Quality Assessment of Drug Therapy

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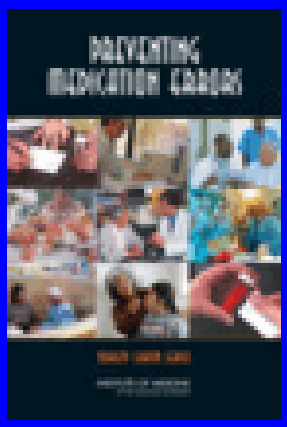
Patient Concerns

Drug-Drug interaction	70%
Wrong medicine	69%
Cost of treatment	69%
Complications from procedure	69%
Cost of prescription medicines	67%
Hospital acquired infection	49%

ASHP Survey: May 1 and 5, 2002

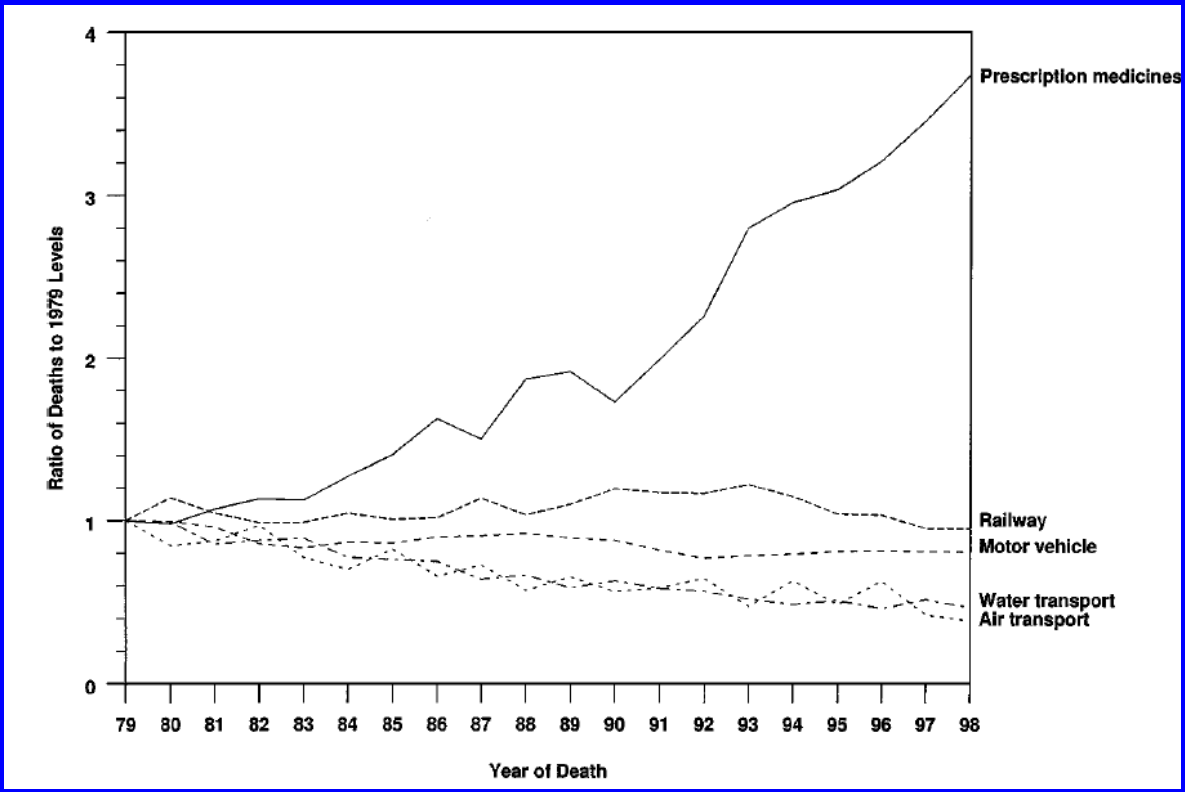
IOM Report: Preventing Medication Errors



- IOM study estimated 1.5 million preventable adverse medication events per year
- One medication error per patient per day

Committee on Identifying and Preventing Medication Errors,
Philip Aspden, Julie Wolcott, J. Lyle Bootman, Linda R. Cronenwett, Editors.
Washington DC; National Academies Press; 2007.

Deaths From Medication Accidents



Phillips DP, Breder CC, Annu. Rev. Public Health 2002; 23: 135-50

Drug Related Morbidity and Mortality Costs

Hospital	$121 billion
Long Term Care	33 billion
Physician visits	14 billion
Emergency visits	5 billion
Added prescriptions	3 billion
Total	$177 billion

Ernst, J Am Pharm Assn. 2001; 41:192-9 (Mar 2001)

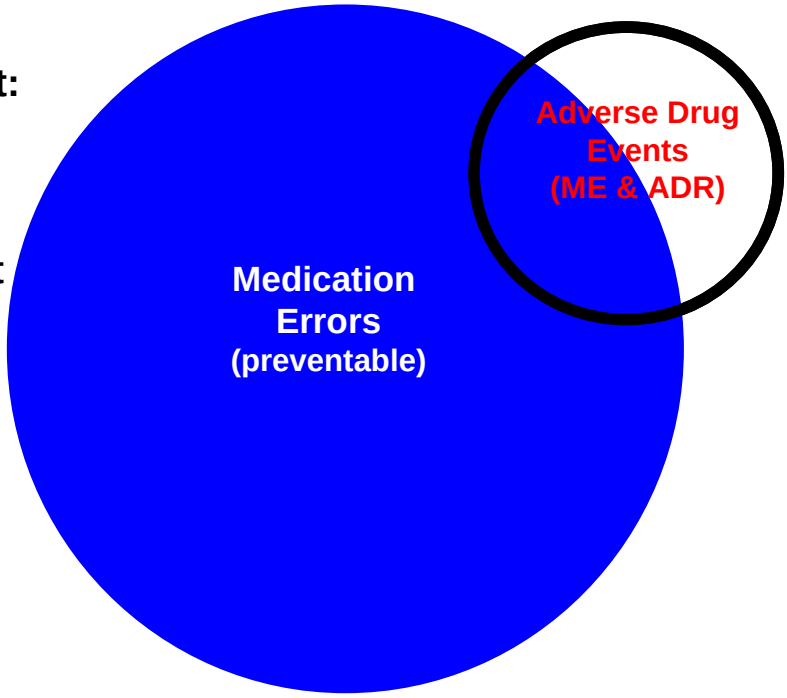
Medication Use Quality

- Medication use process/system
- Organizational interests in med use
- Monitoring and improving med use quality & outcomes
- Identifying and reducing med errors

Adverse Drug Events

Adapted from Bates et al.

Adverse Drug Event: preventable or unpredicted medication event--- with harm to patient



Cost Impact of ADE's

	Increased LOS	Increased Cost
ADE	2.2	$3,244
Preventable ADE	4.6	$5,857

Bates DW, et al. The Costs of Adverse Drug Events in Hospitalized Patients. JAMA. 1997; 277:307-311

Incidence of Preventable Drug Related Admissions

- Meta-analysis of 15 studies (1980-99)
- 4.3% (2.5-19%) of all admissions were drug related
- >50% of drug related admissions are preventable

Winterstein AG, Sauer BC, Hepler CD, Poole C, Preventable Drug-Related Hospital Admissions. Ann Pharmacother 2002; 36:1238-48

Impact of Preventable Drug Related Admissions

- 158 ADR related admissions over 11 months (24% life threatening)
- 67% inappropriate monitoring of therapy (80% lab abnormality)
- 26% drug-drug interactions
- 595 hospital days (6.1 day LOS)

