

# First Do No Harm

Patient Safety & Safety Culture  
Michelle Mourad



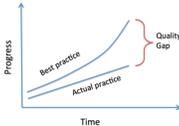
**Patient Safety is not about the errors we make but how we respond to them**

- ### Goals
1. Engage you in patient safety opportunities around you
  2. Demonstrate a simple framework for identifying and analyzing errors
  3. Describe how to foster a culture of safety

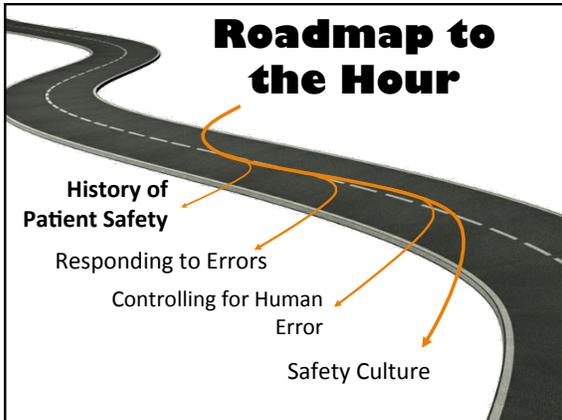


**Patient Safety**  
Analysis & Prevention of patient harm

VS



**Quality Improvement**  
Changes to the health care system to improve patient outcomes





Old way	New Way
People cause errors	Systems are broken
Remediate People	Redesign Systems
Culture of Silence	Culture of Reporting
Culture of Blame ( <i>who?</i> )	Culture of Inquiry ( <i>why?</i> )

**Patient Safety is not about the errors we make but how we respond to them**

- Improve patient safety**
1. Acknowledge we are human and thus, make slips & mistakes
  2. Analyze actual & potential errors
  3. Identify and fix the processes that let errors happen.

<p><b>The 90's: Reports of Preventable errors</b></p> <p>Adverse events occur in 2.9% to 3.7% of hospital admissions</p>	<p><b>2010: Reports of Preventable errors</b></p> <p>Adverse events occur in 2.5% of hospital admissions</p> <p>Adverse events occur in 20% of hospital discharges</p>
<p><small>Landrigan, N Engl J Med 2010 Forester, Annals, 2006</small></p>	

**High reliability organizations**

**Improve patient safety**

1. Acknowledge we are human and thus, make slips & mistakes
2. Analyze actual & potential errors
3. Identify and fix the processes that let errors happen.

**In Pursuit of Perfection**

**Roadmap to the Hour**

History of Patient Safety

Responding to Errors

Controlling for Human Error

Safety Culture

**Our Case**

61 yo woman with history of **HTN and severe osteoporosis** s/p bilateral hip replacement admitted for elective hip re-replacement. Transferred to the floor on POD#2.

### Our Case

On POD#6 she became hypoxemic with increased work of breathing and increasing O2 requirements over the course of the morning. The nurse, concerned about the patient called the

#### rapid response team

(an interdisciplinary team of an ICU nurse and a respiratory therapist) who recommended increasing oxygen requirements and diuretics.

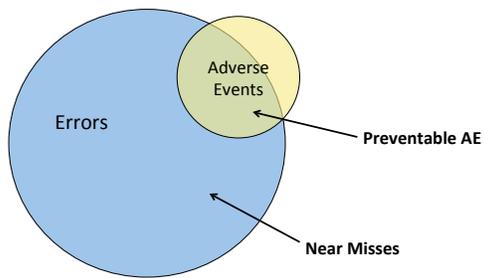


### Our Case

The surgical intern was busy and **wrote for diuretics on another patient**. The nurse got busy discharging another patient and **forgot** to follow up.



The patient remained on 6L NC throughout the day, but looked well and said she felt fine. The surgical intern assessed the patient that afternoon and **wasn't really confident** in differentiating volume overload from pneumonia on exam, but ordered diuretics anyway. No CXR was ordered and the senior resident wasn't notified.



### Human Factors: Slips



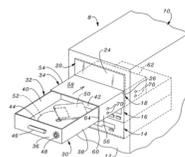
Errors that result when a person does something they did not intend to do.

