



Clinical Pharmacy Services in the Emergency Department

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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



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



DO NOT USE ABBREVIATIONS: U, IU, Q.D., Q.O.D., Trailing zero (X.0 mg), Lack of leading zero (.X mg), MS, MSO₄, MgSO₄, μg, T.I.W., A.S., A.D., A.U.

ers ing malignancy	MEDICATION		MG/KG/DOSE	
	Ciprofloxacin			
se Reactions	DOSE	ROUTE	FREQUENCY	
	400mg	PO	BID	
	INDICATION		TIME	DATE
			1440	9/18/0
	SIGNATURE/TITLE		PAGER NUMBER	
	[Signature] MD			
	MEDICATION		MG/KG/DOSE	
	Maalox			
	DOSE	ROUTE	FREQUENCY	
	30cc	IV	x1 Now	
	INDICATION		TIME	DATE
			1440	9/18/0
	SIGNATURE/TITLE		PAGER NUMBER	
	[Signature] MD			
	MEDICATION		MG/KG/DOSE	





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



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