CLINICAL DECISION UNIT (CDU) OPERATIONAL REVIEW
FOR EMP

Introduction:

What is a CDU?
A CDU is an area, adjacent to the Emergency Department (ED), that provides for a short period of observation, assessment or short course of therapy for patients who no longer require active ED care.

The CDU is an inpatient facility adjacent to the ED managed by Consultants in EM. CDUs, in other hospitals may also be known as Observation Units (OUs) or Short Stay Units (SSUs) and may also include Chest Pain Assessment Units (CPAUs). The fundamental 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.

The cost-effectiveness and safety of CDUs and chest pain assessment units is well established in the international literature. CDU care is an inherent component of EM in the UK, Australia, Canada and the US. There is good evidence from the literature that a CDU can manage certain type of conditions effectively such as low and intermediate risk chest pain, asthma, head injury, soft tissue infection and abdominal pain. ED OUs are safe and cost effective for the management of low to moderate risk chest pain patients. In relation to head injury patients, Madsen et al concluded that observation units are a safe alternative to hospital admission for stable trauma patients. Another study by Roberts et al evaluated CDU as an alternative to emergency hospitalization and concluded CDU was associated with a statistically and clinically significant reduction in hospital admissions.

In Ireland, there are seven CDU/OU/SSU/CPAUs operational currently. Five are in Dublin: Tallaght Hospital, St. James’s Hospital, Mater Misericordiae University Hospital, St. Vincent’s University Hospital and James Connolly Memorial Hospital. The other two are in Munster: Cork University Hospital and Mid-West University Hospital. These units vary in size, staffing, Standard Operating Procedures (SOPs), Average Length Of Stay (ALOS) and Maximum Length Of Stay (MLOS). Some have a CPAU incorporated. There are a further five units either pending or planned.
National and College of Emergency Medicine (CEM) drivers that support CDU development:

1. Emergency Medical Programme (EMP) 2012.\(^8\)
   - This is a national framework of EM care in Ireland
   - A CDU is recommended for all Type A (24/7) EDs.
   - One of the 4 EMP KPIs relates to CDU maximum length of stay (MLOS). The recommendation is that the CDU MLOS is less than 24hrs at least 90% of the time.

2. HIQA Statutory Inquiry Report into acute admissions at AMNCH.\(^9\)
   - The Statutory Inquiry conducted by HIQA into Tallaght Hospital’s acute admissions made a number of local and national recommendations. One of the local recommendations was in relation to the CDU.
   - The recommendation states that ‘the CDU should have a LOS of less than 24hrs and the hospital should have effective measures in place to manage and monitor the utilisation of the CDU’.

3. CEM ‘Way Ahead’ 2008-12.\(^1\)
   - This document is a blueprint for the development of EM in the UK and has a dedicated section for the ROI. EM in Ireland has very close links with CEM.
   - It states:
     - CDU is core facility
     - Every ED should have a CDU or OU

4. Health Service Executive National Operational Plan 2013 Implementing the National Service Plan 2013.\(^7\)
   - Develop Clinical Decision Units in major EDs to reduce inpatient bed demand and improve the quality and experience of patient care. To be actioned by end of Q2 as per Plan.
   - Design solutions to ensure ED compliance with recommendations of HIQA Tallaght report.\(^9\) To be actioned by end of Q3 as per Plan.
CDU patient journey:

**CDU admissions process**

All CDU patients are admitted under the care of a Consultant in EM and must have one of the specified suspected conditions coming under a defined evidence-based clinical pathway or Standard Operating Procedure (SOP).

**CDU admission criteria**

The potential conditions managed in the CDU might be obtained from the list of conditions (Box 1) which are not exhaustive. The fundamental purpose of the CDU is to make safe clinical decisions on a patient who presents to the ED and whose MLOS is likely to be no longer than 24 hours duration. Such a patient will fall into one of 3 categories and typically need either:

1. A period of observation.
2. An investigation, the results of which, determines whether the patient is likely to be discharged.
3. A short course of therapy to treat defined conditions following which it is anticipated the patient can be discharged safely.

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, local expertise, staffing and ancillary support processes.

**CDU admission policy**

Following the decision to admit to the CDU, the hospital admissions policy should be adopted and a hospital chart generated, or the old chart retrieved, if relevant. All patients in the CDU are classified as in-patients. The hospital Patient Management System will record these patients as in-patients.

