Human Factor Based Quality & Safety : Examples

Module 3. Integrated Model: Patient Safety & Clinician Wellbeing

Michael R Privitera MD MS
Professor of Psychiatry
Director, Medical Faculty and Clinician Wellness Program
University of Rochester Medical Center
Chair, MSSNY Task Force on Physician Stress and Burnout.
Malpractice Claims Frequency Comparison

Intervention= Organization-Wide Stress Management Program

<table>
<thead>
<tr>
<th>HOSPITAL GROUP</th>
<th>Baseline Year</th>
<th>Following Year</th>
<th>Claims Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Control Hospitals (n=22)</td>
<td>36</td>
<td>1.64</td>
<td>1.81</td>
</tr>
<tr>
<td>Intervention Hospitals (n=22)</td>
<td>31</td>
<td>1.41</td>
<td>1.44</td>
</tr>
</tbody>
</table>

Baseline Year  $t(21) = 1.16$, n.s.
Following Year $t(21) = 2.89$. $p<0.01^*$

Jones, John W.; Barge, Bruce N.; Steffy, Brian D.; Fay, Lisa M.; Kunz, Lisa K.; Wuebker, Lisa J.
Stress and medical malpractice: Organizational risk assessment and intervention.
Emotional Influences in Patient Safety

How doctors feel: affective issues in patients’ safety    Lancet, 2008

Historically, the prevailing view in medicine is that clinical decisions should be objective and free from contextual affective issues. One could not be objective and

The Affective Imperative: Coming to Terms with Our Emotions    Acad Emerg Med, 2007

Commentary: A unique and distinguishing feature of the article by Dr. Amato in this issue is her account of powerful visceral reactions toward a patient that include empathy, compassion, revulsion, disgust, and doubt.

Diagnostic Failure: A Cognitive and Affective Approach    In Advances in Patient Safety: From Research to Implementation, 2005

Pat Croskerry

Abstract
Diagnosis is the foundation of medicine. Effective treatment cannot begin until an accurate diagnosis has been made. Diagnostic reasoning is a critical aspect of clinical performance. It is vulnerable
# NASA TLX on Workload

<table>
<thead>
<tr>
<th>Demand</th>
<th>Rating Question</th>
<th>Rating</th>
<th>X Weight</th>
<th>= Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Demand</td>
<td>How mentally demanding was the task?</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Physical Demand</td>
<td>How physically Demanding was the task?</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Temporal Demand</td>
<td>How hurried or rushed was the pace of the task?</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Performance</td>
<td>How successful were you in accomplishing what you were asked to do?</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Effort</td>
<td>How hard did you have to work to accomplish your level of performance?</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Frustration</td>
<td>How insecure, discouraged, irritated, stressed and annoyed were you?</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total weights = 15**

\[
\text{Sum} = \frac{\text{Total weights}}{15} = \frac{15}{15} = 1
\]

**Mean Score =**
Workload (NASA TLX Score) and Frequency of Radiotherapy Incidents $r = 0.87$, $P$ value $= .045$

Can you think of examples where mental or temporal demand, effort or frustration lead to error or near miss?

Pair into groups, discuss with neighbor, share with larger group.
Error Sensitivity to Sleep Deprivation in Burnout and Depression

Fahrenkopf 2008
Medical Errors, Personal Distress, Reduced Empathy and Future Errors

- Self perceived medical errors - common among internal medicine residents
  - Subsequent personal distress, increased burnout and depression, decreased empathy.
  - Increases odds for future self-perceived errors

- Suggests a vicious cycle.

- Suggestions:
  1. Efforts to decrease errors
  2. Focus on systemic contributions to error & fatigue
  3. Help with coping, personal awareness and self care.

Cyclical Relationship between Burnout and Errors

- Burnout & Depression contributing to Medical Errors
- Medical Errors contributing to Burnout & Depression

- ORGANIZATIONAL contributions to Burnout & Depression
- ORGANIZATIONAL contributions to Medical errors
What are some ideas on how to interrupt this vicious cycle of medical error, burnout, depression and medical error?

Group together, discuss, share with group.
External world environment

Medical Culture of Endurance and Silence

Internal world:
- Altruism, workaholic, perfectionism, obedience to authority.
- ‘I don’t want them to think I can’t handle this’.
- ‘Things kept getting in the way of me taking care of patients’.
- ‘My family is depending upon me’. 21 years of school, $250,000 in debt.

- New (authority of choice) regulations say this is ‘good care’ and led to believe possible to do --in context of all other requirements (though no one oversees the total demand).
- Complaining = whining
- You are a professional, self-effacement, put aside how you feel*
- Not differentiate eustress from distress or hyper stress.
- ‘You are lucky to be working/ training here’.
  - Don’t be ‘weak’.
  - Don’t be a ‘fanatic’.
What are some ways to get clinicians to be able to speak up about overwhelm, personal safety and patient safety?

