultant in Emergency Medicine: A medical practitioner who has undergone training in a recognised training programme and is included on the Specialist Register in the division of Emergency Medicine.

CPAU: Chest Pain Assessment Unit.

CPD: Continuing Professional Development.

CSF: Clinical skills facilitator/skills facilitator.

CST: Certificate of Specialist Training, equates to Certificate of Completion of Training (CCT).

D

DCSP: Directorate of Clinical Strategy and Programmes, Health Service Executive.

DFB: Dublin Fire Brigade.

Diagnostic Imaging: The technique and process used to create images of the human body (or parts and function thereof) for clinical purposes.

Digital Imaging: The technique and process used to create digital images of the human body (or parts and function thereof) for clinical purposes which are stored on a computer or portable device.

DoH: Department of Health.

E

EBM: Evidence-based medicine.

Electronic prescribing (**e-prescribing):** The electronic transmission of prescription information from the prescriber to a computer for the purposes of generating a medical prescription.

EC: Emergency Care.

ECARN: Emergency Care Academic Research Network.

ECN: Emergency Care Networks i.e. coordinated systems of care that include Pre-hospital care, EDs, other emergency units, supporting acute hospital services and have links with Primary Care and voluntary emergency care providers.

ECRU: Emergency Care Research Unit.

ED: Emergency Department.

EDIS: Emergency Department Information System.

Electronic Whiteboard: A patient tracking system which provides real-time information concerning the condition of patients, the number of patients and patients' lengths of stay.

Emergency Medicine (EM): A field of practice based on the knowledge and skills required for the prevention, diagnosis and management of acute and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioural disorders. It further encompasses an understanding of the development of pre-hospital and in-hospital emergency medical systems and the skills necessary for this development. (International Federation for Emergency Medicine 1991)

EMP: Emergency Medicine Programme.

Emergency Nursing: The provision of immediate nursing care and intervention to adults and children who have undiagnosed, undifferentiated healthcare needs arising from social, psychological, physical and cultural factors (adapted from Emergency Nurses Association 2009).

End of Life Care: the care that is offered during the period when death is imminent and life expectancy is limited to a short number of days, hours or less.

ENIG (Emergency Nursing Interest Group): A nursing group representing Emergency Nursing in Ireland.

EPR: Electronic Patient Record.

ETA: Estimated time of arrival to the hospital.

EWTD: European Working Time Directive.

F

Falls Clinic: A specialist, multidisciplinary clinic to assess the risk factors and causes of falls, particularly in older patient populations.

FCEM: Fellowship Examination of the College of Emergency Medicine. This is the exit examination for EM training in the UK and Ireland.

First Clinical Intervention (FCI): Any treatment, diagnostic test, procedure or review by an EM clinician which contributes to the patient's diagnosis and clinical management.

G

GP Liaison Nurse: A nurse who acts as an intermediary between the Emergency Department and primary care teams to coordinate and plan patient care and follow-up.

GP: General Practitioner.

H

H_1N_1: Influenza A (H_1N_1) virus which is a subtype of the influenza A virus.

HCA: Health Care Assistant.

HCAI: Health Care Acquired Infection.

HEMS: Helicopter Emergency Medical Service.

HIQA: Health Information and Quality Authority.

HIS: Healthcare Information System.

HRM: Human Resource Management.

HSE: Health Service Executive.

HST: Higher Specialist Training.

HSTEM: Higher Specialist Training in Emergency Medicine is a five year programme during which trainees rotate through a minimum of three training Emergency Departments and includes six months training in Paediatric EM.

I

IAEM: Irish Association for Emergency Medicine.

ICEMT: Irish Committee for Emergency Medicine Training.

ICGP: Irish College of General Practitioners.

ICP: Integrated Care Pathway is a multidisciplinary outline of anticipated care, placed in an appropriate timeframe, to help a patient with a specific condition or set of symptoms move progressively through a clinical experience to positive outcomes.

ICT: Information & Communication Technology.

ICU: Intensive Care Unit.

ID: Intellectual Disability.

IFEM: International Federation of Emergency Medicine.

ISAs (Integrated Service Areas): A local service delivery unit within the four HSE regions that deliver all health and social care services for a given population.

IPAR: Inpatient admission rates.

ISPTC: Irish Surgical Postgraduate Training Committee – the committee of the Royal College of Surgeons in Ireland responsible for training in surgical specialties including training in EM. In practice this is delegated to ICEMT.

K

KPI: Key Performance Indicator.

L

Lean: A concept that has been described variously as a toolset, a transformative management system and a philosophy in the workplace.

LEUs (Local Emergency Units): Units that provide undifferentiated emergency access on a less than 24-hour basis.

Liaison mental health /Liaison psychiatric service: A service provided by a psychiatrist or specialist psychiatric nurse that enables the fast-tracking of ED patients with psychiatric or mental health issues for psychiatric assessment and treatment.

LIUs: Local Injury Units -- units that provide care to defined patient groups e.g. non-life or limb threatening injury.

LOS: Length of Stay.

M

MAG: Medical Advisory Group.

Major Emergency: An incident which, usually with little or no warning, causes or threatens death or injury, serious disruption of essential services or damage to property, the environment or infrastructure beyond the normal capabilities of the principal emergency services.

Major trauma or polytrauma: Trauma to the body that is severe or affects multiple systems.

Medical Assessment Unit (MAU): Unit in a *Model 2* (local) hospital which will see GP-referred differentiated medical patients who have a low risk of requiring full resuscitation. It will have assessment beds in a defined area and serve a clinical decision support function. Admissions will be to inpatient beds in a *Model 2* hospital.

Medical Council: Regulates doctors to practise medicine in the Republic of Ireland. Its statutory role is to protect the public by promoting and better ensuring high standards of professional conduct and professional education, training and competence among registered medical practitioners.

Manchester Triage: The Manchester Triage System is a system of clinical risk management employed in EDs worldwide to manage patient flow safely when clinical need exceeds capacity.

MCEM: Membership examination of the College of Emergency Medicine. It is the entry examination to HSTEM in Ireland.

MDT: Multidisciplinary team.

MEWS: Medical Early Warning Score / Modified Early Warning Score.

Middle Grade: A doctor of Registrar, SpR grade or a senior non training grade doctor such as a Staff Grade or equivalent.

MIMMS: Major Incident Medical Management and Support Course.

MLOS: The maximum length of stay for a patient to be in the ED before transfer to a ward, theatre, other specialist service or discharge home.

Models of hospitals: The four levels of acute hospitals proposed by the national clinical programmes in relation to acute medicine patients. The models are:

Model 4 - Tertiary hospital;

Model 3 - General hospital;

Model 2 - Local hospital with selected (GP-referred) medical patients

Model 1 - Community/District hospital.

MSc: Master of Science postgraduate degree.

N

NALS: Neonatal Advanced Life Support.

NAS: National Ambulance Service.

NECS: National Emergency Care System: A coordinated system of care to facilitate the provision of high-quality patient care that is standardised across the country and easily accessible for all service users, irrespective of when or where they access emergency care.

National Retrieval System: A national service for the rapid transfer of critically ill patients to a specialist hospital or treatment centre.

National Trauma Registry: A system for collating annual data on the numbers of patients treated for major trauma in the country.

Navigation Hub: An ICT facilitated central resource staffed by case managers to direct, in real time, patients or clinicians to the service that is most appropriate for their needs.

NCHD: Non-Consultant Hospital Doctor.

NECSSG: National Emergency Care System Steering Group.

Neurorehabilitation: The provision of specialist multidisciplinary rehabilitative care to patients with Neurological conditions e.g. acquired brain injury.

NIMIS: National Image Management and Information System.

NPH: National Paediatric Hospital.

NTG: National Trauma Group.

Nurse Reference Group: A group that provides a nursing input or perspective to the development of the Emergency Medicine Programme.

O

OPD: Outpatient department.

Orthoptic service: A specialist eye service.

OT: Occupational Therapy.

P

PACS: Picture Archiving and Communication Service.

PACU: Paediatric Ambulatory Care Unit.

Palliative care: care that is focused on improving the quality of life of patients and their families facing the problems associated with life-threatening illness.

PALS: Paediatric Advanced Life Support: A course to teach doctors and nurses Paediatric Resuscitation skills not dissimilar to APLS.

PEM: Paediatric Emergency Medicine: A subspecialty of EM and General Paediatrics dealing with the emergency care of children.

Paramedic: Specialist health professionals involved in the provision of pre-hospital care and major incident responses.

Patient care algorithms/Patient care pathways: Evidence-based multidisciplinary management tools for a specific group of patients with a predictable clinical course, in which the different interventions by the professionals involved in the patient care are defined, optimized and sequenced either by hour (ED), day (acute care) or visit (homecare).

Patient dependency score: A measure or classification of the severity of a patient's condition that quantifies the level of nursing care required.

Patient streaming and fast-track systems: Processes for the rapid transfer of ED patients to the appropriate care in an ED, hospital or primary care setting.

PAU: Paediatric Assessment Unit.

PDC: Practice Development Coordinator.

PDP: Professional Development Planning.

PED: Paediatric Emergency Department.

PHECC: The Pre-Hospital Emergency Care Council which is the statutory regulator of the paramedic profession.

PAS: Patient Administration System.

POCT: Point of care testing e.g. bedside urine tests, blood test analysis.

Polypharmacy: The use of multiple medications by a patient, when more drugs are prescribed than is clinically warranted or when there are too many pills to take even though all prescribed medications are clinically indicated.

PHC: Pre-hospital care: That part of the patient care episode that takes place prior to arrival at hospital incorporating the primary response to injury and sudden illness, patient retrieval services, aspects of telemedicine and Major Incident Management and response.

POM: Process observation and mapping: A methodology that enables workers to identify where bottlenecks and delays occur in the patient's pathway through the ED. It should include measures of the time taken to perform steps in a process so the efficiency as well as the structure of the process is measured.

Protocol: A written plan that specifies procedures to be followed in defined situations. It represents a standard of care and is more explicit and specific in its detail than a guideline; it specifies who does what, when and how.

R

RAT: Rapid Assessment and Triage.

RCPCH: Royal College of Paediatrics and Child Health.

RCPI: Royal College of Physicians of Ireland.

RCSI: Royal College of Surgeons in Ireland.

Regional critical care retrieval team: A team proposed as part of the critical care programme for the safe regional or supra-regional transport of critically ill patients.