#### Caused by:

- Fatigue
- Boredom
- Illness
- Distractions
- Clutter
- Workflow
- Frustration
- Stress
- Noise



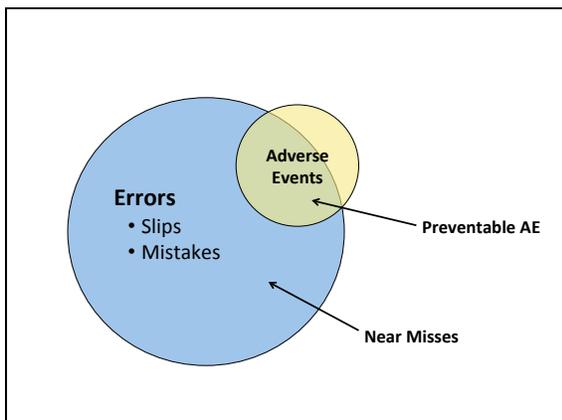
### Human Factors: Mistakes



Errors that result when the wrong thing is consciously done.

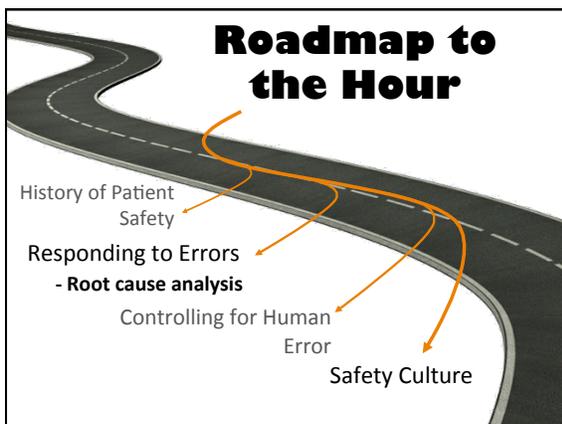
#### Caused by:

- Lack of knowledge
- Lack of training, experience, supervision
- Lack of protocols to standardize work



**Improve patient safety**

1. Acknowledge we are human and thus, make slips & mistakes
2. Analyze actual & potential errors
3. Identify and fix the processes that let errors happen.



**Our Case continues**



That evening (POD #6) the patient continued to desaturate on 6L nasal canula. Before change of shift the day nurse called rapid response again and the patient was placed on high flow NC at 10L.

The rapid response team notified the intern & called the ICU, but the ICU resident and intern felt that the patient could be maintained on the floor with continuous oxygen monitoring.

**Our Case continues**



**At 9AM** on the morning of POD#7, the patient was found persistently hypoxemic and hypotensive.



**Medicine consult** was called and evaluated the patient at **10am** and recommended transfer to the ICU.



Patient was transferred to the ICU at **11:10am**, on arrival her lactate was 8.0. Early goal directed therapy with fluid resuscitation and broad spectrum antibiotics (Vanc and Zosyn) were initiated **at 2pm** that afternoon.

**You're invited...**



You participated in the care of this patient and you hear that she had progressive multi organ system failure and eventually grew out **Klebsiella in her blood and sputum.**

She suffered a **PEA arrest** on POD #8 and could not be resuscitated.

You are asked to attend the RCA

**Root Cause Analysis**



- Safe, blame-free, protected
- Structured retrospective analysis for identifying causal factors
- Multidisciplinary
- Focuses on systems and processes, not individual performance

**Not allowed at an RCA:**

*"It's okay, the patient was really complex and sick anyway"*

**Not allowed at an RCA:**

*"That MD/RN/ pharmacist just wasn't doing their job"*

**Not allowed at an RCA:**

*Finger pointing*

**Root Cause Analysis**

*What really happened?*

*Why did it happen?*

*What do we do to prevent it from happening again?*

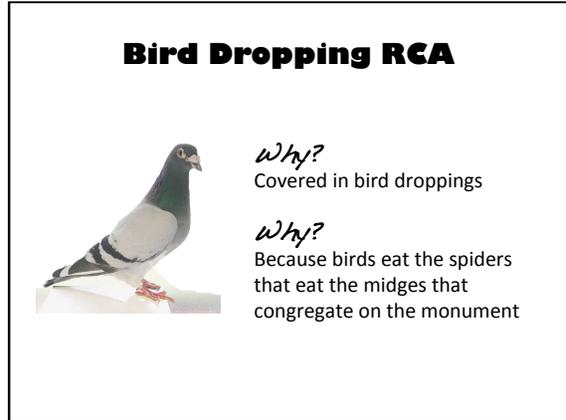
*How will we know our actions have improved patient safety?*

