Clinical Pharmacy Services in the Emergency Department

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  - Rollin J. (Terry) Fairbanks, MD, MS
ED is a Unique Practice

- Many safety mechanisms not available in ED
- Pharmacy USUALLY not present
  - NO DOUBLE CHECK
- Joint Commission supports pharmacist double check on ALL medication orders
ED is a Unique Practice

- High Patient Volume
- Verbal Orders
- HIGH STRESS situations
Contributing Factors to Hazards

- Patients are strangers
- Multiple patients being treated at same time
- Wide range of medications utilized
- Interruptions/distractions
- ED Dispensing
- Time Constraints
- Tight Coupling

Croskerry, et.al. Academic Emergency Medicine
Medication Errors in the ED

- ED has highest rate of preventable errors
- 110 MILLION ED patients yearly in US*
- 5% experience potential events
  - 70% of these are PREVENTABLE**

*National Center for Health Statistics.
**Harvard Medical Practice Study
Let’s Compare

- 77% of all ED medication errors between ordering phase and administration phase
- 23% of errors were discovered before patient received medication
- 39% in other area of hospital
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- ED has > 120 beds
- Over 500 doses of medication dispensed per day
- Over 90,000 patient visits per year
  - 60,000 adults
  - 30,000 pediatrics
- Nationally ~ 3.5% of ED’s have Pharm presence
Pharmacist Duties in the Emergency Department

- Clinical
- Academic
- Research
- Administrative
- Distribution
- Emergency preparedness
Clinical Duties

- Clinical Consultation
  - Attend rounds and present patient information
  - Dose recommendations
  - Therapeutic substitution
  - Disease state specific pharmacotherapy
  - Pharmacokinetics

- Being available – and visible!!
Clinical Duties

- Medication history
- Allergy screening
- Pregnancy medication consultation
- Weight based dosing
  - Pediatric
  - Obese
  - Geriatric
  - Disease specific (CF, FTT, etc)
Clinical Duties

- Patient Education
  - Medication specific education
    - Asthma
    - Warfarin
    - LMWH
    - Diabetes
  - Discharge counseling
Order Review

- Allergies
- Medication interactions
- Inappropriate
  - Dose
  - Route
  - Indication
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<table>
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The Medication Process

- Prescribing
- Transcribing
- Dispensing
- Administering
- Monitoring
- Discharge Medications
Prescribing

- Incomplete knowledge of medication
- Incomplete knowledge of patient
- Less access to
  - Patient medications prior to visit
  - Patient history
Transcribing

- Verbal Orders
- Poor penmanship
- Team communication errors
Dispensing

- Dispensed by nursing
- Dispensed by physicians
- Thorough counseling not available/performed
Distribution

- Automated dispensing machines
- CPOE for admitted patients
  - Pharmacy System
  - PYXIS
- Pharmacist available for assistance
Monitoring

- Parenteral administration
  - Esp cardiac medications, insulin, etc...
- Emergency procedures
- Inadequate personnel
Public Awareness

- ASHP / ACCP involvement
- National EM/CC society involvement
- Publications
- AHRQ Grant
- ASHP Mentorship program


References


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- IOM report on Emergency Care 2006