Review Clinic: A clinic held in the ED for the planned follow up of certain cohorts of patients.

RFID: Radio Frequency Identification Device.

RITA: Record of In-training Assessment.

S

SARS: Severe Acute Respiratory Syndrome.

Scope of Nursing and Midwifery Practice Framework: A Bord Altranais framework for the guidance of nurses and midwives in determining their own clinical competence.

Senior medical doctor: A Consultant, specialist registrar or registrar or equivalent who has the competencies and experience to make a prompt clinical diagnosis and decide the need for specific investigations and treatment, the mode of treatment and the most appropriate setting for that treatment and ongoing care.

Service User: A patient or client who uses a healthcare facility.

SHO: Senior House Officer.

Six-sigma: A data-driven quality method developed by the Motorola Corporation in Japan to reduce the number of errors in a process and improve cost-effectiveness.

SOP: Standard Operating Procedure.

SpR: A Specialist Registrar.

Staff Grade: A non-training grade of senior EM doctor.

T

TARN: Trauma Audit and Research Network.

TB: Tuberculosis infection.

TEDT: Total ED Time.

Telemedicine: The use of telecommunication and information technologies in order to provide clinical health care at a distance.

Therapy Professionals: Healthcare therapists who belong to one of the professions allied to medicine such as Physiotherapy, Occupational Therapy, Speech and Language Therapy etc.

TDD: Time to Disposition Decision: The time taken from first arrival in the ED until a definitive patient care decision is made by a senior clinician. This treatment decision may include:

- Inpatient admission;
- Discharge of the patient from ED;
- Transfer for care at another hospital or healthcare site;
- Outpatient pathway of care with on-call specialty, regional specialty or Primary Care;
- A plan for deferred care.

TNCC: Trauma Nursing Care Course: A course to teach nurses trauma resuscitation skills.

TRHs: Trauma Receiving Hospitals: Hospitals which specialise in and are designated for the treatment of severely injured patients.

Triage: The process of determining the priority of patients' treatments based on the severity of their condition.

TSBTC: Time seen by a treating clinician.

W

Workforce planning: A continuous process of shaping the workforce to ensure that it is capable of delivering objectives both now and in the future. Workforce planning aims to have the right people in the right place at the right time with the right skills, diversity and flexibility to deliver high-quality care to meet the needs of individuals.

Appendix 21

References and Resources

Chapter 1. What is Emergency Medicine?

1. Australasian College for Emergency Medicine Policy Document. Patient's right to access emergency department care. Available at http://www.acem.org.au/media/policies_and_guidelines/P02_-_Standard_Terminology_16.04.09.pdf. Accessed 7th January 2011.
2. International Federation for Emergency Medicine (2008) About IFEM. Available at: http://www.ifem.cc/About_IFEM.aspx. Accessed 10th June 2010.
3. Bull World Health Organ vol.84 no.10 Oct 2000. Available at http://www.who.int/bulletin/volumes/83/8/626arabic.pdf. Accessed 9th May 2012.
4. Cooke M, Fisher J, Dale J, McLeod E et al. Reducing Attendances and Waits in Emergency Departments. A systematic review of present innovations. 2004. Available at: http://wrap.warwick.ac.uk/134/. Accessed 24th February 2011.
5. Not Just a Matter of Time. A review of urgent and emergency care services in England, September 2008. Commission for Healthcare Audit and Inspection, UK. Available at: http://www.scot.nhs.uk/searchResults.html?cx=003501025796087152226%3Axcougsx07yc&cof=FORID%3A11&q=not+just+a+matter+of+time . Accessed 24th February 2011.
6. Salisbury C, Bell D. Access to urgent health care EMJ 2010:27:189-190.doi: 10.1136/emj.2009.073056
7. FitzGerald G, Jelinek GA, Scott D et al., Emergency department triage revisited (Review) Emerg Med J 2010;27:86-92
8. Chapman DM, Hayden S, Sanders AB et al., Integrating the Accreditation Council for Graduate Medical Education Core Competencies into the Model of the Clinical Practice of Emergency Medicine. Acad Emerg Med June 2004;11:6:674-685.
9. Croskerry P, Cosby K, Schenkel SM et al. Patient safety in Emergency Medicine. Publisher Lippincott Williams & Wilkins 2009.
10. Glickman SW, Delgado MC, Hirshon JM et al. Defining and Measuring Successful Emergency Care Networks: A research agenda. Acad Emer Med December 2010;17:12:1305.
11. Australasian College for Emergency Medicine. ACEM Policy on Standard Terminology. Available at http://www.acem.org.au/media/policies_and_guidelines/P02_-_Standard_Terminology_16.04.09.pdf. Accessed 10th May 2012.

Chapter 2. The Organisation of Emergency Care

1. International Emergency Medicine. Emergency Clinics of North America.23:1:February 2005. Publisher W.B Saunders.
2. Hospital based Emergency Care at the Breaking Point. A report of the Institute of Medicine Committee on the Future of Emergency Care in the United States Health System 2006. Available at: http://books.nap.edu/openbook.php?record_id=11621. Accessed 24th February 2011.

3. Comhairle na nOspidéal, Report of the Committee on Accident & Emergency Services, February 2002. Available at http://www.lenus.ie/hse/bitstream/10147/44735/1/6309.pdf. Accessed 10th May 2012.
4. Implementing Trauma Systems Key Issues for the NHS. Available at: http://www.nhsconfed.org/Publications/Documents/Implementing_trauma_systems_report.pdf. Accessed 10th May 2012.
5. Checklist Emergency Care Networks. NHS. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitala sset/dh_4087134.pdf. Accessed 24th February 2011.
6. Cooke M, Fisher J, Dale J, McLeod E et al. Reducing Attendances and Waits in Emergency Departments. A systematic review of present innovations. 2004. Available at: http://wrap.warwick.ac.uk/134/. Accessed 24th February 2011.
7. Not Just a Matter of Time. A review of urgent and emergency care services in England, September 2008. Commission for Healthcare Audit and Inspection, UK. Available at http://webarchive.nationalarchives.gov.uk/20100813162719/http://www.cqc.org.uk/_db/_docu ments/Not_just_a_matter_of_time_-_A_review_of_urgent_and_emergency_care_services_in_England_200810155901.pdf. Accessed 24th February 2011.
8. Northern Ireland Hospital Statistics. Emergency Care 2010/2011. Department of Health Social Services and Public Safety. Available at: http://www.dhsspsni.gov.uk/a_e_annual_report__2010-11_final.pdf. Accessed 10th May 2012.
9. The time spent in Northern Ireland Accident and Emergency Departments (sic): December 2009, Northern Ireland Department of Health, Social Services and Public Safety August 2009. http://www.dhsspsni.gov.uk/ec1_july_2009.pdf. Accessed 9th May 2012.
10. Audit Scotland. Emergency Departments. Available at: http://www.audit-scotland.gov.uk/docs/health/2010/nr_100812_emergency_departments.pdf. Accessed 10th May 2012.
11. HES online Accident and Emergency Attendances (Experimental Statistics) 2009-10. http://www.ic.nhs.uk/webfiles/publications/004_Hospital_Care/HES/aandeattendance0910/AE_ Attendances_in_England_Experimental_statistics_2009-10__v2.pdf. Accessed 11th April 2012.
12. Salisbury C, Bell D. Access to urgent health care EMJ 2010:27:189-190.doi: 10.1136/emj.2009.073056
13. Developing Safe and Sustainable acute services in South Central Stroke, major trauma and vascular surgery engagement document. NHS South Central. August 2011. Available at: http://www.ageuk.org.uk/BrandPartnerGlobal/oxfordshireVPP/Documents/SS%20engagement %20document%20final.pdf. Accessed 10th May 2012.
14. Nichol J et al. The relationship between distance to hospital and patient mortality in emergencies: an observational study. EMJ 2007;24:665-668.
15. IAEM Position Paper on Reconfiguration and Regionalisation of Emergency Services, 2008. http://www.iaem.ie/images/stories/iaem/publications_position_statements/2008/iaem_position _paper_on_reconfiguration_and_regionalisation_of_emergency_services_280108.pdf. Accessed February 2011.
16. Emergency and Urgent Response To Remote and Rural Communities, Strategic Options Framework, October 2009. Available at: http://www.nospg.nhsscotland.com/wp-content/SOF_FINAL_211009.pdf. Accessed 10th May 2012.

Chapter 3. Clinical Governance

1. Health Information and Quality Authority (2010) Dublin Draft National Standards for Better, Safer Healthcare. Available at: http://www.hiqa.ie/standards/health/safer-better-healthcare. Accessed 10th May 2012.
2. HSE Guidance Achieving Excellence in Clinical Governance, Towards A Culture of Accountability 2010. Available at: http://www.hse.ie/eng/about/Who/Quality_and_Clinical_Care/Quality_and_Patient_Safety_Documents/comms.pdf. Accessed 10th May 2012.
3. HSE Quality and Patient Safety Directorate. National Clinical Programmes: Checklist for Clinical Governance. Available at: http://www.hse.ie/eng/about/Who/Quality_and_Clinical_Care/Quality_and_Patient_Safety_Documents/checklist.pdf. Accessed 21st March 2012.
4. Scally G, Donaldson CJ. Clinical Governance and the Drive for Quality Improvement in the new NHS in England BMJ 1998;317:61-65.
5. An Bord Altranais (2000) Scope of Nursing and Midwifery Practice Framework. An Bord Altranais: Dublin. Available at: http://lenus.ie/hse/bitstream/10147/45073/1/6798.pdf. Accessed 10th May 2012.
6. An Bord Altranais (2000) Code of Professional Conduct for each Nurse and Midwife. An Bord Altranais: Dublin. Available at: http://www.nursingboard.ie/en/policies-guidelines.aspx?page=2. Accessed 10th May 2012.
7. HSE Nursing job descriptions. Available at: http://hsenet.hse.ie/HSE_Central/Human_Resources/SServices/Recruitment/Job_Specification/Nursing.html. Accessed 17th June 2011.
8. HSE Therapy Professional and Medical Social Worker job descriptions. Available at: http://hsenet.hse.ie/HSE_Central/Human_Resources/SServices/Recruitment/Job_Specification/Health_Social_Care_Professionals.html. Accessed 17th June 2011.
9. Medical Social Work Competencies. Available from the Irish Association of Social Workers http://www.iasw.ie. Accessed 17th June 2011.
10. EUROTARN Available at: http://eurotarn.man.ac.uk/. Accessed 7th April 2011.
11. Out of Hospital Cardiac Arrest Register. Prehospital Emergency Care Council. Available at: http://www.phecit.ie/DesktopDefault.aspx?tabId=1259. Accessed 10th May 2012.
12. Comptroller and Auditor General Special Report Health Service Executive Emergency Departments 2009. Government Publications: Dublin. Available at: http://audgen.gov.ie/documents/vfmreports/70_Emergency_Departments.pdf. Accessed 3rd May 2011.