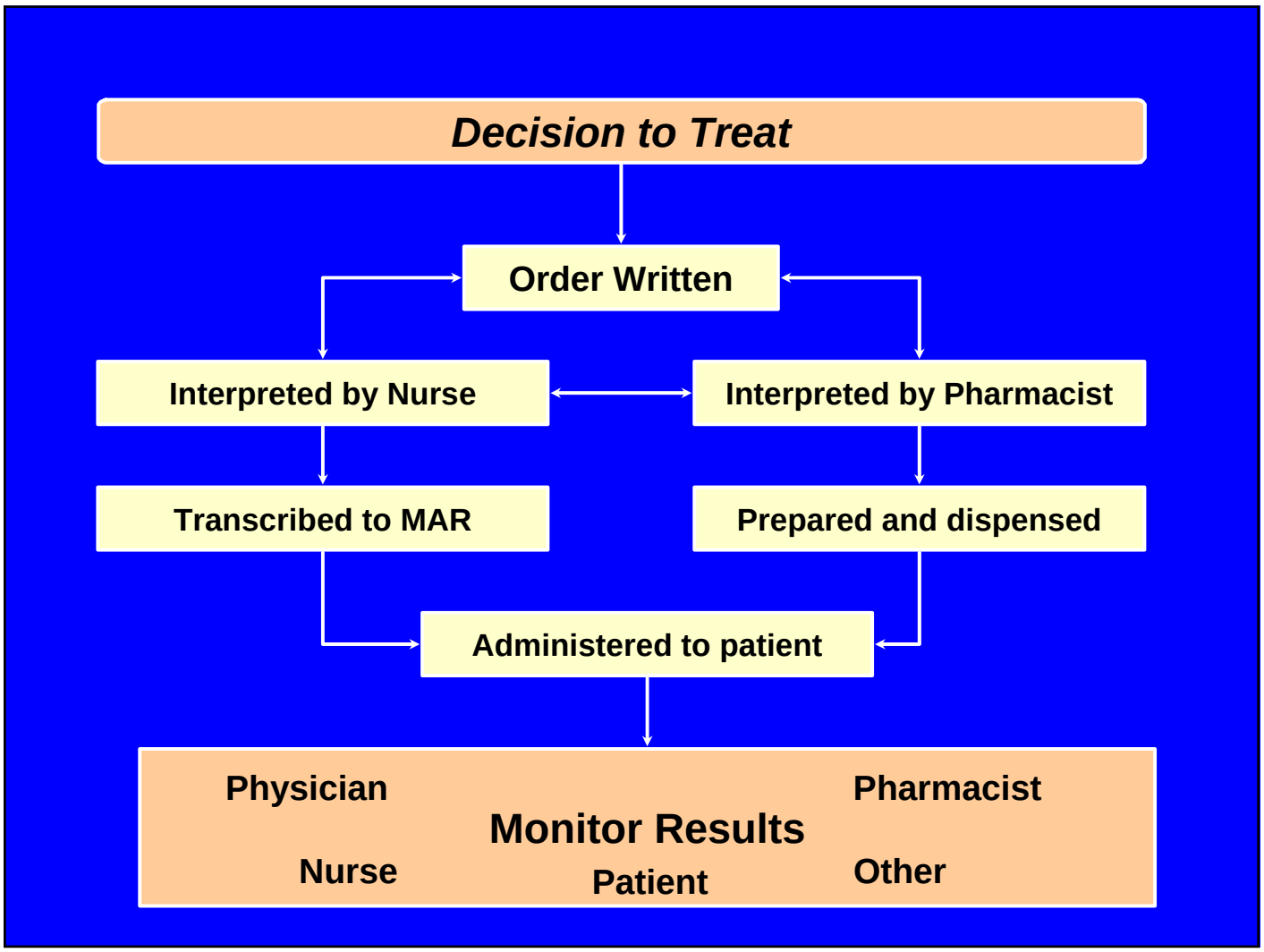
McDonnell PJ and Jacobs MR. Hospital Admissions Resulting from Preventable Adverse Drug Reactions. Ann Pharmacother 2002; 36:1331-6

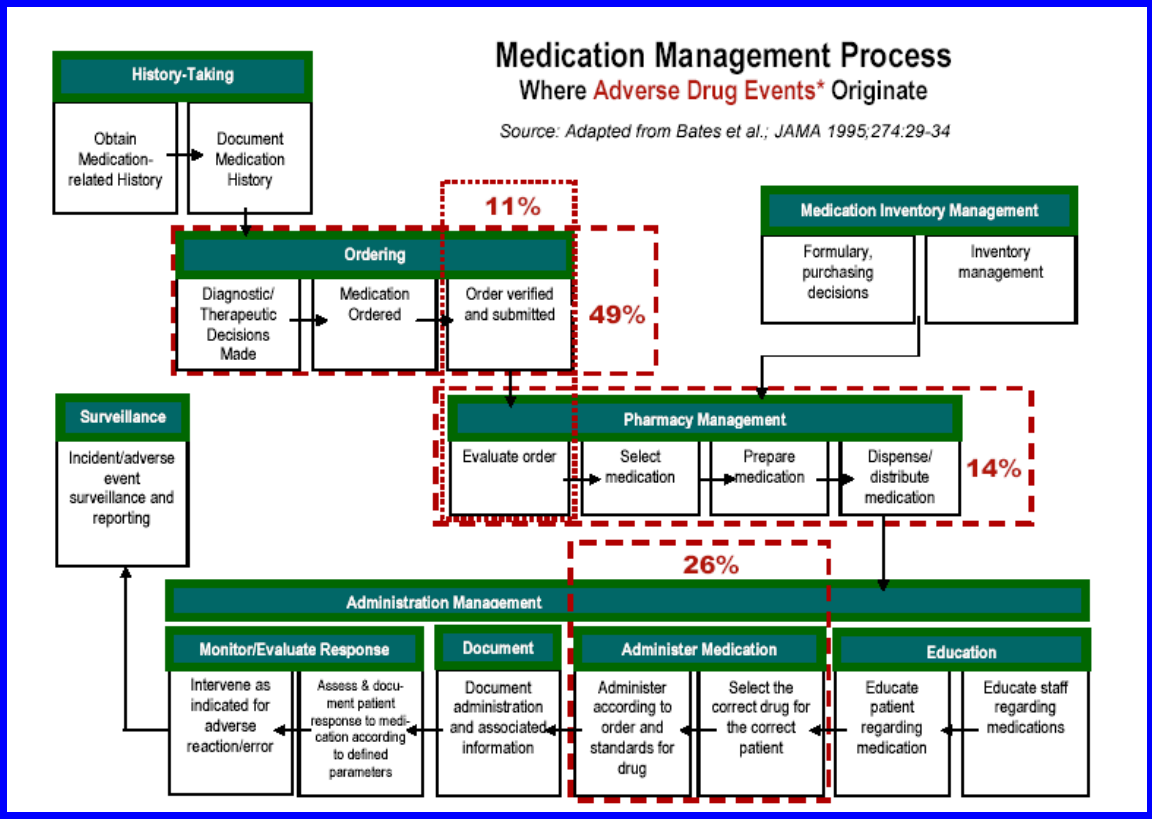
Medication Errors

Any preventable event that may cause or lead to inappropriate medication use or patient harm while medication is in the control of the health care professional, patient or consumer

National Coordinating Council for

Medication Error Reporting and Prevention


Decision to Treat
Order Written
Interpreted by Nurse
Interpreted by Pharmacist
Transcribed to MAR
Prepared and dispensed
Administered to patient
Physician
Nurse
Monitor Results
Patient
Pharmacist
Other



As Published in *Computerized Physician Order Entry: Costs, Benefits and Challenges*, Feb 2003, AHA