**The Problem:**

The granite of the Jefferson Memorial is crumbling at an alarming rate



36



**Root Cause Analysis**

*What really happened?*

*Why did it happen?*

*What do we do to prevent it from happening again?*

*How will we know our actions have improved patient safety?*

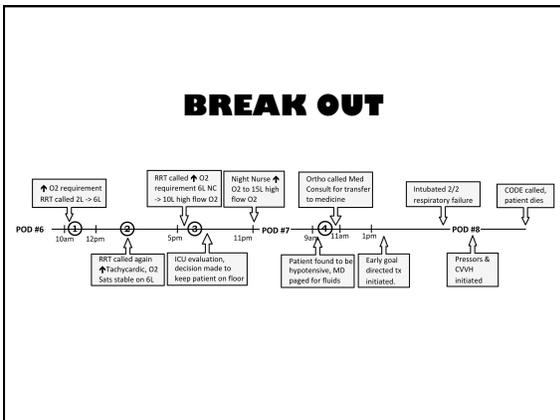
**Root Cause Analysis**

*What really happened?*

*Why did it happen?*

*What do we do to prevent it from happening again?*

*How will we know our actions have improved patient safety?*



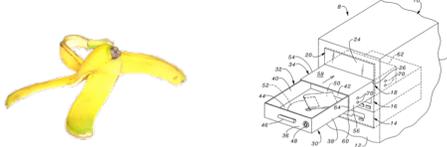
**Root Cause Analysis**

*What really happened?*

*Why did it happen?*

*What do we do to prevent it from happening again?*

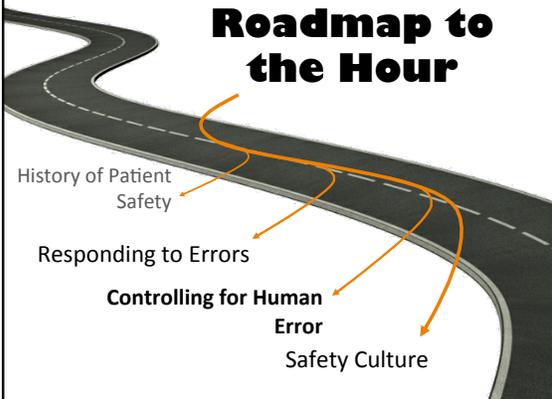
*How will we know our actions have improved patient safety?*



**Slips:** Error proof the processes

**Mistakes:** Train the people, standardize the work.

## Roadmap to the Hour



History of Patient Safety

Responding to Errors

Controlling for Human Error

Safety Culture

### Improve patient safety

1. Acknowledge we are human and thus, make slips & mistakes
2. Analyze actual & potential errors
3. Identify and fix the processes that let errors happen.



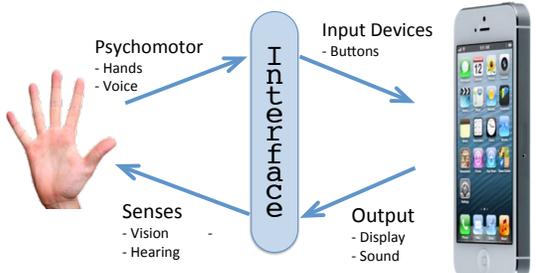
## How do we control for human error?

### Human Factors Engineering



*Design of systems for human use*

### Human factors design principles



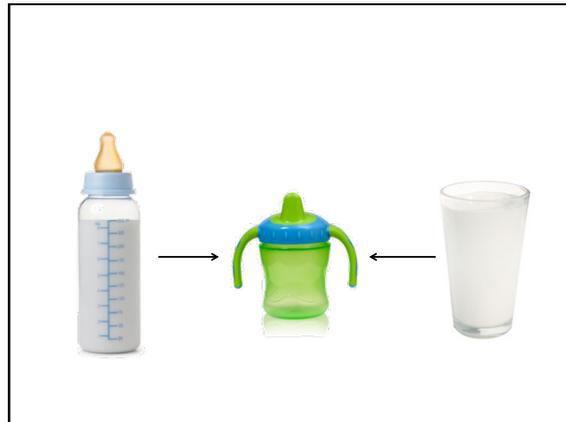
Psychomotor  
- Hands  
- Voice

Input Devices  
- Buttons

Senses  
- Vision  
- Hearing

Output  
- Display  
- Sound

Interface



**Apply human factors thinking to the hospital environment**

1. Avoid reliance on memory



The image shows two yellow diamond-shaped signs with the text "FALL RISK" and a graphic of a person falling. One sign is upright, and the other is tilted, illustrating the importance of visibility in safety signage.

