

The Medication Safety Journey

Natasha Nicol, Pharm. D., FASHP
Director of Medication Safety
June 4, 2009



About me

- I am someone's mother, wife, daughter, granddaughter, sister, aunt, cousin and niece.
- I am married to a physician and have a sister who is a nurse.
- I am educated.
- I am a good pharmacist.
- I have a story to tell you.



...and this is my story



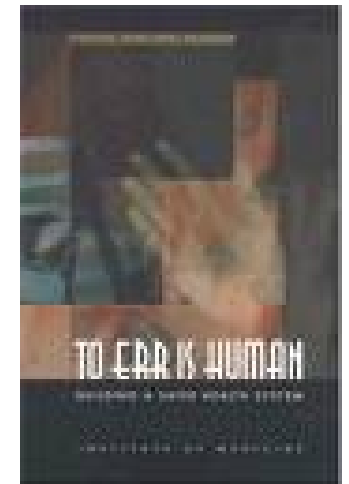
Medication Safety

A journey.... not a destination



Institute of Medicine's *To Err is Human*, 1999

- Errors are common
- Errors are costly
- Systems cause errors
- Errors can be prevented
- Medication-related adverse events are the single-leading cause of preventable errors



Editors Janet Corrigan, Linda T. Kohn, and Molla S. Donaldson

The Numbers per Year

- 1.3 million injured by treatments intended to help
- 180,000 die as a result of medical accidents
- 2/3 preventable (i.e. due to errors)

Compared to your chance of dying on an airplane:

1 in 3 million

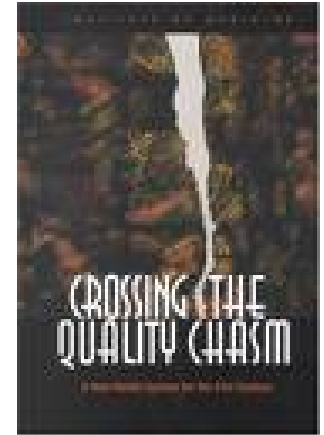
Boeing 747

- 450 would have to crash every year to equal medical deaths
- That's more than ONE A DAY!



Institute of Medicine's *Crossing the Quality Chasm, 2001*

“Indeed, between the healthcare that we now have and the healthcare we could have, lies not just a gap, but a chasm.”



Crossing the Quality Chasm:
A new health system for the 21st century

IOM 2001 Report

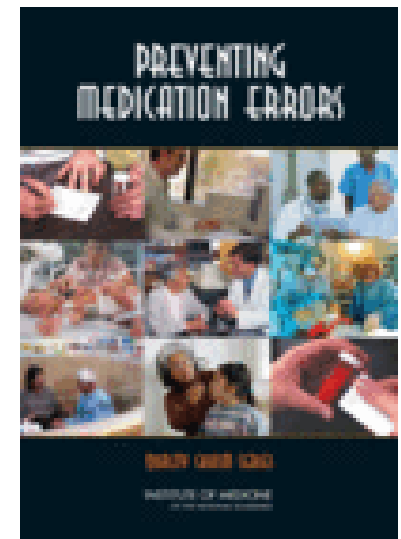
The 1999 IOM report “summarized the information we had and got widespread attention.

“But afterwards, people were left with the task of trying to figure out what to do to improve patient safety.”

Dr. David Bates 2002

Institute of Medicine's *Preventing Medication Errors*, 2006

- Electronic prescribing (CPOE)
- Use of technology (barcode scanning)
- Medication reconciliation
- Adoption of a safety culture
- Decision support and use of smart pumps



Institute of Medicine: 2006

- Communication of drug information
- Access to automated point of care drug information
- Monitoring for errors
- Communication of risk/benefit information
- Segregation of “look alike-sound alike” drugs