Medication Use Process

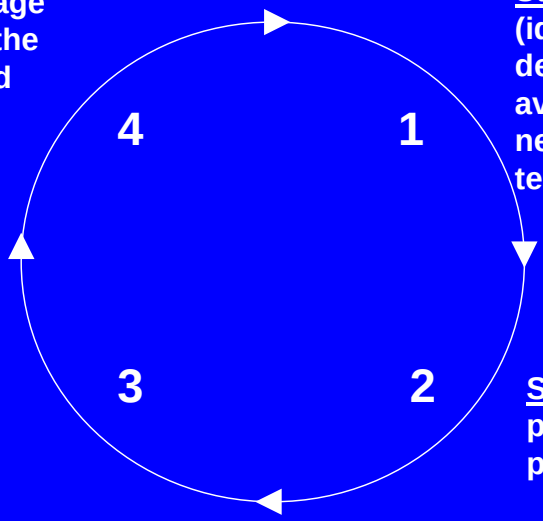
- Complex system
- Opportunities for error
- Impacts patient care and research

Process Improvement

- Focus on systems
- Data driven
- Iterative Cycle Concept

Shewhart Cycle in Quality Improvement

Step 4: Evaluation stage (study the results of the changes implemented during this cycle)



Step 1: Planning stage (identify objectives, define data which may be available, define new data needs, plan change or test)

Step 3: Observation stage (collect information on the effect of the planned changes which have been implemented)

Step 2: Implementation or pilot stage (complete the planned changes or test)

The Shewhart cycle is repeated multiple cycles with expected improvements implemented in each new cycle

Organizational Interests

- What to use
- When to use it
- How to use it
- Is it cost-effective
- Will it be used safely

Pharmacy and Therapeutics Committee

Focus for medication related activities within a health care organization

P&T Committee Overview

- Medical Staff Committee
- Oversight of medication use in the organization
- Staff experts in the medication use process

P & T Committee Role

- Medication related policies
- Formulary drug selection and review
- Evaluate medication use and improve performance
- Educate

Medication Policy Issues

- Medication selection and quality
- Medication prescribing
- Medication administration

Formulary

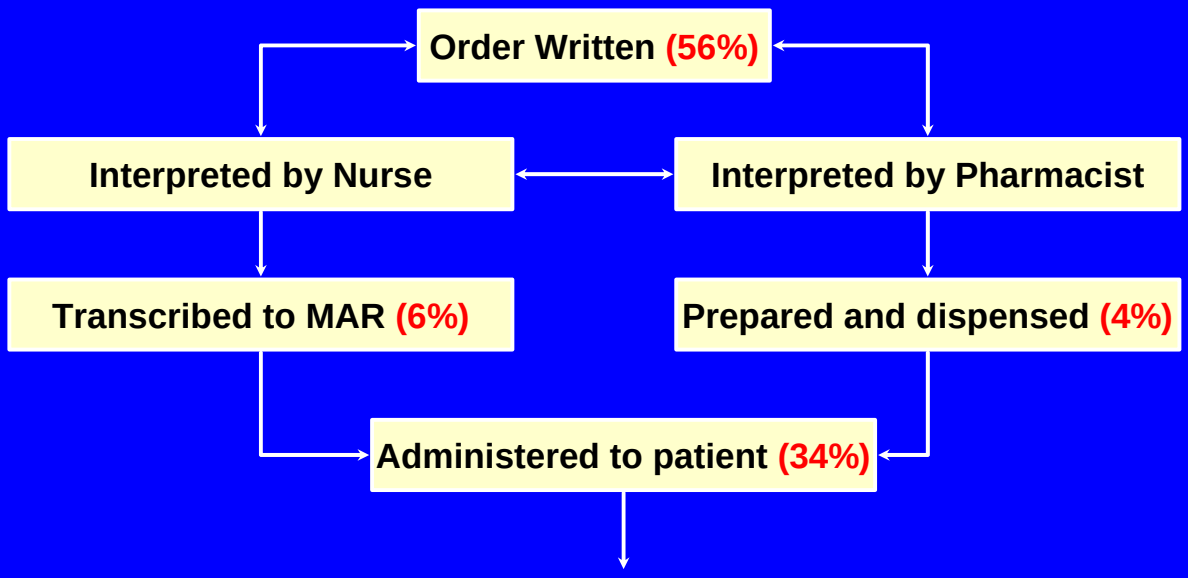
A continuously updated list of medications and related information representing the clinical judgement of physicians, pharmacists, and other experts…

Principles of a Sound Drug Formulary System, 2000
http://www.usp.org/pdf/EN/patientSafety/pSafetySndFormPrinc.pdf

Drug Selection

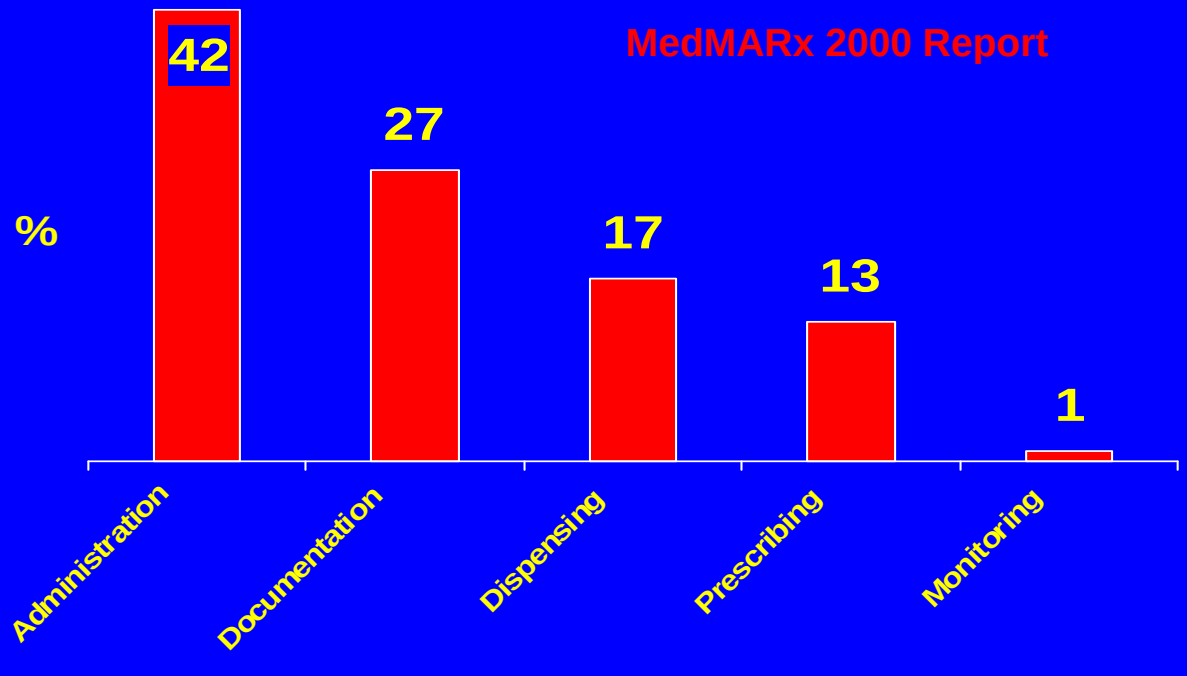
- Safety
- Clinical Effectiveness
- Cost Impact