**CDU clerical operation**

The ED ward clerk should assist with the maintenance to the charts and filing of results and letters. GP letters might fall under the remit of the GP Liaison Officer, if available, after the GP letter is completed by the CDU intern.
Potential SOPs include:\textsuperscript{1,8}:

**Observational group:**
A patient in this group may require a safe period of observation. Examples 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
- Multi-disciplinary assessment of elderly patients
- Observation following treatment of a pneumothorax

**Diagnostic group:**
A patient in this group may require a diagnostic intervention or investigation to determine whether or not the patient can be safely discharged or requires a further period of in-patient management. Examples include:

- Acute Coronary Syndrome (ACS) exclusion
- Acute headache. Exclusion of subarachnoid haemorrhage.
- Ureteric / renal colic
- Suspected pulmonary embolus (PE)
- Low risk GI bleed

**Short-term therapy group:**
A patient in this group may require a short course of therapy to determine if the patient can be safely discharged. Examples include:

- Asthma – mild/moderate
- Anaphylaxis
- Smoke inhalation / poisoning
- Pneumonia – low risk
- Soft tissue skin infections including cellulitis
- Soft tissue injury requiring pain control
**CDU clinical operation**

The CDU clinical staff will assist in booking diagnostics, clerking, onward referral to in-house teams when indicated, discharges, prescriptions, follow-up as well as checking results and reports.

Patient medication must be prescribed as per hospital policy on designated prescription cards.

An Early Warning Score or equivalent must be performed on all CDU patients. The EM consultant/registrar must be alerted if a CDU patient deteriorates. See also ‘Emergencies in the CDU’ below.

To facilitate good patient care and LOS, CDU patients which satisfy criteria for certain diagnostics should have protected slots where possible. Examples of this would be early a.m. protected slots for non-contrast CTB and CTKUB to facilitate e.g. head injury and ureteric colic CDU patients. Local agreements would establish the number of protected diagnostic slots. Also to facilitate timely diagnostics other than protected slots, local policies would be agreed to ensure patients who need a diagnostic are processed so that the MLOS is not breached where possible.

**Emergencies in the CDU:**

As the CDU is SOP driven and designed for patients who are stable, it is rare for a patient to require emergency management because of a clinical deterioration in the condition.

All patients admitted to the CDU have an Early Warning Score, or equivalent, done on arrival and will be updated regularly.

If a deterioration occurs then the EM consultant / registrar must be alerted and the patient will be reviewed.

When necessary, the patient will be removed from the CDU and transferred to the ED resus room for immediate and urgent review by the EM team.

The CDU must have a Defibrillator and Resuscitation Trolley to facilitate immediate management of cardiorespiratory arrest within the CDU. The hospital resuscitation code and cascades should be followed.
**CDU discharge process**

The discharge options include discharge back to the community with or without follow-up as per SOP and ED consultant, or, onward admission to a ward to facilitate continuing in-patient care, if relevant.

Once a patient is identified for discharge back to the community, a GP discharge summary is compiled by the ED intern.

Patients requiring onward referral and further in house care, must be admitted to a ward under an appropriate consultant. An example would be a patient on CDU with a confirmed Pulmonary Embolus. Bed management will be alerted immediately to facilitate bed placement. This will help optimize CDU bed utilization and turnover. Transfer of Care Protocols and guidance, agreed locally, will assist in smooth transfer of care for these patients.

The CDU MLOS of 24hrs is recommended by both the EMP and HIQA\(^8,9\).

**Hours of Opening:**

Hours of opening of a CDU is determined by the staff provision for it. Ideally, a CDU should be operational 7 days per week 24 hrs per day. Some CDUs may be only capable of an extended day service e.g. 08.00 to 22.00 or may be capable of a weekday only service. Irrespective of the operational hours, there should be a Transfer of Care Policy to allow for continuing care of patients who require care beyond the MLOS for the CDU of 24 hrs.

**Staffing of CDU:**

Staffing is an important factor in providing capability to the unit. The size or capacity of the unit will need to reflect the size the catchment population and its optimization will be determined by the number of dedicated staff provided.

The EMP is clear and states: ‘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…The EMP will produce recommendations on CDU staffing in conjunction with its overall workforce...’
plan…The consultant in EM should be supported by adequate numbers of NCHD staff to provide this service. 

**Medical recommendations:**

Twice daily ward rounds should be conducted by an EM consultant every day. Dedicated CDU Clinical Fellows (CFs) would allow for increased opening hours, SOP expansion, increased patient turnover and CDU utilization. Two CFs might be considered a minimum to provide a 7 day CDU service. To provide for CDU utilization 5 days per week, 1 CF dedicated to CDU might suffice. The CDU CF(s) might form part of the ED Middle Grade cohort and rotate regularly or some units may prefer a stand alone CF. As the CDU is distinct and separate from the ED main shopfloor, the staffing of CDU would need to be additional to existing ED staffing. An ED workforce analysis may be of assistance to put together the business case for additional staffing.

