



**National Emergency Medicine Programme
Irish Committee for Emergency Medicine Training**

**Building and Sustaining the Emergency Medicine Medical Workforce
in Ireland**

Guidance Document

24th April 2013



Summary

- Current Emergency Medicine (EM) workforce issues that compromise the safety and quality of patient care and the sustainability of EM services need to be urgently addressed.
- There are critical shortages of Middle Grade (MG) EM doctors and Consultant staffing levels fall far below international norms. The dependence of the system on locum staffing to maintain essential services is driving up costs.
- Morale among EM staff is exceptionally low with many senior trainees intent on working outside Ireland following completion of training.
- There should be equity between EM and other specialties with regard to remuneration and working conditions. The relative attractiveness of a career in EM compared with other specialties needs to be enhanced to increase recruitment and retention.
- The College of Emergency Medicine recommendation that solutions to EM staffing shortages should be structured around service delivery and workforce issues is endorsed by Irish EM.

Service delivery

- Recognition and support for EM
- Definition and reconfiguration of services provided
- Reducing and sharing of ED workload
- Provision of alternative local services

Workforce

- Maximising the workforce
 - Creating sustainable working
 - Optimising training
- The Emergency Medicine Programme should be fully implemented, including its recommendations for models of care for EDs and Emergency Care Networks, staffing and the creation of permanent MG roles in EM.
 - The ideal EM workforce is a blended multidisciplinary team with adequate numbers of appropriately trained EM doctors working with multidisciplinary teams to provide high quality, high value emergency care for patients and communities. The EM medical workforce should include Consultants in EM, Middle Grade doctors (Staff Grades and Specialist Registrars in EM), doctors in Basic Specialist Training for EM and other specialties and Interns.
 - The wellbeing of the EM medical workforce is essential to the provision of high quality, safe patient care.



1 Introduction

1.1 Background

The *National Standards for Better, Safer Healthcare (2010)*¹ state that “The quality and safety of healthcare depends on the people who deliver it. Therefore, the workforce should have, maintain and continuously develop the knowledge, skills, attitudes and behaviours to provide safe and high quality care”. The purpose of this guidance document is to help everyone involved in the development and management of the Emergency Medicine (EM) workforce in Ireland understand the factors that influence the EM workforce and provide a framework to align the multiple agencies and initiatives needed to resolve EM workforce problems. It would not be wise to attempt to formulate detailed plans for workforce development, given the rapidly changing environment and the multiple factors that influence the EM workforce (Table 1). Rather we recommend that there should be a clear overarching aim to which short- and longer-term workforce development is aligned.

The current state of the EM workforce should be a cause of concern to patients and health providers alike, with insufficient numbers of appropriately trained specialists in EM², unacceptable delays for patients in Emergency Departments (EDs), uncertainty as to the sustainability of staffing for EM services in some areas and over-reliance on agency and locum doctors driving up staffing costs. The overarching aim for the health service must be to have adequate numbers of appropriately trained EM doctors working within multidisciplinary teams providing high quality, high value emergency care for patients and communities.

1.2 Document outline

1. Introduction
2. Characteristics of the EM workforce
3. Current status
4. The future EM workforce
5. International experience
6. Developing solutions - initiatives to mitigate current risks, develop and sustain the future workforce
7. References and Appendices

This document provides additional updated guidance to supplement the EMP Report 2012.² Issues relating to medical staff remuneration are outwith the scope of this document but are significant contributors to the problems of recruitment and retention in the specialty.



2 Understanding the Emergency Medicine Workforce

2.1 Characteristics of Emergency Medicine

The role of EM in the healthcare system is to protect and improve the population's health by minimising disability and death from sudden illness, injury and psychosocial emergencies. It is a relatively new specialty being only 50 years old but now practiced in over 70 countries. The EM workforce is recognised as being key to quality in emergency care.³ There are crucial differences between EM and other hospital-based specialties with EM characterised by unrestricted access, service flexibility to accommodate patient needs and demand, undifferentiated casemix, multidisciplinary teamwork, time-critical care, process-orientation and multiple specialty/service interfaces.

2.2 Understanding and building the Emergency Medicine workforce

Emergency care is a complex adaptive system⁴ (Appendix 1) and a systems-thinking approach to EM workforce issues promotes understanding of the range of historical and contemporary factors influencing the current EM workforce and should encourage the development of sustainable solutions. The EM workforce is influenced by multiple factors (Table 1) some of which are root causes of current workforce problems and others of which have exerted or continue to exert compounding effects. Systems thinking also points to there being no single 'quick fix' solution to the workforce crisis but that resolution will be achieved through multiple initiatives aimed at key elements of the system. Solutions will be achieved through managing immediate challenges, minimising risks to the system and creating the appropriate conditions for sustainable workforce development to meet patients' care needs. International experience and expert opinion^{2,3,5-8} point to the following priority areas for action:

- Recognising EM as an essential component of the health system and supporting the delivery of high-quality emergency care for patients;
- Ensuring the relative attractiveness and sustainability of EM as a career compared to other specialties;
- Managing ED workload and providing an appropriate work environment;
- Optimising training in EM at undergraduate and post-graduate levels.