Preventable ADE's



Bates DW, Cullen DJ, et al., JAMA 1995; 274: 29-34

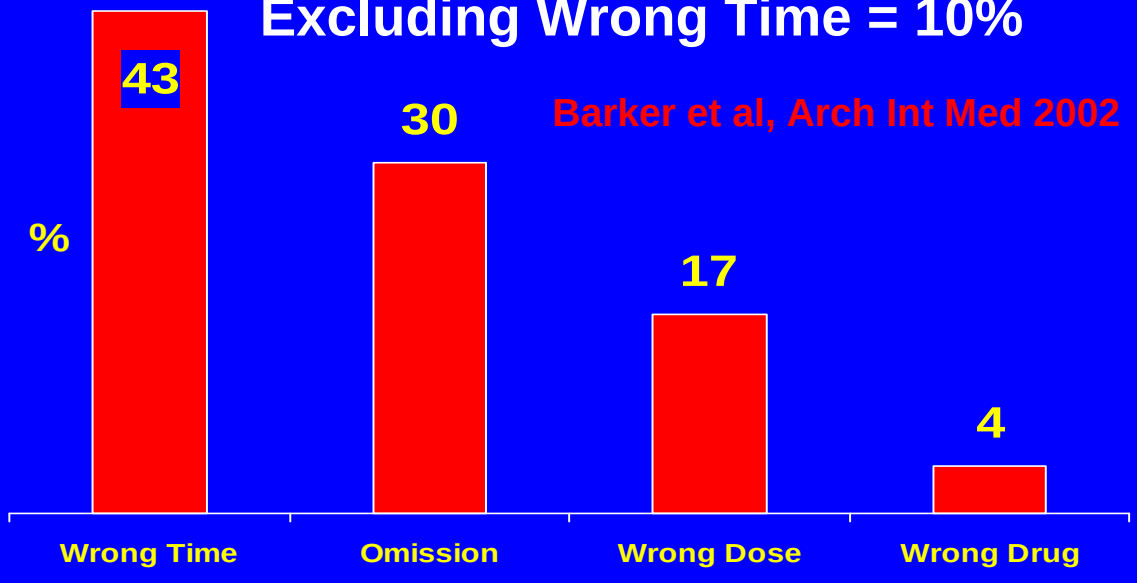
Error Location in Medication Use Process



Errors in Medication Administration

Total Error Rate = 19%

Excluding Wrong Time = 10%



Barker et al, Arch Int Med 2002

Errors in ICU Medication Administration

- Med Administration Errors (3.3%)
- Vasoactive Drugs (33%)
- Sedative / Analgesics (26%)
- Wrong Infusion Rate (40%)
- Pharmacist Involvement cited in low rate

Calabrese et al. Intensive Care Med, 2001; 27:1592-1598.

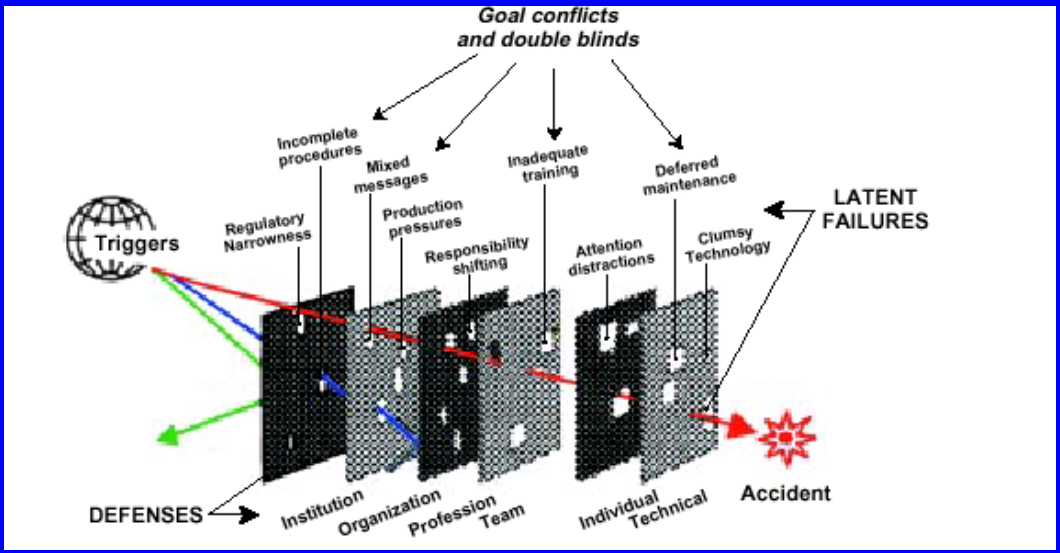
MEDICATION ERROR DEATHS

FDA Adverse Events Reporting System 1993-98

Error Type	%
Wrong dose	41
Wrong drug	16
Wrong route	9.5

Phillips J, Meam S, Brinker A, et al. Retrospective analysis of mortalities associated with medication errors. Am J Health-sys Pharm, 2001; 58:1835-41.

Sources of Errors and Elements of Defense Against Them



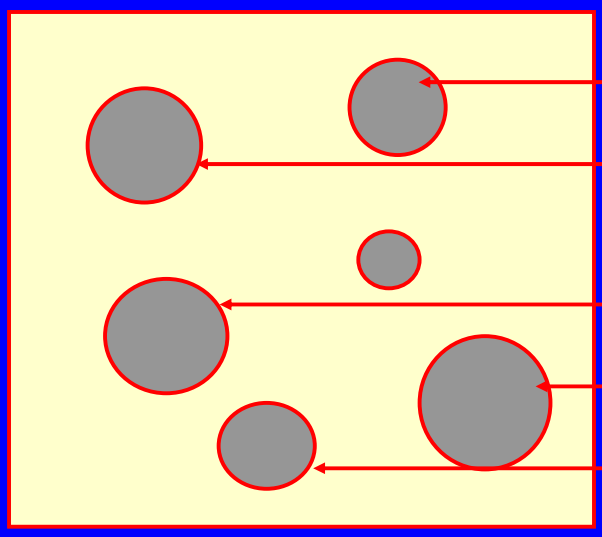
Reason J. Human Error. Cambridge, England: Cambridge Univ. Press; 1990

Proximal Causes of Medication Errors*

Lack of knowledge of the drug	Faulty dose checking
Lack of information about the patient	Infusion pump and parenteral delivery problems
Violation of rules	Inadequate monitoring
Slips and memory lapses	Drug stocking and delivery problems
Transcription errors	Preparation errors
Faulty checking of identification	Lack of standardization
Faulty interaction with other services	

* Adapted from Leape LL, et al. Systems analysis of adverse drug events. JAMA 1995;274:35-43

Latent Medication System Errors



Latent Errors

- handwriting
- incomplete information
- order transcription
- unclear labeling
- high workload
- etc

Workload and Outcomes

	IP Mortality	30-day Re-admit	LOS	Total Costs
Team admissions that day	1.09*		3.09*	2.31*
Average Census			-5.30*	-5.11*

*Significant Multivariate House Staff Effects

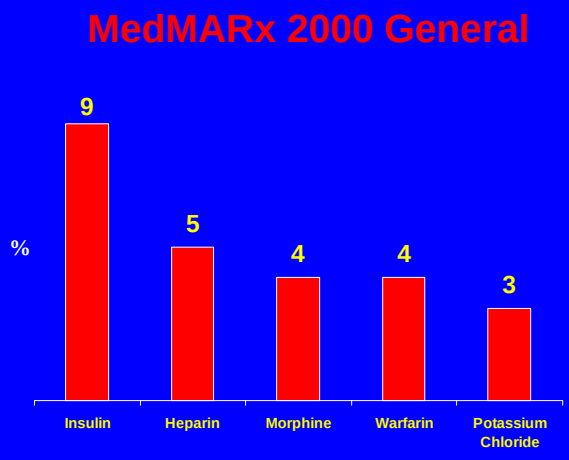
Ong et al., Arch Intern Med. 2007, 167: 47-52.