Chapter 4. Patient Participation in Emergency Care

1. The Society for Cardiothoracic Surgery in Great Britain and Ireland document Maintaining patients' trust: modern medical professionalism 2011. Available at: http://www.scts.org/_userfiles/resources/634420268996790965_SCTS_Professionalism_FINAL.pdf. Accessed 15th April 2011.
2. HSE Emergency Departments Patient Profiles, Experiences and Perceptions 2007. Available at: http://www.hse.ie/eng/services/Publications/services/Hospitals/HSE_Emergency_Departments-_Patient_Profiles,_Experiences_and_Perceptions.pdf. Accessed 4th April 2011.
3. Insight 07 Health and Social Services in Ireland – Survey of Consumer Satisfaction. Available at:

http://www.hse.ie/eng/services/Publications/Your_Service,_Your_Say_Consumer_Affairs/Repor ts/Insight_07.html. Accessed 4th April 2011.

4. You and Your Health Service, What you can expect from your health service and what your health service can expect from you, 2010. Available at: http://www.hse.ie/eng/services/ysys/Documentation/YouYourHealthService.pdf. Accessed 4th April 2011.

5. Health Information and Quality Authority (2010) Dublin. Draft National Standards for Better, Safer Healthcare. Available at: http://www.hiqa.ie/standards/health/safer-better-healthcare. Accessed 10th May 2012.

Chapter 5. Paediatric Emergency Medicine

1. Royal College of Paediatrics and Child Health. Services for children in emergency departments: report of the intercollegiate committee for services for children in the emergency department. London: RCPCH, April 2007. Available at: http://www.rcpch.ac.uk/sites/default/files/asset_library/Health%20Services/54824_RCPCH_A% 2BEServs.pdf. Accessed 10th May 2012.

2. Irish Association for Emergency Medicine. The Development of Paediatric Emergency Medicine in Ireland. Available at: http://www.iaem.ie/images/stories/iaem/publications/2010/the_development_of_paediatric_e mergency_medicine_in_ireland_october_2010_final.pdf. Accessed 24th November 2010.

3. Confidential Enquiry into Maternal and Child Health. Why Children Die: A Pilot Study 2006. London: CEMACH. May 2008. Available at: http://www.injuryobservatory.net/documents/why_children_die1.pdf. Accessed 10th May 2012.

4. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine and American College of Emergency Physicians, Pediatric Committee. Care of Children in the Emergency Department: Guidelines for Preparedness. Pediatrics Vol. 107 No. 4 April 2001.

5. Davies F. Paediatric emergency medicine: Do we need George Clooney? Emerg. Med. J. 2001;18;157-158.

6. Australian College of Paediatrics and Australian College of Emergency Medicine. Policy on Hospital Emergency Department Services for Children. Available at: http://www.acem.org.au/media/policies_and_guidelines/P11_Hosp_ED_Services_for_Children. pdf. Accessed at 24th November 2010.

7. Geelhoed GC, Geelhoed EA. Positive impact of increased number of emergency consultants. Arch. Dis. Child. 2008;93;62-64.

8. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine and American College of Emergency Physicians, Pediatric Committee. Care of Children in the Emergency Department: Guidelines for Preparedness. Pediatrics 2001; 107(4):777-781.

9. American Academy Of Pediatrics Committee On Pediatric Emergency Medicine Policy Statement. Pediatric Care Recommendations For Freestanding Urgent Care Facilities. Pediatrics 2005; 116(1):258-260.

10. Australian College Of Paediatrics and Australasian College For Emergency Medicine Policy On Hospital Emergency Department Services For Children. Available at: http://www.acem.org.au/media/policies_and_guidelines/P11_Hosp_ED_Services_for_Children. pdf. Accessed 25th November 2010.

11. O'Malley PJ, Brown K, Krug SE, and the American Academy of Pediatrics Committee on Pediatric Emergency Medicine. Patient- and Family-Centered Care of Children in the Emergency Department. Pediatrics 2008;122:e511–e521.

12. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine; American College of Emergency Physicians, Pediatric Emergency Medicine Committee. Patient- and

family-centered care and the role of the emergency physician providing care to a child in the emergency department. Pediatrics. 2006;118(5):2242–2244.

13. Hampers L, McNulty J. Professional interpreters and bilingual physicians in a pediatric emergency department: effect on re- source utilization. Arch Pediatr Adolesc Med. 2002;156(11): 1108 –1113.

14. Green SM, Ruben J. Emergency Department Children Are Not As Sick As Adults: Implications For Critical Care Skills Retention In An Exclusively Pediatric Emergency Medicine Practice. J Emerg Med. 2009;37 (4):359–368.

15. Mallory MD, Kadish H, Zebrack M, et al. Use of a Pediatric Observation Unit for Treatment of Children With Dehydration Caused by Gastroenteritis. Ped Emerg Care 2006; 22(1):1-6.

16. McConnochie KM, Conners GP, Lu E, et al. How commonly are children hospitalized for dehydration eligible for care in alternative settings? Arch Pediatr Adolesc Med. December 1999;153(12):1233 – 1241.

17. Hassan TB. Clinical decision units in the emergency department: old concepts, new paradigms, and refined gate keeping. Emerg Med J 2003;20:123–125.

18. Blair M, Gore J, Isaza F, et al. Multi-method evaluation of a paediatric ambulatory care unit (PACU): impact on families and staff. *Arch. Dis. Child.* 2008;93;681-685.

19. Royal College of Paediatrics and Child Health. Short Stay Paediatric Assessment Units. Advice for Commissioners and Providers, January 2009. Available at: http://www.rcpch.ac.uk/doc.aspx?id_Resource=4441. Accessed 25th November 2010.

20. Royal College of Paediatrics and Child Health. The Role of the Consultant Paediatrician with Subspecialty Training in Paediatric Emergency Medicine, August 2008. Available at: http://www.rcpch.ac.uk/doc.aspx?id_Resource=3997. Accessed 25th November 2010.

21. Abanses JC et al., Impact of rapid influenza testing at triage on management of febrile infants and young children. Pediatr Emergency Care. 2006 Mar;22(3):145-9.

22. Iyer S et al., Effect of Point-of-Care Influenza Testing on Management of Febrile Children. Acad Emerg Med. 2006 Dec;13(12):1259-68. Epub 2006 Nov 1.

23. Mintegi S et al., Rapid influenza test in young febrile infants for the identification of low-risk patients. Pediatr Infect Dis J. 2009 Nov;28(11):1026-8.

24. EUROTARN Available at: http://eurotarn.man.ac.uk/. Accessed 7th April 2011.

25. Health Information and Quality Authority (2010) Dublin Draft National Standards for Better, Safer Healthcare. Available at: http://www.hiqa.ie/standards/health/safer-better-healthcare. Accessed 10th May 2012.

26. Children First: National Guidelines for the Protection and Welfare of Children (2011 edition)

27. Council for Children's Hospital Care, 2008. *Child Protection Guidelines for the Children's Hospitals.*

Chapter 6. Pre-hospital Emergency Care

1. Advance Life Support Courses. Available at http://www.alsg.org/index.php?id=44. Accessed 18th April 2011.

Chapter 7. The Organisation of Trauma Care

1. The Implementation of a National Trauma Audit: Submission by the National Trauma Audit Committee of the RCSI, June 2010.

2. Review of Trauma and Emergency Services: Final Report. Acute Health Division, Department of Human Services, Victoria, Australia, 1999. Available at: http://www.health.vic.gov.au/trauma/review99/index.htm. Accessed 10th May 2012.

3. Towards Trauma 2014: Review and future directions of the Victorian State Trauma System, Australia, February 2009. Available at: http://www.health.vic.gov.au/trauma/publications/trauma_towards_2014.pdf. Accessed 10th May 2012.
4. NHS Clinical Advisory Groups Report: Regional Networks for Major Trauma, September 2010:371-378. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_120048. Accessed 10th May 2012.
5. London Trauma Office Mid-Year Report for the period April-September 2010. NHS. Available at: http://www.londontraumaoffice.nhs.uk/silo/files/london-trauma-office-midyear-report.pdf. Accessed 24th March 2011.
6. Celso B et al. A systematic review and meta-analysis comparing outcome of severely injured patients treated in trauma centres following the establishment of trauma systems. J Trauma 2006;60:371-378.

Chapter 8. Inpatient Care in Emergency Medicine – Clinical Decision Units

1. Cooke M, Fisher J, Dale J, McLeod E et al. Reducing Attendances and Waits in Emergency Departments. A systematic review of present innovations. 2004. Available at: http://wrap.warwick.ac.uk/134/. Accessed 24th February 2011.
2. Goodacre S, Nichol J, Dixon S, Cross E et al. Randomised controlled trial and economic evaluation of a chest pain observation unit compared with routine care. BMJ 2004;328:254 doi:10.1136/bmj.37956.664236. Accessed 7th March 2011.
3. The Effectiveness of CDU in Reducing Length of Stay – AMNCH. Presentation at IAEM Scientific Conference, Faithlegg, Waterford. Nov 2010. (Publication pending)
4. The College of Emergency Medicine. The Way Ahead 2008 – 2012. Strategy and Guidance for Emergency Medicine in the United Kingdom and the Republic of Ireland, December 2008. Available at: http://www.marathe.org/media/the-way-ahead-2008-2012.pdf. Accessed 10th May 2012.
5. Roberts MV et al. Can an Emergency Department-based Clinical Decision Unit successfully utilize alternatives to emergency hospitalization? Eur J Emerg Med 2010 Apr;17(2):89-96
6. Victorian Government Department of Human Services Melbourne, Victoria, Australia. Observation Medicine Guidelines 2009. Available at: http://www.health.vic.gov.au/emergency/obs09.pdf. Accessed 10th May 2012.
7. Hassan TB. Clinical decision units in the emergency department: old concepts, new paradigms, and refined gate keeping. Emerg Med J 2003;20:123-125. Abstract available at: http://emj.bmj.com/content/20/2/123.full. Accessed 10th May 2012.