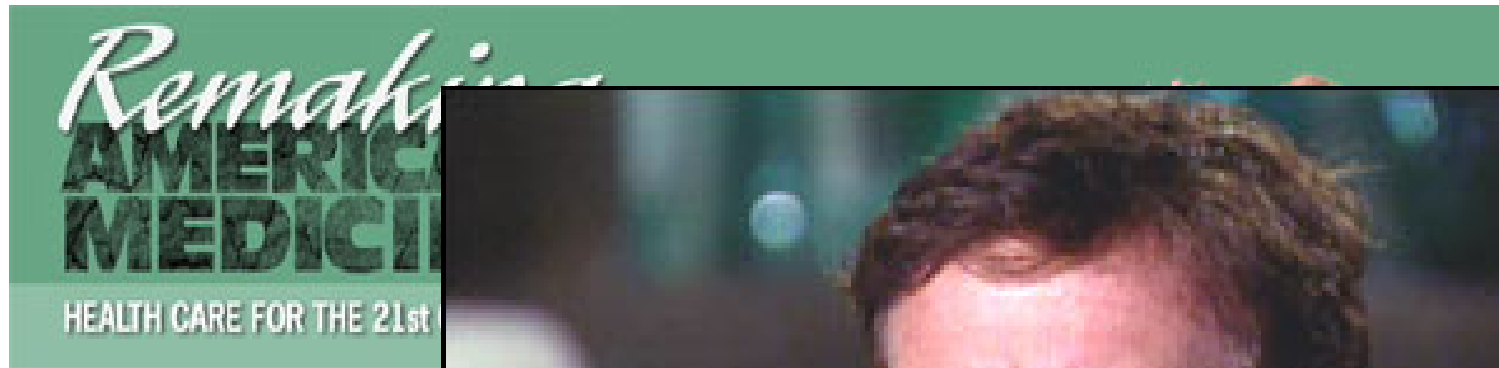
And now we have:

- IHI – 1991
- ISMP - 1994
- NCCMERP – 1995
- NPSF – 1997
- Joint Commission National Patient Safety Goals - 2003
- WHO Patients for Patient Safety/World Alliance - 2006
- CMS (on steroids)



Public awareness

- Medical errors are now dinnertime discussions



Where do you begin?

- Creating a culture of safety
- Out with the old ...in with the new



Aviation Industry

1. Assume errors and failures are inevitable
2. Standardize procedures (ie pilot checklist)
3. Training, examination, certification procedures are highly developed and strictly enforced



Vision for Medication Safety

We are perfecting the medication delivery system to be safe for every patient, every time, while making it easy for caregivers to do the right thing, and impossible to do the wrong thing.

Creating a Culture of Safety

- Culture change does not happen overnight
- Words matter
- Leadership must be immersed
- Provide the funds
- Study together – Book Club
- Kotter's Change Model



Creating a culture of safety

- **Implementing a culture shift**
 - Engage and empower the staff
 - “JUST” culture, not “No responsibility”
 - Medication 101/Spring into Safety – training classes
 - Tell stories
 - Pilot
 - Celebrate success
 - DAILY Administrative walk-arounds

Creating a culture of safety

- **Implementing a culture shift**

- 8 times 8 ways
- Promote collaborative relationships
- Post the Vision statement – everywhere!
- Conduct regular culture surveys – for free survey visit:
<http://www.ahrq.gov/qual/patientsafetyculture/>
- Look outside the organization for creative ideas
 - Firestone visit
 - Steal shamelessly

The Culture Movement

- 1st: blame and shame
- 2nd: blame-free
- 3rd: no blame, but not no responsibility
- 4th: just culture

Types of behavior involved in errors

- Human error = someone blinked
- At-risk = “nothing’s happened yet”
- Reckless = make a conscious choice
- Malice = intentional harm

Defining a Just Culture

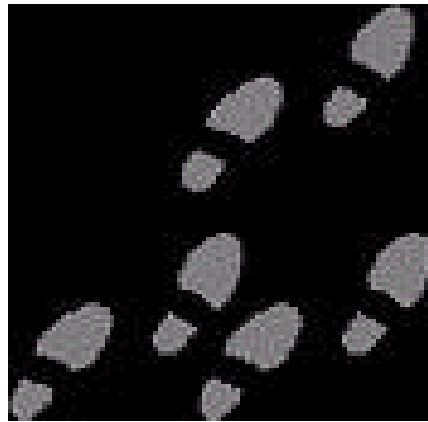
Workers trust each other, are rewarded for providing safety information, and are clear about their responsibilities regarding safe behavioral choices.

