The Role of Clinical Pharmacists in the Emergency Department

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Background

Clinical pharmacists are integral to the care and safety of patients in the hospital, particularly in specialty and high-risk settings. Emergency departments (EDs) represent care environments that carry unique risks that may be addressed through the addition of clinical pharmacists specifically trained and/or experienced as an ED pharmacist. Adult and pediatric patients present with undifferentiated medical, neurological, traumatic, psychiatric, and surgical complaints 24 h a day, 7 days a week. Patients are generally unfamiliar to the emergency care providers, may be unable to communicate relevant medical information, and may require time-sensitive interventions. When present, ED crowding is associated with increased risk for medication errors [1–4]. Other factors that raise the risk for error include the expanding pharmacopeia, the increasing complexity of patient drug regimens [5, 6], and problems related to health information technology [7–9].

Despite the evidence supporting the role of pharmacists in the ED and support from national Emergency Medicine groups including the American College of Emergency Physicians [10], some hospitals rely on pharmacy personnel

positioned outside the ED. Among EDs with dedicated pharmacists, few have 24-h coverage. This position statement by the American College of Medical Toxicology outlines the importance of dedicated pharmacists in the ED to improve care of adult and pediatric ED patients at all times.

Importance ED Pharmacists have demonstrated a positive impact on patient-specific outcome measures, timely medication administration, optimization of therapy, medication safety, and cost of care.

Timely Medication Administration

Published data demonstrate that the presence of an ED pharmacist is associated with a reduction in time to antibiotic administration for patients with sepsis [11–13], time to first analgesic in trauma patients [14], time to sedation and analgesia after rapid sequence intubation [15, 16], time to thrombolysis for patients with acute ischemic stroke [17], and door-to-balloon time for patients with acute myocardial infarction [18].

ED pharmacists also facilitate medication management for other time-sensitive situations such as cardiac resuscitations [19–22] and mass casualty events [23, 24]. This frees clinicians from retrieval and medication preparation, allowing them to remain at the bedside to render care.

Optimization of Therapy

Pharmacists are uniquely trained to verify medication orders for appropriateness, taking into account the indication, dosing intervals, and adjustment for patient-specific variables such as weight, organ function, allergies, and drug interactions. In addition, pharmacists can rapidly access documents regarding

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drug resistance patterns, current therapeutic guidelines, and local hospital antibiograms to improve selection of antimicrobial therapy [6, 12, 15, 25]. In some settings, ED pharmacist review of post-discharge cultures allows regimen modifications while also decreasing return visits and subsequent admissions [26–30]. In addition, ED pharmacists routinely make recommendations to optimize pharmacotherapy regimens particularly in regard to high-risk therapeutic classes such as central nervous system and cardiovascular medications, opioids, insulin, anticoagulants, and thrombolytics [31–33]. Pharmacists in the ED can review discharge prescriptions with patients and providers to ensure optimal therapy [34] and improved compliance for chronic illnesses such as asthma, chronic obstructive pulmonary disease, and congestive heart failure [35]. ED pharmacists also work collaboratively with emergency physicians and nurses, hospital pharmacists, medical toxicologists, and regional poison centers to manage patients with toxic exposures [36]. As part of the care team, pharmacists can recommend interventions that improve medication utilization and adherence to evidence-based medicine and national quality standards [31]. This has been particularly important with the increasing prevalence of critical drug shortages including antidotes [37, 38].

Medication Safety

ED pharmacists provide real-time decision support and order verification [39–41], and can intercept prescribing errors before patient harm occurs [33, 40, 42, 43]. Transitions of care are improved through medication reconciliation [44], thereby reducing errors and outpatient treatment failures [29, 34, 45–47]. Pharmacists may also recognize adverse drug events that another provider has not identified [48]. Finally, pharmacist-driven error reporting facilitates identification of safety deficits [49].

Impact on Cost of Care

The potential cost avoidance in reducing errors, eliminating antibiotic redundancies, meeting quality standards for reimbursement, improving patient satisfaction, and reducing ED revisits are important factors in the financial justification for dedicated ED staffing [50, 51].

Summary

The ED is a unique setting with a diverse and complex patient population presenting around the clock with urgent and emergent needs. Emergency physicians readily utilize and value the presence of ED pharmacists to aid in this care [10,

52–54]. We support 24-h staffing of emergency departments with dedicated ED pharmacists as part of the clinical care team. ACMT also supports studies to further define the impact and value of pharmacists in the ED and other areas of ED expansion such as urgent care and observation units.

Sources of Funding None.

Compliance with Ethical Standards

Conflict of Interest None.

Disclaimer The position of the American College of Medical Toxicology (ACMT) is as follows: clinical pharmacists are integral to the care and safety of emergency department (ED) patients. Emergency department pharmacists positively impact time to critical therapies, including antibiotics for sepsis and door-to-balloon time for acute myocardial infarction. Pharmacists optimize pharmacotherapy regimens involving high-risk therapeutic classes, such as thrombolytics. Clinical pharmacists improve patient safety by intercepting prescription errors and recognizing adverse drug events. The potential cost avoidance of reducing errors and meeting standards for reimbursement provides financial justification for dedicated ED clinical pharmacist staffing. We support 24-h staffing of emergency departments with dedicated ED pharmacists.

While individual practices may differ, this is the position of the American College of Medical Toxicology (ACMT) at the time written, after a review of the issue and pertinent literature.

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