Chapter 9. Emergency Department Infrastructure

1. Emergency Department Taskforce Report 2007. Available at: http://www.hse.ie/eng/services/Publications/services/Hospitals/ECTaskForce.html. Accessed 25th May 2011.
2. Standards for Emergency Department Design and specification for Ireland 2007. Available at: http://www.iaem.ie/images/stories/iaem/publications_position_statements/2007/iaem_standards_for_ed_design__specification_for_ireland_300907.pdf. Accessed 25th May 2011.
3. Draft National Standards for Better, Safer Healthcare. Health Information and Quality Authority (2010) Dublin Available at:

http://www.patientsafetyfirst.ie/attachments/article/10/J_Billings.pdf. Accessed 10th May 2012.

Chapter 10. Information and Communications Technology

1. Handler JA, Feied CF, Gillam M, et al. Developing consensus in emergency medicine information technology. Acad Emerg Med. 2004; 11:1109–11.
2. Irish Association for Emergency Medicine. National ED ICT Survey, 2010.
3. Current State of Emergency Department Information Systems. InfoHealth Management Corporation, May 2007.
4. Cabanas JG, Scholer M, Tintinalli J. Emergency Medicine Informatics: Information Management and Applications in the 21st Century. *Emergencias* 2009; 21:354-361.

Chapter 11. Clinical Guidelines

1. Institute of Medicine (1990). Clinical Practice Guidelines: Directions for a New Program, M.J. Field and K.N Lohr (eds.) Washington, DC: National Academy Press (page 38).
2. National Health and Medical Research Council (NHMRC, Australia) 1999. A guide to the development, implementation and evaluation of clinical practice guidelines. Available at: http://www.nhmrc.gov.au/guidelines/publications/cp30. Accessed 10th May 2012.
3. National Health and Medical Research Council (NHMRC) 2000. How to use the evidence: assessment and application of scientific evidence. Available at: http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp69.pdf?q=publications/synopses/_files/cp69.pdf. Accessed 10th May 2012.
4. National Health and Medical Research Council (NHMRC) 2000. How to put evidence into practice: implementation and dissemination strategies. Available at: http://www.nhmrc.gov.au/guidelines/publications/cp71. Accessed 10th May 2012.

Chapter 12. Key Specialty and Service Interfaces

The General Practice Interface

1. David Carson, Henry Clay and Rick Stern Primary Care and Emergency Departments: Report from the Primary Care Foundation March 2010. Available at: http://www.primarycarefoundation.co.uk/images/PrimaryCareFoundation/Downloading_Reports/Reports_and_Articles/Primary_Care_and_Emergency_Departments/Primary_Care_and_Emergency_Departments_RELEASE.pdf. Accessed 11th May 2012.
2. Murphy A, Bury G, Plunkett P et al. Randomised controlled trial of general practitioner versus usual medical care in an urban accident and emergency department; process, outcome and comparative cost. BMJ 1996;312:1135
3. Gibney D, Murphy A, Smith M et al. Attitudes of Dublin accident and emergency department doctors and nurses towards services offered by local general practitioners. EMJ 1995;12;262-5.
4. Murphy A, Plunkett P, Bury G et al. Effect of patients seeing a general practitioner in accident and emergency on their subsequent re-attendance; cohort study. BMJ 2000;320: 903.
5. Sharma A. & Inder B. Impact of co-located general practitioner clinics and patient choice on duration of wait in the emergency department. EMJ 2009. doi:10.1136/emj.2009.086512

6. O'Kelly F, Teljeur C, Carter I and Plunkett P. Impact of a GP cooperative on lower acuity emergency department attendances. EMJ 2010;27:770-3. doi:10.1136/emj.2009.086512

7. Accident and Medical Care Course. Auckland; University of Auckland/Accident and Medical Practitioners Association, 2004. Available at: http://www.fmhs.auckland.ac.nz/faculty/postgrad/programmes/pgdipcomemmed.aspx. Accessed 11th May 2012.

8. The College of Family Physicians of Canada. Certificate of Special Competence in Emergency Medicine. Available at: http://www.cfpc.ca/ExamofSpecialCompetenceinEmergencyMedicine. Accessed 11th May 2012.

The Emergency Care of Older People

1. Eamon O'Shea and Patricia Conboy. Planning for an Aging Population: Strategic Considerations. National Council of Aging and Older People: Ireland 2005. Available at: http://www.ncaop.ie/publications/research/reports/87_Ageing_Pop_Str_Cons.pdf. Accessed 11th May 2012.

2. Ann O'Hanlon, Hannah McGee, et al. Healthcare and Social Services for Older People II. (HeSSOP II): Changing Profiles from 2000 to 2004. National Council of Aging and Older People: Ireland 2005. Available at: http://www.ncaop.ie/publications/research/reports/91_Hessop2.pdf. Accessed 11th May 2012.

3. Smith S. Characteristics of emergency department attendances in four Irish teaching hospitals. Working Paper No 27; 2007. Available at: http://www.esri.ie/research/research_centres/health_services_health_in/26._Characteristics_of_Emergency_Department_Attendances_in_Four_Irish_Teaching_Hospitals.pdf. Accessed 11th May 2012.

4. Belinda Parke and Jane McCusker. Consensus-based policy recommendations for geriatric emergency care. *International Journal of Health Care Quality Assurance.* 2008; 21: 385-395.

5. Corina Naughton, Jonathan Drennan, et al. The role of health and non-health-related factors in repeat emergency department visits in an elderly urban population. *EMJ* 2010; 27:683-687.

6. Khan SA , Miskelly FG et al. Missed diagnoses among elderly patients discharged from an accident and emergency department. *J Accid Emerg Med* 1996;13:256-7.

7. McInerney JJ , Breslin TM, et al. Prolonged boarding in an overcrowded ED in Ireland and its impact on morbidity among elderly patients. *EMJ* 2008;25 (Suppl 1) A8.

8. McCusker J. Prediction of hospital utilization among elderly patients during the 6 months after an emergency department visit. Ann Emerg Med. 2000 Nov;36(5):438-45.

9. Hughes G . Rapid assessment teams and early discharge of the elderly from ED; vunerable in the current financial climate? *EMJ* 2006;23:416.

10. The Future of Geriatric Care in our Nation's Emergency Departments: Impact and Implications. ACEP 2008. Available at: http://www.acep.org/Content.aspx?id=25112&terms=geriatrics. Accessed 10th May 2012.

The Psychiatry Interface

1. National Registry of Deliberate Self Harm Ireland 2009. Available at: http://www.lenus.ie/hse/bitstream/10147/109335/1/NRDSH_AnnualReport2009.pdf. Accessed 17th June 2011.

2. Report of the National Acute Medicine Programme 2010. Available at: http://www.hse.ie/eng/services/Publications/services/Hospitals/AMP.pdf. Accessed 17th June 2011.

3. Liaison Psychiatry Faculty of the College of Psychiatrists of Ireland commentary about the Report of the Acute Medicine Programme, (2011).

4. Psychiatric services to Accident and Emergency departments. CR118. Royal College of Psychiatrists & British Association for Accident and Emergency Medicine, UK, 2004; G15. Available at: http://www.rcpsych.ac.uk/files/pdfversion/cr118.pdf. Accessed 17th June 2011.
5. Emergency Department Design. Australasian College for Emergency Medicine, 2007). Available at: http://www.acem.org.au/media/policies_and_guidelines/G15_ED_Design.pdf. Accessed 17th June 2011.
6. Standards for Emergency Department Design and specification for Ireland 2007. Available at: http://www.iaem.ie/images/stories/iaem/publications_position_statements/2007/iaem_standards_for_ed_design__specification_for_ireland_300907.pdf. Accessed 25th May 2011.
7. Bastion S. Mental Health Triage Scale. NICE Self-Harm development group. The short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care. National Institute of Clinical Excellence, UK, 2004).
8. Pitman A, Tyrer P. Implementing clinical guidelines for self-harm – highlighting key issues arising from the NICE guideline for self-harm. Psychology and Psychotherapy: Theory, Research and Practice, 2008, 81, 377-397
9. A Vision for Change, Department of Health and Children, 2005. Available at: http://www.dohc.ie/publications/pdf/vision_for_change.pdf. Accessed 17th June 2011.
10. Managing urgent mental health need in the acute trust, Academy of Medical Colleges, 2008
11. Improving the management of patients with mental ill health in emergency care settings (2004). National Health Service, UK. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4089197.pdf. Accessed 11th May 2012.

Diagnostic Imaging in Emergency Medicine

1. The Way Ahead 2008-2012. Strategy and Guidance for Emergency Medicine in the United Kingdom and the Republic of Ireland, December 2008. Available at: http://www.marathe.org/media/the-way-ahead-2008-2012.pdf. Accessed 10th May 2012.
2. Standards for Design of Irish Emergency Departments. Irish Association for Emergency Medicine, 2007.

Laboratory Medicine

1. Guidelines for Safe and Effective Management and Use of Point of Care Testing, November 2007. Available at: http://www.rcpi.ie/Faculties/Documents/POCT%20Guidelines%20April%202008.pdf. Accessed 15th June 2011.
2. Guidelines for the administration of blood and blood products. National Blood Users Group. 2004. Available at: http://www.giveblood.ie/Clinical_Services/Haemovigilance/Publications/Guidelines_for_the_Administration_of_Blood_and_Blood_Components.pdf. Accessed 17th June 2011.

Chapter 13. The Emergency Team and Workforce Planning

1. ICN (1999) Guidebook for Nurse Futurists – Future oriented planning for Individuals, Groups and Associations. International Council of Nurses: Geneva.
2. WHO (1980) Manual on Health Manpower Statistics (Bui Dang Ha Doan Ed.) World Health Organisation: Geneva.
3. Draft National Standards for Better, Safer Healthcare. Health Information and Quality Authority (2010) Dublin. Available at:

http://www.patientsafetyfirst.ie/attachments/article/10/J_Billings.pdf. Accessed 10th May 2012.

4. Health Care Commission. Inspecting Informing Improving. Acute hospital portfolio review Accident and Emergency. August 2005. Available at: http://www.cqc.org.uk/_db/documents/04019296.pdf. Accessed 17th June 2011.

