The Knowledge Imperative

Timothy B McDonald, MD JD

September 7, 2012
SESSION DESCRIPTION

• Interactive session on the role of science in patient safety that will address how knowledge, skills and behavioral competencies are critical to reducing errors.
• Implications and opportunities for medical students
HOW SONIA HAS ALWAYS FELT ABOUT LAWYERS
• Human factors science research examines the environmental, organizational and job factors of humans interacting with systems, as well as the physiological and psychological characteristics which influence behavior at work.
Societal, Cultural and Regulatory Influences

Organizational and Management

Team (Group)

Individual
Medical Student

Work Environment/Equipment

PATIENT
Culture eats strategy for breakfast
A CASE TO ILLUSTRATE THE IMPORTANCE OF KNOWLEDGE, SKILLS, AND BEHAVIORAL COMPETENCIES IN ERROR REDUCTION

• July 17, 2012
• Post-operative patient has “routine labs” drawn at midnight
• At 2 am -hemoglobin reported as 7.1 gms/dL
• First year resident physician called
• Orders patient to receive one unit pRBCs
• Concerns?
TIMELINE 7-9 THRU 7-17
A CASE TO ILLUSTRATE THE IMPORTANCE OF KNOWLEDGE, SKILLS, AND BEHAVIORAL COMPETENCIES IN ERROR REDUCTION

• On July 9, 2012 patient was admitted with altered mental status and unable to communicate.
• Discussion with patient’s mother revealed that patient was a Jehovah’s Witness.
• Consented to the administration of fresh frozen plasma, platelets.
• Refused to consent to pRBCs
• New concerns or questions?
A CASE TO ILLUSTRATE THE IMPORTANCE OF KNOWLEDGE, SKILLS, AND BEHAVIORAL COMPETENCIES IN ERROR REDUCTION

• Back to July 17, 2012
• 2 am bedside nurse sends clot to blood bank
• 5 am blood bank sends unit of pRBCs
• Bedside nurse asks charge nurse to “double check” consent
• Charge says to “go ahead” – consent in order
• Nurse begins to administer blood
• 7 am next shift arrives, alarmed to see blood hanging
• Concerns, questions, what next?
A COMPREHENSIVE RESPONSE TO PATIENT INCIDENTS: THE SEVEN PILLARS.

MCDONALD, MAYER ET AL. QUALITY AND SAFETY IN HEALTH CARE, JAN 2010

• Reporting
• Investigation
• Communication
• Apology with remediation – including waiver of hospital and professional fees
• Process and performance improvement
• Data tracking and analysis
• Education – of the entire process
The Seven Pillars:
A Comprehensive Approach to the Prevention and Response to Patient Events

Data Base

Patient Communication Consult Service 24/7 Immediately Available

Patient Harm?

Yes

Consider “Second Patient” Error Investigation Hold bills

No

Inappropriate Care?

Yes

Activation of Crisis Management Team – emotional first aid

No

Full Disclosure with Rapid Apology and Remedy

Unexpected Event reported to Safety/Risk Management

“Near misses”

Process Improvement
The Swiss Cheese Model of Accident Causation

Some holes due to active failures

Hazards

Other holes due to latent conditions

Successive layers of defenses, barriers, & safeguards

Losses
ISSUES IN THIS CASE

• Culture
• Organization
• Team
• Individual
• Work Environment
• Patient
AS BACKGROUND:
JEHOVAH’S WITNESSES AND REFERENCES TO BLOOD

- **Genesis 9:4** "But flesh (meat) with...blood...ye shall not eat"
- **Leviticus 17:12-14** "...No soul of you shall eat blood...whosoever eateth it shall be cut off"
- **Acts 15:29** "That ye abstain...from blood..."
- **Acts 21:25** "...Gentiles...keep themselves from things offered to idols and from blood..."
HUMAN FACTORS MODEL:
CREDIT TO JOHN GOSBEE

Psychomotor
- Hand
- Feet

Senses
- Vision
- Hearing

Input Devices
- Buttons
- Foot pedal

Output
- CRT
- Sound
7-9-2012 The following note was written on 7-9-2012.

“Pt is a Jehovah’s Witness and is not to receive PRBCs but is ok for plt and ffp per mother.”

This note is copied and pasted every day until 7-16-2012.

Person who wrote the note admitted to being unaware of the content.

“Push button” medicine?

Legal implications
BLOOD CONSENT FORM

I certify that I personally explained the above risks and benefits to the patient and obtained his/her consent.

Understanding the nature of my condition, the reasons for and risks of blood transfusion, and alternative methods of treatment including those not involving transfusion, I have decided to withhold consent for the administration of blood components. I realize I may revoke my refusal at any time and thereafter consent to the receipt of such blood components, under the conditions specified in the above form.