**Apply human factors thinking to the hospital environment**

1. Avoid reliance on memory
2. Make things visible



The image shows a syringe with a label, illustrating the need for clear labeling and visibility in medication administration to avoid reliance on memory.

**Apply human factors thinking to the hospital environment**

1. Avoid reliance on memory
2. Make things visible
3. Review and simplify processes



The image shows a medication tray with several compartments containing pills, illustrating the need for clear labeling and visibility in medication administration to avoid reliance on memory and to simplify processes.

### Apply human factors thinking to the hospital environment



1. Avoid reliance on memory
2. Make things visible
3. Review and simplify processes
4. Standardize common processes and procedures

### Apply human factors thinking to the hospital environment



1. Avoid reliance on memory
2. Make things visible
3. Review and simplify processes
4. Standardize common processes and procedures
5. Routinely use checklists

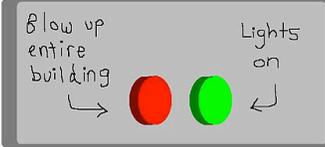
### Apply human factors thinking to the hospital environment



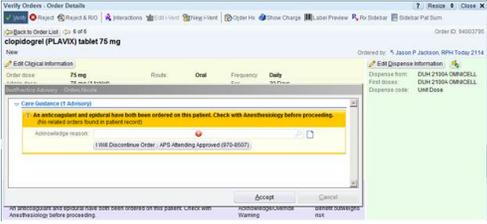
1. Avoid reliance on memory
2. Make things visible
3. Review and simplify processes
4. Standardize common processes and procedures
5. Routinely use checklists
6. Decrease the reliance on vigilance

### System redesign

"Poor design"



### From Patient Safety to QI



EMR will not let you order an anticoagulant in a patient with an epidural

### Outcome of our RCA

- Sepsis awareness campaign for nurses, MDs and RRT
- Policy that if RRT is called twice on a patient in the same day, ICU must come evaluate *and* leave a note
- Empiric "sepsis" antibiotics are now on every floor.
- Sepsis Screening done at change of shift with protocol for automatic lactate for 2 SIRS + organ dysfunction. If lactate is >4 code sepsis is called.
- Code Sepsis can be called by any nurse or RRT to bring team of ICU nurse, ICU fellow, pharmacists & primary team to bedside to provide early goal directed therapy.
- Increased ICU staffing, especially at night

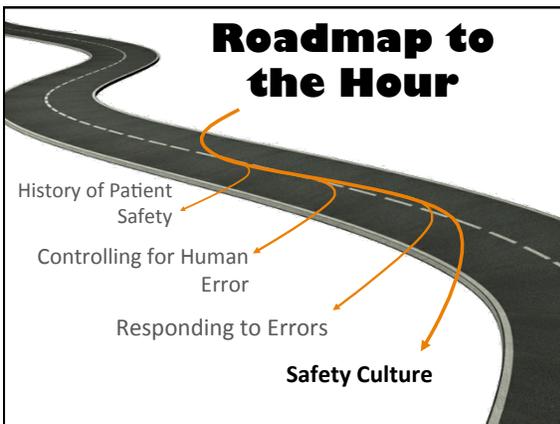


**The only real mistake is the one from which we learn nothing.**

- John Powell

**Improving Patient Safety**

1. Acknowledge we are human and thus, make slips & mistakes
2. Analyze actual & potential errors
3. Identify and fix the processes that let errors happen.



**“the way things are done around here”**



**Culture obstacles in this case**



- Rapid Response Team incentivized poorly
- Intern afraid of asking for help & angering attending with ICU transfer
- Floor nurse overruled by RRT and orthopedic resident
- Events happening with no chart documentation
- Med Consult not taking responsibility for a decompensating patient



*Recipe for Safety Culture*  
Mix and Stir:  
- 1 cup error reporting without fear of punishment

*Recipe for Safety Culture*  
Mix and Stir:  
- 1 cup error reporting without fear of punishment  
- 2 tsp of constant concern about the possibility of failure