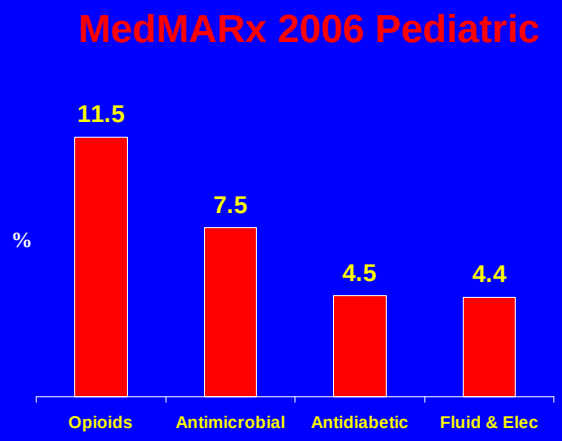
Prescribing Errors by Medication Category

Antimicrobials	40%
Cardiovascular	18%
Gastrointestinal	7%
Narcotic analgesics	7%

Lesar et al. JAMA, 1997

MedMARx Reports of Actual Error or Harm



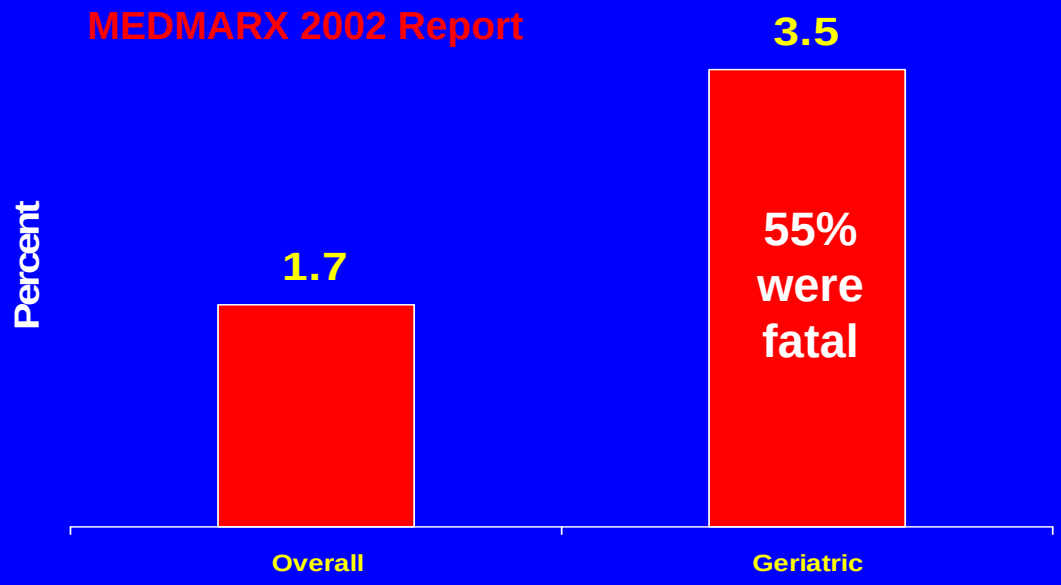


Specific Factors Related to Errors in Medication Prescribing

Decline in renal or hepatic function	13.9%
History of medication allergy	12.1%
Use of abbreviations	11.4%
Incorrect dose calculation	10.8%

Lesar et al. JAMA, 1997

MEDMARX℠ Reports of Harmful Errors

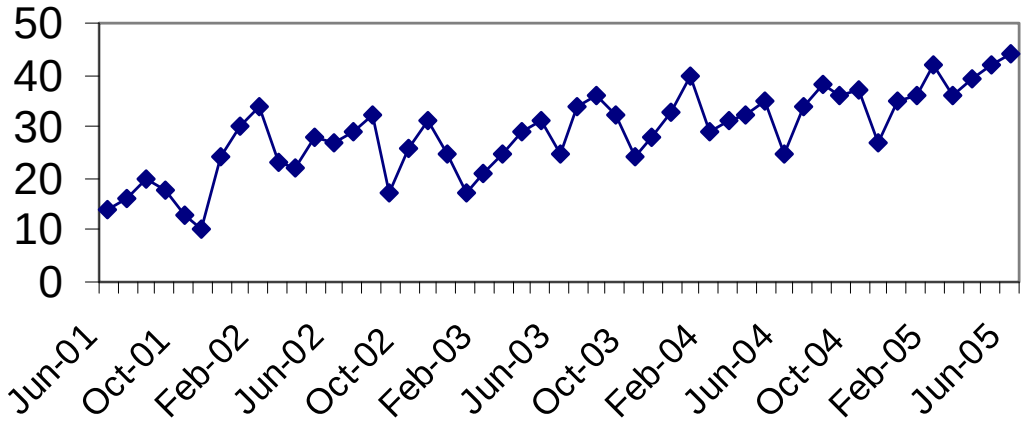


Safeguard Against Errors in High-Risk Drugs

- Build in System Redundancies
- Use Fail-Safes
- Reduce Options
- Use Forcing Functions
- Externalize or Centralize Error-prone Processes
- Store Medications Appropriately
- Screen New Products
- Standardize and Simplify Order Communication
- Limit Access
- Use Constraints
- Use Reminders
- Standardize Dosing Procedures
- Use Differentialization

* Adapted from Cohen MR, Kilo CM. High-Alert Medications: Safeguarding against errors. In Medication Errors. Washington: American Pharmaceutical Association; 1999

Total Medication Errors by Month



Use of High Level Data

- Shows interesting trends
- Better for global evaluation
- No detail to work with

Pitfalls of High Level Data

- Cause unclear
- Potential false conclusions

Medication Errors by Quarter

Quarter

	Jun-02	Sep-02	Dec-02	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	**Mean**
Wrong Drug	5	3	6	2	10	2	4	5	4	8	2	2	4.4
Wrong Dose	11	17	8	13	6	12	18	17	21	15	22	14	14.5
Duplicate Dose	10	4	3	8	2	16	4	11	9	11	6	17	8.4
Wrong Route	3	2	4	0	2	1	1	5	3	0	3	1	2.1
Wrong Time	15	25	12	33	15	19	27	31	17	26	10	29	21.6
Wrong Fluid	6	7	4	10	3	8	7	5	8	2	3	2	5.4
Wrong Rate	16	20	12	17	21	8	24	8	11	19	23	14	16.1
Wrong Device	2	0	0	1	3	1	4	2	0	1	2	2	1.5
IV Infiltration	0	2	1	0	3	2	0	0	4	0	2	0	1.2
TOTAL	**68**	**80**	**50**	**84**	**65**	**69**	**89**	**84**	**77**	**82**	**73**	**81**	**75.2**

Broad-based Information Sources

- Near misses
- Patient specific events
- Aggregated hospital-wide occurrence data
- External medication error data
- Hospital quality improvement data
- Therapeutic trends & changes
- Hospital programatic information

Epidemiology of Medication Errors

- Collect the numbers
- Read between the lines
- Look for common threads
- Try to link together

Admission Order Medication Omissions

- Review of ongoing meds not ordered by MD at admission
- 53% of patients had at least 1 unintended discrepancy
- 37% had potential for harm

Cornish, Arch Intern Med 2005; 165:424-429

Admission Order Medication Omissions

Type	*Frequency*
Omission	65
Dose	35
Frequency	24
Incorrect drug	16
Total	*140*

Cornish, Arch Intern Med 2005; 165:424-429

IOM Recommendations on: Preventing Medication Errors

- Stronger consumer role (self-management)
- Enhance consumer information sources
- Complete patient-information & decision support tools
- Improved drug labeling
- Standardize drug-related health information technologies
- Broad research agenda on safe and appropriate med use with funding

Medication Use Evaluation

A performance improvement method that focuses on evaluating and improving medication-use processes with the goal of optimal patient outcomes

American Society of Health-System Pharmacists, 1996

Selection of MUE Projects

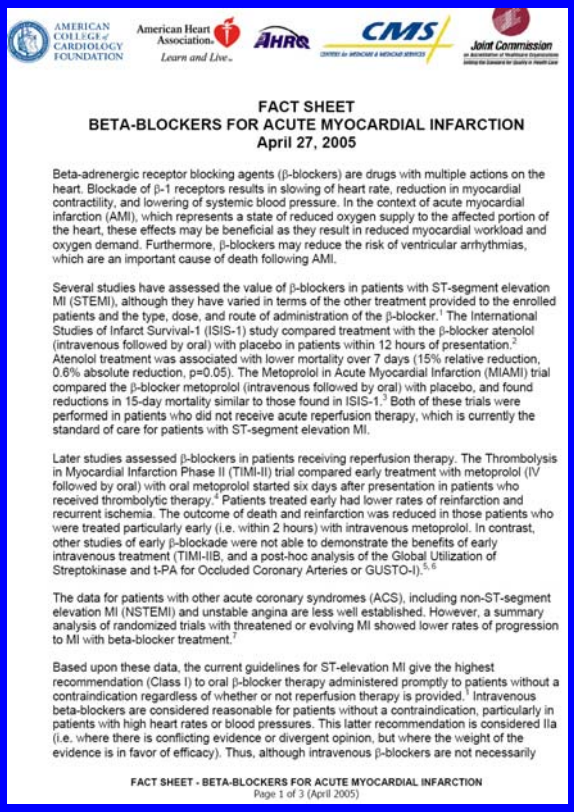
- known or suspected to cause adverse reactions or drug interactions
- affects large number of patients or medication is frequently prescribed
- potentially toxic or causes discomfort at normal doses
- under consideration for formulary retention, addition, or deletion
- expensive
- used in patients at high risk for adverse reactions
- critical component of care for a specific disease, condition, or procedure
- most effective when used in a specific way
- suboptimal use would have a negative effect on patient outcomes or system costs

•Adapted from American Society of Health-System Pharmacists. ASHP guidelines on medication-use evaluation. Am J Health Syst Phar 1996;53:1953-5.