5. Paw RC. Emergency Department staffing in England and Wales, April 2007. Emergency Medicine Journal. 25, 420 – 423.

6. Higginson I, Whyatt J and Silvester K (2010) Demand and capacity planning in the emergency department: how to do it. Emergency Medicine Journal. 28(2),128–135.

7. Comptroller and Auditor General Special Report Health Service Executive Emergency Departments 2009. Government Publications: Dublin. Available at: http://audgen.gov.ie/documents/vfmreports/70_Emergency_Departments.pdf. Accessed 3rd May 2011.

8. HSE (2008) Independent examination of the Potential for Reducing Nursing Working Hours in Ireland: review and feasibility analysis of nursing and other related staff resource deployment in the HSE. Horwath Consulting Ireland & Teamwork Management Services UK. Dublin.

9. Report on Nurse Staffing Levels in Emergency Departments in the Republic of Ireland Healthcare Consulting Limited 2003 The Health Service Employers Agency.

10. O'Brien A and Benger J (2008) Using patient dependency to calculate staffing needs in the A&E. Nursing Times.104:15, 29-30.

11. O'Brien A and Benger J (2007) Patient Dependency in Emergency Care: do we have the nurses we need? Emergency Care. 16(11),2081–2087.

12. Gedmintas A, Bost N, Keijzers G, Green D and Lind J (2010) Emergency care workload units: a novel tool to compare emergency department activity. Emergency Medicine Australasia. 22, 442–448.

13. Australian College of Emergency Medicine ACEM (2008) Guidelines on Constructing an Emergency Medicine Medical Workforce. ACEM: Melbourne. Available at: http://www.acem.org.au/media/policies_and_guidelines/G23_Constr_Workforce.pdf. Accessed 26th August 2010.

14. Challander E and Schofield D (2011) Emergency Department Workforce Models: what the literature can tell us. Emergency Medicine Australia. 23,84–94.

15. HSE (2001) Effective Utilisation of Professional Skills of Nurses and Midwives: report of the working group. Government publications: Dublin. Available at: http://www.lenus.ie/hse/bitstream/10147/42519/1/1887.pdf. Accessed 10th May 2012.

16. HSE & SKILLS (2008) National Review of the Role of Health Care Assistants in Ireland. HSE: Dublin.

17. Comhairle na nOspidéal, Report of the Committee on Accident & Emergency Services, February 2002. Available at: http://www.lenus.ie/hse/bitstream/10147/44735/1/6309.pdf. Accessed 10th May 2012.

18. Report of the National Task Force on Medical Staffing (The Hanly Report), Department of Health & Children, June 2003. Available at: http://www.healthreform.ie/pdf/hanly.pdf. Accessed 10th May 2012.

19. Presentation to the Forum on the future of Surgical Specialities in Ireland, Royal College of Surgeons in Ireland, 21st November 2003. Available at: http://www.rcsi.ie/files/surgery/docs/20100928014305_Forum%20on%20the%20future%20of%20surgica.pdf. Accessed 12th May 2012.

20. Australasian College for Emergency Medicine Guidelines on Constructing an Emergency Medicine Medical Workforce. Australian Medical Workforce Advisory Committee. The Specialist Emergency Medicine Workforce in Australia an Update: 2002 to 2012 AMWAC Report 2003.6, September 2003. Available at: http://www.acem.org.au/media/policies_and_guidelines/G23_Constr_Workforce.pdf. Accessed 12th May 2012.

21. The Way Ahead 2008-2012. Strategy and Guidance for Emergency Medicine in the United Kingdom and the Republic of Ireland, December 2008. Available at: http://www.marathe.org/media/the-way-ahead-2008-2012.pdf. Accessed 10th May 2012.
22. College of Emergency Medicine - Workforce in Emergency Medicine 2008. Available at: http://www.emergencymed.org.uk/CEM/Background/Workforce%202001.asp. Accessed 26th August 2010.
23. Emergency Medicine Clinics of North America Feb 2005;23:262-3.
24. Foundation for Excellence - An Evaluation of the Foundation Programme. Professor John Collins. Medical Education England, October 2010.
25. Anne Marie Ogelsby: Analysis of Emergency Medicine incidents and Completed Closed Claims, March 2009. Available at: http://hse.openrepository.com/hse/handle/10147/79833. Accessed 10th May 2012.
26. White AL, Armstrong PA, Thakore S. Impact of senior clinical review on patient disposition from the emergency department Emerg Med J 2010 27: 262-265.
27. Geelhoed GC, Positive impact of increased number of emergency consultants. Arch Dis Child 2008;93:62-64.
28. Thornton V. et al. Junior doctor strike model of care: reduced access block and predominant Fellow of the Australasian College of Emergency Medicine staffing improve emergency department performance. Emerg Med Australas 2008;20:425-30.
29. Rade B Vukmir and Randy N Howell. Emergency medicine provider efficiency: the learning curve, equilibration and point of diminishing returns. Emerg Med J 2010 27: 916-920.
30. The Development of Paediatric Emergency Medicine. Joint publication of the Advisory Committee on Emergency Medicine Training and the Irish Association for Emergency Medicine. Available at: http://www.iaem.ie/images/stories/iaem/publications/2010/the_development_of_paediatric_emergency_medicine_in_ireland_october_2010_final.pdf. Accessed 12th May 2012.
31. IAEM Staffing Needs for Emergency Departments in Ireland. Available at: http://iaem.ie/images/stories/iaem/publications_position_statements/2006/iaem_staffing_needs_for_eds_in_ireland_231106.pdf. Accessed 9th November 2010.
32. Sklar DP, Handel DA, Hoekstra J, et al. The Future of Emergency Medicine: An Evolutionary Perspective Acad Med 2010. 85;(3); 490- 495.

Chapter 14. Emergency Nursing

1. HSE (2008) Independent Examination of the Potential for Reducing Nursing Working Hours in Ireland. Horwath Consulting Ireland in association with Teamwork Management Services UK.
2. Emergency Nurses Association (2009) Definition of Emergency Nursing. Mosby's Medial Dictionary 8th Ed. Elsevier.
3. Endacott, R (2003) The Nature of Emergency Nursing. In Jones G, Endacott R, Crouch R eds. Emergency Nursing Care: Principles and Practice. London. Greenwich Medical Media Ltd.
4. National Council for the Professional Development of Nursing and Midwifery (2008). *Enhanced Nursing Practice in Emergency Departments.* Position Paper No 4. NCNM, Dublin. Available at: www.ncnm.ie. Accessed 10th May 2012.
33. Health Information and Quality Authority (2010) Dublin Draft National Standards for Better, Safer Healthcare. Available at: http://www.hiqa.ie/standards/health/safer-better-healthcare. Accessed 10th May 2012.
5. Department of Health (2011) *Strategic Framework for Role Expansion of Nurses and Midwives: Promoting Quality Patient Care*. DOHC. Dublin. Available at: http://www.dohc.ie/publications/role_expansion_nurses_midwives.html. Accessed 10th May 2012.

6. An Bord Altranais (2000) *Scope of Nursing and Midwifery Practice Framework* (2000) Dublin, An Bord Altranais. Available at: www.nursingboard.ie.
7. Office for Health Management (2004) *Frontline Competencies for Nurse and Midwife Managers.* OHM. Dublin.
8. National Council for the Professional Development of Nursing and Midwifery (2008). *Accreditation of Advanced Nurse Practitioner and Advanced Midwife Practitioner Posts.* 2nd edn. NCNM, Dublin. Available at: www.ncnm.ie.
9. National Council for the Professional Development of Nursing and Midwifery (2008). *Framework for Establishment of Advanced Nurse Practitioner and Advanced Midwife Practitioner Posts.* 4th edn. NCNM, Dublin. Available at: www.ncnm.ie.
10. National Council for the Professional Development of Nursing and Midwifery (2008). *Framework for the Establishment of Clinical Nurse/Midwife Specialist Posts Intermediate Pathway.* 4th edn. NCNM, Dublin. Available at: www.ncnm.ie.
11. National Council for the Professional Development of Nursing and Midwifery (2010c) *Nurse and Midwife Clinical Competency Determination and Competency Development Planning Toolkit.* NCNM, Dublin. Available at: www.ncnm.ie.
12. Department of Health and Children and Health Service Executive (2009) *An Integrated Workforce Planning Strategy for the Health Services.* Department of Health and Children, Dublin and HSE, Dublin. Available at: http://www.dohc.ie/publications/workforce_planning_strategy.html . Accessed 10th February 2011.

Additional Resources Relating to Emergency Nursing

- Government of Ireland (1998) *Report of the Commission on Nursing: A Blueprint for the Future.* The Stationery Office Dublin. www.dohc.ie/publications/report_of_the_commission_on_nursing.html
- Health Service Executive (2009) *Guiding Framework for the Implementation of Nurse Prescribing of Medical Ionising Radiation (X Ray).* ONMSD. HSE .Dublin
- Jones, G (2008) Nursing in Emergency Care. In Dolan B, Holt L (eds) *Accident and Emergency Nursing: Theory into Practice* 2nd Edition. Elsevier. London.
- National Council for the Professional Development of Nursing and Midwifery (2010a in press) *An Evaluation of Clinical Nurse/Midwife Specialists and Advanced Nurse/Midwife Practitioners in Ireland.* NCNM, Dublin. www.ncnm.ie .
- National Council for the Professional Development of Nursing and Midwifery (2010b) *Clinical Outcomes – Discussion Paper.* NCNM, Dublin. www.ncnm.ie.
- Office for Health Management (2000) *Report on Nursing Management Competencies*. OHM. Dublin.
- An Bord Altranais (2000b) *Code of Professional Conduct for each Nurse and Midwife. Dublin*. Dublin, An Bord Altranais. www.nursingboard.ie.
- An Bord Altranais (2000) *Guidance for Nurses and Midwives on the Development of Polices, Guidelines and Protocols.* Dublin, An Bord Altranais. www.nursingboard.ie.
- An Bord Altranais (2002) *Recording Clinical Practice Guidance to Nurses and Midwives.* Dublin, An Bord Altranais. www.nursingboard.ie.
- An Bord Altranais (2002) *e-learning package -Supporting Competence Assessment.* Dublin, An Bord Altranais. www.nursingboard.ie.
- An Bord Altranais (2005) *Requirements and Standards for Nurse Registration Education Programmes.* Dublin. An Bord Altranais. www.nursingboard.ie
- An Bord Altranais (2007) *Guidance to Nurses and Midwives on Medication Management* Dublin. An Bord Altranais. www.nursingboard.ie.
- An Bord Altranais (2009) *Professional Guidance for Nurses Working with Older People.* Dublin, An Bord Altranais. www.nursingboard.ie.