*Recipe for Safety Culture*  
Mix and Stir:  
- 1 cup error reporting without fear of punishment  
- 2 tsp of constant concern about the possibility of failure  
- ¼ pint of deference to expertise regardless of rank or status

*Recipe for Safety Culture*  
Mix and Stir:  
- 1 cup error reporting without fear of punishment  
- 2 tsp of constant concern about the possibility of failure  
- ¼ pint of deference to expertise regardless of rank or status  
- 4 oz. ability to concentrate on a specific task while having a sense of the big picture

*Recipe for Safety Culture*  
Mix and Stir:  
- 1 cup error reporting without fear of punishment  
- 2 tsp of constant concern about the possibility of failure  
- ¼ pint of deference to expertise regardless of rank or status  
- 4 oz. ability to concentrate on a specific task while having a sense of the big picture  
- 1 lb of the ability to flatten hierarchy as best fits situation

### Principles

1. Acknowledge we are human and thus, make slips & mistakes
2. Analyze actual & potential errors
3. Identify and fix the processes that let errors happen.

### What can you do?

1. Ask to go to an RCA conducted by your medical center
2. Examine your Divisional process for peer review
3. Ensure checklists are being used effectively where needed (e.g. for picking up holdovers and for discharge)
4. Have your Division take a safety culture survey to see where areas of improvement are needed.

**You are on the front lines.**

**This is YOUR work.**

### Stuff we know how to prevent & improve

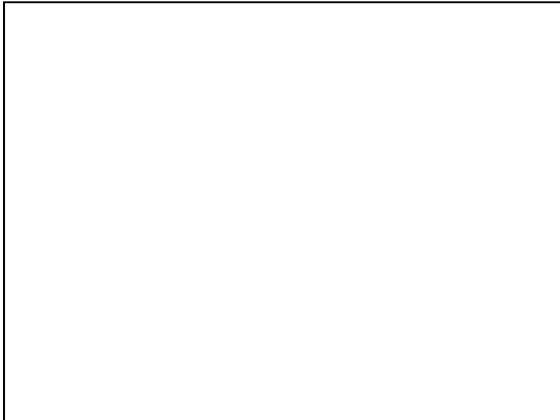
- Medication Errors
- CA – UTI
- CLABSI
- C. diff
- MRSA infections
- Post discharge adverse events
- Falls
- Over radiation from CT scans
- Errors due to poor handoffs/sign out
- Sepsis
- Hospital acquired DVT
- Antibiotic use/resistance
- Errors in hospital transfer

### Goals

1. Engage you in patient safety opportunities around you
2. Demonstrate a simple framework for identifying an analyzing errors
3. Describe how to foster a culture of safety

### Questions?





**So is nothing anyone's fault?**



**Case example**

- Patient with craniotomy and mechanical valve.
- Heparin to be started at 1000 units/hr and titrated based on protocol.
- Order has a dose range of 0-2500 units per hour, nurse interpreted order as 2500 units per hour
- Drip was then increased to 2700 units per hour based on the baseline normal PTT.
- Patient developed an intracranial bleed and was transferred to the ICU



**Clear process changes**

- Appearance of heparin order in nursing MAR modified to improve clarity
- Improved education for nurses on heparin order sets
- EMR modified so 2<sup>nd</sup> RN doing verification, sees the EMR alerts
- Do not allow IV Pump to give doses over order range



**Just human error ?**

- Nurse did not observe the two RN verification protocol for heparin dosing
- Nurse clicked through EMR alerts for high dose
- Nurse bypassed alerts on pump regarding dosing

**Just Culture**  
Considers the intent of the employee with regard to the poor outcome.

Human Error	At-Risk Behavior	Reckless Behavior
<i>Inadvertent action: slip, lapse, mistake</i>	<i>A choice: risk not recognized or believed justified</i>	<i>Conscious disregard of risk. Knowingly violates protocol or procedure</i>
Manage through changes in: <ul style="list-style-type: none"> <li>• Processes</li> <li>• Procedures</li> <li>• Training</li> <li>• Design</li> <li>• Environment</li> </ul>	Manage through: <ul style="list-style-type: none"> <li>• Removing incentives for at-risk behaviors</li> <li>• Creating incentives for healthy behaviors</li> <li>• Increasing situational awareness</li> </ul>	Manage through: <ul style="list-style-type: none"> <li>• Remedial action</li> <li>• Punitive action</li> </ul>
<b>Console</b>	<b>Coach</b>	<b>Punish</b>