Factors Influencing the Emergency Medicine Workforce	
Causative, compounding and contributory factors	Organisations / Individuals involved
● Historic underdevelopment of EM workforce	● Department of Health (DOH) / HSE
● Health service funding	● Government / DOH
● Changes in the PRES exam	● Medical Council
● Medical Practitioners Act 2007	● Government / DOH / Medical Council
● Changes in recognition of Intern training	● Medical Council
● Changes in training status of NCHD posts	● Medical Council / HSE MET
● HSE and Acute Hospital recruitment practices and locum contract issues	● HSE / DOH
● Centralised NCHD recruitment	● HSE HR
● European Working Time Directive	● EU / DOH / HSE HR
● Staffing requirement for 24/7 rosters	● Inherent in specialty / HSE HR / EU
● Status of Emergency Medicine in undergraduate curricula	● Medical Schools / DOH / Dept of Education
● Retention of graduates of medical schools in Ireland	● DOH / HSE
● Training Programme structures and capacity	● ICEMT / Medical Council / HSE MET
● Relative remuneration for NCHDs working full shifts	● DOH / HSE HR
● NCHD recruitment and retention; attrition of trainees to other specialties in Ireland	● DOH / HSE / Forum of PG Training Bodies / HSE MET / Individuals
● UK immigration/work permit regulation changes ⁹	● UK/International (2006 - 2008)
● International recruitment from the Irish health system	● International (Australia recruitment)
● EM training for other specialties e.g. General Practice and changes to other specialties' training programmes.	● DOH / Forum of Post-graduate Training Bodies / HSE MET
● Hospital networks and groups	● DOH / HSE
● Lack of alternative services e.g. out of hours General Practice contributing to ED demand and workload	● HSE / DOH
● Relative attractiveness of geographical areas	● Remote / rural recruitment difficulties in many specialties
● ED working environment and infrastructure	● DOH / HSE
● ED overcrowding - impact on patient care and providers	● DOH / HSE
● Technological, practice & academic development in EM / PEM	● Specialty specific and changing over time
● Lack of ICT, systems intelligence to support workforce management and development and efficient ED patient care and operations management	● DOH / HSE
● Consultant in EM staffing levels for direct patient care, training NCHDs and other providers and essential supporting activities	● EMP / HSE HR / DOH
● Consultant involvement in emergency care outside the ED and service development e.g. major emergency planning, pre-hospital care and balanced job planning.	● ICEMT / HSE HR / DOH
● CPD and training requirements for doctors at all levels	● Relates to all medical specialties
● NCHD post suppression for new Consultant Posts	● DOH / Dept of Finance; Relates to all medical specialties
● Expanded roles for other members of the ED team	● HSE / DOH
● Intensity of EM work, service demands	● DOH / HSE
● Implementation of Consultant contract 2008 in EM	● DOH / HSE
● Reduction in Consultant remuneration 2012	● DOH
● Relative attractiveness of specialty for Consultant careers compared to specialties with little out-of-hours commitment, controlled demand and private practice	● DOH / HSE HR
● Doctors expectations of opportunities for family friendly working	● Relates to all medical specialties to varying degrees
● Media portrayal of Consultants	● DOH / HSE Communications / Media
● Retirement, attrition, Consultant retention issues	● EM is a high-stress, high-burnout ¹⁰ specialty.

Table 1: Factors influencing the EM workforce

3 The Current Emergency Medicine Workforce

3.1 Overview

- There is a critical shortage of Middle Grade (MG) staff in EM with approximately 30% of posts filled on a locum basis;
- There are concerns as to the sustainability of services on some major sites unless MG recruitment improves;
- There are insufficient numbers of Consultants in EM to provide sustainable rosters that include evening and weekend working;
- Morale among EM doctors is at an all time low, with the majority of senior trainees planning to work abroad.

3.2 Medical Staffing Levels

The National Emergency Medicine Report 2012² explains the role of the EM workforce within the context of multidisciplinary team and emphasises the importance of teamwork in emergency care. The Irish Association for Emergency Medicine (IAEM) undertakes 6-monthly surveys of medical staffing and a summary of the results of the September 2012 survey is presented in Table 2. There were approximately 450 fully registered Medical Practitioners employed in the EM workforce in October 2012 (466 doctors, including interns). The greatest challenges in NCHD staffing occur at Registrar or Middle Grade (MG) level with the proportion of posts filled on a locum basis ranging from 0 to 100% in some units. Nine out of 31 acute hospitals had 40% or more of their ED middle grade posts filled on a locum basis in September 2012. The ranges of MG and SHO NCHD complements in EDs were from 2 to 10 MGs and from 0 to 12 SHOs.

Grade	Number of WTE*	Subgroups	Number of WTE
Consultants in EM	73	(79 funded posts)	
Middle Grades	171.5	Specialist Registrars	31
		Long-term Registrars/ Associate specialists / Staff Grade doctors	24.5
		Registrars**	147
Senior House Officers	205	BSTEM designated	26
		BST other specialties	88
		SHO posts not in BST ***	91
Total NCHD excluding Interns	387.5		
Interns	11		

* IAEM survey of posts September 2012; ** This includes SpR posts. Only 102 of these posts are filled and locum staffing supports the service; *** 6 SHO posts are unfilled.

Table 2: Current EM Workforce.

3.2 Medical Team Skill-mix

Increased Consultant-provided direct patient care, senior decision-making and improved training and clinical supervision for NCHDs are key objectives of the EMP Report 2012.² The dependence of the system on relatively inexperienced doctors in training for the bulk of service provision and in particular on locum and



temporary staff jeopardises its ability to have, maintain and continuously develop the knowledge, skills, attitudes and behaviours to provide safe and high quality care recommended by the National Standards for Safer Better care. The prevalence of locum staff places additional burdens of work on ED nursing and medical staff who must compensate for and support new doctors who may not be familiar with operational aspects of the EDs in which they work on a short-term basis. The system would not be dependent on locum doctors if EM were an attractive specialty, with an appropriately structured workforce and fully resourced training programmes.

3.3 The Cost of the EM Workforce

Data provided by the Casemix Office indicated that salary costs for EM medical staffing in 2010 was equivalent to approximately 0.034% of the HSE budget in 2010; pay costs included agency pay and overtime. There were approximately 1.2 million ED patient care episodes during this period. The Comptroller and Auditor General's Report 2009¹¹ noted that there was considerable variance in the numbers of whole time equivalent medical staff per patient attendance in EDs and in cost allocation in general between EDs. A stable EM workforce would provide better value for money and improve quality while reducing overtime and agency costs. Research evidence outlined in the EMP report² also confirms the achievement of cost-savings and efficiencies through increased senior ED staffing. The unmeasured societal and health service costs associated with deficiencies in the EM workforce may include costs associated with poor patient outcomes, avoidable errors as well as stress and burnout within the ED team.

