Teaching Patient Safety

2013

Answer Key

Email NCPS GME
PSCurric@va.gov

Thank you for being willing to mentor/guide/teach at the workshop. This has been cited as one of the strengths of the GME workshops. If you hear comments or questions that suggest improvements to the workshop, please talk or write to Vince or Linda.

Thanks!
New Patient Safety Listserv for Teachers

There is now a listserv dedicated to discussion of topics related to teaching patient safety to medical students and residents. If you are interested in subscribing to the listserv, address email to: ListServ@www.listserv.va.gov and paste “SUBscribe MDTeachPtSafety-L@www.ListServ.va.gov” in the main body of the email message (without quotes).

Alternatively, you can notify PSCurric@va.gov with a request to add your email address to the list.

To send a message to the group address your email to: MDTeachPtSafety-L@www.ListServ.va.gov

There are currently >150 physician-teachers from various programs in the US subscribed to this listserv.

We’re hoping to keep discussions going, interest other teachers, and pull in resources such as ACGME as needed.

--------------------------To discontinue subscription--------------------------
Anytime that you decide you would rather not participate, send an email message to ListServ@www.listserv.va.gov with this message, “SIGNOFF MDTEACHPATSAFETY-L”. Alternatively, you can notify PSCurric@va.gov with any request to modify or discontinue your subscription.
**Wednesday, January 23, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tr>
<td>800 - 830</td>
<td>Introductions</td>
</tr>
<tr>
<td>830 - 930</td>
<td>Patient Safety Basics</td>
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<tr>
<td>930 - 945</td>
<td>Break</td>
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<tr>
<td>945 - 1115</td>
<td>Human Factors Engineering</td>
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<tr>
<td>1115 - 1245</td>
<td>Lunch break</td>
</tr>
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<td>1245 - 145</td>
<td>Teamwork &amp; Communication</td>
</tr>
<tr>
<td>145 - 230</td>
<td>Dramatic Simulation: Doc U Drama</td>
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<tr>
<td>230 - 245</td>
<td>Break</td>
</tr>
<tr>
<td>245 - 500</td>
<td>Establishing Trust; Just Culture; Leadership; Second Victim; Encouraging reporting &amp; RCA participation.</td>
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**Thursday, January 24, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tr>
<td>800 - 830</td>
<td>Reprise of yesterday, and what to expect today</td>
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<tr>
<td>830 - 930</td>
<td>Safe handoffs</td>
</tr>
<tr>
<td>930 - 945</td>
<td>Break</td>
</tr>
<tr>
<td>945 - 1200</td>
<td>Breakout Sessions: Simulation; Mistake-Proofing</td>
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<tr>
<td>1200 - 130</td>
<td>Lunch break</td>
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<tr>
<td>130 - 230</td>
<td>Causation Theory &amp; Diagramming</td>
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<td>230 - 330</td>
<td>Patient Safety M&amp;M</td>
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<tr>
<td>330 - 345</td>
<td>Break</td>
</tr>
<tr>
<td>345 - 500</td>
<td>Assessing learners &amp; programs; safely reporting and RCA participation; teaching plan development; integrating into existing curriculum</td>
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</table>
Patient Safety Curriculum Workshop

Residency (GME) Patient Safety Curriculum: Developing Faculty Leaders and Pioneers

**Purpose:** Develop faculty leadership at all VA facilities where medical residents train in order to pursue the objectives of the VA patient safety curriculum.

**Outcome Objectives:** At the conclusion participants will be able to:

1. Demonstrate the skill of engaging residents to learn about patient safety so that residents take an active role in safety activities, and can, in turn, teach other residents and students;
2. Identify communication failures as a direct contributor to adverse outcomes; and evaluate poor – good teamwork and communication skills using validated observational tools.
3. Identify lessons learned and best methods from several VA’s and universities where patient safety curriculum has been pilot tested with residents and students;
4. Identify key laws, guidelines, and standards that might serve as leverage to initiate patient safety curriculum (e.g., ACGME core competencies: ICS, PBLI, SBP);
5. Apply opportunities for patient safety quick start and integrating into existing curriculum.
6. Formulate knowledge of key patient safety principles and tools, such as root cause analysis, human factors engineering, and high reliability organizations.

**Personal learning objectives:**
Background and Overview

1) What do you think has worked the best for teaching patient safety?

2) Why did it work?

3) Did you have to convince anyone, and how did you do it?

4) What patient safety teaching session or approach has failed (if any) and why?

Incorporate your ideas into your planning document.

Goals of the VA Patient Safety Curriculum:
1. Residents are active agents of change towards systems and quality approach; away from blame and train model.
2. Residents incorporate understanding of human performance and high reliability organizations into:
   - Patient care
   - Patient safety activities
3. VA's help affiliated residency programs provide great education (as outlined in ACGME core competencies)

Teaching Plan Tools:
- Curriculum work book
- Curriculum planning guide
- MDTeachPatientSafety Listserv
Patient Safety – Introduction

Patient Safety Overview
Objectives
• Define patient safety and illustrate its scope.
• Summarize the epidemiology of adverse events in healthcare.
• Construct a foundation for understanding the systems approach to patient safety.
• Explain the role of close calls.
• Contrast current healthcare to high reliability organizations.
• Design systems to prevent, eliminate, and/or reduce adverse events and hazards.

Handout
Homework

Feedback
Clinical Teamwork Scale

Clinical Teamwork Scale Item #
(See Methods for Description)

N = 100 observations

Patient Safety Curriculum for Residents
Why It is Important?
• Residents perform patient care services.
• Residents can enhance “physician” contribution to adverse event and near miss reporting that can help with organizational learning.
• Residents serve on Root Cause Analysis (RCA) teams.
• Patient safety education including Systems-Based Practice (SBP), Practice-Based Learning (PBL), and Interpersonal and Communication Skills (ICS) required by the ACGME.
• Residents represent the future of healthcare.