- Department of Health (1980) *Working Party on General Nursing Report*. The Stationary Office. Dublin.
- Department of Health and Children (2008) The Report of the Commission of Patient Safety and Quality Assurance: *Building a Culture of Patient Safety.* Department of Health and Children. Dublin. www.dohc.ie/publications/building_culture_patient_safety.html.

Chapter 15. The Role of the Consultant in Emergency Medicine and Specialty Training

1. Rade B Vukmir and Randy N Howell. Emergency medicine provider efficiency: the learning curve, equilibration and point of diminishing returns. Emerg Med J 2010 27: 916-920.
2. Australian College of Emergency Medicine ACEM (2008) Guidelines on Constructing an Emergency Medicine Medical Workforce. ACEM: Melbourne. Available at: http://www.acem.org.au/media/policies_and_guidelines/G23_Constr_Workforce.pdf. Accessed 26th August 2010.
3. Guide to Emergency Medicine Training in Ireland. Available at: http://www.rcsi.ie/index.jsp?p=105&n=319. Accessed 17th June 2011.

Chapter 16. The Roles of Therapy Professionals and Medical Social Workers in Emergency Care

Physiotherapy in Emergency Care

1. Lawlor M, Kealy S, Agnew M, Korn B, Quinn J, Cassidy C, Silke B, O Connell F, O Donnell R. Early discharge care with ongoing follow-up support may reduce hospital readmissions in COPD. Int J Chron Obstruct Pulmon Dis. 2009;4:55–60.
2. Puhan MA, Scharplatz M, Troosters T, et al. Respiratory rehabilitation after acute exacerbation of COPD may reduce the risk for readmission and mortality – a systematic review. Respir Res 2005; 6: 54.
3. Mantyselka, PT, Kumpusola, EA, Ahonen, RS, et al: Direct and indirect costs of managing patients with musculoskeletal pain – challenge for health care. Eur J Pain.2002.6:141-148.
4. Zigenfus, GC, Yin, JBS, Giang, GM, et al: Effectiveness of early physical therapy in the treatment of acute low back disorders. J Occup Environ Med.42:35-43,2000.
5. McClellan C, Cramp F, Powell J, Benger JR. Extended Scope Physiotherapists in the emergency department: a literature review. Physical Therapy Reviews.2010;15,2:106-111.
6. McClellan C, Greenwood R, Benger J. Effect of an extended scope physiotherapy service on patient satisfaction and the outcome of soft tissue injuries in an adult emergency department. Emerg Med J 2006; 23:384-387.

Occupational Therapy in Emergency Care

1. World Federation of Occupational Therapists, (2010). Statement on Occupational Therapy, *World Federation of Occupational Therapists*. April 2010. Available at: http://www.wfot.org/. Accessed 10th May 2012.
2. Hill N, (2010), Therapy in an acute front line service, *Occupational Therapy News*, May, 18(5), 25.
3. Brandis, S., (1998). Use of Occupational Therapy services to facilitate early discharge from hospital. *Australian Journal of Occupational Therapy*, 45, pgs131- 138.
4. Currie, C, (2005), Accident, emergency or what? *Age & Ageing,* 34 (1) 6-7.

5. Bentley, J., Meyer, J., (2004) Repeat attendances by older people at accident and Emergency Department. Journal of advanced nursing,48(2),149-156.
6. Runciman P, Currie CT, Nicol M, Green L & McKay V (1996) Discharge of elderly people from an Emergency department: evaluation of health visitor follow-up. *Journal of Advanced Nursing* 24, 711–718.
7. Ferguson A. Discharge planning from A&E: Part 1. *Accident and Emergency Nursing* 5, 210–214
8. Cherry J and Reid J. Fast-tracking older people through A&E. *Nursing Standard* 15,42–44.
9. Dunnion, M, Kelly B. From the emergency department to Home. *Journal of Advanced Nursing*, 14(6), 776-785
10. Moss, JE, Flower, CL, Houghton LM, Moss DL., Nielsen DA, Mc D Taylor D., (2002) A multidisciplinary Care Coordination Team improves emergency department discharge planning practice. *Medical Journal of Australia*. 177 (8):435-439
11. Katsoulis E, Rees K, Warrick D., (2005), Hand Therapist-Led management of mallet finger. *British Journal of Hand Therapy*.10(1)17-20.
12. Warick D, Belward P, (2004) Hand Therapist Carpal Tunnel clinic. *British Journal of Hand Therapy,*9(1).
13. Hendriksen H, Harrison RA, (2001), Occupational Therapy in Accident and Emergency Departments. A Randomised control trial. Journal of Advanced Nursing 36(6)727-732.

Speech and Language Therapy in Emergency Care

1. Irish Heart Foundation: Council for Stroke (2009) National Clinical Guidelines and Recommendations for the Care of People with Stroke and Transient Ischaemic Attack
2. Tam, K. F, Ho, H.F., Shea, T.M, Yuen, E., Mak, Y.F., Wong, L.K, Lai, Y.S., Lau, C.Y., Leung, L.S and Li, P. Joint efforts of emergency medicine specialists and geriatricians in managing old-age-home elderly who attended the Accident and Emergency Department of a regional hospital Asian Journal of Gerontology & Geriatrics Vol 2 No 3 December 2007.
3. Heins, NP & Wiles, CM (1998) 'Assessment of Swallowing and referral to speech and language therapists in acute stroke' in Quarterly Journal of Medicine Vol 91.829-835.
4. Suiter, DM & Leder SB (2008) 'Clinical Utility of the 3-ounce Water Swallow Test' Dysphagia Vol 23 p 244-250.
5. Irish Heart Foundation (2008) National Audit of Stroke Care. Available at: http://www.irishheart.ie/media/pub/strokereports/stroke_report.pdf. Accessed 10th May 2012.

Clinical Nutrition/Dietetics in Emergency Care

1. Nutrition Screening Survey in the UK and Republic of Ireland in 2010. A Report by the British Association for Parenteral and Enteral Nutrition (BAPEN).
2. Trebber, L.A. and Harris, M.A. (1996). Effect of early nutrition intervention on patient length of stay. *Journal of the American Dietetic Association*. Volume 96(9)1.pA29.
3. Lumbers M, New SA, Gibson S and Murphy MC (2001). Nutritional status in elderly hip fracture patients: comparison with an age-matched home living group attending day centres. British journal of Nutrition,85:733-740.
4. Thoresen, L., Rothenberg, E., Beck, A.M., Irtun, O. (2008). Doctors and nurses on wards with greater access to clinical dietitians have better focus on clinical nutrition. *Journal of Human Nutrition and Dietetics*. Volume 21 (3), p 239–247.

Podiatry in Emergency Care

1. Diabetes UK. Putting feet first. *Diabetes UK*; 2009.
2. National Institute for Health and Clinical Excellence (NICE). Type 2 diabetes: Prevention and management of foot problems. Clinical Guideline 10. London: NICE; 2004.

Orthoptics in Emergency Care

1. The Irish Heart Foundation (IHF) National Clinical Guidelines and Recommendations for the Care of People with Stroke and TIA.
2. Atherosclerosis Risk in Communities Study, Stroke AHA journals 2002.

Medical Social Work in Emergency Care

1. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.
2. Auberbach, C., Mason, S. (2010). The value of the presence of social work in Emergency Departments. Social Work in Health Care 49(4) 314-326.
3. Kennedy U, McGarry S, Haye R, Geary U (2009) Emergency Department Access to Medical Social Workers in the Republic of Ireland. Irish Social Worker.3.19-24.
4. Hardy C, Whitwell D, Sarsfield B, Maimaris C. Admission avoidance and early discharge of acute hospital admissions: an accident and emergency based scheme. Emerg Med J 2001: 18:435-441.
5. Bywaters P., McLeod E. (2003) Social care's impact on emergency medicine: a model to test. Emergency Medicine;20;134-137.
6. Emergency Department Taskforce Report. HSE, 1st June 2007. Available at: http://www.hse.ie/eng/publications/hospitals/ectaskforce.html. Accessed on 18th April 2011.
7. Davies M, Connolly J. The social workers role in the hospital: seen through the eyes of other healthcare professionals. Health and Social Care in the Community, 1995,3(5):301-310.

Chapter 17.   Academic Emergency Medicine and Emergency **Nursing Education, Professional Development and Academic Activity**

1. Preparing Ireland's Doctors to meet the Health Needs of the 21st Century. A report of the Postgraduate Medical Education and Training Group. DoHC 2006. Available at: http://www.hrb.ie/fileadmin/Staging/Documents/RSF/PEER/Policy_Docs/Relevant_reports/buttimer.pdf. Accessed 12th May 2012.
2. Medical Education in Ireland - A New Direction. A report of the Working Group on Undergraduate Medical Education and Training. DoHC 2006.
3. Research Strategy for Emergency Medicine in Ireland. Irish Association for Emergency Medicine Academic Committee, 2010.
4. Undergraduate Curriculum for Emergency Medicine. International Federation for Emergency Medicine, 2009. Available at: http://ifem.cc/site/DefaultSite/filesystem/documents/Policies%20and%20Guidelines/IFEM%20UGE%20core%20curriculum%20--%20Jan%2015%202009.pdf. Accessed 10th May 2012.
5. Guide to Emergency Medicine Training in Ireland, 4th Edition. Irish Committee on Emergency Medicine Training, RCSI, April 2011.

