

The Emergency Pharmacist (EPh): A Safety Measure in Emergency Medicine

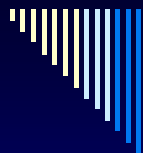
Part I: Justification

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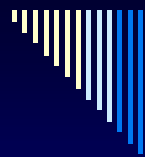


The Ideal Emergency Department

- No patient feels forgotten
- Every nurse and every doctor has adequate support
- Every resident and student receives appropriate supervision
- All patients rest secured that there are no adverse medication events....

Trout et al, *Academic Emergency Medicine*, June 2000; 7(6)

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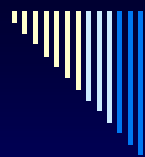


In reality, the Ideal Does Not Exist

- Unique Environment - the ED is Vulnerable
 - High volume and diversity of patients
 - Patient history often not readily available
 - More frequent interruptions/distractions for all staff compared to other areas of hospital
 - Medication ordering, dispensing, and administering at point of care
 - High risk intravenous medication usage
 - Fast paced environment
 - Frequent verbal orders
 - No routine pharmacy review

Chisholm C et al, *Academic Emergency Medicine*, Nov 2000; 7(11)
 Paparella S, *Journal of Emergency Nursing*, 2004; 30(2)
 Leape LL et al, *JAMA* 1999; 282(3)

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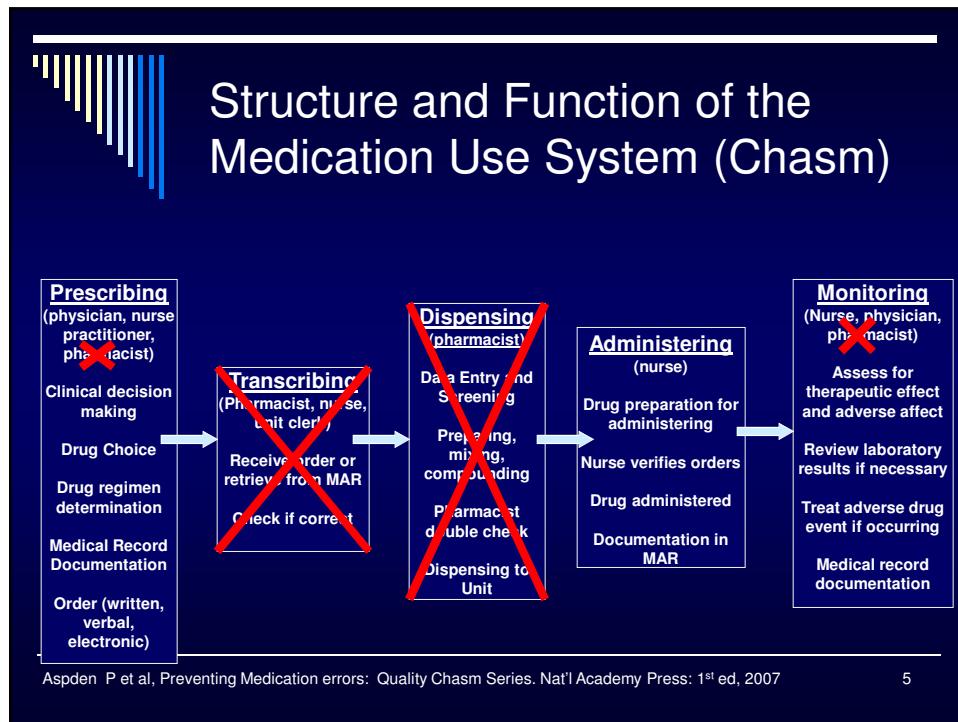
Patient Safety is at Risk

- Established safety mechanisms are normally not available in the ED
 - pharmacy review for ED medications
 - pharmacy oversight for verbal orders
 - pharmacy preparation of medications
 - pharmacist involvement in clinical decision making
- Medication Error in the Emergency Department
 - A higher prevalence of preventable adverse events
 - Medication-related events
 - 3.6% of ED patients receiving inappropriate medication
 - 5.6% receiving inappropriate discharge prescription

Hafner JW et al, *Annals of Emergency Medicine*, 2002; 39(3).
 Leape LL et al, *JAMA*, 1995; 274(1).

Sanders MS et al, *Human Factors Engineering and Design*, 7th ed; McGraw Hill, Inc.: 1993

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Pediatric Safety is at Risk

- ED's are not well equipped to manage pediatric care
 - Nationwide, only 6% of ED's are prepared for pediatric patients
 - Pediatric patients make up 27% of ED visits
 - Pediatric patients are not just small adults
 - All children need weight based dosing, which increases the risk of an adverse event.