InstituteforHealing-IncreasingtheQualityofCare

Patient Safety Curriculum for Residents
Why It is Important?

Valuable clinical services
- On call duties
- Timely prescriptions
- Patient admissions

Employees with a contract
- VA Safety/Policies
- “Time Outs”.
- Medical malpractice liability

Patient Safety/Vulnerability
- Fatigue
- Medication errors
- Hand offs

Pre
Post

Form a group with several of your neighbors. Take 5-10 minutes and describe a storyboard as to what happened to this young patient. Describe at least one medical error that occurred in any one of the scenes shown above. Write your storyboard and medical error notes in the box below.

No special mentoring/guiding here except to make the point that each storyboard will be different – each is based upon personal experience.
What is patient safety?

- Patient safety is the identification and control of hazards/vulnerabilities that could cause harm to patients.
- Patient safety is the prevention of harm or injury to patients.

Patient Safety Competencies

- Contribute to a culture of patient safety.
- Work in teams for patient safety.
- Communicate effectively for patient safety.
- Manage safety risks.
- Optimize human and environmental factors.
- Recognize, respond to, and disclose adverse events.

Canadian Patient Safety Institute

Hmmm . . .

- What do you call the following?
  - Stat sheet: patient in the wrong room.
  - Wrong dose of anti-depressant medication administered
  - Diagnosis is “too late” to save patient with meningitis.
  - You almost go into the wrong room to do a thoracentesis.

- Hold judgment, but consider . . .
  - Incidence and prevalence very widely in literature.
  - Our focus is reducing harm to the patient.

Adverse Event

“An injury related to medical management, in contrast to complications of disease. Medical management includes all aspects of care, including diagnosis and treatment, failure to diagnose or treat, and the systems and equipment used to deliver care. Adverse events may be preventable (error) or non-preventable”


Error

- Failure of a planned action to be completed as intended (execution) or the use of a wrong plan to achieve an aim (planning).
- Active errors – frontline providers at the “sharp” end of healthcare.
- Latent errors – poorly designed equipment or processes, inadequately structured organizations, “blunt” end.
- Normalization of deviance.


Patient Safety Epidemiology

- How many adverse events?
- How many close calls?
- Inpatient vs. outpatient?
- Very dependent on definitions and methodology.
NOTE: You can use this exercise to introduce patient safety topics to residents and medical students:

What is your definition of error?

**Error:**
See next page for VA NCPS definition.
The VA definition of Adverse Events may be helpful to consider:
“Adverse events are untoward incidents, therapeutic misadventures, iatrogenic injuries or other adverse occurrences directly associated with care or services provided within the jurisdiction of a medical center, outpatient clinic or other facility. Adverse events may result from acts of commission or omission (e.g., administration of the wrong medication, failure to make a timely diagnosis or institute the appropriate therapeutic intervention, adverse reactions or negative outcomes of treatment, etc.).

Does your facility/hospital/clinic have a no-fault reporting system? Describe how it works. If it is not no-fault what type do you have? How does it work?

Type of Reporting System

How Reporting System Works – or is supposed to work:

We will return to this page later.

….for later discussion.
Patient Safety Introduction

From the data about adverse events in healthcare….

What data do you find most surprising?

Surprising

What would you consider useful in introducing patient safety topics to residents and medical students?

Potentially useful
Re-assemble into your previous group. With the additional information regarding patient safety and the systems-approach to human error, discuss one or more contributing factors or root causes to the medical errors you described in Part I. Write the medical error(s) and the contributing factors in the box below.

Each storyboard will be different – based on the writer’s experiences.
Human Factors Engineering

HFE and patient safety
- Human factors engineering is to patient safety as microbiology is to infection control
- HFE concepts = physiology and anatomy
- HFE tools = diagnostic testing

- Understand how human factors engineering (HFE) is a useful problem-solving approach for patient safety.
- Introduce how demonstration of HFE principles helps
  - Flip learner’s brains around 180 degrees.
  - At the same time teach safety content.
- Demonstrate how HFE helps improve analysis and development of lasting remedies (diagnosis and treatment of systemills).

What is Human Factors Engineering?
- Designing systems, devices, software, and tools to fit human capabilities and limitations
- Using established methods to gather unique information about:
  - Hidden needs of the end user
  - Unexpected interactions between the system and the end user
- Taking advantage of knowledge bases about human-system interaction
  & reciprocating syringe

Human Factors Engineering:
- The study of human capabilities and limitations
- The application of that knowledge to the design of systems
- Goal: to reduce errors and inefficiencies ➔ optimize human performance

Human Factors Model

HFE and Device Literature Explosion (Most of these since 2003)
- Observation and/or Human Factors Conceptual Analysis
  - Cardiac surgery
  - General surgery
  - Interventional radiology
  - Chest Tube insertion (focus on universal precautions)
  - Central Vena Cava Catheter (Central Line) insertion
- Usability Testing
  - Infusion (IV) Pumps
  - Automated Defibrillators (AEDs)
  - Dry powder inhalers
  - Home glucometers
  - Epinephrine auto-injectors
  - Medication label layout
HFE and Device Literature
Explosion (cont.)

- Heuristic (Expert) Evaluation
  - IV Pumps
  - Cardiovascular monitoring devices
  - Home care information technology
  - CHF standard order sets
  - Telemedicine systems

- Ergonomics (work area - physical analysis)
  - Neonatal intensive care
  - Hand hygiene tools (sink, dispensers)

Good HFE Design Distilled

- Make it easy to do the right thing
- Make it difficult or impossible to do what may cause inadvertent harm to a patient
- Always reveal status – make it transparent, that is, make it really easy to know precisely what is happening.