			SPENT FY 01	SPENT FY 02	SPENT FY 03	SPENT FY 04	SPENT FY_05
80000	**ANTI-INFECTIVE AGENTS**						
	80400	AMEBICIDES	$0	$1,522	$332	$884	$1,321
	80800	ANTHELMINTICS	$2,510	$996	$2,623	$1,231	$1,834
	81202	AMINOGLYCOSIDES	$9,457	$13,457	$10,351	$35,468	$47,014
	81204	ANTIFUNGAL ANTIBIOTICS	$256,806	$320,884	$357,206	$946,657	$1,082,165
	81206	CEPHALOSPORINS	$221,196	$197,231	$162,850	$180,186	$188,435
	81207	B-LACTAMS	$59,322	$77,722	$77,703	$90,073	$112,235
	81208	CHLORAMPHENICOLS	$626	$204	$172	$771	$1,331
	81212	ERYTHROMYCINS	$52,106	$69,377	$89,793	$112,984	$109,499
	81216	PENICILLINS	$50,569	$41,427	$65,243	$46,314	$61,153
	81224	TETRACYCLINES	$16,872	$4,427	$4,788	$4,569	$8,820
	81228	MISCELLANEOUS ANTIBIOTICS	$38,577	$35,347	$35,261	$37,811	$41,473
	81600	ANTITUBERCULOSIS AGENTS	$33,141	$27,937	$42,335	$53,318	$46,223
	81800	ANTIVIRALS	$658,157	$1,399,246	$2,472,982	$3,251,543	$3,417,004
	82000	ANTIMALARIAL AGENTS	$82,141	$60,942	$20,848	$19,051	$20,577
	82200	QUINOLONES	$82,319	$113,064	$94,705	$117,380	$116,301
	82400	SULFONAMIDES	$7,053	$6,730	$3,425	$3,660	$2,770
	82600	SULFONES	$5,207	$4,839	$4,651	$4,972	$5,366
	83200	ANTITRICHOMONAL AGENTS	$1,493	$3,923	$677	$924	$1,454
	83600	URINARY ANTI-INFECTIVES	$5,974	$2,009	$2,142	$1,632	$2,836
	84000	MISCELLANEOUS ANTI-INFECTIVES	$28,489	$34,661	$30,211	$27,401	$19,394
80000	**ANTI-INFECTIVE AGENTS TOTAL**		$1,612,016	$2,415,944	$3,478,297	$4,936,828	$5,287,206
100000	**ANTINEOPLASTIC AGENTS TOTAL**		$1,226,067	$1,564,834	$1,550,613	$1,693,797	$1,866,450

Review Category	Data Collection Model (s)	Typical Application	Comments
Retrospect	Data is collected for a fixed period which may be archival or accumulation of new patients for a fixed period of time	Data archive search for prescribing patterns of patients on seratonin antagonist antiemetic drugs	Supports large scale epidemiologic approach No active intervention to change medication use patterns occurs due to the post-hoc data collection process
Concurrent	Each new order generates an automatic review of previously approved criteria for use within a specified period of the initiation of therapy	Review of naloxone to investigate possible nosocomial adverse medication event	
	Laboratory or other monitoring criteria are reported for all patients on the drug Abnormal Laboratory or other monitoring criteria are reported for all patients on the drug on a regular basis	Digoxin monitoring based upon daily review of digoxin serum levels (49). Regular review of serum creatinine for patients on aminoglycosides	
Prospective	Each new order for the drug is evaluated for compliance with previously approved criteria for use. Variance to the criteria require intervention prior to initiation of therapy	Medication use guidelines (ketorolac) (50); Restricted antibiotics	

Evidence Based Guidelines



FACT SHEET
BETA-BLOCKERS FOR ACUTE MYOCARDIAL INFARCTION
April 27, 2005

Beta-adrenergic receptor blocking agents (β-blockers) are drugs with multiple actions on the heart. Blockade of β-1 receptors results in slowing of heart rate, reduction in myocardial contractility, and lowering of systemic blood pressure. In the context of acute myocardial infarction (AMI), which represents a state of reduced oxygen supply to the affected portion of the heart, these effects may be beneficial as they result in reduced myocardial workload and oxygen demand. Furthermore, β-blockers may reduce the risk of ventricular arrhythmias, which are an important cause of death following AMI.

Several studies have assessed the value of β-blockers in patients with ST-segment elevation MI (STEMI), although they have varied in terms of the other treatment provided to the enrolled patients and the type, dose, and route of administration of the β-blocker.[1] The International Studies of Infarct Survival-1 (ISIS-1) study compared treatment with the β-blocker atenolol (intravenous followed by oral) with placebo in patients within 12 hours of presentation.[2] Atenolol treatment was associated with lower mortality over 7 days (15% relative reduction, 0.6% absolute reduction, p=0.05). The Metoprolol in Acute Myocardial Infarction (MIAMI) trial compared the β-blocker metoprolol (intravenous followed by oral) with placebo, and found reductions in 15-day mortality similar to those found in ISIS-1.[3] Both of these trials were performed in patients who did not receive acute reperfusion therapy, which is currently the standard of care for patients with ST-segment elevation MI.

Later studies assessed β-blockers in patients receiving reperfusion therapy. The Thrombolysis in Myocardial Infarction Phase II (TIMI-II) trial compared early treatment with metoprolol (IV followed by oral) with oral metoprolol started six days after presentation in patients who received thrombolytic therapy.[4] Patients treated early had lower rates of reinfarction and recurrent ischemia. The outcome of death and reinfarction was reduced in those patients who were treated particularly early (i.e. within 2 hours) with intravenous metoprolol. In contrast, other studies of early β-blockade were not able to demonstrate the benefits of early intravenous treatment (TIMI-IIB, and a post-hoc analysis of the Global Utilization of Streptokinase and t-PA for Occluded Coronary Arteries or GUSTO-I).[5,6]

The data for patients with other acute coronary syndromes (ACS), including non-ST-segment elevation MI (NSTEMI) and unstable angina are less well established. However, a summary analysis of randomized trials with threatened or evolving MI showed lower rates of progression to MI with beta-blocker treatment.[7]

Based upon these data, the current guidelines for ST-elevation MI give the highest recommendation (Class I) to oral β-blocker therapy administered promptly to patients without a contraindication regardless of whether or not reperfusion therapy is provided.[1] Intravenous beta-blockers are considered reasonable for patients without a contraindication, particularly in patients with high heart rates or blood pressures. This latter recommendation is considered IIa (i.e. where there is conflicting evidence or divergent opinion, but where the weight of the evidence is in favor of efficacy). Thus, although intravenous β-blockers are not necessarily