6. The Development of Paediatric Emergency Medicine in Ireland, Irish Association for Emergency Medicine and Irish Committee on Emergency Medicine Training. October 2010.
7. Department of Health & Children (2004) Report of Expert Group on Midwifery and Children's Nursing Education. Dublin. The Stationary Office. www.dohc.ie/publications
8. Health Service Executive (2009) National Independent Evaluation of the Nurse and Midwife Prescribing Initiative. University College Dublin. HSE.
9. National Council for the Professional Development of Nursing and Midwifery (2008) Enhanced Nursing Practice in Emergency Departments. Position Paper 4. NCNM. Dublin.
10. Health Service Executive (2008) Report of the Post-Registration Nursing and Midwifery Education Review Group. ONSD. HSE. Dublin.
11. National Council for the Professional Development of Nursing and Midwifery (2008) Accreditation of Advanced Nurse/Midwife Practitioners. NCNM. Dublin.
12. National Council for the Professional Development of Nursing and Midwifery (2010) Evaluation of Clinical Nurse and Midwife Specialists and Advanced Nurse and Midwife Practitioner Roles in Ireland (SCAPE). NCNM. Dublin.
13. Department of Health & Children (2003) A Research Strategy for Nursing and Midwifery in Ireland. Stationary Office. Dublin. Available at: www.dohc.ie/publications/pdf/rsnw.pdf. Accessed June 2011.
14. National Council for the Professional Development of Nursing and Midwifery (2005) Nursing and Midwifery Research Priorities for Ireland. NCNM. Dublin.
15. National Council for the Professional Development of Nursing and Midwifery (2005) The Development of Joint Appointments: a Framework for Irish Nursing and Midwifery. NCNM. Dublin.

Chapter 18. A Systems Improvement Approach to Emergency Care

1. Reforming Emergency Care 2001. Department of Health UK. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4058836.pdf. Accessed 21st March 2011.
2. Cooke M, Fisher J, Dale J et al. Reducing Attendances and Waits in Emergency Departments A systematic review of present innovations Report to the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO). January 2004. Available at: http://www.sdo.nihr.ac.uk/files/project/29-final-report.pdf. Accessed 16th January 2010.
3. Recommendations to Improve Quality and the Measurement of Quality in New Zealand Emergency Departments. 2009. New Zealand Ministry of Health. Available at: http://www.moh.govt.nz/moh.nsf/pagesmh/8783/$File/quality-ed-jan09.pdf. Accessed 21st March 2011.
4. New South Wales Health Clinical Services Redesign Program Models of Emergency Care 2006. Available at: http://www.archi.net.au/e-library/moc/emergency-moc. Accessed 21st March 2011.
5. Better faster emergency care. Improving emergency care and access in Victoria's public hospitals. A Victorian Government initiative. Available at: http://www.health.vic.gov.au/emergency/better-faster-report07.pdf. Accessed 21st March 2011.
6. Four hour Rule Program. Government of Western Australia, Department of Health. Available at: http://www.health.wa.gov.au/fourhourrule/home/. Accessed 12th May 2012.
7. Womack JP, Jones DT, Roos D. The Machine That Changed the World: The Story Of Lean Production (New York: Harper Perennial 1991).
8. Dickson WE, Anguelov X, Betterick D et al. Use of Lean in the emergency department: a case series of 4 hospitals. Ann Emerg Med. 2009;54:504-510.

9. King DL, Ben-Tovim DI, Bassham J. Redesigning emergency department patient flows: Application of Lean Thinking to health care. Emerg Med Australas 2006;18:391-397.

10. Jody Crane, Chuck Noon. The Definitive Guide to Emergency Department Operational Improvement 2011. Productivity Press, Taylor & Francis Group. New York NY 10017.

11. Dr Souza LB, Pidd M. Exploring the barriers to heal health care implementation. Public Money & Management January 2001; 59-66.

12. Graban Mark. Lean Hospitals: improving quality, patient safety, and employee satisfaction. (Productivity Press. Taylor & Francis Group 2009.)

13. Holden RJ. Lean Thinking in Emergency Departments: A Critical Review. Ann Emerg Med 2011;57:3:265-78.

14. Ng D, Vail G, Thomas S, Schmidt N. Applying the Lean principles of the Toyota Production System to reduce wait times in the emergency department. CJEM. 2010 Jan;12(1):50-7.

15. Shriver M, Eitel D. Optimizing emergency department throughput: Operations Management Solutions for Health Care Decision Makers (Taylor & Francis Group LLC, 2010)

16. Dart RC (Editorial). Ann Emerg Med 2011. ;57:3:279-281

17. Jacobssen GH, McCoin NS, Lescallatte R et al. Kaizen: a method of process improvement in the emergency department. Acad Emerg Med. 2009;16:1341-1349.

18. Trebble TM, Hansi N, Hyders T et al. Process maping the patient journey through healthcare:an introduction. BMJ 2010:341:394-7.

19. Koelling CP, Eitel D, Maapatra S, Messner K et al. Value Stream Mapping the Emergency Department. Available at: http://www.iienet.org/uploadedFiles/SHS/Resource_Library/details/180.pdf. Accessed 28th March 2011.

20. Smith M, Feied C, The Emergency Department as a Complex System. 1999. Available at: http://necsi.edu/projects/yaneer/emergencydeptcx.pdf. Accessed 21st March 2011.

21. New England Complex Systems Institute. Available at: http://www.necsi.edu/guide/study.html. Accessed 21st March 2011. Accessed 21st March 2011.

22. Institute for Healthcare Improvement Cambridge Massachusetts Innovation Series 2003. Optimizing Patient Flow Moving Patients Smoothly Through Acute Care Settings. Available at: http://www.ihi.org/IHI/Results/WhitePapers/OptimizingPatientFlowMovingPatientsSmoothlyThroughAcuteCareSettings.htm. Accessed 21st March 2011.

23. Mayhew L, Smith D. Using queuing theory to analyse the Government's 4-h completion time target in Accident and Emergency departments. Healthcare Management Science 2008; 11:1(11-21).

24. Green LV, PhD, Soares J, Giglio JF, MD, Green RA, Using Queuing Theory to Increase the Effectiveness of Emergency Department Provider Staffing. Society for Academic Emergency Medicine. Available at: http://www.hbs.edu/units/tom/seminars/2007/docs/lgreen3.pdf.

25. Goldratt E, Cox J. The Goal A Process of Ongoing Improvement. 3rd Revised Edition 2004. North River Press Publishing Corporation, Great Barrington MA01230.

26. Crane J. Presentation to the Institute for Healthcare Improvement Conference on Perfecting Emergency Department Operations. Boston April 27th-28th 2011.

27. Clinical Microsystems "The Place Where Patients, Families and Clinical Teams Meet". Assessing, Diagnosing and Treating Your Emergency Department© 2001, Trustees of Dartmouth College, Godfrey, Nelson, Batalden, Institute for Healthcare Improvement; Adapted from the original version for Geisinger Health System, Version 2, February 2005. Available at: http://www.clinicalmicrosystem.org/. Accessed 30th April 2012.

28. Value by Design: developing clinical Microsystems to achieve organizational excellence. Eugene C Nelson, Paul B Batalden, Marjorie M Godfrey, Joel S Lazar 2011. Published by Jossey-Bass; 989 Market Street, San Francisco CA 94103-1741.

29. Plunkett PK, Byrne, DG, Breslin T et al. Increasing wait times predict increasing mortality for emergency medical admissions. Eur J Emerg Med 2011 Aug;18(4):192-6.

30. Richardson DB. Increase in patient mortality at 10 days associated with emergency department overcrowding. Med J Aust 2006;184:213-216.
31. Guttman A, Schull MJ, Vermullen MJ, Stukel TA. Association between waiting times and short term mortality and hospital admission after departure from emergency department: population based cohort study from Ontario, Canada. BMJ 2011;342:d2983doi:10.1136/bmj.d2983.
32. Health Service Executive Emergency Departments. Patient Profiles, Experiences and Perceptions. Report of a National Survey among people who attended during 2006. Available at: http://www.hse.ie/eng/services/Publications/services/Hospitals/HSE_Emergency_Departments-_Patient_Profiles,_Experiences_and_Perceptions.pdf. Accessed 22dn March 2011.
33. Pines JM, Iyer S, Disbot M, Hollander JE et al., The effect of emergency department crowding on patient satisfaction for admitted patients. Acad Emerg Med 2008 Sep;15(9):825-31.

Other Resources Relating To Systems Management Tools for Emergency Medicine:

- New Zealand Ministry of Health: Tools, Checklists and Guidelines for Improving ED Services MoH Summary. Available at: http://www.hiirc.org.nz/page/17469/tools-checklists-and-guidelines-for-improving/?section=9088&contentType=451&tab=822. Accessed 22nd March 2011.
- Jensen K, Crane J.Improving patient flow in the emergency department: there are nine strategies hospitals can incorporate to more effectively manage patient flow in the emergency department without sacrificing quality of care. Healthcare Financial Management November 2008. Available at: http://findarticles.com/p/articles/mi_m3257/is_11_62/ai_n31334484/pg_4/?tag=mantle_skin;content. Accessed 2nd May 2011.
- NSW Clinical Services Redesign Program. http://www.archi.net.au/e-library/performance/flow. Accessed 22nd March 2011.

Chapter 19. The Emergency Medicine Patient Pathway

1. Plunkett PK, Byrne DG, Breslin T et al. Increasing wait times predict increasing mortality for emergency medical admissions. Eur J Emerg Med 2011 Aug;18(4):192-6.
2. Richardson DB. Increase in patient mortality at 10 days associated with emergency department overcrowding. Med J Aust 2006;184:213-216.
3. Guttman A, Schull MJ, Vermullen MJ, Stukel TA. Association between waiting times and short term mortality and hospital admission after departure from emergency department: population based cohort study from Ontario, Canada. BMJ 2011;342:d2983doi:10.1136/bmj.d2983.
4. HSE Emergency Departments Patient Profiles, Experiences and Perceptions 2007. Available at: http://www.hse.ie/eng/services/Publications/services/Hospitals/HSE_Emergency_Departments-_Patient_Profiles,_Experiences_and_Perceptions.pdf. Accessed 4th April 2011.
5. Pines JM, Iyer S, Disbot M, Hollander JE et al., The effect of emergency department crowding on patient satisfaction for admitted patients. Acad Emerg Med 2008 Sep;15(9):825-31.
6. Locker T, Mason SM. Analysis of the distribution of thime that patients spend in emergency departments. BMJ 2005;330:1188-9.
7. A&E Clinical Quality Indicators. Department of Health 17th December 2010. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_122868. Accessed 13th January 2011.
8. New Zealand Ministry of Health. Available at: http://www.moh.govt.nz/moh.nsf/indexmh/ed-target. Accessed 13th January 2011. Accessed 13th January 2011.

9. New South Wales Health clinical Services Redesign Program Models of Emergency Care 2006. Available at: http://www.archi.net.au/e-library/moc/emergency-moc. Accessed 21st March 2011.