Good HFE Design Distilled

- Support the things that humans do well
- Make up for the things that humans don’t do particularly well

Case Study: Detect and classify underwater

Tactile Monitoring Device

Safety in Healthcare
Dispelling Magic and Illusion

With thanks to John Gosbee, MD, MS and Magicians, Illusionists, and Neuroscientists
Itiel Dror, PhD - cognitive neuroscientist (Harvard); currently with an academic appointment at University College London
Can you think of other uses of color use that put patients at risk because we humans are vulnerable to the Stroop Effect?

<table>
<thead>
<tr>
<th>We rely on color coding more often than is safe:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Color coded wrist-bands</td>
</tr>
<tr>
<td>• Compressed gas</td>
</tr>
<tr>
<td>• Dedicated use for insulin administration (orange)</td>
</tr>
<tr>
<td>• Needle gauge</td>
</tr>
</tbody>
</table>

The use of color is valuable because we as humans are sensitive to color differences – but the information should never be delivered by color alone. The use of color is risky if/when it reinforces as correct an incorrect decision or choic.


Add to the data at [http://faculty.washington.edu/chudler/words.html#seffect](http://faculty.washington.edu/chudler/words.html#seffect)

Are there instances you’ve observed when experienced residents use communication shortcuts with medical students or less experienced residents – making a difficult task seem easier than it really is? (As in the “name the months of the year” challenge.)

“Hook the oxygen up to the green adapter.”
“Telemetry is off” taken to mean that it has been discontinued.
Magic & Illusion

- Magicians, Illusionists, and Neuroscientists

Add water to... dry seal, dry suction, express, oasis, ocean???

Wrong choice = worsening pneumothorax.

Different ... but so similar

- Illusion: They are different but seem alike

Laparoscopic Visual Illusion

- "The videotapes of operations literally show the operators deliberately, intentionally cutting the common bile duct, believing that they were cutting the cystic duct. The surgeons believe what they see. But the appearance...on the screen is deceiving.... The clarity at the moment of injury was a delusion." — Cook, Richard (2003). Seeing is believing. Annals of Surgery 237:4:472-473
Can you think of other instances of illusion or trickiness?

Remember – the best state is complete awareness of the true status of things.

Number of passes made between basketball players wearing white T-shirts = _____.

What patient safety lessons come to mind after seeing the basketball count-the-passes exercise?
Why is automation considered an intermediate rather than strong level patient safety intervention? Consider the potential adverse outcomes when automation surprise and inattentional blindness coincide.

Intermediate because it may introduce other unexpected complications. Consider what would be required for it to become stronger. Prior to CPOE (Computerized Physician Order Entry), KCl (potassium chloride) orders passed through multiple humans and were often corrected in the process. Automation allowed the order to pass from physician to pharmacy and then on to the patient without as many human reviewers. Fatalities resulted.

The illustration suggests that the actions of the automaton are determined by its programming - programming done by humans who may not have been able to anticipate every interaction with the user and the environment.
Usability Testing:
There are 3 scripts that follow this page: Match the script to the device that your group is given. Read the scenario (either the person testing the device or the test director reads the scenario). The person testing the device will attempt to accomplish each of the tasks. Only one voice should be heard at any time: either the person testing the device who is thinking out loud or the test director reminding that person to think out loud. The rest are observers/scribes.

After the usability testing is complete, the whole group will identify problematic design issues. Involve everyone in the group in re-design to address the issues you’ve identified. (There is note page in this book following the usability testing scripts.)
Structured Usability Testing Exercise – Juice Pouch

Your insulin-dependent diabetic great uncle is visiting. The meal is ordered, but you aren’t sure how long it will be until it arrives at your table. He is not as alert as usual. You assist him with a finger stick and get a glucose reading of 50.

Another dinner guest carries juice pouches for her son. You promise the whining child that you will replace the juice pouch later.

Instructions for user - tester:
Based on the above scenario, please attempt the following tasks. (This is a test of the product – not a test of your skill.)

Task 1 - Remove the straw from its wrapping;

Task 2 - Insert the straw into pouch so that the juice can be drawn from the pouch.

Task 3 – Find nutritional information, specifically – information about the sugar content for treating your uncle’s hypoglycemia.

Task 4 – Check the expiration date.
Structured Usability Testing Exercise – Smints or Pez

You are entertaining visitors from the ACGME at a nice Italian restaurant. After lunch, you want to offer a mint to alter your breath in a positive way. Being a generous host, you also offer a mint to each of your guests.

Instructions for user - tester:
Based on the above scenario, please attempt the following tasks. (This is a test of the product – not a test of your skill.)

Task 1 - Open the package.

Task 2 - Find the nutritional information; read aloud the serving size and amount and type of sweetener.

Task 3 – Check expiration date.

Task 4 – Dispense a candy to each person at the table without having handled the candy.
You are on a lake in a boat with your niece and have just finished a day of bluegill fishing.

You are putting away tackle, stowing the remaining worms, and beginning to think about getting out the sandwiches.

Instructions for user tester:

   Based on the above scenario, please attempt the following tasks. (This is a test of the product – not a test of your skill.)

Task 1 - Open the package.

Task 2 - Remove one wipe.

Task 3 – Reseal (close) package.

Task 4 – Look for Information on the outside of package about:
   • disposal
   • alcohol content.
**Human Factors Engineering – Usability Testing**

Findings from usability exercise

<table>
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<th>HFE Design Issues:</th>
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</table>

<table>
<thead>
<tr>
<th>Re-design Ideas:</th>
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</thead>
</table>

Do you recall working with medical devices with similar design issues? What is the similarity?
1) General Human Factors Impressions
• What is the device “saying” to you?
• Where is the front? The top? How do you know?
• Is it obvious what the device is at a glance?

