



Clinical Pharmacy Services in the Emergency Department

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Objectives

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



History of Emergency Pharmacy Services

- 1970's¹
- Billing
- Inventory control
- Clinical pharmacy services
- 1980's led way for pharmaceutical care



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 :
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