Create your team

- Medication Safety Committee
 - Redesign and rename committee
 - ADE Committee becomes the Medication Safety Committee
 - Extremely interdisciplinary
 - Includes: MD, Administration, RPh, RN, IS, Marketing, Dietary, Quality/Risk, Resp, Anes, Surgery, Children's Services, Educators, Patients

Initial step

- Count the number of steps in the medication delivery process
 - Every step represents a chance for error
 - Theory of Swiss Cheese
 - Reduce the steps, reduce the chance for error



Where errors occur:

- 39% prescribing (50% intercepted)
- 12% transcription
- 11% dispensing
- 38% administration (2% intercepted)

ISMP Self Assessment

- <http://www.ismp.org/selfassessments/Book.pdf>
- Patient information
- Drug information
- Communication of drug orders
- Drug labeling, packaging and nomenclature
- Drug standardization, storage and distribution
- Use of devices
- Environmental factors
- Staff competency and education
- Patient education
- Quality processes and risk management

Process/Technology

- Decentralize pharmacists, hire specialists
- Physician order management system
- Profile
- Bedside bar coding/charting
- CPOM vs. CPOE
- Smart IV pumps

Measurement

- Institute for Healthcare Improvement
 - Global Trigger Tool
 - Calculates rate of harm
 - Medication Module
 - Care Module
 - Surgical Module
 - Intensive Care Module
 - Perinatal Module
 - Emergency Department Module
- Measure any change for validation

Trigger Tool Practical Use

- Trigger Tool establishes a baseline of adverse events for a hospital
- Adverse events categorized and prioritized
- Resources focused on those events causing greatest harm
- Effect of interventions measured over time

Medication Module Triggers

| | |
|-----|---|
| M1 | Clostridium difficile positive culture |
| M2 | PTT > 100 seconds |
| M3 | INR > 6 |
| M4 | Glucose < 50 mg/dl |
| M5 | Rising BUN or SCr greater than 2 times baseline |
| M6 | Vitamin K administration |
| M7 | Benadryl (diphenhydramine) use |
| M8 | Romazicon (flumazenil) use |
| M9 | Narcan (naloxone) use |
| M10 | Antiemetic use |
| M11 | Over sedation/hypotension |
| M12 | Abrupt medication stop |
| M13 | Other |

NCC MERP* Index

Category A: Circumstances or events that have the capacity to cause error

Category B: An error that did not reach the patient

Category C: An error that reached the patient but did not cause harm

Category D: An error that reached the patient and required monitoring or intervention to confirm that it resulted in no harm to the patient

Category E: Temporary harm to the patient and required intervention

Category F: Temporary harm to the patient and required initial or prolonged hospitalization

Category G: Permanent patient harm

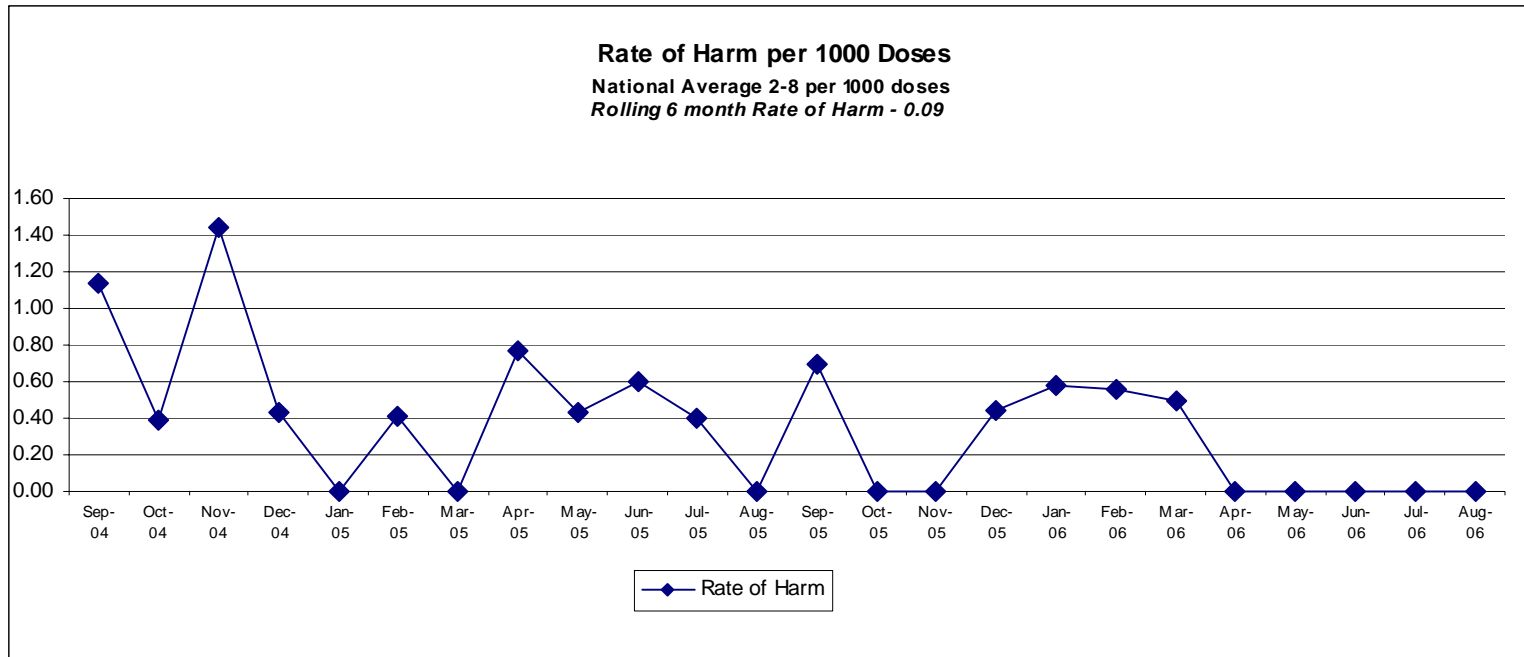
Category H: Intervention required to sustain life