2) Feedback and Visibility of System Status
• When you try to do things, how do you know you are successful?
• Can you tell what you need to do next?
• Do you know what the device is doing at any given moment?
• If you are distracted, can you tell immediately where you’ve left off?
• If you handed the device to someone, does it take them long to figure out where you’ve left off and what the device is doing?

3) Consistent Model or Metaphor
• Does this device look like another device or tool you have used before (e.g., ATM machines, calculators); and is that fact helpful?
• Does it act and work the way similar “models” do?

4) Functionality of Controls
• Is it obvious what each button or switch will do?
• Do they work the same in different circumstances?
• Do you know what you have done when you press the button?
• Do some buttons/switches look too similar to others?
• Are they grouped/located in a logical manner?
• Are some controls more critical than others? If so, how are they differentiated from other controls?

5) Displayed Messages
• Is the message display big enough?
• Can you understand the displayed messages?
• Is it ambiguous?
• Is the language simple and natural?
• Is the information useful? Do you need more information?
• Is it displayed long enough for it to be useful?
6) Recognition and Recovery from Errors

- Are the error messages understandable?
- Can you tell if you've made an error?
- Can you tell what the error is?
- Do you know how to fix it?
- Are there any helpful cues (e.g., messages) to help you figure it out?

7) Minimizing User Memory Load

- Is it obvious how you operate the device?
- Are there any non-intuitive “features” that you’ve had to figure out?
- Do you have to ask someone or refer to a manual to figure out any aspect of the device?
- Does the device provide cues to help you understand how to use it?

8) Readable and understandable labels and warnings

- Are you able to easily see all the important warnings and labels?
- Are they legible? Too small or big? Located in a spot you might miss until it’s too late?
- Is the language on the label/warning understandable?
- Do you need technical knowledge in order to understand it?

Usability Testing Part II

- Design a test
- Trade places with someone in another group to do a usability test
- How easy to get the concept of designing usability testing?
- How is this different from heuristic evaluation?
- How different from a like-ability test.

Human Factors Engineering – Usability Testing

FAC DEV Questions

Where could you fit some or all of this into your program?
What do you think you would have to do to prepare to use this material?
Were you successful in designing a usability test?
What is your experience with healthcare information technology?

What do you tell residents about the various computing systems that they will encounter in their rotations?
Exercise
Part III

For the scenes in the story-board above, identify structural issues in the environment, in the design of devices or architecture. Identify situations where healthcare providers were working without a clear view of the true status of things. Are there places where the two combine? (Tricky or faulty design contributes to a murky picture of status.)
Faculty Development Questions

Was there a lesson that you learned in this session? Is it something you’d use in teaching residents?

**Most important point:**

Other lessons learned:

What elements of human factors engineering could you teach next week?
Teamwork and communication

www.youtube.com/watch?feature=player_detailpage&v=3rTsvb2ef5k

www.jointcommission.org/assets/1/18/SE_RootCauses_2004_3Q2010.pdf
Why do a Briefing?

- Establish a platform for common understanding
  - Gives people permission to be frank & honest
  - Gets everyone on the same page
- Provides a structure for collaborative planning
- Creates a shared mental model

Pre-Procedure Briefing

- Entire Team
  - Physician, Dentist
  - Nurse
  - Resident, PA, others
  - Patient
- Guided by checklist
- Bedside prior to procedure
- Does not replace usual planning

VETERANS HEALTH ADMINISTRATION
Pre-Procedure Checklist

* Read and verify checklist, local facilities decide when checklist completed.

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Risk of Blood Loss</th>
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<tbody>
<tr>
<td>Social Security &amp; Birthdate, or Other VA-Approved Identifier</td>
<td>No</td>
</tr>
<tr>
<td>Names &amp; Roles of Team Members</td>
<td>Yes, and adequate IV access and fluids planned, and blood availability confirmed</td>
</tr>
<tr>
<td>Procedure</td>
<td>If Yes,</td>
</tr>
<tr>
<td>Procedure Site</td>
<td>Type &amp; Screen OR Type &amp; Cross</td>
</tr>
<tr>
<td>LateralitySite</td>
<td>Prophylactic Antibiotics Given Within 60 Minutes of Procedure</td>
</tr>
<tr>
<td>Known Allergy</td>
<td>NA</td>
</tr>
<tr>
<td>Sedation</td>
<td>DVT Prophylaxis</td>
</tr>
<tr>
<td>Difficult Airway, Aspiration Risk</td>
<td>NA</td>
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<tr>
<td>No</td>
<td>Painful</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>If Yes, Equipment &amp; Anesthesi</td>
<td>Yes</td>
</tr>
<tr>
<td>available</td>
<td></td>
</tr>
<tr>
<td>Safety Check Completed</td>
<td>N/A</td>
</tr>
<tr>
<td>Pulse Oximetry</td>
<td>Pertinent Lab Results</td>
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<tr>
<td>Instruments &amp; Special Equipment</td>
<td>Anticipated Critical Events</td>
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<td>N/A</td>
<td>Surgeon</td>
</tr>
<tr>
<td>Yes</td>
<td>Anesthesia</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
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<tr>
<td>Implant(s)</td>
<td></td>
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<tr>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>If Yes, Specifics</td>
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</tbody>
</table>

Checklist is available at
<table>
<thead>
<tr>
<th>+</th>
<th>Δ</th>
</tr>
</thead>
</table>

+ indicates the things that went well.