3.4 Specialty Training in Emergency Medicine

The training path for EM is outlined by the Irish Committee for Emergency Medicine document [Guide to Emergency Medicine Training in Ireland](#). The EM training cycle takes a minimum of 8 years after internship to complete – 3 years at Basic Specialist Training (BSTEM) and 5 in Higher Specialist Training (HSTEM) though many trainees undertake one-year fellowships overseas after completion of training or require an additional intermediate year between BSTEM and HSTEM. A ratio of 3 BSTEM to HSTEM posts is considered ideal to accommodate natural attrition and ensure competition for HSTEM. BSTEM was introduced in 2011 and it is intended that 26 BSTEM candidates be accommodated each year. A lack of essential training posts in related specialties (Medicine, Orthopaedic and Plastic Surgery and Anaesthesia and Critical Care) limits BSTEM programme capacity and the training programme is currently under review. There are 31 whole-time equivalents (WTE) in HSTEM as of October 2012. Higher Specialist Trainees (Specialist Registrars – SpRs) contribute to MG staffing rosters but require protected training sessions of at least one day per fortnight. Service provision during these periods must be back-filled on MG rosters.

Year of HSTEM	SpR Numbers
1	10
2	2
3	8
4	9
5	2

Table 3: HSTEM numbers as of October 2012.

3.5 Training for Other Specialties in Emergency Medicine

Basic Specialist Trainee (BST) doctors from other specialties, including General Practice and Internal Medicine, fill eighty-eight SHO posts. Non-EM BST posts must always be considered in future workforce development.

3.6 Intern Training in Emergency Medicine

There are currently 11 intern posts in EM with most interns spending 3-month rotations in EM. There is potential to increase intern-training capacity in EM to approximately 30 rotational posts. Interns are not fully registered doctors and require significantly increased levels of clinical supervision. Their role is not interchangeable with SHO-grade doctors on ED rosters and therefore additional intern training opportunities cannot be delivered by replacement of SHO posts.

3.7 NCHD Job Plans and Rosters

3.7.1 Clinical and non-clinical activity

A report entitled *Hospital Activity Analysis on Nine Pilot Sites* undertaken by the York Health Economic Consortium in 2005 in Ireland analysed the work-related activities of Non-Consultant Hospital Doctors (NCHDs) and indicated that NCHDs in EM spent 62% of their time in direct patient care, 22% in interaction with others and 16% 'finding stuff and paperwork'. This care compared favourably to medicine and general surgery in which NCHDs only spent 45% of their time in direct patient care. This emphasises the direct patient contact time and clinical training opportunities available in EM.

3.7.2 24/7 Rosters

MG and SHO staffing in any ED cannot be reduced below levels necessary to support 24/7 rosters and ensure EWTD compliance. NCHDs currently work a maximum of 48 hours per week. Staffing levels must allow for training time and annual leave requirements. The EMP Report 2012² recommends that there should be no fewer than 7 MG staff and ideally 8 on 24/7 rosters for Type A EDs. This allows one MG to be present on all shifts, with two on most rosters. Although a basic 24/7 SHO roster can be delivered with 7 WTE in



smaller units, this can result in difficulty matching ED NCHD staffing to demand patterns and in ensuring essential breaks are provided to comply with EWTD. SHO staffing levels are driven primarily by the necessity to provide adequate cover at weekends and at night and to have sufficient numbers of doctors during day-time shifts to cope with workload demand. Most large EDs require a minimum of 10 SHOs to provide a 24/7 roster and service the clinical workload. This number is required to ensure that:

- SHOs work no more than alternate weekends;
- There are two SHOs on the majority of shifts to allow for rostered breaks and service continuity;
- Annual leave and study leave can be scheduled without a requirement for locum staff with associated roster stability and cost-containment.

3.7.3 Rotation of posts

MG posts usually involve 12-month contracts whereas BST posts rotate every 6 months except those for General Practice that may be of 3 or 4 months duration on some rotations. Six-month rotations are preferable from an EM perspective as they allow trainees to achieve greater competence in emergency care skills. The changeover of EM NCHDs represents a regular but profound upheaval in the working of an ED with the replacement of significant numbers of personnel along with the knowledge and skills they gained during their post. It causes unnatural variation in the quality and efficiency of patient care in the ED.

3.8 Consultant in EM staffing

Consultant in EM posts comprise only 2.6% of all Consultant posts in Ireland. Consultant staffing in EDs ranges from 0.5 to 5 WTE and Consultants currently provide on-site presence in EDs with on-call cover for non-core hours. Consultants work up to 20:00 hours on weekdays according to staffing levels. The Consultant Contract 2008 requires a 37-hour working week exclusive of on-call requirements. Most Consultants in EM are on 'one-in-three' on-call rosters, meaning that the Consultant has to be available to return immediately to the ED if called upon and the frequency of this commitment is every third night and every third weekend. Many Consultants work across more than 1 site but a Consultant can only be on-call for one site at any one time. Contract issues in regard to sessional work at weekends and current contractual limitations on out-of-hours working are not considered in this document.

The number of Consultants in EM and the organisation of ED services results in there being approximately twenty Consultants in EM on-call each night for the country, serving a population of 4.5 million. Fourteen new Consultant in EM posts were funded in the HSE Service Plan 2011 on the basis of recommendations made by the EMP and the Clinical Strategy and Programmes Directorate. A number of posts failed to attract suitable candidates and 6 of the posts were either unfilled or filled on a temporary basis in October 2012. No new Consultant posts were funded in 2012.

3.9 Current Challenges

Surveys of HSTEM doctors and consultation with Consultants in EM undertaken by IAEM and ICEMT outlined the following challenges faced by all grades within the current EM workforce:

- Unsatisfactory working conditions associated with ED overcrowding;
- Unsatisfactory NCHD recruitment with staffing shortages;
- Increased supervision burden for Consultants and MGs due to relative inexperience of some SHOs;
- Dependence on locum staff, particularly MG doctors, for service provision.
- Onerous on-call rosters for Consultants;
- Inability to recruit the full number to the BSTEM programme;
- Difficulties accessing essential training posts in related specialties;
- Under development of multidisciplinary team working in many EDs;
- Nursing, administrative and support staff shortages adversely effecting ED efficiency;
- Inadequate ICT support;
- A lack of acuity and case-mix measures to inform future workforce planning;
- Inadequate ED infrastructure in many units;
- Existing workforce distributed over 39 acute hospital sites;
- Uncertainty regarding future health service funding;
- Relative unattractiveness of the specialty with regard to remuneration and conditions of work (e.g. intensity, unsociable hours and environment) in comparison to other specialties in the Irish health system.