Speak with neighbor, reconvene as a group and share ideas.
1. **Improving workflows** within the practice is the most powerful antidote to burnout
   - Reduces burnout 6 fold.

2. **Targeted quality improvement projects** addressing clinician concerns
   - Reduces burnout 5 fold.

3. **Improving communication** between team members
   - Improves professional satisfaction 3 fold.

A Cluster Randomized Trial of Interventions to Improve Work Conditions and Clinician Burnout in Primary Care: Results from the Healthy Work Place (HWP) Study. *J Gen Intern Med.* 2015.
1. **Physical ergonomics** - deals with human body’s responses to physical and physiological work loads
   • e.g. vibration, force, repetition, posture.

2. **(Neuro)Cognitive ergonomics** - deals with brain and mental processes and capacities of humans when at work;
   • e.g. mental strain from workload, decision making, human error and training efforts.

3. **Organizational ergonomics** - deals with organizational structures, polices and processes in work environment;
   • e.g. shift work, scheduling, job satisfaction motivation, supervision, teamwork, ethics, organization of mandatories.
Integrative Model: Patient Safety and Staff Wellbeing

Positive Quality Producing Conditions

Contributory Factors Influencing Practice

Organization & Management Culture
- Work Environment

Management Decisions & Organizational Processes
- Team
- Individual (staff)

National, state, industry, regulatory-imposed factors
- Task
- Patient

Error & Violation Producing Conditions

Latent Failures*

Potential Care Delivery

Excellent care
- Thwarted care
- Chronic

Average Care
- Thwarted care
- Chronic

Poor care
- Thwarted care
- Chronic

Care Delivery Problems

Unsafe Acts
- Errors
- Violations

Active Failures

Actualized Care Delivery

Excellent care

Average Care

Poor care

Incident

Defenses Barriers

Near miss

KEY

*= Bio psychosocial change of individual providing care: Burnout, depression, substances lack of sleep, emotional, time pressure, frustration.

|= Extraneous cognitive load. Well meaning but excessive or poorly designed guardrails/mandates/regulations that thwart care.

|= Well designed judicious use of defenses, Barriers.

*Latent Failures include poor design, installation, and maintenance of equipment, management decisions, and organizational functioning, and thwarted care leading to acute high stress and chronic high stress.


What are some examples of factors that thwart care that can lead to acute risk of error? (Group 1)

What are some examples of factors that chronically thwart care that can affect the clinician in ways that devolve their ability to give quality care? (Group 2)

Each group separate and discuss.
Group 1 share with group their findings.
Then Group 2 share with the group their findings.
Comparative Decision Making

- We often try to emulate what effective leaders do.
- A more productive approach is to look at how successful leaders think.
- Most successful leaders studied are integrative thinkers.

<table>
<thead>
<tr>
<th>STEPS</th>
<th>1. DETERMINING SALIENCE</th>
<th>2. ANALYZING CAUSALITY</th>
<th>3. ENVISIONING the DECISION ARCHITECTURE</th>
<th>4. ACHIEVING RESOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional Thinkers</td>
<td>Focus only on obviously relevant features</td>
<td>Consider one-way linear relationships between variables in which more of “A” produces more of “B”</td>
<td>Break problems into pieces and work on them separately</td>
<td>Make “either-or” choices; settle for best available options</td>
</tr>
<tr>
<td>Integrative Thinkers</td>
<td>Seek less obvious but potentially relevant factors</td>
<td>Consider multidirectional and nonlinear relationships among variables</td>
<td>See problems as a whole. How parts fit together and how decisions affect one another. Hold in head two opposing ideas at once.</td>
<td>Creatively resolve tensions among opposing ideas; generate innovative outcomes. New idea may have elements of each, but is superior to both.</td>
</tr>
</tbody>
</table>

Mandatories Lists A and B, each compiled by different sources. Some overlap expected.