Delta indicates the things that need to change.
Dramatic Simulation

Outline of This Session
- Doc-U-Drama featuring performances by....
- Educational Rationale for Doc-U-Drama
- Applying HFE & causation principles to a dramatic simulation exercise

Learning Objectives
- Application of patient safety diagnostic skills
- Application of patient safety problem solving skills
- ACGME - ICS
  - PBLI
- Experience patient safety improvement without pain

Why Use Dramatic Simulation?
- Our medical education system produces highly autonomous, hard-working residents who are inherently refractory to learning about systems theory
- The goal of Doc-U-Drama is brain flip - to ask a new question
- The goal is to reveal the normalization of complexity that is typical in medicine - similar to using magic to reveal the unintentional illusions of devices

Discussion – Identify Patient Safety Issues
- Sticky Eyeball
- Sliding Scale (if time)

Dramatic simulation
- Scripts dramatize real adverse events
- Performed by learners
- Followed by discussion
  - Usually starts with trying to assign blame then moves to recognition of complexity
Mentoring Residents: Leadership; establishing trust; bringing about a just culture; taking care of the second victim; encouraging reporting and RCA participation

**Leadership Learning Objectives**
- Compare and contrast transformational and transactional leadership styles.
- Explain the concept of ‘mindfulness’ as it applies to patient safety leadership.
- Summarize actions leaders can take to improve patient safety in their organization.
- Produce examples of “Ahlert’s Paradox” from your own experience in health care.

**Leadership Styles**
- Transactional
  - Exchange between leader and follower
  - Both parties receive something of value
  - Follower (bonus, salary increase)
  - Leader (greater productivity, compliance with standard)
- Transformational
  - Deeply held personal value system
  - Unite followers and change their goals and beliefs
  - Raises level of human conduct

**Transformational Leadership Four Behaviors**
- Charismatic (enables influence = inspiration)
  - Vision, sense of urgency, value, personal integrity
- Intellectual stimulation (encourages innovative and / or original thinking)
- Individualized consideration (empowerment)
  - Support, collaboration, personal attention
- Inspirational motivation (enables vision)
  - Enthusiasm, hope, pride

**Leadership Virtues**
- Hope
  - Goal directed behavior
  - Commitment to continuous improvement
- Pride
  - Desire “to do good and be excellent in the work”
- Passion
  - “If you don’t love what you do, you can’t lead others at all”

**Mindfulness for Leaders**
- Reflection and self-awareness
- Acknowledge strong feelings and beliefs as well as utilizing evidence-based guidelines in making difficult decisions and solving problems
- Involve both explicit knowledge (e.g., guidelines) and know-how, skills, and values from experience. Clinical judgment as both science and art
- Recognize own bias and limitations. Act with principle and compassion
- Natural curiosity, open-mindedness, connectedness
- Better able to deal with uncertainty or the unexpected
- See things how they really are

Case Overview

- Fifteen men land on the ground to fight a dangerous fire. Three come out alive (Dodge because he was smart and the other 2 because they got lucky). The rest died for not following Dodge’s lead.
- Dodge was a man of few words.
- Firefighters knew each other through a three-week summer training, but had never worked together on an assignment.
- Team was assigned based on “rested-ness.”
- All the men were volunteers.
- Men in the 1940’s were trained to follow their commander’s lead.
- Wagner Dodge was the oldest (33) and had the most fire-fighting experience (9 years) of the 15 men.
- The radio was destroyed in the jump and one of the men forgot the map.
- It was an extremely dangerous and difficult situation.
- Dodge could never have anticipated the special events that were going to take place.
- The scene on the ground was impossible to fully assess from the air.
- Soldier mentality existed. They followed his instructions up to the point of jumping in the circle of fire.
- Dodge did not panic. He was able to think clearly.
- None were sleep deprived.
- They were aware of the missing gear before they landed.
- The men were confident they could tackle this task, even after they landed.
- The men could see Dodge motioning to them to jump in.
- All could have survived if they had followed him.
- Time was saved by sending the men ahead while he ran back for the lunches
- Time was saved by dropping gear to escape.
- The concept of a fire circle was Dodge’s own ingenuity conceived in the moment.

## Timeline

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 PM</td>
<td>Boarded Plane</td>
<td>50 minutes</td>
</tr>
<tr>
<td>4:10 PM</td>
<td>Hit the Ground (rest and food)</td>
<td></td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Underway</td>
<td>Dodge approached fire line and told men to wait in center of path. He left them and scouted alone. Dodge meets the reconnaissance person. Dodge finds that the fire is worse than originally assessed from the air. Instructs men to head for mouth of gorge without him as he returns to get forgotten food. Men divide into two groups (500 ft. apart) unsure of where each other are.</td>
</tr>
<tr>
<td>5:40 PM</td>
<td>Dodge catches up to the men. Leads them to point 4. Is more alarmed but says nothing.</td>
<td>5 minutes</td>
</tr>
<tr>
<td>5:45 PM</td>
<td>Dodge reverses course again, but says nothing. They run. Within minutes, Dodge passed information along line to drop equipment and move fast. Forest gave way to high grass which burns more quickly. Dodge knows it’s just a matter of minutes before they’ll be overtaken.</td>
<td>11 minutes</td>
</tr>
<tr>
<td>5:58 PM</td>
<td>Dodge lights backfire, motions for others to join. Sallee and Rumsey find safety in rockslide. Fire overtakes other firefighters.</td>
<td>Total: 1hr 48m</td>
</tr>
</tbody>
</table>

---

Fire leapfrogged to the north rim of the gulch, cutting off both the primary attack plan and escape route.
Exercise
In the Heat of the Moment

**Situation**
Dodge lit the fire ring and is motioning for the team to follow him.

**Team 1: Dodge**
You should follow me because...

**Team 2: Firefighters**
We’re not going to follow you because...
(Dodge) Feedback

Other groups have concluded:
- I have the most experience.
- I'm the person you wanted to follow the leader.
- No comments and calm (not panic like you).
- I used good judgment in calling time by letting you run ahead while I followed the course and told you to stop and run ahead to set up the course.
- I improved you after you dropped us.
- I was too loud to communicate properly, so I communicated through action.
- I was quick to adapt the plan as things were changing.
- I could have abandoned you to save myself, but didn't.