4 The Future Emergency Medicine Workforce

4.1 National Standards for Safer, Better Healthcare

The *National Standards for Safe, Better Healthcare*¹ requires service providers to plan, organise and manage their workforce to achieve the objectives of high quality, safe healthcare and in doing so consider the following elements:

- Needs assessment of service users;
- Skill-mix requirement;
- The time and resources needed to provide care;
- The size, complexity and specialities of the service;
- National and international evidence-based practice, policy and guidelines;
- Risk analysis;
- Resources available;
- Changes in workload.

The EMP Report 2012² considered these factors in the development of its workforce guidance for the EM multidisciplinary team. This document supplements the Report's recommendations for medical staffing in light of recent UK reports; additional data from local sources, the UK and Australia; consideration of the staffing options for EDs and other emergency units cognisant of the imminent development of hospital groups (*vide infra*) and a complex systems approach to developing solutions to the current workforce crisis.

4.2 Needs assessment of service users

Populations or catchment areas are unreliable predictors of patient demand for specific EDs as self-presenting patients do not adhere to catchment area boundaries and attendance patterns flux across county and regional boundaries. While service demand may be estimated on the basis of previous attendance data¹², it is vital that demand is monitored in a reliable and responsive manner to detect unpredictable changes and enable services to adapt to demand fluxes. This requires standard datasets to be applied to the NECS with measures of unit activity and casemix. Measuring and managing the effectiveness and value of the workforce will require a standardised approach to measuring and reporting costs, resource utilisation and patient outcomes.

4.3 Skill-mix requirement and the time and resources needed to provide care

The EMP Report 2012 made workforce recommendations based on:

- Published workforce planning recommendations from the College of Emergency Medicine⁵ and the Australasian College of Emergency Medicine⁶ (see EMP Report 2011 Chapter 12);
- Comparison of Consultant staffing numbers per head of population with Australian data;
- Skill-mix requirements within the ED multidisciplinary team;
- Patient consultation.

Key medical workforce recommendations include an expansion in Consultant staffing, establishment of a Staff Grade in EM role, a phased reduction in system dependency on doctors in training for service provision and development of non-medical roles in the ED with effective and efficient task allocation across the multidisciplinary team.

4.3.1 Workforce retirements and attrition

Data provided by the Consultant Appointments Advisory Committee with projected retirements aged 65 is outlined in Table 4. These data reflect the increased Consultant in EM recruitment that occurred from 2000 to 2004. It is likely that some Consultants may opt to emigrate or retire before the age of 65 and there will also be unpredictable losses due to workforce attrition (e.g. illness and death).

Years	Projected Consultant Retirement Numbers
2012 to 2015	2
2016 to 2020	3
2021 to 2025	15
2026 to 2030	25
2031 to 2035	28

Table 4: Projected Consultant Retirements

4.3.2 Clinician wellness and retention

Clinician wellness is an essential consideration for the future workforce and the Institute of Medicine's landmark publication *Crossing the Quality Chasm* 2001¹³ emphasises the need for leadership and clinician wellbeing: "When clinicians are under stress themselves, it is difficult to take care of patients who are ill and stressed. Indeed, this was one of the key transitional issues identified during the committee's deliberations." The International Federation for Emergency Medicine (IFEM) recognises staff burn-out and high turnover as barriers to quality and safety in the ED³ and US research identifies EM as the specialty with the highest risk of burnout.¹⁰ The College of Emergency Medicine recognises the need sustainable work practices^{5,7} and careers that evolve over three decades.⁷

4.3.3 Team Workload Issues

The factors that contribute to the workload, both clinical and non-clinical, of Consultants and NCHDs in EM are adapted from Australasian College of Emergency Medicine workforce planning recommendations⁶ and listed in Appendix 2. Consultants' time should be protected so that Consultants can deal effectively with the elements of ED work that only they can undertake. NCHD training in EM is becoming ever more intensive with workplace-based assessment and defined mentoring structures for trainees. The time required to support NCHD training must be factored into work plans for both NCHDs and Consultants in EM. ED workload varies for each practitioner according to the factors outlined in Appendix 2 and will undoubtedly change as technology, work practices and patient needs and expectations evolve over time.



4.3.4 Relative unattractiveness of the specialty of Emergency Medicine in Ireland

Factors influencing the attractiveness of EM as a long-term career for doctors must be addressed if the current workforce shortage is to be resolved. In 2012, trainees resigned from BSTEM and HSTEM schemes to pursue careers in Anaesthesia and General Practice and surveys of current Higher Specialist Trainees indicate that the majority intend to work overseas on completion of training. Recent changes to Consultant remuneration in Ireland have resulted in a widening disparity between the earning potential of Consultants in EM who provide exclusively public healthcare and Consultants working in clinical fields with high levels of private practice and procedure-based specialties favoured by the current healthcare funding model. Working conditions for Consultants in EM compare poorly with those in many other specialties. HSTEM graduates from Ireland are much sought-after by other health system, notably the UK but particularly Australia where Consultant remuneration is significantly greater than in Ireland. Incentivisation based on intensity of work and of out-of-hours working; supplementary remuneration for additional responsibilities and service development work; clear career progression along with lower overall taxation rates all contribute to greater earning potential for Irish graduates in Australia and the UK and militate against any potential for international recruitment to Consultant in EM posts in Ireland in the foreseeable future.

4.3.5 Training cycle time

The duration of specialist training will determine the lag time from commencement of training to the availability of Irish trained specialists to apply for Consultant in EM posts. Workforce development must factor in cycle times for specialist training and for undergraduates becoming available to apply for training. Changes in the duration and structures of training will influence workforce growth and Consultant training demands.