### Attachment A Mandatory Requirements

<table>
<thead>
<tr>
<th>Source</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHS</td>
<td>HIPAA training</td>
</tr>
<tr>
<td>CMS, TIC</td>
<td>Safety Survey</td>
</tr>
<tr>
<td>SMH Policy</td>
<td>Radiation Privileged training</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>Health report</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>PPD</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>Mask Fitting</td>
</tr>
<tr>
<td>OSHA</td>
<td>Infectious Control</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>Sepsis Training</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>Flu Shot</td>
</tr>
<tr>
<td>Federal</td>
<td>NPI</td>
</tr>
<tr>
<td>Medicare</td>
<td>Time and Effort Survey</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>Optima Training</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>Antibiotic Stewardship</td>
</tr>
<tr>
<td>SMH Policy</td>
<td>ICD-10 Training</td>
</tr>
<tr>
<td>SMH Policy</td>
<td>EMR Training</td>
</tr>
<tr>
<td>SMH Policy</td>
<td>SMH Update Training</td>
</tr>
<tr>
<td>SMH/Dept</td>
<td>Cultural Competence</td>
</tr>
<tr>
<td>Multiple</td>
<td>Yearly Mandatory In-Service Training</td>
</tr>
<tr>
<td>Private Pay/SMH</td>
<td>Board Certification</td>
</tr>
<tr>
<td>Bylaws &amp; Policy</td>
<td>Maintenance of Certification</td>
</tr>
<tr>
<td>SMH Policy/Dept</td>
<td>Code of Conduct</td>
</tr>
<tr>
<td>SMH Policy/ICARE</td>
<td>Training of Staff and Staff</td>
</tr>
<tr>
<td>TAC</td>
<td>Authentication of Skill Demonstrations-Restrains</td>
</tr>
<tr>
<td>U of R/NYS</td>
<td>Sexual Harassment</td>
</tr>
<tr>
<td>Federal</td>
<td>Bullying/implicit Bias/Diversity</td>
</tr>
<tr>
<td>SMH Policy/Specialty</td>
<td>ACLS Certification</td>
</tr>
<tr>
<td>SMH Policy/Laser</td>
<td>Radiation Safety</td>
</tr>
<tr>
<td>SMH Policy/Radiation</td>
<td>Ultrasound Training</td>
</tr>
<tr>
<td>NYSDOH</td>
<td>Child Abuse Mandatory Reporter Training</td>
</tr>
<tr>
<td>U of B</td>
<td>Unconscious Bias Training</td>
</tr>
<tr>
<td>Senior</td>
<td>Annual Financial Disclosure</td>
</tr>
<tr>
<td>Career: RHIB</td>
<td>Human Resource Patient Protection</td>
</tr>
<tr>
<td>Caree: GME/UNF</td>
<td>Student Evaluations</td>
</tr>
<tr>
<td>Career: Clinic/Trial</td>
<td>Clinical Trial training modules</td>
</tr>
<tr>
<td>Sponsor</td>
<td></td>
</tr>
<tr>
<td>Career related</td>
<td></td>
</tr>
<tr>
<td>Payor/SMH Policy/Bylaws</td>
<td></td>
</tr>
<tr>
<td>Federal/NYS Education</td>
<td></td>
</tr>
</tbody>
</table>

### Attachment B

#### Compliance – Everyone
- HIPAA Privacy, Security, and Confidentiality of Information
- HH/SADS Confidentiality
- Joint Commission Readiness
- Occurrence & Change Reporting
- Patient Rights/Ethics/Complaint Process
- Patient Safety, Team Communication, and Medical Health Care Error Reduction
- QM & Performance Improvement

#### Compliance – Clinical
- Consent for Care through Interdisciplinary Communication
- Medical Record Documentation for Clinical Staff
- Write Down, Feed Back

<table>
<thead>
<tr>
<th>Instrument of Care – Everyone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Shooter</td>
</tr>
<tr>
<td>Amber Alert</td>
</tr>
<tr>
<td>Disaster Preparedness</td>
</tr>
<tr>
<td>Electrical Safety</td>
</tr>
<tr>
<td>Emergency Plan Control</td>
</tr>
<tr>
<td>Fall/Safety</td>
</tr>
<tr>
<td>Firearms/Weapons</td>
</tr>
<tr>
<td>Hazard Communication</td>
</tr>
<tr>
<td>WPI Safety</td>
</tr>
<tr>
<td>(Disabling Public Safety/Sec)</td>
</tr>
<tr>
<td>Radiation Safety</td>
</tr>
<tr>
<td>Waste Management</td>
</tr>
<tr>
<td>Workplace Violence/Exploiting</td>
</tr>
</tbody>
</table>

#### Environment of Care – Clinical
- Medical Equipment
- Infection Prevention – Everyone
- Bloodborne Pathogens/Standard Hand Hygiene
- Infection Surveillance – Ebola
- Influenza – What You Should Know

#### Prevention of Infections
- Prevention of General Care Infections
- Prevention of Surgical Site Infections

#### Patient Interactions – Clinical
- Anticoagulation Safety
- End of Life Care
- Ensuring Comprehensive Handoffs
- Effective/EMDR Executive/Procedures
- Health Literacy
- Information for Clinical Decision Making
- Medical Orders for Life-Sustaining Treatment (MOLST)
- Medication Reconciliation
- Multiple Resistant Organisms
- Organ, Eye, and Tissue Donation
- Pain Management
- Radiation Safety
- Seizure Management