(Firefighters) Feedback

Other groups have concluded:
- We can't try you because you have no credibility with us.
- You abandoned us then you tell us to go on.
- You had no idea how bad this was, look how calm you've been.
- You chose a bad place to hold, now we're trapped.
- You don't have a plan. First you tell us to go forward, then around, now retreat.
- You're only thinking of yourself, you don't even know our names after training us for three weeks.

Exercise
Hindsight

Situation
Dodge sits in front of a review board who was assessing the situation of what happened that day.

Teams 1 & 2
What lessons were learned?

Lessons Learned

- Over-confidence can cloud your judgment (lost radio). Make a plan.
- Power of delegation vs. stamina "send others for the task".
- If you have made several bad decisions, be prepared to have your leadership challenged.
- A combination of small errors can create a disaster.
- ALWAYS lead from the front.
- Listen to the feedback - factor two-way communication - don't act unilaterally - many opinions produce better results than one.
- Once critics and critics betray, communication becomes even more difficult.
- The least experienced first-timer newcomers earn on.
- Anticipate future problems and develop action plans TODAY.

Food for Thought

- Why should anyone follow you?
- How do you really know what you or others are?
- Under what conditions is leadership most viable?
- Be prepared to have your leadership questioned.
- What lessons from your Guilt Case can you apply to your daily work as a leader?
- You finally learn your lessons, and then you die.
Storytelling

Exercise

Turn to your neighbor and tell a brief story of your direct involvement in an adverse event or near miss

Listen to your neighbor tell his/her story

See next page for problem-solving space....
What happened? Why did it happen? What might prevent it happening again – or – would prevent harm to the patient?

<table>
<thead>
<tr>
<th>Why did it happen? (Root Causes/Contributing Factors)</th>
<th>Actions/Interventions to Prevent Harm to Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>If needed, guide conversations away from personal blame &amp; guilt – there are always contributing factors and most often root causes in the system.</td>
<td>Encourage each duo to make notes as they listen to the story of the other – notes about system issues and potential fixes.</td>
</tr>
</tbody>
</table>
Disclosure Principles

- Medical care must be safe
  - Learning organizations
  - Systematic and continuous improvement
  - "When things go wrong"
  - Internally committed and care for patient names
  - Change systems to prevent future error
- Medical care must be patient-centered
  - Support the patient and maintain a healing relationship
  - Patients and families are entitled to know the details of incidents and their implications
  - Communication
  - Eliminate adversarial relationships that a secret, liability-focused approach fostered.

Disclosure Duty

- Ethics
  - Respecting patient autonomy
  - Maintaining a promise
  - Ensuring patient trust
- Professional Standards
  - ACA Code of Ethics
  - The Joint Commission
- Organizational Mission and Values
- Legal Support
  - Perioperative Medical Care Analysis and Reduction of Error Act, enacted in March 2003

Disclosure Bright Spots

[Map of the United States with red stars indicating bright spots]

Disclosure Challenging Myths

[Graph showing challenging myths]

Disclosure Three Types

- Clinical disclosure of adverse event
- Institutional disclosure of adverse event
- Large scale disclosure of adverse events

Disclosure When

- Disclosure is called for whenever an adverse event has a known effect on the patient that was not discussed in advance as a known risk.
- Disclosure is called for any time an adverse event necessitates a change in the patient’s care.
- Disclosure is called for when the adverse event potentially poses a significant risk to the patient's future health even if the likelihood of that risk is extremely small.
- Disclosure is called for whenever the adverse event involves providing a treatment or procedure without the patient’s consent.
Disclosure

– Schedule the discussion as soon as possible after the event. Pick a quiet place.
– Ask the patient whether he or she would like to include additional friends or family members in the discussion.
– Have a second person from the hospital sit in on the meeting (e.g., a nurse or risk manager).
– Sit down and lean into the patient and/or family. Pay attention to your own body language. Be empathetic.
– Provide a warning: “We have some bad news.”
– Admit the error and apologize. Say, “I’m sorry.”
– Discuss the adverse event, what went wrong with the system (but do not speculate), and what changes will occur to limit the likelihood something similar could happen in the future using clear, nondefensive, simple language. Do not blame others.
– Invite and answer all questions as honestly as possible.
– Above all else listen to the patient.

Looking back to page 10 of this workbook (the question about Reporting Systems), what modifications to your current reporting system need to be made in order for you to trust it sufficiently to encourage use by your residents?
Resident Supervision & Mentoring (Faculty Development questions)
Scenario: You’ve delivered convincing statements to residents about the importance of reporting. “By not reporting, you choose not to let systems learn.” One of your best residents reports an adverse event. The resident’s faculty-mentor insists that the details become part of the resident’s permanent record. Assume that this was not an intentionally unsafe act – and that the goal is to promote reporting in order to learn from adverse events.

Formulate arguments or talking points to persuade your faculty colleague. Make the case for NOT making this part of the resident’s permanent record.

How will you turn it into a discussion of disclosure?

See next page for answer key for this exercise.
Answer Key for Swift and Long Term Trust

Assignment: Formulate arguments or talking points to persuade your faculty colleague. Make the case for NOT making this part of the resident’s permanent record.

Potential strategies for arguments:
1.) Get your colleague to tell his/her own story – tell yours

2.) List things that could be learned from the events, cite literature about the results of resident involvement, for example:
   
   Kevin G.M. Volpp, M.D., Ph.D., and David Grande, M.D. Residents' Suggestions for Reducing Errors in Teaching Hospitals. Volume 348:851-855 February 27, 2003 Number 9


3.) When a human makes a mistake, will punishment delivered by the shame and blame police result in future error free behavior? “To err is human.” Humans making mistakes are simply expressing normal human behavior. The more important question is: what can be done to reduce the probability of an undesirable event happening again?