10. Weber EJ, Mason S, Carter C, Hew A. Emptying the Corridors of Shame: Organizational Lessons From England's 4-Hour Emergency Throughput Target. Annals Emerg Med; 2011;57; 79-88.

11. Alberti G. Emergency Care 10 Years on: Reforming Emergency Care. UK Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_074234.pdf. Accessed 22nd March 2011.

12. Schull MJ, Lazier K, Vermeulen M et al.,Emergency Department Contributors to Ambulance Diversion: A Quantitative Analysis Ann Emerg Med. 2003;41:467-476.

13. Fatovich DM, Nagree Y, Sprivulis P. Access block causes emergency department overcrowding and ambulance diversion in Perth, Western Australia. Emerg Med J. 2005 May;22(5):351-4.

14. Wiler JL, Gentle C, Halfpenny JM. Optimising Emergency Department Front-End Operations Annals Emerg Med 2010;55:142-160.

15. Goodacre, S, Morris F, Tesfayohannes B, Sutton G. 2001. Should ambulant patients be directed to reception or triage first? Em Med J 18:441-443.

16. Fitzgerald G et al. Emergency department triage revisited. EMJ 2010; 27:86-92.

17. Mackway-Jones K, Marsden J, Windle J; Manchester Triage Group, editors. Emergency triage. 2nd edition. London: Blackwell Publishing Let; 2006.

18. Cooke M W & Jinks S. Does the Manchester triage system detect the critically ill? J Accid Emerg Med 1999; 16:179-181.

19. Versoot-Storm M N. et al. Observer agreement of the Manchester Triage System and Emergency Severity Score; a simulation study. EMJ 2009; 26:556-560.

20. Croskerry et al. Patient Safety in Emergency Medicine. Pub Lippincott Willliams and Wilkins. 2009.

21. Cooke M, Fisher J, Dale J et al. Reducing Attendances and Waits in Emergency Departments A systematic review of present innovations Report to the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO). January 2004. Available at: http://www.sdo.nihr.ac.uk/files/project/29-final-report.pdf. Accessed 16th January 2010.

22. Terris J et al. Making an IMPACT on emergency department flow; improving patient processing assisted by consultant at Triage. EMJ 2004; 21: 537-541.

23. Harbison J et al. Diagnostic Accuracy of Stroke Referrals From Primary Care, Emergency Room Physicians, and Ambulance Staff Using the Face Arm Speech Test. Stroke. 2003;34:71-76.

24. Prytherch D R et al. ViEWS – towards a national early warning score for detecting adult inpatient deterioration. Resuscitation 2010; 81:932-937.

25. Champion HR et al. A Revision of the Trauma Score. J Trauma 1989; 20:623.

26. Sabatine M S & Antman E M. The thrombolysis in myocardial infarction risk score in unstable angina/non-ST-segment elevation myocardial infarction. J Am Coll Cardiol 2003 Feb 19; 41(4 Suppl S):89S-95S.

27. NSW Emergency Department Workforce Rese Available at: http://www.archi.net.au/documents/resources/hsp/flow/access-redesign/improving-access.pdf. Accessed 22nd March 2011.

28. Croskerry P, Cosby K, Schenkel SM et al., Patient safety in Emergency Medicine . Publisher Lippincott Williams & Wilkins 2009.

29. Chisholm C, Edgar K et al. Emergency Department Workplace Interruptions: Are Emergency Physicians "Interrupt Driven" and "Multitasking"? Academic Emergency Medicine Nov 2000:Vol 7 (911) 1239–1243.

30. Gosbee J, Lin L. The role of human factors engineering in medical device and medical system errors. In: Vincent C(Ed.) Clinical Risk Management: Enhancing Patient Safety. London. BMJ 2000.

31. Freshwater-Turner DA, Boots RJ, Bowman RN, Healy HG, Klestov AC. Difficult decisions in the intensive care unit: an illustrative case. Anaesth Intensive Care. 2007;35:748-59.
32. Croskerry P. Achieving Quality in Clinical Decision Making: Cognitive Strategies and Detection of Bias. Acad Em Med, Nov 2002, Vol. 9, No. 1184-1204.
33. Resource Utilization in the Emergency Department. The Duty of Stewardship. ACEP policy reaffirmed October 2007. Available at: http://www.acep.org/practres.aspx?id=29930. Accessed 30th December 2010.
34. Chitnis J, Cumberbatch GL, Thomas PW. Emergency department board rounds: are they worthwhile? EMJ 2008 Jul;25(7):437-8.

Chapter 20. The Review Clinic

1. Katsoulis, E., Rees, K., Warwick, D., (2005), Hand Therapist-Led management of mallet finger. British Journal of Hand Therapy. 10 (1) 17- 20.
2. Warwick, D., Belward, P., (2004) Hand Therapist Carpal Tunnel clinic. British Journal of Hand Therapy, 9 (1).

Chapter 21. Patients with Particular Care Needs

1. Hospice Friendly Hospitals Organisation. Quality Standards for End-of-Life Care in Hospitals. Available at: http://www.hospicefriendlyhospitals.net/images/stories/pdfs/Quality_Standards_for_End_of_Life_Care_in_Hospitals.pdf. Accessed 24th March 2011.
2. Health Services Intercultural Guide published by HSE has guidelines on the care of deceased persons from all religious beliefs. Available at: http://www.hse.ie/eng/services/Publications/services/SocialInclusion/InterculturalGuide/. Accessed 13th May 2012.
3. Homelessness an Integrated Strategy. Available at: http://www.dcya.gov.ie/docsdb/results.asp?rl=155
4. Youth Homelessness: http://www.dohc.ie/publications/youth_homelessness_strategy.html. Accessed 13th May 2012.
5. The Way Home. A strategy to address adult homelessness 2008 – 2013. Available at: http://www.environ.ie/en/Publications/DevelopmentandHousing/Housing/FileDownLoad,18192,en.pdf. Accessed 13th May 2012.
6. Standards for Emergency Department Design and specification for Ireland 2007. Available at: http://www.iaem.ie/images/stories/iaem/publications_position_statements/2007/iaem_standards_for_ed_design__specification_for_ireland_300907.pdf. Accessed 25th May 2011.
7. Rape/Sexual Assault: National Guidelines on Referral and Forensic Clinical Examination in Ireland. 2nd edition. 2010. Available at: http://www.garda.ie/Documents/User/recent%20rape%20%20sexual%20assault%20-%20national%20guidelines%20on%20referral%20and%20forensic%20clinical%20examination%202010.pdf. Accessed 13th May 2012.

Resources relating to disability issues:

- www.enableireland.ie
- www.iwa.ie
- www.ncbi.ie

Resources for the Care of Pregnant Women in EDs

- http://www.nice.org.uk/guidance/index.jsp?action=byType&type=2&status=3
- Centre for Maternal and Child Enquiries (CMACE) (2011) "Top ten" recommendations BJOG 118 (supp. 1) 1-203.

Resources for information on assisting patients with communications difficulties

- www.hse.ie/eng/services/Publications/services/SocialInclusion/EMA.html
- www.hse.ie/eng/staff/HR/Trust_in_Care.pdf
- www.2massgeneral.org/interpreters/cultural.asp
- www.deafblind.com/card.html
- www.nala.ie
- www.irishdeaf.com

Chapter 22. Emergency Medicine Programme Measures

1. Beattie E, Mackway-Jones K. A Delphi study to identify performance indicators for emergency medicine. Emerg Med J 2004;21:47-50.
2. Boyce N, McNeil J, Graves D, et al. Quality and outcome indicators for acute healthcare services. http://elibrary.zdrave.net/document/Australia/execsmry.pdf. Accessed 9th June 2011.
3. Rogers IR, Evans L, Jelinek GA, et al. Using clinical indicators in emergency medicine: documenting performance improvements to justify increased resource allocation J Accid Emerg Med 1999 16: 319-321.
4. HIQA Guidance for the Development of Key Performance Indicators and Minimum Data Sets http://www.hiqa.ie/resource-centre/professionals/kpi-data-sets. Accessed 9th June 2011.
5. An Introduction to Quality Assurance in Health Care. Avedis Donabedian. Oxford University Press, Inc, New York. 2003.
6. Ospina MB, Bond K, Schull M, Innes G, Blitz S, Rowe BH. Key indicators of overcrowding in Canadian emergency departments: a Delphi study. CJEM. 2007 Sep;9(5):378-9.
7. Gordon TJ. The Delphi Method. 1994. Available at: http://millennium-project.org/FRMv3_0/04-Delphi.pdf. Accessed 9th June 2011.
8. Campbell SM, Braspenning J, Hutchinson A, Marshal MN. Research methods used in developing and applying quality indicators in primary care. Brit Med J 2003;326(7393):816-9.
9. Economic and Social Research Institute Hospital In-Patient Enquiry Scheme (HIPE). Available at: http://www.esri.ie/health_information/hipe/. Accessed 12th May 2012.
10. American College of Emergency Physicians. The Fundamentals of Reimbursement: What Every Graduating Resident Should Know Before Starting Practice. Available at: http://www.acep.org/search.aspx?searchtext=billing%20codes. Accessed 12th May 2012.
11. World Health Organisation. International Classification of Diseases. Available at: http://www.who.int/classifications/icd/en/. Accessed 12th May 2012.
12. Agency for Healthcare Research and Quality. Quality Indicators. Available at: http://www.qualityindicators.ahrq.gov/. Accessed 12th May 2012.
13. NHS Connecting for Health. Background to OPCS-4 development. Available at: http://www.connectingforhealth.nhs.uk/systemsandservices/data/clinicalcoding/codingstandards/opcs4/background. Accessed 12th May 2012.
14. NHS Connecting for Health. SNOMED CT Browsers. Available at: http://www.connectingforhealth.nhs.uk/systemsandservices/data/uktc/snomed/browser. Accessed 12th May 2012.
15. Porter ME. What is value in healthcare. NEJM December 2010. 10.1056/MEJMp1011024.MEJM.org.

16. Comptroller and Auditor General Report. Special Report Health Service Executive Emergency Departments 2009. Government Publications. Dublin. Available at: http://audgen.gov.ie/documents/vfmreports/70_Emergency_Departments.pdf. Accessed 3rd May 2011.

Chapter 23. Programme Outcomes

(No references)

EMERGENCY MEDICINE

The National Emergency Medicine Programme

Royal College of Surgeons in Ireland,
123 St Stephens Green, Dublin 2, Ireland.

Email: emp@rcsi.ie