Clinical Pharmacy Services in the Emergency Department

Daniel P. Hays, Pharm.D., BCPS
Director, Specialty Residency in Emergency Medicine
Clinical Pharmacy Specialist – Emergency Medicine
University of Rochester Medical Center
Strong Memorial Hospital

Objectives

- Explain the benefits of designing/implementing an EM Pharmacist program
- Describe a model program

History of Emergency Pharmacy Services

- 1970's[1]
- Billing
- Inventory control
- Clinical pharmacy services
- 1980's led way for pharmaceutical care

1 Ellenbaas, et all

ED is a Unique Practice

- Many safety mechanisms not available in ED
- Pharmacy USUALLY not present
  - NO DOUBLE CHECK
- JCAHO supports pharmacist double check on ALL medication orders

Unique Practice cont.

- High Patient Volume
- Verbal Orders
- HIGH STRESS situations

Reasons for Chaos

- One time orders
- Little patient history
- No other safety mechanism in place
- Changing gears
- Inpatients/outpatients co-mingling
- 4 times as many ED visits as OR in US!

Medication Errors in the ED

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

*National Center for Health Statistics.

The Medication Process

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

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/considered

Administration of Medications

- Multiplicity of medications
  - Therapeutic duplications
- Potency of medications
- Multiple patients in the ED
- Parenteral administration
- Drug incompatibilities
- Physician administration

Monitoring

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

IOM Report

- *Hospital-Based Emergency Care: At the Breaking Point*
  - Emergency Department (ED) crowding:
    - Over past decade, ED visits increased 26%.
    - The number of EDs declined 9% and hospitals closed 198,000 beds.
  - Ambulance diversion: When crowding reaches dangerous levels, ERs divert inbound ambulances..

IOM Report

- Uncompensated care: Everyone is legally entitled to emergency care, however no funding is provided This results in the inevitable closing of many ERs and trauma centers.

- Fewer "on-call" specialists: The rising costs of uncompensated care and fear of legal liability have led more specialists to opt out of taking ER call.

- Inadequate emergency preparedness: If ERs and trauma centers are already jammed with patients, how could they respond to a disaster or a terrorist strike?

IOM Report

- EDs not well equipped to manage pediatric care
  - Pediatrics make up 27% of ED visits
  - 6% of EDs prepared for pediatrics

Model EPh program

Strong Memorial Hospital

- ED has > 120 beds
- Over 500 doses of medication dispensed per day
- Over 95,000 patient visits per year
  - 65,000 adults
  - 30,000 pediatrics
- Nationally ~ 3.5% of ED's have Pharm presence

Model EPh program

100% Clinical

- Trauma and medical resuscitation
- Discharge patient assistance
- Teaching

- Minimal to NO dispensing

Clinical Duties

- Being involved in patient presentation
- Actively involved in bedside care of all critically ill (medical and surgical) patients
- Seeing patients and making recommendations
- Helping avoid ADEs + PADEs

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

Challenges/Barriers to Implementation

- FINANCIAL
- Acceptance by medical team and administration
- Staffing
- Physical space within ED
- Training

Financial Barrier

- Largest cost savings based on clinical interventions

- 2 Major interventions
  - Medication selection
  - Dose change

Year	# of interventions	# of saving interventions	Cost savings ($)
1989	9,700	1,334	31,041.20
1990	15,770	1,464	54,007.09
1991	15,637	1,541	93,561.22

Levy, DB. Hospital Pharmacy 1993

Administration Barrier

- “Show me the money”
  - Soft dollars don’t usually count
- Patient safety benefits

Medical Team Barrier

- Just play nice with everyone
- BE VISIBILE!!!
- Show them what you are worth
- Know which fight to pick
- Build a relationship with attendings is key – many teams rotate through

Solutions to Challenges

- Power of suggestion
  - Not overstepping boundaries
  - Enhancing patient care

Power of Communication

- Actively seek out medical team
- Offer assistance – CONTINUALLY
  - Don’t be pushy – try subtly
  - BE AVAILABLE
- Not my job – of course it is!

Staffing Barrier

- Unfortunately national shortage
- Trained RPhs esp in EM
- Size of hospital will make a difference

Physical Space Barrier

- Avoid the satellite
- Technology is wonderful!
- Don’t expect an office when we barely have room for the patients

Training Barrier

- EM is EVERYTHING!
  - ID
  - Geriatrics
  - Pediatrics
  - Medicine
  - Psychiatry
  - Surgery
  - Jerry Springer show

Know Nothing

- Know your references
- Know where to look up EVERYTHING
- If you don’t know, don’t fake it
- “Fantasy Physiology”

Conclusion

- The EDs across the country are begging for pharmacists – come in with a plan and they will welcome you with open arms!

Questions?

- Thank You

- For more information, please contact :

Daniel P. Hays, PharmD, BCPS
Clinical Pharmacy Specialist
Departments of Pharmacy/Emergency Medicine
Daniel_hays@urmc.rochester.edu