4.4 The size and complexity of the service

Considerations of the size and complexity of service were addressed in the EMP Report 2012. The report recommends the establishment of Emergency Care Networks (ECNs) with shared governance and management of emergency care. It is uncertain how future hospital groups will be aligned with ECNs but the recommendations for staffing according to the role of each unit will apply irrespective of the configuration of groups and networks. HR functions should be deployed as locally as possible within hospital groups but it will be essential that there is alignment of recruitment and other HR functions at national level to prevent untoward or unfair competition between groups and to ensure delivery of equitable emergency care across the country. HR units and hospitals should endeavour to be as responsive as possible to ED staffing issues on a 24/7 basis and senior clinician time should not be consumed by HR duties.

4.4.1 EM staffing resource requirements for hospitals

The Consultant in EM and NCHD staffing requirement for any ECN or hospital group will depend on the relative numbers of different types of units in the network. Lead EDs with larger attendance numbers will need appropriate staffing across all medical staffing tiers. Preliminary options for medical staffing for EDs and Local Injury Units have been reviewed by the EMP and indicate a likely total Consultant in EM staffing requirement of between 124 and 158 Consultants depending on the final designation of a number of smaller



hospitals (with a potential maximum of 190 for 16-hours cover; additional Consultants would be required for staffing beyond this level). A further 12 to 14 Consultants in PEM would be required for the National Paediatric Hospital and linked units in Dublin. This estimate is comparable to the Consultant staffing requirement of 180 Consultants outlined in the EMP Report 2012 based on per-capita of population comparisons with Australian staffing levels.²

4.4.2 NCHD post numbers after ED reconfiguration

Review of staffing options for future EDs and LIUs also suggests that the impact of reconfiguration on NCHD staffing numbers will be limited. The options model suggests an upper requirement for NCHDs of 366 posts whereas there are currently 376 NCHDs in the system. MG requirements would be reduced if the continuous MG presence favoured by the Department of Health was not required in all Local Injury Units. Reconfiguration of services would require transfer of some NCHD posts to network hubs.

4.4.3 NCHD post suppression

The staffing options model also indicates that the current policy of NCHD post suppression for Consultant posts at a ratio of 2:1 is unsustainable within the specialty of EM. NCHD suppression will inevitably and rapidly reach the critical point where suppression for Consultant posts will impact the critical number of NCHDs required to maintain 24/7 ED services with EWTD-compliant rosters appropriate to service demand.

4.5 Risks to the EM workforce

The following risks should be considered:

- Inadequate workforce planning for all EM grades, but particularly MGs, jeopardises the sustainable provision of 24/7 EDs on multiple sites. Reduction in services at major ED sites, particularly those outside the Greater Dublin area, will compromise the quality and patient experience of care and increase the National Ambulance Service's workload through increased transfer distances and demand;
- The inability to recruit sufficient trainees will limit and could preclude the transition to a Consultant provided service;
- Further decline in recruitment to both Consultant in EM and EM training posts due to further reductions in Consultant remuneration;
- A misplaced expectation that other specialties, particularly Acute Medicine and Acute Surgery will significantly reduce the requirement for Consultants in EM, in the absence of any international evidence to support this.
- Inadequate organisational support hindering the effectiveness of the existing workforce;
- Changes in training programmes for specialties that rotate through ED SHO posts;
- Poorly phased Consultant expansion and reductions in NCHD posts resulting in critical staff shortages;
- Failure to pre-empt acute hospital reconfiguration with appropriate staffing and reallocation of resources;



- Small percentage decreases in the provision of Primary Care services and out-of-hours Primary Care service provision could significantly increase demand for ED emergency care;
- Inadequate commitment by health service planners to the development of EM services for patients;
- Generational changes in attitudes to work may adversely influence staff recruitment and retention;¹¹
- A failure to support the professional longevity of current Consultants will adversely affect EM staffing.

5 International experiences in EM workforce development

5.1 Interpretation of international evidence

Comparisons of Consultant staffing across different health systems are of uncertain value because health systems vary significantly in terms of service configuration, work-practices, the contribution of other clinical roles to the workforce and demography, to name but a few factors. International EM workforce research and report recommendations should be interpreted with caution, but may nonetheless point to solutions applicable or adaptable to the Irish health care setting. Many European countries are introducing models of emergency care similar to that practised in the UK, Canada, Australasia and Ireland. They look to us for guidance on developing their medical workforce (personal communication) and through international collaboration will hopefully avoid some of the challenges we face here.

5.2 Emergency Medicine Workforce in Australia

The Australasian College of Emergency Medicine (ACEM) *Guidelines on Constructing an Emergency Medicine Medical Workforce*⁶ informed the EMP medical staffing recommendations. Australia is the preferred destination for most Irish Medical Graduates who have opted for NCHD-level training abroad and a number of Irish-trained doctors are Consultants in EM in Australia where working conditions, training opportunities and remuneration are far more favourable than in Ireland (*personal communication*). Comparison with Consultant staffing in Australia demonstrates significantly higher rates of Consultant in EM provision per head of population compared to Ireland.

	Population	Number of Consultants in EM	Ratio
Australia Consultant presence for 60% of hours; usually 08:00 to midnight			
New South Wales	7,221,000	294	1:24,561
Northern Territory	228,500	12	1:19,042
Tasmania	507,000	25	1:20,280
Queensland	4,499,000	224	1:20,085
Western Australia	2,286,000	157	1:24,864
Victoria	5,529,000	314	1:17,608
Australian Capital Territory	357,700	20	1:17,885
South Australia	1,641,000	66	1:24,864
Ireland			
Current Consultants	4,581,269 (2011)	73	1:65,757
* Personal communication from Australasian College of Emergency Medicine			
*** Central Statistics Office Census 2011			

Table 5: Comparisons of Consultant in EM staffing per head of population

Further data provided by ACEM indicates their staffing with Consultants and advanced trainees per patient presentations. (Advanced trainees in Australia undertake a 5 year training programme). ED presentations per Consultant in Australia are between 4,994 and 7,857 but were 18,505 in Ireland during 2011.

Consultants and SpR staffing levels in Ireland correspond to a number of patient presentations per Consultant and senior trainee level of 12,798 compared to 3,122 to 4,573 in Australia and New Zealand.