Category I: Patient death

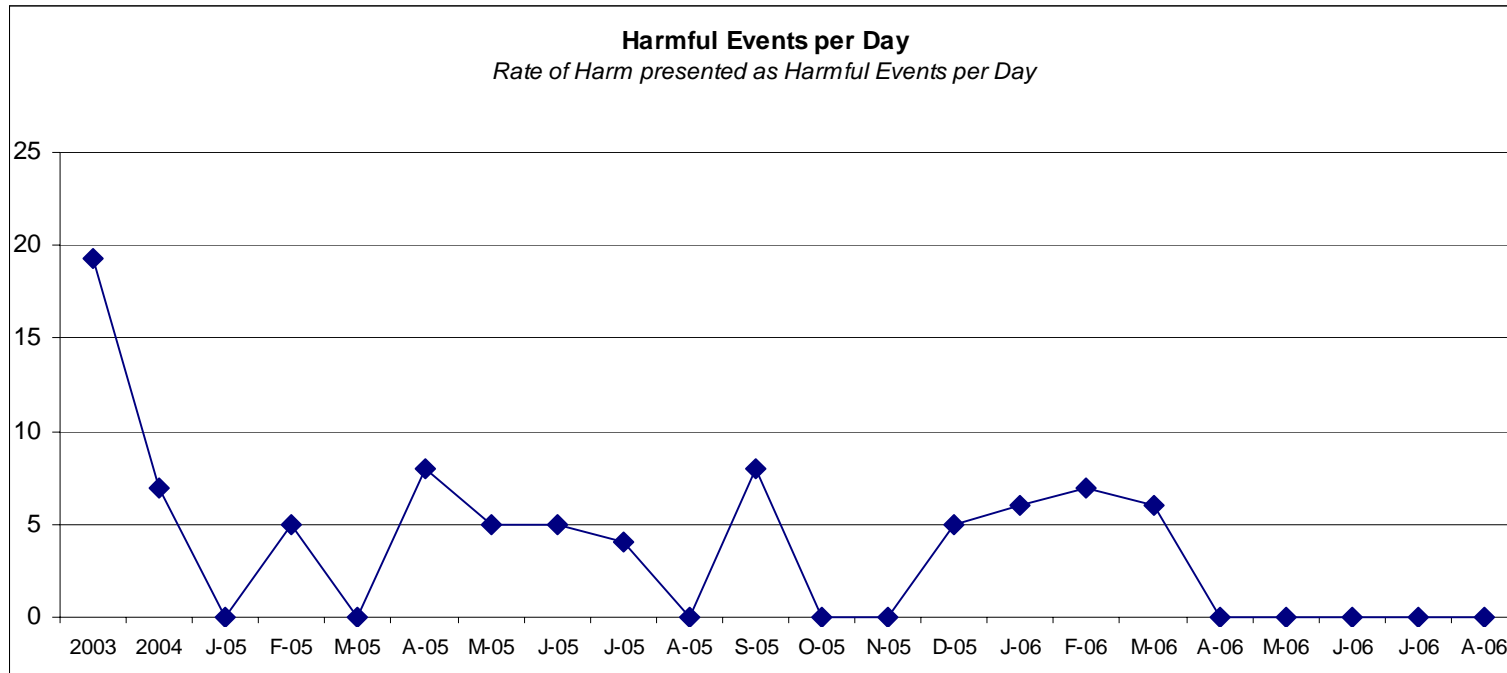
* National Coordinating Council for Medication Error Reporting and Prevention



