



Recommendation and justification for Clinical Pharmacy services in Emergency Departments

Introduction

The role of the Clinical Pharmacist is an emerging role in the Multi-Disciplinary Team (MDT) within Emergency Departments (ED). The ED Clinical Pharmacist has already established their role in North America¹, Australia and the UK². Published literature³⁻⁶ has shown that Clinical Pharmacists working in the ED can reduce medication errors and create time-savings for physicians. An Irish study⁷⁻⁸ has demonstrated that the ED Clinical Pharmacist is a cost-effective addition to the hospital through the avoidance of drug related harm.

The National Emergency Medicine Programme (EMP) Model of Care⁹ released in 2012 referenced the benefit of the EMP to developing the role clinical pharmacy (p28) in EDs, identifying the following areas;

- 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

Current situation

In a 2019 survey of 29 Irish EDs, only four EDs were found to have a WTE x 1WTE dedicated clinical pharmacist service. Seven EDs were found to have a partial ED clinical pharmacist service. The partial services range from 1 hour per day pharmacist contact for medicine reconciliation queries to 0.5WTE contact service dedicated to ED. Certain partial ED clinical pharmacist services are affiliated with speciality posts (e.g. Frailty team).

Typical ED Clinical Pharmacist duties include:

- Medicine reconciliation
- Provision of Medicine Information
- Patient Counselling
- Prescription/Order Review
- Clinical Pharmacist Review
- Medication Management training
- Community Pharmacy and General Practitioner Liaison for ED Prescription queries
- Prescribing Education
- Clinical Guideline Development
- Medication Safety Initiatives
- Nurse Prescribing Collaborative Practice Agreement Development

- ED Drug Shortage substitution and training
- Monitoring drug usage
- Implementation of medication related technology (e.g. electronic prescribing, prescribing references, electronic clinical guidelines and tools, automated drug dispensing units, SMART intravenous pump)

Requirement for 12 hour service 7 days a week

Hospital Model	Requirement (minimum)
Mixed ED (35,000 attendances)	1.5 WTE dedicated Clinical Pharmacist
Adult only ED (35,000 attendances)	1.5 WTE dedicated Clinical Pharmacist
Mixed ED (55,000 attendances)	3 WTE dedicated Clinical Pharmacist
Adult only ED (55,000 attendances)	3 WTE dedicated Clinical Pharmacist
Paediatric only ED	1.5 WTE dedicated Clinical Pharmacist
Paediatric Urgent Care Centre (UCC)	1 WTE dedicated Clinical Pharmacist

Qualifications & experience

At least Senior Grade Pharmacist with Clinical Pharmacist post-graduate clinical education and experience x 1 WTE. The second and third pharmacist could be either Basic Grade Pharmacist (who may be undertaking their clinical post-grad and rotating through clinical areas) or another Senior Grade Pharmacist with Clinical Pharmacist post-graduate clinical education and experience.

Paediatric only ED / UCC Senior Grade Pharmacist with Paediatric experience and post-graduate clinical education x 1WTE.

Cost based on HSE consolidated pay scales 1st July 2022

In sites where more than 1 Clinical Pharmacist position is required the second post maybe graded as a Basic Grade Pharmacist. Both pay scales are noted below.

Grade	Grade Code	Salary	Salary point	PRSI 10.75%	Pension 4%	Total
Senior Clinical Pharmacist	3239	69,597	5	7,482	3,083	€80,162
Basic Grade Pharmacist	3247	50,893	7	5,470	2,254	€58,617

Senior Clinical Pharmacist €64,614 - €74,929

Basic Grade Pharmacist €35,259 - €67,727

Examples of using an ED Clinical Pharmacist to improve ED patient flow and reduce medication harm:

Medicines Reconciliation and Prescription Chart preparation in Triage/ Waiting Area

- Pharmacist led medication reconciliation can improve drug history accuracy³⁻⁵ and save ED physician time in acquiring the most up to date list of medications and creation of drug kardex⁶
- A time saving of 36 minutes per patient was observed for determining medication history, reconciliation and charting of medications⁶.
- This early review of medication may allow pharmacist identification of drug related issues and presentations (e.g. Drug interaction, non-compliance, adverse drug reaction, drug side effect, overdose, drug toxicity)
- This will ensure missed doses are avoided from lack of drug history information and medications are promptly prescribed for Clinical Decision Unit patients. Missed doses of essential medications in the ED can cause significant problems for certain patients (e.g. Parkinson Disease Treatment, Oral Chemotherapy, anti-psychotics, anti-epileptics, transplant rejection treatment and anti-retrovirals).

Clinical Pharmacist Referrals for identification and solution of drug related problems

- Drug Induced Seizures, Acute Kidney Injury, Psychosis
- Drug Interactions, Side Effects, compliance
- Renal dosing
- Swallowing difficulties/ Tube Feeding Administration
- Drug Dosing Calculation
- Aminoglycoside prescribing (i.e. Vancomycin, Gentamicin)
- Polypharmacy review

Reduction of Adverse Drug Events

- Pharmacist-led programme of education on medication safety
- Reduce prescribing and administration errors
- Reduce medication omissions and delayed medications in the ED

Toxicology Referrals (Overdose, Poisoning, Drug Toxicity)

- Use Clinical Pharmacists to complete assessments on drug toxicity and antidotes.
- Review of drugs with narrow therapeutic window (e.g. anti-epileptics, lithium, immunosuppressants)
- Physician time saving

Improved patient care at transitions of care

- Liaison with General Practitioner and Community Pharmacy regarding medicated related issues (e.g. information gathering, adverse drug events, prescribing changes and recommendations, medication compliance or abuse issues)
- Review of ED discharge prescriptions
- New medication counselling at patient discharge

Contribution to the work of the ED Management team

- An ED Clinical Pharmacist can complete drug budget analysis, clinical and medication management audits, ensure safe management of controlled drugs, development of clinical guidelines and drug monographs, liaison role with medication policies from rest of hospital (e.g. education on changes on hospital antimicrobial guideline) to assist work of ED Management team.
- An ED Clinical Pharmacist will be involved in the implementation and management of electronic prescribing reference material such as Clinical Decision Unit Prescribing Protocols, Smart Pump Library, IV Drug Administration Monographs and ED Electronic Prescribing Product List.

High Risk Patient Review

- Certain patient groups may be identified and prioritised for ED Clinical Pharmacist review at triage due to their current condition (e.g. epilepsy, renal failure, diabetes, Parkinson's disease) or the high risk medication which they are taking (e.g. chemotherapy, opioids, anticoagulants, >5 regular medications).
- Physicians caring for high risk patients in the ED will benefit from ED Clinical Pharmacist advice on contraindications, monitoring, adverse drug event information and drug interactions as well as a prompt and accurate medication reconciliation process.

Risks incurred without the appointment of an Emergency Department Clinical Pharmacist

- Increased risk of drug related issues e.g. Drug interaction, non-compliance, adverse drug reaction, drug side effect, overdose, drug toxicity due to lack of specialist knowledge
- Inaccurate recording of medication history due to lack of expertise/time

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