Table 2: FACEM and Advanced Trainees working in Emergency Medicine and Emergency department presentations, by region

	Public					Private				
	FACEMs	Adv Trainees	Presentations ¹	PPS	PPST	FACEMs	Adv Trainees	Presentations ²	PPS	PPST
Australia	1048	681	6,183,289	5900	3576	64	9	526,900	8233	7218
ACT	22	12	112,233	5102	3301					
NSW	286	191	2,074,098	7252	4348					
NT	18	22	141,419	7857	3535					
QLD	208	162	1,195,325	5747	3231					
SA	65	58	383,992	5908	3122					
TAS	24	11	143,848	5994	4110					
VIC	295	149	1,483,159	5028	3340					
WA	130	76	649,215	4994	3152					
NZ	142	72	978,657³	6892	4573					

- PPS = ED Presentations per Specialist (FACEM) per annum
- PPST = ED Presentations per Specialist (FACEM) and Specialist Trainee (Advanced Trainee) per annum
- Annual non-admitted patient emergency department presentations, data sources:
 - ¹ AIHW (2011) Australian hospital statistics 2010-2011: emergency department care and elective surgery waiting times. Health services series no. 41. Cat. no. HSE 115. Canberra: AIHW.
 - ² ABS • PRIVATE HOSPITALS • 4390.0 • 2009-10
 - ³ 2010-2011 NZ total (non-admitted and admitted) Emergency Department presentations, National Health Board, Ministry of Health (personal communication)

Table 6: Patients seen per specialist and per specialist and advanced trainee in Australia 2010-2011.

5.3 Emergency Medicine Workforce Issues in the UK.

The College of Emergency Medicine (CEM) recommends a minimum of 10 Consultants in EM to provide 16 hours presence 7 days per week with higher staffing levels in Major Trauma Centres (MTC)⁵ and has revised predictions for achieving this from 2020 closer to 2030 because of current recruitment difficulties.⁷

5.3.1 Current status

A 2012 College of Emergency Medicine Survey of ED staffing indicated an average of 6 Consultants per ED with a maximum of 16 funded WTE and some MTCs operating 24/7 Rosters with dedicated funding. The maximum number of Associate Specialists is 4 per ED. EDs with attendance of 80,000 - 90,000 should have 12 Consultants but on average had 8 Consultants (personal communication). CEM recommends 10 Consultants for EDs of between 50,000 and 80,000. Nineteen percent of UK EDs see >80,000 new patients pa and 41% see between 50-80,000 new patients per annum. Thirty-six percent of EDs have a Consultant presence for >14 hours on Monday to Friday and 25% have a Consultant presence for >14 hours every day. Examples of EM staffing from two large hospitals in England are outlined in Appendix 3. The Foundation Trust Network Briefing October 2012 *Driving Improvement in A&E (sic) Services*¹⁴ based on data from 11 UK Foundation Trusts for the period April 2011 to Jan 2012 indicated that the proportion of medical WTEs that are Consultants in EM varied from 12% to 27% (mean 18%) and that there was significant variation across trusts in activity loads per WTE. The number of ED attendances per medical WTE ranged from 1,700 to 2,800 (mean 2,000) across trusts.¹⁴ (A comparable ratio for ED staffing in Ireland would be approximately



1:2,752 for 2012 and 17% of medical WTE in Ireland are Consultants). The report also demonstrated considerable dependence on locum staffing.

5.3.2 EM staffing shortages in the UK:

The UK is experiencing a severe shortage of Consultant and Middle Grade doctors, with Scotland even more severely affected than England. A taskforce was established last year to address poor recruitment to HSTEM with less than 50% fill rate for posts. The interim taskforce report describes that fewer trainees are opting for EM due to concerns over the intensity of work, unsociable hours, working conditions and career sustainability.⁷ A recent RCP Report indicates recruitment difficulties in Acute Medicine as well as in EM in England.¹⁵ On 18th January 2013, the NHS Commissioning Board announced a review of the model of urgent and emergency services in England to look at and address how services are delivered with a focus on 7-day provision of care.

A recent survey of Staff Grade and Associate Specialist doctors indicated poor morale; poor working conditions with high stress levels and unsustainable rotas with high frequency of out-of-hours working.⁷ In response to the EM staffing crisis that has threatened the viability of a number of EDs the College has also produced a Workforce Toolkit.⁸ The toolkit approach looks at service delivery and workforce issues:

Service delivery

- Recognition and support for EM
- Reducing and sharing of ED workload
- Definition and reconfiguration of services provided
- Provision of alternative local services

Workforce

- Maximising your workforce
- Sustainable working
- Optimising training

Service Delivery recommendations that may be applicable to Ireland are listed below. The EMP and other Clinical Programmes have recommended many similar initiatives:

- EM professionals to actively engage with service commissioners (in progress);
- System-wide approaches with meetings for all stakeholders to help understand the problem and to start to enact a system-wide approach (as per this document);
- Develop Emergency Care Networks (as per EMP Report);
- Ensure local understanding of ED and EM - engage with Medical Director and CEO to ensure that the current pressures are fully appreciated (Clinical Programmes);
- Ensure that the ED access standard is seen as system issue and not an ED target;
- Informatics - Improving coding and information systems can have an important effect on an ED's ability to manage patients and be properly resourced. Consider whether telemedicine may have a useful role;
- Consider overnight closure of smaller units;
- Optimise ambulance strategies for non-conveyance; develop by-pass protocols (NAS/PHECC/EMP);



- Define what the ED does and not become the default safety-net for deficiencies elsewhere in the system, e.g. referrals to inpatient teams by GPs, direct admission to wards (Clinical Programmes), optimise Acute Medical Units (AMUs);
- Increase the role of clinicians other than EM within the ED e.g. Acute Medicine, Paediatrics, Medicine for the Elderly (Clinical Programmes);
- Increase the role of primary care in out of hours provision and consider co-location of primary care centres and a role for General Practitioners who wish to work in EDs (though numbers are likely to be small); GPs facilitating community discharge (Clinical Programmes);
- Develop local Directories of Care (recommended by many Clinical Programmes).