4.) Cite aviation reporting history – and what happened when New Zealand revealed pilot identification (reporting stopped). This story highlights the critical importance of trust in predicting an individual’s willingness to report.

5.) Reporting involves taking a personal risk. Therefore the resident deserves protection from punitive measures.

6.) Is it fair?

7.) Will documenting the resident’s role violate confidentiality and protections built in for patient safety activities; what will it accomplish?

8.) Have disclosure requirements been covered without need for this punitive step?

9.) What punitive experiences have you experienced that were unfair & should be spared current and future residents?

10.) Cite David Marx’s just culture and Rules of Causation

11) If this event becomes a permanent part of the resident’s personal record of employment, what is the likelihood that this resident will report future adverse events or close calls?
Safe handoffs

Learning Objectives

- Recognize communication failure as a leading cause of adverse events in healthcare.
- Rationalize why the increased number of handoffs due to duty hour restrictions may not contribute to increased patient safety vulnerability.
- Demonstrate portfolio management for a patient cohort.
- Contribute to the definition of standardized handoff in a way that preserves flexibility for customization.

No easy solutions or shortcuts

No silver bullet for safe patient hand-offs

“I have a microwave fireplace. You can lay down in front of the fire all night in eight minutes.”

- Steven Wright

Coming up

- A few definitions
- Old & new models for teaching handoffs
- Why isn’t it as bad as we expected?
- What makes it so hard to teach?
- Why bother learning to teach new strategies?
- A chance to practice (a teaching method).

Hand off / sign out

- Handoff – poorly defined in published literature.
- Goal of handoff/handover – Continuity of care across a transfer of responsibility for patient care.

“...Improve the effectiveness of actions taken by the receiving party.”

- Cohen

Primary Objective

The hand off will provide accurate information about a patient’s care, treatment, and services; current condition; and any recent or anticipated changes.

Why so difficult to teach/learn?

Healthcare systems are complex, interconnected, event-driven, time-pressured, and resource-constrained with the potential for high consequences for system failure.

The work is distributed across multiple people in dedicated roles with specialized knowledge and expertise.
Exercise – Part V

Review your storyboard Part I and IV. How did hand-offs/transitions in care contribute to the bad outcome?
Three Phases

I. Preparation
   - Ensure access to information for new team
   - Synthesis: rational organization based on patient history and current status

II. Transfer of responsibility
   - Shared cognition
   - Joint problem solving
   - Cross-training teams
   - Integrate, but take care decision-making

III. Immediate Impact
   - New item is ready for urgent care
   - What patients
   - What actions

Ideal model

- Concise
- Problem-based
- Sickest patients first
- Up-to-date
- Accurate
- Reliable
- Active sign-in
- “Star rating” — Helms

Resources

- Computer generated info to minimize rewriting
- Quiet space
- Interruption/distractions-free zone
- Easy access to EHR

Resident recommendations

1. Name and demographics
2. Star-rating field
3. Chronic diagnoses
4. Important medications visually connected to diagnosis/therapeutic intent
5. Inpatient procedures (date performed)
6. Active important problems (most critical and acute listed first)
7. Anticipated events
8. To do list
Early Warning Signs Score

<table>
<thead>
<tr>
<th>Score</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart rate (bpm)</td>
<td>&lt;40</td>
<td>40 – 50</td>
<td>51 – 100</td>
<td>101 – 110</td>
<td>111 – 129</td>
<td>&gt; 130</td>
<td></td>
</tr>
<tr>
<td>Systolic Blood Pressure (mmHg)</td>
<td>≤ 70</td>
<td>71 – 80</td>
<td>81 – 100</td>
<td>101 – 159</td>
<td>160 – 199</td>
<td>200 – 220</td>
<td>&gt; 220</td>
</tr>
<tr>
<td>Respiratory Rate (breaths/min)</td>
<td>&lt; 8</td>
<td>8 – 9</td>
<td>10 – 14</td>
<td>18 – 20</td>
<td>21 – 29</td>
<td>&gt; 30</td>
<td></td>
</tr>
<tr>
<td>Temperature (°F)</td>
<td>&lt; 95.0</td>
<td>95.0 – 96.8</td>
<td>96.9 – 100.4</td>
<td>100.5 – 101.3</td>
<td>&gt; 101.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consciousness</td>
<td>U</td>
<td>P</td>
<td>V</td>
<td>A</td>
<td>Agitated or Confusion</td>
<td>New onset of agitation or confusion</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>Unresponsive/No reaction</td>
<td>P</td>
<td>Response to Pain</td>
<td>V</td>
<td>Response to voice</td>
<td>A</td>
<td>Alert</td>
</tr>
</tbody>
</table>

If you are uneasy with the patient’s condition: Add 1 point

Urinary production < 75ml during last 4 hours: Add 1 point
Oxygen Saturation < 90% despite therapy: Add 3 points

Patient scores 4 points or higher → Activate CAT team
Patient scores 6 points or higher → Activate the CAT team & Call physician

Green = 0-1
Stable
Yellow = 2-3
Stay Alert to Changes
Orange = 4-5
Activate CAT Team
Red = ≥ 6
Activate CAT & Call Physician

10 Van Eaton et al

Fig 3. Part of an sample printed rounding list report. Vital signs and laboratory values are imported from the hospital’s electronic clinical information system.
Summary

• Educating residents to perform effective handoffs
  – Promotes patient safety
  – Maintains continuity of care
  – Enhances professionalism through teamwork.
  – Like fixing an engine while it’s running.
  – It is a “sweet spot”

References

• Farnan et al 2009. Handoff education and evaluation: Pilot testing the observed simulated handoff (O3HS). JGIM
Mistake Proofing

[Breakout session]

“Be More Careful” is Not Effective

- “Training and motivation work best when the physical part of the system is well-designed. If you train people to use poorly designed systems, they’ll be OK for awhile. Eventually, they’ll go back to what they’re used to or what’s easy, instead of what’s safe.”