Institute of Medicine, The Future of Emergency Care. Nat'l Academies Press: 2007



Pediatric ADE's in the ED

- Estimated 100 prescribing errors and 39 administration errors per 1000 pediatric visits.
- 22% of APAP doses ordered incorrectly according to therapeutic standards

Aspden P et al, Preventing Medication errors: Quality Chasm Series. Nat'l Academy Press: 1st ed, 2007

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Risks are Preventable

- The ED has the highest rate of preventable adverse events in the US
 - 110 million people visit the ED per year in the US
 - 5% of patients experience potential events
 - This equals 550,000 potential events per year
 - 70% of these are PREVENTABLE
 - Equaling 38,500 preventable events

USP Patient Safety CAPS

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At the Breaking Point

- ED Crowding
 - Over the past decade, ED visits increased 26%
 - The number of EDs declined 9% and hospitals closed 198,000 beds
 - As space decreases and volume increases, the capacity to deliver safe care declines
- Boarding of inpatients
 - Patients board for long periods of time in ED
 - Contribute to an overcrowded, high risk environment

Institute of Medicine, The Future of Emergency Care. Nat'l Academies Press; 2007
 Derlet R et al, *Acad Emerg Med*, 2001; 8
www.gao.gov/cgi-bin/getrpt?GAO-03-460.

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Safety Benefits of EPh Program

- EPh adds extra layer of protection
 - Available to immediately review high risk medication orders
 - Pediatric orders < 1 year of age and/or less than 10 kg
 - Responds to all traumas, resuscitations, and critical patients
 - Consults with physicians regarding medication choice
 - Educates medical staff
 - Focuses coverage on high volume periods
 - Provides immediate accessibility to healthcare team

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Joint Commission Compliance

- EPh Improves JC compliance
 - High yield medication orders and prescriptions are reviewed
 - The effects of medication(s) on patients are monitored
 - High degree of communication with nurses and physicians ^[1]
 - The hospital develops processes for managing high risk or high alert medications ^[2]

[1] Fairbanks, Patel, and Shannon. *EPh Time-Motion Study (2007)*. Results presented at AHSP Mid-Year Clinical Meeting, December 5, 2007.

[2] Conners GP, Hays D. *Emergency Department Drug Orders: Does Drug Storage Location Make a Difference?* *Annals of Emergency Medicine*. 2007;50:414-418

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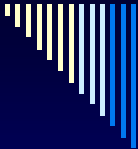


Valued Staff Member

- It has been shown that staff value the EPh
 - 26 item survey to random ED staff with 82% responding.
 - 99% felt EPh improves quality of care.
 - 96% felt EPh was an integral part of ED team.
 - 95% indicated they had consulted with EPh at least a few times during last 5 shifts.

Fairbanks RJ, Hildebrand JM, Kolstee KE, Schneider SM, Shah MN. *Medical and nursing staff value and utilize clinical pharmacists in the Emergency Department*. *Emergency Medicine Journal*. Oct 2007; 24:716-719.

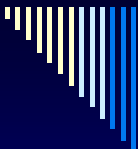
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ICU Success with Dedicated Pharmacist

- The ICU study concluded that participation of the pharmacist on medical rounds can be a powerful means of reducing the risk of ADE's.
- In the ICU 99% of pharmacist recommendations to medical staff were well accepted.
- An existing pharmacist participated in rounds as a member of the patient care team.
- The cost of pharmacist intervention required no additional resources; instead it represented a different use of existing pharmacists' time.

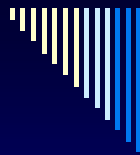
Leape L et al, *JAMA*, 1999; 282(3) 13



Clinical and cost-saving Pharmacy Intervention in the Emergency Room: A Four Month Study

Type of Intervention	No.Interventions	Average Cost Avoidance per Intervention (\$)	Cost Avoidance (\$)
Drug-drug or drug disease interactions or drug incompatibilities identified	334	1,647	297,053
Therapeutic recommendation	523	1,188	273,383
Adverse drug event prevented	48	1,098	23,190
Medication error prevented	488	1,375	436,150
Total	1393	5,308	<u>1,029,776</u>

Lada P et al, *Am J Health-Syst Pharm*, Jan. 2007; 64(1) 14



The EPh – A Safe Measure in Emergency Medicine

- Presence in the ED improves process measures such as:
 - Time to cath lab, abx in pna, pain management, etc ^[1]
- Ensures a needed layer of safety in a vulnerable ED environment ^[2]
- Is a cost saving benefit to the ED ^[3]

[1] Fairbanks RJ. Results of the AHRQ Emergency Pharmacist Outcomes Study. American Society of Health-System Pharmacists 42nd Mid-Year Clinical Meeting, Las Vegas: 12/5/07.

[2] Fairbanks RJ et al. *The Optimized Emergency Pharmacist Role*, Presented at AHRQ Patient Safety & Health Conference, June 2006

[3] Lada P, Delgado G. Documentation of Pharmacists' Interventions in an Emergency Department and Associated Cost Avoidance. *Am J Health-Syst Pharm*-Vol 64 Jan 1, 2007