Also, the CDU would require Intern provision. Two Interns might be considered a minimum to provide a 7 day CDU service. To provide for CDU utilization 5 days per week, 1 Intern dedicated to CDU might suffice. The CDU intern(s) might form part of the ED Intern cohort and rotate regularly or some units may prefer stand alone Interns. The local intern coordinator and Tutor may offer advice. As already stated, the CDU is distinct and separate from the ED main shopfloor so the staffing of CDU would need to be additional to existing ED staffing. An ED workforce analysis may be of assistance as already stated.

The CEM ‘Way Ahead 2008-12’ defines a whole time equivalent (WTE) as an EM SHO that is expected to see 3000 pts per yr (2000 patients per year if difficult casemix). An EM Registrar or CF is defined as 0.8 WTE for patient quantitative purposes. Therefore a CDU CF might be expected to process 2,400 per annum.

**Nursing recommendations:**

The CDU nursing cohort should be under the direct responsibility of the Assistant Director of Nursing for the ED. CDU nursing staffing should reflect the rapid turnover and intense nature of the unit. The optimum nurse to patient ratio would be 1:6. The nurse to patient ratio on the wards would be 1:8 typically.

Advanced Nurse Practitioners (ANPs) with CDU specialization is a potential for the future with protocol based admission and discharge development. This development might, if realized, compliment the clinical capability and may in time reduce the CDU medical staff requirements. ANP’s should be developed to meet
service need and that education and training should meet the competencies required to manage the caseload of CDU.

Ancillary Staff:

Psychiatry liaison, social work, occupational health input should be available as required. Pharmacist support must also be available for good prescription drug governance. Phlebotomy service should provide a daily service for CDU to facilitate timely investigations. Portering, ward clerk support, ward attendants, secretarial support, IT support must be assigned to the CDU to facilitate operational running of the unit. Some of the above ancillary staff may be procured in a shared way from the ED shopfloor.

IT process:

Patients who are admitted to the CDU are in-patients and should be registered as per usual hospital policy. Units that have ED and/or In-patient Management Systems will utilize these systems accordingly.

Audit of CDU activity should be carried out on an ongoing basis. An monthly activity report should include numerics on overall intake, admitting diagnosis, ALOS, MLOS, onward admission and discharge rates.

CDU designation:

Irrespective of the patient’s status regarding medical insurance cover, patients currently admitted to the CDU are not covered and are admitted as public patients. This is not unique to CDU beds and also applies to Medical Assessment Unit (MAU) beds currently. Also, a growing number of EM consultant are Contract A holders.

As it stands, hospitals are not benefiting from medical insurance policies for patients who are admitted to non-designated beds. With the proposed ‘Money Follows The Patient’ development in hospital financing, the in-patient CDU designation may change along with other units such as the MAU. This would be facilitated by coding and costing developments.

Risk Management:

There should be a robust process for adverse incident reporting for the CDU. Adverse incident reports should be monitored and if received are processed in
accordance with the Office of the Director of Risk. Learning points and actions need to be cascaded to all staff when indicated.

There should be a robust process for complaints reporting for the CDU. All patient complaints should be monitored and referred to the hospital’s Patient Advocacy Department for acknowledgement and processing. Again learning points and actions need to be cascaded to all staff when indicated.

Surveys including patient satisfaction surveys can help identify good and bad experiences which might be facilitated by a Patient Liaison Officer, if employed, to ensure that the patient experience is noted and where possible addressed.

**SOP development:**

Existing SOPs and clinical pathways of care for the CDU should be regularly updated to reflect Evidence Based (EB) and Best Practice with local agreement. MLOS agreements as well as Transfer of Care Policy to minimise entry block to CDU should be agreed locally. The EMP, HIQA and CEM recommend a MLOS of 24 hrs for all CDU patients.\(^1,8,9\)

New SOPs can be added to the existing compliment of SOPs again based on EB and best practice with local agreement. Capacity (number of CDU beds) and capability (staff dedicated to CDU, bed turnover, exit block, entry block) will determine the rate of SOP development.

**Research and Audit:**

The CDU has great scope for research activity and regular audit. The CDU dedicated staff compliment would be strongly encouraged to carry out research projects while audit projects would be expected.

The international evidence is very clear that a CDU is safe, efficient, cost effective and optimises bed utilisation.\(^1-8\)

**CDU Repository:**

The CDU subgroup for the EMP has put together a repository of existing SOPs from current CDUs/OUs, CDU documentation as well as a list of CDU references to facilitate the EM community. This repository can be accessed via Moodle at RCSI.\(^19\)
References:


