Role of Pharmacist in Emergency Department

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Idi Idiong: declares no conflicts of interest, real or apparent, and no financial interests in any company, product, or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.
Target Audience: Pharmacists and Pharmacy Technicians

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Activity Type: Knowledge-based
Learning Objectives

Pharmacist Learning Objectives:

1. State the progression of pharmacy practice in the ED setting
2. Identify the administrative duties and clinical duties of an ED pharmacist
3. Recall methods for ongoing evaluation of ED pharmacy services

Pharmacy Technician Learning Objectives

1. State the role of the Pharmacy Technician in the ED setting
2. Identify areas for optimization of the pharmacy technician in the ED setting
3. Recall barriers and limitations with integration of pharmacy technicians into ED pharmacy practice
Self-Assessment Questions

1. Which of the following **best** describes the primary objective of the ED pharmacy team?
   - A. Improve operational efficiency in the ED setting
   - B. Promote safe and effective use of medications
   - C. Utilize collaborative practice to improve access to care
   - D. Perform medication reconciliation
   - E. Manage drug inventory and procurement

2. Which one of these duties is **not** considered a clinical function for an ED pharmacist?
   - A. Serve as preceptor for ED pharmacy clinical rotation
   - B. Participate in therapeutic drug monitoring
   - C. Provide disease state management for patients with chronic illness
   - D. Participate in emergency medical response
   - E. None of the above
Self-Assessment Questions

3. Identify an area for optimization of the ED pharmacy technician
   
   A. ED Unit inspection
   B. Medication dispensing for ED patients
   C. Participation in medication reconciliation process to improve patient outcomes
   D. A and B
   E. All of the above
Overview of Emergency Department (ED) practice setting
Background on ED pharmacy practice
Implementation of ED pharmacy practice
Description of ED pharmacist and technician roles
Overview of limitations to ED pharmacy implementation
Key points on ED pharmacy practice
Overview of Emergency Department

- Unique practice setting
  - Serves as point of entry, transition and exit
  - Intended for treatment and management of emergent or acutely ill patients
  - May contain urgent care or fast track section

- Workflow
  - Fast paced
  - Chaotic

- Staff
  - Primarily health techs, nurses, physician
  - Expanding to other services for improved access

- Patient
  - Various acuity levels
  - Boarders

- Highest number of preventable adverse drug events of any hospital setting
Background

▶ ED pharmacy practice originated in 1970s providing operational duties
  ▶ Medication dispensing
  ▶ Inventory management
  ▶ Cost-containment efforts
▶ ED pharmacy services has expanded over the last 40 years
▶ Expansion of services led to advances in roles of ED pharmacist and technician
▶ Significant increase in number of hospitals with dedicated ED pharmacy services from 3.4% in 2006 to 16.4% in 2014

Background

- Advanced ED pharmacy services supported by professional organizations
  - Institute of Medicine (IOM) report “To Err is Human”
  - American Pharmacists Association (APhA)
    - Interdisciplinary team approach in all settings optimal for medication use, continuity of care, culture of safety
    - Pharmacist’s role must be recognized and fully utilized within the health care team
  - American Society of Health-System Pharmacists (ASHP)
    - Position statement recommending hospital pharmacy provides pharmacy services in ED
    - Published guidelines on Emergency Medicine Pharmacist Services
  - American College of Emergency Physicians (ACEP)
    - Policy statement recognizing clinical pharmacists as integral members of the ED multidisciplinary team
  - The Joint Commission (TJC) emphasizes need for pharmacist involvement in ED
Evolution of ED Pharmacy Practice

1970s and 1980s
Operational duties

1990s and 2000s
Operational duties
Limited pharmaceutical care

2010s
Limited operational duties
Increased pharmaceutical care and clinical duties
Implementation - Facility

- Dependent on facility’s needs
- Resources
  - Fiscal
  - Space
  - Personnel
- Nature of medication use system
- ED triaging model
Implementation - Assessment

- Evaluate current ED practice at facility
  - Total cost of care
  - Clinical outcomes
  - Quality of care
- Assess and document need for decentralized ED pharmacy services
  - Medication interventions
  - Potential cost avoidance
  - Survey ED physicians
  - Patient safety
  - Operational efficiency

- Medication errors were captured by pharmacists more frequently during provider consultation interactions (51.4%)
- Supports on-site, dedicated ED pharmacy coverage as best model for prevention of medication errors


- Discusses evidence showing effectiveness of ED pharmacist program
- Provides information and resources that can be used by hospitals considering the implementation of an ED pharmacy program
Implementation – Literature Review

  - Challenges in implementing program in a cost-neutral manner
  - Realignment of staff duties and schedules
  - Arrangement for expanded coverage hours
  - Results
    - Improved admission medication reconciliation process
    - Provision of additional services to improve patient safety and quality of care
Implementation - Proposal

- Develop formal proposals
  - Align with facilities strategic plan or mission
  - Include potential services or projects to be implemented
  - Include timelines from implementation through completion
- Staffing models
- Tour of duties
- Identify core responsibilities
- Provide continuous assessment plan
- Quantify value of ED pharmacy activities by demonstrating economic benefit
- Discuss with stakeholders and facility leaders
ED Pharmacy team

- Technician
- Pharmacist
- Clinical Pharmacist
ED Pharmacy team objectives

- Promote safe and effective use of medications
  - Integrate into ED team
  - Promote collaborative practice
  - Provide optimal patient care
  - Offer additional value
  - Recognition as critical members of ED interdisciplinary team
ED Pharmacist role in Medication Use System

**Prescribing**
- Physician, PA, Pharmacist, NP
- Clinical decision making
- Drug Choice
- Drug regimen determination
- Medical Record Documentation
- Order (w,e,v)

**Transcribing**
- Pharmacist, Nurse
- Receive order or retrieve from MAR
- Check if correct

**Dispensing**
- Pharmacist
- Data Entry & Screening
- Preparing, mixing, compounding
- Pharmacist double check
- Dispensing to patient

**Administration**
- Nurse
- Drug preparation for administering
- NURSES ADMINISTERED
- Documentation in MAR

**Monitoring**
- Nurse, Physician, Pharmacist
- Assess for therapeutic & adverse effects
- Review lab results
- Treat adverse drug event if occurring
- Medical record documentation
ED Pharmacist Roles

- Review of study published in Annals of Emergency Medicine 2010
  - Study Objective
    - Determine rate and severity of medication errors
    - Identify factors associated with error occurrence in the ED
  - Methods
    - Prospective observational study
    - Conducted between May 1, 2008 and February 1, 2009
    - Pharmacist observed and collected data on nursing activities medication use process
    - Errors categorized by severity
    - Logistic regression used to analyze factors associated with risk of medication error

ED Pharmacist Roles

- Review of study published in Annals of Emergency Medicine 2010
  - Results
    - 178 medication errors observed in 192 patients
    - 59.4% of patients had at least one error
      - 37% of errors reached the patient
    - 60% of all medication orders were associated with an error
    - Phases of medication error occurrence

ED Pharmacist Roles

**Clinical**
- Promote safe and appropriate medication use leading to improved patient outcomes and cost effectiveness

**Administrative**
- Participation in decision-making committees, workgroups impacting policies and procedures affecting ED setting

**Technical**
- Distributive and operational duties impacting patient care such as medication distribution, inventory management, ward or unit inspections
ED Pharmacist Role - Clinical

Hierarchy of Clinical Duties

Clinical Pharmacist

- Participation in emergency medical response (ACLS, Acute Stroke, ACS, intubation, sepsis, procedural sedation, toxicology/overdose reversal)

Pharmacist

- Medication renewals
- Disease state management (Anticoagulation, VTE, Diabetes, HTN, COPD)

- Promote safe use of medications
- Improve patient outcomes (Medication reconciliation, Drug therapy consultation, Pharmacy interventions, Drug monitoring, Medication order verifications, Drug procurement)
- Improve cost effectiveness - Formulary management
ED Pharmacist Role - Clinical

- Promote safe and appropriate use of medications
  - Obtain medication history
  - Allergies
    - Adverse drug reactions
    - Medication orders
  - Prospective medication order review
    - Drug Selection
    - Dosing
    - Administration
  - Identify drug related concerns
  - Disease state management
  - Provide drug information
ED Pharmacist Role - Clinical

- Improving patient outcomes
  - Collaborative practice
    - Physicians
    - Other health professionals
    - Patients
  - Assess therapeutic effectiveness
  - Assess drug interactions
  - Monitor laboratory values
    - Evaluation of renal function
    - Narrow therapeutic index
  - Participation in resuscitation
  - Medication reconciliation
  - Medical record documentation
ED Pharmacist Role - Clinical

- Cost Effectiveness
  - Formulary management
  - Cost avoidance goals
  - Therapeutic substitutions
  - Prescription drug programs
ED Pharmacist Role - Administrative

• Hierarchy of Administrative duties

- Research
- Disaster Preparedness
- Scholarly activities
  (precept students, residents, provide lectures and ED inservices)
- ED quality assurance processes
  (Patient Safety Cmte, Stroke team, MUE)
- ED quality improvements
  (Protocol and SOP development, Order sets, Clinical Pathways, Barcode medication administration implementation)
ED Pharmacist Role - Administrative

- Implementation of Quality assurance/quality improvement programs
  - Protocol development
  - Standard operating procedures
  - Order sets
  - Clinical pathways
  - Medication events analysis
- Education
  - Drug information to healthcare providers
  - Preceptor for students and residents
ED Pharmacist Role - Administrative

- Committee level involvement
- Research
- Supervision
  - Technician, students, residents
ED Pharmacist Role - Technical

- Ward stock medication supply
- Automated dispensing device maintenance
- Inventory management
- Medication use process
- Medication dispensing
- Unit and ward inspection

***For operational efficiency, consider assignment of technical roles to pharmacy technician***
Role of ED Technician

- Support the overall pharmacy team in the ED
- Distributive Services
  - Ward stock supply of automated dispensing devices
  - Inventory control
  - Medication use process
- Clinical
  - Obtain medication history
  - Medication reconciliation
Identify essential duties versus desirable duties for pharmacist and technician

**Essential duties**
- Involves functions in daily ED activities
- Promote safe use of medications
- Improve patient outcomes

**Desirable duties**
- Expansion of clinical pharmacy practice

Focus on roles aligning with facility's goals or strategic plan
- Operational efficiency
- Access to care
- Improved quality of care

Create a targeted expansion plan incorporating desirable duties
Optimization

- Evaluate current practice
  - Quarterly reviews of current status
  - Review published literature
- Utilize surveys to identify benefits and opportunities
  - ED physicians and nurses
  - Inpatient physicians and nurses
- Document, document, document
Limitations to Implementation

- Space
- Resources
  - Cost
  - Barcode medication administration systems
- Consistency of services provided
  - Tour of duty
  - Variation in standard of care 24/7
- Limited support
- ED personnel viewpoints
- Limited pharmacy personnel with specialized ED training
Limitations to Implementation

- Integration of technician into ED Pharmacy team
  - Challenges in defining roles
    - Technical functions can be performed by a pharmacist
    - Majority of clinical functions cannot be performed by technician
Key Points

- ED is a unique practice setting producing highest number of preventable adverse drug events.
- ED pharmacy practice continues to evolve.
- Studies have found utilization of ED pharmacists led to decrease in medication errors and improved patient outcomes.
- Several professional medical organizations support advancement of ED pharmacy services.
- Primary objective for implementation is to improve safe and effective use of medications.
- Implementation is dependent on each facility’s need.
Key Points

- ED pharmacy team could comprise of any or all of the following:
  - Clinical Pharmacist
  - Pharmacist
  - Technician
- Role of the ED pharmacist consist of clinical, administrative and technical duties
- Role of the ED technician is to support ED pharmacy team
- Optimization involves ongoing evaluation of current practice
- ED technician role could be further optimized through utilization in medication reconciliation process
- Limitations to implementation varies from one facility to another


Answers To Self-Assessment Questions

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3. Identify an area for **optimization** of the ED pharmacy technician

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D. A and B
E. All of the above
Closing Remarks

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