REFUSAL TO CONSENT TO TRANSFUSION

[Signature]

N [initial] RBC's

DATE: 7/9/12
TIME: 11:10

Mother

SIGNATURE OF PATIENT (OR PERSON AUTHORIZED TO CONSENT FOR PATIENT)

SIGNATURE OF PHYSICIAN WHO DISCUSSION THE PROCEDURE WITH PATIENT (OR PERSON AUTHORIZED TO CONSENT FOR PATIENT)

7/9/12
11:10
PATIENT FOLLOW-UP

• Team had a detailed family discussion and it was explained to them patient has critically low Hb [5 gms/dl] and due to patient being Jehovah's witness, lack of transfusion can endanger his life. Family understood the implications of not transfusing and made a decision to no transfuse him. He was also made DNR per family wishes.
HUMAN FACTORS: INFORMATION MANAGEMENT & COMMUNICATION

- Copy and Paste in Medical record
- Verbal orders
- Inadequate hand-off and knowledge of critical information
- Notification of blood bank of limited consent
- “Human factors” related to signed consent
- Consents in multiple areas of paper chart not in EMR as discrete documents until scanned after discharge
- Consent design – consent signature and refusal to consent on same page
HUMAN FACTORS: HUMAN RESOURCES
INDIVIDUAL TASK PERFORMANCE

- 41 hours of overtime in past time period
- Policies and procedures not followed
- Not patient-centered – no notification of family prior to transfusion.
- Cut and paste
- Verbal orders
Unsafe Acts Algorithm

1. Were the actions as intended? NO
2. Evidence of illness or substance use? NO
3. Did the consequences as intended? NO
4. Substance abuse without mitigation
   - Culpable

5. Known medical condition?
   - Substances use with mitigation
   - Gray Area
6. Were the procedures available, workable, intelligible, correct and routinely used? NO
7. System induced violation
   - Blameless error
   - System induced error
8. Deficiencies in training, selection, or inexperienced?
   - Yes, blameless error, corrective training, counseling indicated
   - Blameless error
9. Pass substitution test? (Could someone else have done the same thing)? NO
10. History of unsafe acts? YES

An Assessment of an Educational Intervention on Resident Physician Attitudes, Knowledge, and Skills Related to Adverse Event Reporting

Barbara G. Jericho, MD
Rosalie F. Tassone, MD, MPH
Nikki M. Centomani, RN, BSN
Jennifer Clary, BA
Crescent Turner, RN, MS
Michael Sikora, MD
David Mayer, MD
Timothy McDonald, MD, JD

188 Journal of Graduate Medical Education, June 2010
REPORTING

- Reporting established as an expectation and part of Core Competency assessment.
In July 2008, a survey was provided to the anesthesia residents regarding their attitudes about adverse events.

Start of the Anesthesia Resident Reporting program.

Start of the Online Occurrence Reporting System in 8/06

In July 2009, the anesthesia residents were resurveyed regarding their attitudes about adverse events.
## Event Data

<table>
<thead>
<tr>
<th>Category of occurrence</th>
<th>Number</th>
<th>Lack of adequate supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consent/Documentation</td>
<td>3</td>
<td>2 of 3</td>
</tr>
<tr>
<td>Disruptive provider</td>
<td>7</td>
<td>0 of 7</td>
</tr>
<tr>
<td>Equipment</td>
<td>7</td>
<td>0 of 7</td>
</tr>
<tr>
<td>Patient fall</td>
<td>2</td>
<td>0 of 2</td>
</tr>
<tr>
<td>Lab specimen mislabeled</td>
<td>2</td>
<td>0 of 2</td>
</tr>
<tr>
<td>Medication issues</td>
<td>19</td>
<td>3 of 19</td>
</tr>
<tr>
<td>OB anesthesia complications</td>
<td>3</td>
<td>0 of 3</td>
</tr>
<tr>
<td>Delay in treatment/service</td>
<td>8</td>
<td>0 of 8</td>
</tr>
<tr>
<td>Unplanned extubation</td>
<td>2</td>
<td>0 of 2</td>
</tr>
<tr>
<td>Patient transport issues</td>
<td>12</td>
<td>0 of 12</td>
</tr>
<tr>
<td>Treatment/procedure complications [intubation, regional block, central line placement]</td>
<td>17</td>
<td>9 of 17</td>
</tr>
<tr>
<td>Resident needlestick</td>
<td>2</td>
<td>0 of 2</td>
</tr>
</tbody>
</table>
ATTITUDE DATA: ATTITUDE IMPROVEMENTS [N = 50]

- “I don’t report because I am worried about discipline”
- “I don’t report because I am worried about litigation”
- “I don’t report because my colleagues may be unsupportive”
- “I don’t report because I am uncertain which incidents to report”
- “Current systems for reporting patient safety problems are adequate”
- “Hospitals adequately support providers who experience stress”
LESSONS LEARNED

• WE CANNOT FIX WHAT WE DO NOT KNOW ABOUT

• MEDICAL STUDENTS CAN GAIN KNOWLEDGE, SKILLS AND BEHAVIORAL COMPETENCIES IN PATIENT SAFETY AND HUMAN FACTORS SCIENCE THRU REPORTING INTO A ORGANIZATION’S PATIENT SAFETY/OCCURRENCE SYSTEM AND ENGAGING IN FOLLOWUP INVESTIGATION AND PERFORMANCE IMPROVEMENT EFFORTS
QUESTIONS?