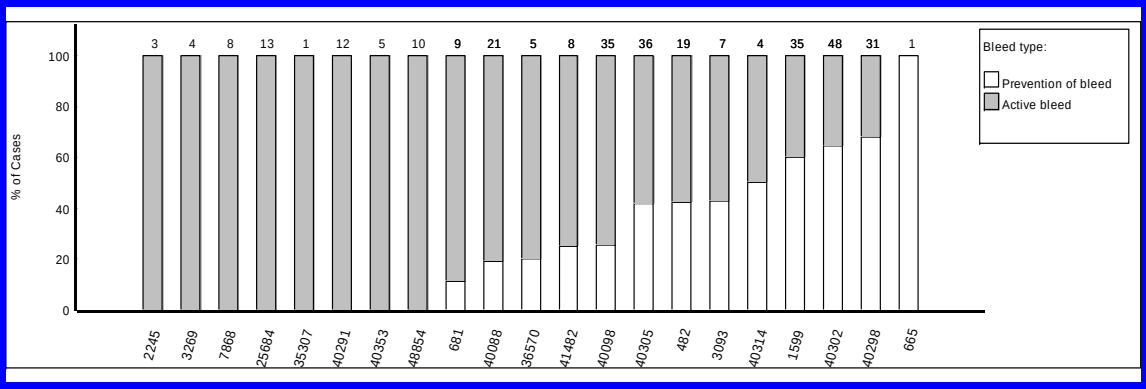
www.guidelines.gov

Benchmarking

Primary Indication for NovoSeven™ Use

- 37.8% (119/315) of patients received NovoSeven for prevention of bleed
- 62.2% (196/315) of patients received NovoSeven for treatment of active bleed

Primary Indication for NovoSeven Use by Institution



Note: The numbers above the bars represent the number of complete cases submitted by each institution.

Benchmarking

C6 - Medication until first dose of antifungal medication - Page 1 of 2

Hosp ID	N	Alemtuzumab	Aminoglycoside	Antithymocyte/lymphocyte globulin	Azathioprine	Basiliximab	Cladribine or Fludarabine	Colony-stimulating growth factor	Cyclophosphamide	Cyclosporine	Daclizumab
1	30	0.0% (0)	10.0% (3)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
2	31	0.0% (0)	6.5% (2)	71.0% (22)	3.2% (1)	19.4% (6)	0.0% (0)	6.5% (2)	3.2% (1)	41.9% (13)	0.0% (0)
5	29	0.0% (0)	3.4% (1)	20.7% (6)	24.1% (7)	10.3% (3)	0.0% (0)	0.0% (0)	0.0% (0)	37.9% (11)	0.0% (0)
13	6	0.0% (0)	0.0% (0)	50.0% (3)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	66.7% (4)	0.0% (0)
14	5	0.0% (0)	20.0% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	40.0% (2)	80.0% (4)
17	30	0.0% (0)	0.0% (0)	3.3% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
27	30	46.7% (14)	13.3% (4)	10.0% (3)	0.0% (0)	6.7% (2)	0.0% (0)	3.3% (1)	0.0% (0)	23.3% (7)	10.0% (3)
28	20	0.0% (0)	0.0% (0)	40.0% (8)	0.0% (0)	5.0% (1)	0.0% (0)	10.0% (2)	0.0% (0)	5.0% (1)	0.0% (0)
34	30	30.0% (9)	20.0% (6)	26.7% (8)	0.0% (0)	26.7% (8)	0.0% (0)	3.3% (1)	6.7% (2)	13.3% (4)	16.7% (5)
40	28	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	3.6% (1)	0.0% (0)
55	30	0.0% (0)	13.3% (4)	50.0% (15)	0.0% (0)	20.0% (6)	0.0% (0)	0.0% (0)	0.0% (0)	70.0% (21)	0.0% (0)
57	23	0.0% (0)	21.7% (5)	0.0% (0)	0.0% (0)	87.0% (20)	0.0% (0)	0.0% (0)	0.0% (0)	4.3% (1)	0.0% (0)
61	30	0.0% (0)	6.7% (2)	26.7% (8)	6.7% (2)	73.3% (22)	0.0% (0)	3.3% (1)	0.0% (0)	53.3% (16)	0.0% (0)
69	29	0.0% (0)	0.0% (0)	20.7% (6)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	48.3% (14)	55.2% (16)
76	30	0.0% (0)	3.3% (1)	16.7% (5)	20.0% (6)	20.0% (6)	0.0% (0)	0.0% (0)	0.0% (0)	50.0% (15)	0.0% (0)
77	30	23.3% (7)	0.0% (0)	76.7% (23)	3.3% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	6.7% (2)	0.0% (0)
79	30	0.0% (0)	0.0% (0)	6.7% (2)	3.3% (1)	0.0% (0)	0.0% (0)	6.7% (2)	3.3% (1)	10.0% (3)	36.7% (11)
274	16	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	6.3% (1)	0.0% (0)	0.0% (0)	0.0% (0)
Total	**457**	**6.6% (30)**	**6.3% (29)**	**24.1% (110)**	**3.9% (18)**	**16.2% (74)**	**0.0% (0)**	**2.2% (10)**	**0.9% (4)**	**25.2% (115)**	**8.5% (39)**

Benchmarking

UHC Key Indicator Report

Tuesday, February 28, 2006

Sample Hospital

Jul - Sep 2005 (Q3)