“Be More Careful” is Not Effective

- “You’re not going to become world class through just training. You have to improve the system so that the easy way to do a job is also the safe, right way. The potential for human error can be dramatically reduced.”

References

- John Grout’s Mistake-Proofing page: http://www.mistakeproofing.com
- Error Proofing Techniques: http://elsmier.com/Error_proofing/std001.htm
- Six Sigma: http://www.sixsigma.com/tpc/tpc polite site/
Key Patient Safety Analysis Tools

Learning Objectives

- Hands-on experience with HFE diagnostic methods.
- Ability to demonstrate chronological analysis and apply causation theory in two different but complementary methods.
- Observe the connection between accurate diagnosis and effective problem-solving.

Key tools

1. Cause and effect diagramming
   - We are hard-wired not to do this well.
2. Rules of Causation

Flow Diagram

Two Key Tools for Patient Safety Problem Solving

1. Cause and Effect Diagram
2. Five Rules (Principles) of Causation
   - Woodcock article about novices vs. experts doing RCAs
   - Only the use of tools showed statistically and meaningful difference in data gathering and decisions

Why Cause and Effect Diagram?

1. It works in real-life RCA teams
   - Fosters analysis within time constraints
   - Directly maps to writing of root cause statement
2. Cited as crucial tool
   - Sidney Dekker commentary online
   - Sidney Dekker, *Field Guide to Human Error Investigation*

Fig. 1. Study 2, mean number of facts retrieved, by group.
Step 1:
Problem statement

Step 2:
Develop Primary Causes

- Strategies
  - Use triage & triggering questions (see Image Cards)
  - Ask caused by questions
  - Use brainstorming

- Reveal more causes:
  - Site visits
  - Simulations
  - Literature search
  - Interviews

Advanced Cause and Effect Diagram

- Actions
  - Things that happen in a moment of time
    - Example: patient goes to bathroom

- Conditions
  - Things that exist over time
    - Example: bathroom door is narrow
Step 2:
Develop primary causes.

This is a small group effort -
1. Be sure that every person at the table has a *bunch* of sticky notes
2. Follow the steps outlined in the didactic portion to assist in constructing a C & E diagram of an ordinary everyday mishap.

*Getting the problem statement correct is the essential first step. Ask “what is it that is to be avoided?”*

*Continue by developing primary causes. This page is for notes - the group diagram should be completed using sticky notes on the easel.*

**Actions:** Momentary, fleeting
**Conditions:** Exist overtime
**Primary causes:** Without these present, event would not have happened
Complete Causal Chain

- Develop actions or conditions for each chain/branch
  - Expect interrelationships, question marks
- Continue to review notes from site visits, simulations, references, etc
- Apply 5 rules of causation to prevent stopping too early (we will cover this next)

**Actions**: Momentary, fleeting
**Conditions**: Exist overtime
**Primary causes**: Without these present, event would not have happened
Causal Statements

• For a full Root Cause Analysis
  – Translate diagram into causal statements
  – Each branch ~ one causal statement

• If 5 rules were used to develop the diagram
  – Little effort will be needed

Example

• From the RCA exercise on curriculum website.

• Nurse practitioner inadvertently misplaces TE feeding catheter in esophagus.

• Many ideas/paths can be found in the instructors guide for this case.

• Push for design issues, since RCA teams (real or trainees) will go to policy first.
Summary of the Event
G.S. is a 66 year old man who had major neck surgery for cancer and has to be fed via a special tracheal-esophageal tube in his neck. He entered the Extended Care Therapy Center (ECTC) for prostate surgery on October 20th. He had his hollow tube replaced by a “keep-open” tube (Robnel catheter) by the Ear-Nose-Throat (ENT physician). He then was asked to eat a soft mechanical diet by mouth. Two days later, he was NPO (no food by mouth) and had a TURP (Trans Urethral Resection of the Prostate) surgery under general anesthesia. One day later, he returned to the ECTC and was placed back on the soft mechanical diet.

After 8 days on this diet, he was not eating or drinking much at the ECTC. He was also undergoing several days of radiation therapy for his neck cancer. On November 1st, the nurse practitioner (NP) at the ECTC replaced the feeding tube through the TE stoma (hole in the neck). ENT physician was not called, and the NP followed the instructions found in the packaging. The instructions did not call for confirmation of placement by X-ray.

Before the RN covering this patient was to connect liquid food to the catheter, she called the physician on call for confirmation of change of diet and route. A chest X-ray was ordered and found the tube to be only part of the way in (stopped at the mid esophagus). The tube was advanced to the stomach before any feeding through the tube was started.

Other Important Data
1) Patient was cared for on 11/1/01 with full physical exam, increased IV fluid rate, and cautionary antibiotics
2) Many procedures at the ECTC were done by nurse practitioners in order to meet needs of the many patients in a timely basis
3) The feeding tube set was new, due to a change in purchasing contract that month
4) This nurse practitioner had missed the in-service training for the new feeding tube set
5) The patient was Do-Not-Resuscitate (DNR)
6) There were few resources at the ECTC to encourage or assist patients if they had difficulty eating or drinking by mouth
7) Event has occurred before. Corrective actions included more training of personnel involved, new procedures for feeding those with tubes, and new tubing sets
This example is included to illustrate the complexity of C-E diagramming – it isn’t related to any of our case studies.