Workforce recommendations listed by CEM that are applicable to Ireland include, to:

- Improve Staff Grade recruitment and development;
- Consider whether groups of hospitals could cooperate to produce a quality assurance and control package for locum doctors;
- Consider international recruitment as a short-term measure;
- Expand Nursing roles including ANPs with national competency standards (EMP Report);
- Consider the development of Physician Assistants/Associates within national curricula and governance though the lead-in time will be significant and the impact is uncertain;
- Optimise existing EM resources and sustainable working:
 - Promotion of career planning that evolves over three decades;
 - Consideration of the introduction of an annualised rota to improve flexibility and offer more options to Consultants and Staff Grade doctors;
 - Consideration of the development of combination posts e.g. pre-hospital, ICU, Paediatrics to attract and retain staff;
 - Consideration of posts that offer other incentives (e.g. dedicated time to pursue professional interests)
 - Allowing Consultants and Staff Grades time to train and develop within job;
 - Ensuring specialty training is delivered effectively and consider pooling resources across wider areas to deliver more effective training;
 - Development of innovative training models, making alternative training routes more accessible;
 - Development of leadership skills to ensure trainees are prepared for the consultant role;
 - Ensuring that staff know they are valued, get the breaks they need to function well and that training is not compromised;
- All care provided must be patient focussed regardless of external pressures.

5.4 EM Workforce in the USA

Consultants in EM in the US work full-shift patterns with Consultants in larger units combining clinical work with education, research and service development roles. Specialist training is delivered over 3 or 4 years with many trainees undertaking 1 to 2 year subspecialty fellowships thereafter. EM is among the most sought-after specialist training programmes in the US and this is ascribed to favourable rostering arrangements supporting work/life balance and relatively good remuneration. The US system has used



Physician Assistants and expanded nursing roles in recent decades and has better developed information and intelligence systems underpinning services. It is estimated that over 260 Consultants in EM would be required to provide similar levels of Consultant presence in EDs in Ireland.¹⁶ Research on Emergency Physician efficiency in the US model of care where Consultants work a shift-based pattern without an on-call commitment found that the highest levels of individual doctor 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.¹⁷ This is consistent with a maximum 37 hour working week for Consultants in EM, albeit that it is based on a full-shift rather than a predominantly day-time ED presence with on-call cover. Recent research in the US indicates that Emergency Physicians are 3.18 times more likely to experience burnout than the average for all other physician groups.¹⁰ General internal medicine (1.6 times) was the closest specialty to EM in terms of burnout rates and hours worked per week were associated with increased risk of burnout for all specialties and hours worked per week was associated with a higher risk of burnout for all doctors.¹⁰

6 Developing Solutions

Consultants in EM look to the HSE Medical Education and Training (MET) unit to coordinate the multiplicity of agencies and actions needed to redress current problems in EM staffing and support the development of a highly-performing, sustainable EM workforce. The actions outlined by the CEM (section 5.3.3) are recommended and additional measures required in an Irish health system context are outlined below.

6.1 Immediate risk mitigation

- The EMP developed a framework for hospitals to respond to critical shortages in ED NCHD staffing in October 2010. This guidance should be adapted for local use;
- EM recruitment for July 2013 should be addressed as an immediate priority;
- Locum staffing will need to be sustained until longer-term solutions are implemented.

6.2 Systems-wide solutions for EM:

- a. Understand, acknowledge, protect and sustain the unique role of EM within the health service;
- b. Implement fully the recommendations of the EMP to improve safety, quality, access and value in emergency care, thereby improving patient and staff experiences of care;
- c. Eliminate ED overcrowding to ensure patient safety and quality of care and improve staff experiences of providing care;
- d. Implement ED Information Systems in all EDs without delay;
- e. Reduce overall number of 24/7 EDs with service reconfiguration. This should be undertaken with careful planning and management as outlined in the EMP Report. Reconfiguration alone will not reduce system dependence on NCHD staffing for service provision.

6.3 Systems-wide issues for all medical specialities that also impact on EM:

- a. Establish how implementation of Medical Council regulations and work practices can be best managed to support but not adversely affect NCHD recruitment, locum and longer-term medical staffing;
- b. Consider the impact of the management of the Pre-Registration Examination System (PRES) and International English Language Testing System (IELTS) examinations on NCHD recruitment;
- c. Support the Forum of Postgraduate Training Bodies in working with trainee representative groups to enhance the recruitment and retention of graduates from medical schools in Ireland.

6.4 Human Resource Management Issues

- a. Demonstrate understanding of the role of Consultants in EM as the most highly-trained clinicians in emergency care, managing onerous work demands and carrying professional responsibility for the



delivery of high-quality patient care, training in EM and the development of multi-disciplinary and multi-agency emergency services;

- b. Increase the relative attractiveness of the specialty with measures to enable EM to compete against the more preferable working conditions and earning potential in other specialties;
- c. Resolve outstanding contractual issues for Consultants in EM;
- d. Progress approval of all unfilled Consultant posts through the Consultant Appointments Advisory Committee;
- e. Ensure that all new Consultant in EM appointments are made according to the recommendations of the EMP Report. Appointments should be made on a regional/network basis to support ECN development and each job description should include a commitment to providing support to future networked units. It is unreasonable to expect future Consultants in EM to work single-handedly in EDs and no Consultant can be on call for more than one site;
- f. Allow short-term Consultant locum appointments of appropriately trained doctors to vacant posts with due vigilance to prevent locum appointees achieving entitlement to contracts of indefinite duration;
- g. Facilitate SpRs and doctors on the Training Register in undertaking locum work in EDs that are approved for training;
- h. Promote Consultant in EM career longevity through flexible working, developing career structures and job plans that combine front-line clinical work with emergency care outside the ED e.g. pre-hospital care, events medicine etc.;
- i. Abandon the policy of NCHD post suppression and replace it with a structured workforce development framework to enable a safe transition from NCHD staffing to more senior staffing at network and national level;
- j. Structure and resource ED MG and SHO rosters within ECNs to comply with EMP recommendations;
- k. Develop an emergency care workforce as a blended, multidisciplinary team working collaboratively across of networks of 24/7 Emergency Departments and smaller linked units in ECNs;
- f. Reduce the current over-dependence on NCHD staffing for service provision by:
 - Increasing Consultant in EM recruitment;
 - Development of the Staff Grade role in EM as outlined by ICEMT;¹⁸
 - Re-distribution of tasks and clinical work within the ED Multidisciplinary Team; this will also improve the work experiences of NCHDs, increasing the relative attractiveness of the specialty;
 - Expanding nursing roles, particularly Advanced Nurse Practitioners;
- g. Work with all ED team members to optimise task allocation and reduce waste caused by inefficient working practices in the ED;
- h. Consider the impact of the current DoH requirement for a MG doctor presence in Local Injury Units on MG staffing levels in ECNs in the context of expansion of ANP staffing;
- i. Ensure that HR management and EM NCHD recruitment in future hospital groups is structured to maximise local flexibility while retaining national alignment and preventing untoward or unfair competition between hospital groups;
- j. Optimise the responsiveness of local HR departments and minimise the amount of senior clinician time that is consumed by ED staffing issues.