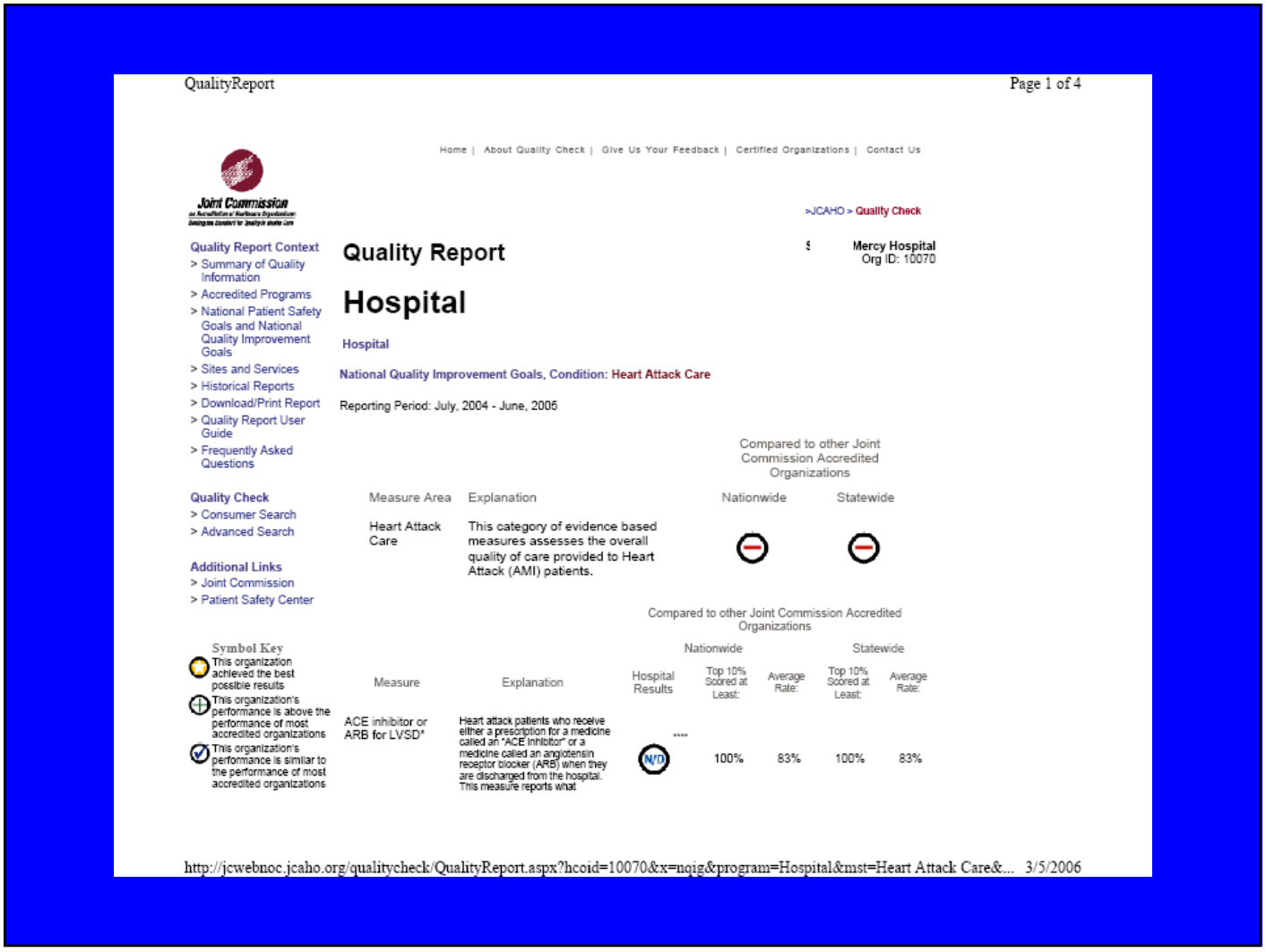
		Jul - Sep 2005 (Q3)					Oct 2004 - Sep 2005 (recent year)				
		Relative Performance	Observed	Percentile Rank	Target	UHC Median	Relative Performance	Observed	Percentile Rank	Target	UHC Median
UHC Key Performance Metrics											
Clinical Effectiveness											
Post-Surgical Mortality	(obs/exp)	⊙	0.75	33%	1.00	0.87	⊙⊙	0.76	29%	1.00	0.87
Medical Mortality (AHRQ Populations)	(obs/exp)	⊙	0.80	41%	1.00	0.84	⊙	0.83	42%	1.00	0.86
Readmission Rate	(%)		4.7	59%		4.4		5.0	52%		4.9
JCAHO Core Measure--AMI*	(%)										
JCAHO Core Measure--Heart Failure*	(%)										
JCAHO Core Measure--Pneumonia*	(%)										
JCAHO Core Measure--SIP*	(%)										
Efficiency											
Cost/CMI-Adj Discharge (WI-Adj)	($ / pt)	⊙⊙	6,288	8%	8,363	9,399	⊙⊙	6,761	5%	8,130	9,061
Cost/CMI-Adj Disch Net Bad Debt (WI-Adj)	($ / pt)	⊙⊙	6,147	8%	7,898	8,635	⊙⊙	6,656	7%	7,805	8,322
Supply Cost/CMI-Adj Discharge	($ / pt)	⊖	2,283	79%	1,723	2,035	⊖	2,416	87%	1,612	1,957
Supply Cost % Net Operating Revenue	(%)	●	26.8	93%	15.9	19.4	●	27.1	96%	15.8	19.1
IP Drug Exp/Rx Intensity-Weight Discharge	($ / pt)	⊙	148	30%	141	179	⊙	143	28%	142	177
Labor Cost (WI-Adj)/CMI Adj Discharge	($ / pt)	⊙⊙	2,733	8%	3,788	4,243	⊙⊙	2,758	7%	3,622	4,042
FTEs/CMI AOB	(FTE/bed)	⊙⊙	2.4	2%	3.7	4.2	⊙⊙	2.5	5%	3.6	4.0
LOS Ratio	(obs/exp)	⊙	0.96	34%	1.00	1.02	⊙	1.00	40%	1.00	1.01
Financial Stability											
Net Days A/R	(Days)				43.7	48.3				43.2	49.1
Net Operating Revenue/CMI-Adj Discharge	($ / pt)	⊖	8,512	12%	11,725	10,116	⊖	8,894	22%	11,269	9,996
Operating Margin Percentage	(%)	⊙⊙	18.7	96%	10.0	8.3	⊙⊙	18.4	92%	12.5	8.1
Patient Centeredness											
Inpatient Satisfaction	(100=best)	⊙	85.8	86%	84.4	82.5	⊙	85.4	84%	84.2	82.6
Safety											
Death in Low-Mortality DRGs	(Rate/1000)	⊙	0.00	57%	0.78	0.00	⊙	0.00	17%	0.86	0.47
AHRQ Surgery-Related Safety Summary	(failure rate)	⊙!	2	62%	3	2	⊖!	5	93%	3	2

Legend

- ● Substantially Worse than Target
- ⊖ Worse than Target
- ⊙ Within Target Range
- ⊙⊙ Substantially Better than Target
- ⊘ No Data From Your Institution
- ! Interpret with Caution. This is an introductory measure and is subject to revision.

* JCAHO data availability lags the other indicators.

Note: Targets have been set specific to each individual metric. AHRQ and JCAHO targets are used when available and appropriate. See detail pages for target ranges.



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>JCAHO > Quality Check

Joint Commission

Quality Report Context
- > Summary of Quality Information
- > Accredited Programs
- > National Patient Safety Goals and National Quality Improvement Goals
- > Sites and Services
- > Historical Reports
- > Download/Print Report
- > Quality Report User Guide
- > Frequently Asked Questions

Quality Check
- > Consumer Search
- > Advanced Search

Additional Links
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- > Patient Safety Center

Symbol Key
- This organization achieved the best possible results
- This organization's performance is above the performance of most accredited organizations
- This organization's performance is similar to the performance of most accredited organizations

Quality Report

Mercy Hospital
Org ID: 10070

Hospital

Hospital

National Quality Improvement Goals, Condition: Heart Attack Care

Reporting Period: July, 2004 - June, 2005

Measure Area	Explanation	Compared to other Joint Commission Accredited Organizations: Nationwide	Statewide
Heart Attack Care	This category of evidence based measures assesses the overall quality of care provided to Heart Attack (AMI) patients.	⊖	⊖

Measure	Explanation	Compared to other Joint Commission Accredited Organizations: Hospital Results	Nationwide: Top 10% Scored at Least:	Nationwide: Average Rate:	Statewide: Top 10% Scored at Least:	Statewide: Average Rate:
ACE inhibitor or ARB for LVSD*	Heart attack patients who receive either a prescription for a medicine called an "ACE inhibitor" or a medicine called an angiotensin receptor blocker (ARB) when they are discharged from the hospital. This measure reports what	N/D	100%	83%	100%	83%

Computerized Laboratory Alerts

- Flashing Computerized Alert for low Potassium
- Increased follow-up monitoring
- Increased K+ intervention rate
- Decreased hypokalemia at discharge

Paltiel, Arch Intern Med 2003; 163:200-204

Computerized Order Entry

- Taylor (Pediatrics, 2008)
- Feldstein (Arch Intern Med, 2006)
- Mekhjian (JAMIA, 2002)
- Nightingale (BMJ, 2000)
- Bates (JAMA, 1998; JAMIA, 1999)
- Raschke (JAMA, 1998)
- Claussen (Ann Intern Med, 1996)

Computer Facilitated Order Errors

- Computerized prescriber order entry error opportunities
- 22 types of errors facilitated by CPOE system
- Many can be corrected by investigation and improvement

Koppel, JAMA 2005; 1197-1203

Computer Facilitated Errors

- 20% of MedMARx reports involved computer related interaction
- 71% did not reach patient
- 0.74% did actual harm
- Automated dispensing machines

MedMARx 5th Anniversary Data Report, 2005

Simulation of Technology Impact

- Computer simulation of integrated medication use system

Concluded

- 1,226 days of excess hospitalization
- $1.4 million associated costs

Anderson, JAMIA 2002; 9: 479-90

Drug Name Selection

- Lambert (Drug Safety, 2005)
- Lambert (AJHP, 1997)
- Lambert (Medical Care, 1999

Summary of Medication Use Quality Issues

- Complex process prone to error
- Drug use can be improved
- ADE risks can be reduced


GRF
INJECT
35 MCG
012886
COMPOUND
X
INJECTION
GRF
012886
STUDY
LACTATE
INJECTION