Rate of Harm



Harmful Events Per Day



Event Reporting

- Must have option to be ANONYMOUS
- Keep it simple and easy
- Elicit thought-provoking ideas
- Celebrate high reporters
- Provide immediate feedback

Paralysis with Analysis

- Reports alone cannot change anything
- Be specific with categories to report on
- Limit choices of categories so it's useful information

Don't fall into the trap of overanalyzing *EVERY SINGLE REPORTED ERROR* to death!

ISMP ASSESS – ERR™

- Medication System Worksheet
- <http://www.ismp.org/Tools/AssessERR.pdf>

ASSESS - ERR™

Medication System Worksheet

Patient MR# _____ Incident # _____
 (if error reached patient) ✓ if no callback identified: _____
 Date of error: _____ Date information obtained: _____ Patient age: _____

Drug(s) involved in error: _____

Non-formulary drug(s)? Yes No
 Drug sample(s)? Yes No
 Drug(s) packaged in unit dose/unit of use? Yes No
 Drug(s) dispensed from pharmacy? Yes No
 Error within 24 hours of admission, transfer, or after discharge? Yes No
 Did the error reach the patient? Yes No
 Source of IV solution: Manufacturer premixed solution Pharmacy IV admixture Nursing IV admixture

Brief description of the event: (what, when, and why) _____

| Possible causes | Y/N | Comments |
|---|-----|----------|
| Critical patient information missing? (age, weight, allergies, VS, lab values, pregnancy, patient identity, location, renal/liver impairment, diagnoses, etc.) | | |
| Critical drug information missing? (outdated/absent references, inadequate computer screening, inaccessible pharmacist, uncontrolled drug formulary, etc.) | | |
| Miscommunication of drug order? (illegible, ambiguous, incomplete, misheard, or misunderstood orders, intimidation/faulty interaction, etc.) | | |
| Drug name, label, packaging problem? (look/sound-alike names, look-alike packaging, unclear/absent labeling, faulty drug identification, etc.) | | |
| Drug storage or delivery problem? (slow turn around time, inaccurate delivery, doses missing or expired, multiple concentrations, placed in wrong bin, etc.) | | |
| Drug delivery device problem? (poor device design, misprogramming, free-flow, mixed up lines, IV administration of oral syringe contents, etc.) | | |
| Environmental, staffing, or workflow problems? (lighting, noise, clutter, interruptions, staffing deficiencies, workload, inefficient workflow, employee safety, etc.) | | |
| Lack of staff education? (competency validation, new or unfamiliar drugs/devices, orientation process, feedback about errors/prevention, etc.) | | |
| Patient education problem? (lack of information, noncompliance, not encouraged to ask questions, lack of investigating patient inquiries, etc.) | | |
| Lack of quality control or independent check systems? (equipment quality control checks, independent checks for high alert drugs/high risk patient population drugs etc.) | | |

Did the patient require any of the following actions after the error that you would not have done if the event had not occurred?
 Testing Additional observation Gave antidote Care escalated (transferred, etc.) Additional LOS Other _____

Patient outcome: _____



Practical online help

- ISMP Medication Safety Alerts: www.ismp.org
- ISMP Quarterly Action Agenda: www.ismp.org
- www.justculture.org
- www.consumermedsafety.org
- IHI Global Trigger Tool: www.ihl.org

Think about it.....

- What do *reported* errors really measure?

CULTURE

Most often...

Safety is commonly thought of
as the absence of adverse events.

Begin to think that...

Safety is defined as the organizational capacity to protect from the potential of minor mishaps developing into major breakdowns

Roger Resar, MD

Don Berwick, MD idea for change...

- When harm is underway, proceed urgently to stop it, test possible solutions and learn from these
- Reconsider our attitudes toward thresholds for action