6.5 Training Issues

- a. Support and increase Basic Specialist Training capacity in EM by securing SHO posts for rotations through Medicine, Trauma & Orthopaedic Surgery, Plastic Surgery and Anaesthesia & Critical Care.
- b. Increase the number of Intern posts in EM but in the context that interns are not interchangeable with fully registered doctors working in the ED.
- c. Review the rotation of NCHD staff at three, four, six and twelve months and encourage the standardisation of SHO posts to six months duration and consider alternative training structures that would minimise variability in the quality and efficiency of ED patient care associated with NCHD changeover while enhancing the quality of NCHD training.
- d. Implement a Staff Grade role as recommended by ICEMT and IAEM but ensuring avoidance of the negative experiences of this role reported in the CEM survey.
- e. Establish a system to match and monitor ED NCHD numbers in tandem with estimated future Consultant staffing needs, with due consideration for system complexity and unpredictability. Align BST numbers for other specialties taking posts in EM with future staffing requirements in each specialty and minimise the potential for fluxes in SHO in EM staffing precipitated by non-EM specialties.
- f. Embed international training opportunities (e.g. fellowships) within EM training rotations at HSTEM level to enable trainees to travel within Irish training structures.
- g. Develop high-quality innovative training opportunities for overseas medical graduates who may wish to train in Ireland.
- h. Consider the potential development of innovative roles in emergency care such as Physician Assistants but appreciate that the lead-in times for the development and implementation of new roles means that they are unlikely to contribute significantly to care delivery in EM for five to ten years.
- i. Ensure that undergraduate medical training in Irish Medical Schools accords fully with the International Federation for Emergency Medicine (IFEM) curriculum and provide more appropriate exposure of medical students to EM to increase awareness of the specialty as a potential future career (in collaboration with the Department of Education).
- j. Support Consultants in EM in enhancing the quality of BSTEM and HSTEM training and competence assurance in EM. Recognise that training capacity within the specialty is absolutely dependent on the numbers of Consultants employed.

The safety and quality of patient care along with consideration of the professional wellbeing of clinicians must drive efforts to resolve current deficiencies in the EM workforce and enhance the future development of services.

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Appendix 1: A Complex Adaptive Systems Approach to the Emergency Medicine Workforce

1 Describing Complex Adaptive Systems

Complex adaptive systems (CAS) are nonlinear, interactive systems that have the ability to adapt to a changing environment.¹ In complex systems 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.² Complex systems are history-dependent, characterised by the relationships between individual parts and constant progressive adaptation over time.¹ They are deeply influenced by the transfer of information within the system and subject to emergent phenomena (new unexpected patterns).¹ They function best when their environment is optimised i.e. inhibiting external and internal factors are addressed, vital information is available for feedback loops to drive adaptation and the system is governed by minimum specifications¹ or guidance rather than rigid command and control structures.

2 Systems Theory Applied to EM Workforce Solutions

Factors interact over time in CAS in ways that are non-linear, sometimes with cumulative or multiplicative effects (i.e. a web of causation). The effect attributable to a single factor may be difficult to predict or measure while the combined effect of multiple factors is evident in the system's overall performance. It would be futile to attempt to rank the factors that led to the current problems in ED staffing chronologically or in order of magnitude of effect as all factors are inter-related and co-evolving. The potential for new factors to emerge and influence the workforce system means that the future is unpredictable.

3 Appendix 1 References

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Appendix 2: Factors influencing Consultant and NCHD workload

Factors influencing EM/ED Workload	Descriptors
ED service demand	New patient attendance numbers
ED Demographics	Paediatrics / Adult / Elderly / Very Elderly
Case-mix	Increasing complexity and co-morbidities increases EM workload
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
Performance Targets	Resourcing to meet quality and access standards/targets
Medical Teams	Leave availability and cover Availability of NCHD staffing Role substitution and task delegation
Nursing staff	Appropriate levels and skill-mix Expanded roles – staff nurses / CNS / ANPs
Multi-disciplinary team support	Appropriate staffing levels in Therapies and Medical Social Work Administrative support
Departmental roles (Consultants)	Clinical Decision Unit work Supervision of junior staff ED governance activity
Education & Training	Bedside and situational teaching Formal teaching sessions Workplace-based assessments Induction training for all staff (Consultants and SpRs) Support for expanded nursing roles (Consultants)
Network roles (Consultants)	Sessional commitment to LIUs and LEUs Network governance meetings Network lead roles
National roles (Consultants)	Participation in the EMP and other training and representative roles
Subspecialty interests for Consultants or additional training sought by NCHDs	Pre-hospital care & Transport Medicine/Retrieval services Paediatric EM Critical care / Acute Medicine Simulation Training
Continuing Professional Training	Attending and organising CPD activity
Clinician competencies and experience (NCHDs)	Ability to work in a safe and efficient manner (NCHDs)
A safe and satisfying workplace	Optimal rostering practices Consideration of the impact of evening/ weekend work Staff recruitment and retention Increased productivity from a motivated workforce Staffing levels promoting resilience and sustainability within the team Flexibility, part-time working and allowance for lifestyle factors. Peer support

Appendix 2, Table 1. Factors affecting Consultant and NCHD workload