#### UIR at Work – Everyone
- Code of Conduct
- Code of Organizational and Business Ethics
- Diversity and Inclusion
- Interactions Between UIR Medicine & Industry
- Meal Periods and Rest Breaks
- Policy Against Discrimination and Harassment
- Professional Conduct Event Education
- Professional Misconduct Reporting and the Impaired Professional
- Smoke-Free Campus, Inside and Out

#### UIR at Work – Clinical
- Conflict of Care

### Highland Hospital Employee General Modules
- Access to Medication Storage
- Bariatric Sensitivity
- Employee Use of Social Media
- Forensics
- Highlevel Code of Conduct & Compliance Statement
- Highlevel Promise

### Jones Memorial Hospital Employee General Modules – Everyone
- Patient Prisoner Population

### Thompson Health Employee General Modules – Everyone
- Incident Reporting
- Non-Discrimination
- Policies and Procedures
- Public Relations
- Quality Improvement
- SBAR
- Service Excellence

### University of Rochester Employee General Modules – Everyone
- Minimum Standards Programs for Minors
- Patient Prisoner Population
- Staff Handling of Unknown Substances
- The ICARE Commitment

### University of Rochester Employee General Modules – Clinical
- Clinical Alarm Management
Mandatories list is a product of national, state or industry level Conventional Thinking.

Conventional Thinker not able to weigh benefits versus downstream risks as an Integrative Thinker would, who could be better aware of the potential interaction with other factors in the healthcare system.

Integrative Thinkers, by weighing factors, come up with superior solutions and think more systemically.
Organizational Ergonomics: Mandate Management.

4 Separate Hospital Admin Offices for Mandates 1, 2, 3, 4

Individual Clinician Based approach
- Your on your own, but have to comply.
- Deal with each mandate office separately.
- Figure out what each wants you to do.
- Computer Based Training (CBT) on your own time.
- No immediate help if CBT poorly operational.

Hospital & Department-Based approaches
Organized with support provided to expedite and guide compliance with people familiar with software operation, staff in other offices, requirements, etc.

Organized Administrative collaboration between mandate offices

Formation of single committee “Clinical Education Council” through which all mandatories are processed, recorded, satisficed and monitored.
Healthcare Organization Level
Burnout Reduction Opportunity
From Chaos to Order

Macro Level -
National, state, industry, regulatory

Meso Level -
Hospital/Healthcare Organization

Micro Level -
Individual clinician

Well-intended
EMR - not well designed.
Multiple Quality Metrics
untested un-harmonized.
Patient Safety Movement silo-ed,
uncoordinated
Mandates, laws, regulations.
Public demand for increased
clinician education as solution.
Patients as primary concern

Not so well-intended
Hassle Factors by Insurance
intended to wear down provider,
cost control methods adapted
from auto production.
For-profit Agendas.
Healthcare as investment
vehicle.
Shareholders as primary concern

Organization Management
Mitigation of Chaos

Individual Clinician Based approach

Hospital/Healthcare Organization

Organization-Based approaches
Proposed Mandate Solutions

1. Formation of a **single committee** that tracks all mandates and advisory to Subject Matter Experts (URMC=Medical Faculty and Clinician Wellness Program Mandatory Learning Review Committee). Its purposes:
   1. Collaborating on the identification, development, reviewing mandates
   2. Reducing cognitive load of education requirements
   3. Enhancing interprofessional education.

2. **Satisfice mandatory portion** (satisfactory and sufficient to meet requirement, but no extras). Option for additional learning for those interested.

3. Improve the experience of completing mandates. Engage intrinsic desire to give good care. More effective learning methods. Avoid terms like “assignment” that remind employee they have no control and no choice.

4. Organize mass completion of mandates.

5. Consider employee input on how to accomplish mandates where possible.
8. Avoid short term low-cost-to-institution solutions to mandate completion. Be careful with prepackaged training company products who do not have motivation to keep learning concise and efficient.

9. Universal fallacy is the underestimation of negative impact on the clinician, as each is thought to be minimal inconvenience so determine the total expectation.

10. Have all mandatories stored on one website for ease of access.

11. Classifying a learning activity “mandatory” must be carefully weighed against unintended consequences.

12. If mandatory training designation is a legal agreement to a lawsuit or regulatory necessity, the same methods above can be used.

13. Objective of the mandate is to demonstrate knowledge of the subject matter so allow “testing out” so that staff can go directly to answering the questions.

14. Mandate completion expectation needs to be reframed as a Cost of Doing Business Expense. Time during the day must be provided by the institution to achieve completion of the mandatories without cutting into employee time off and family time.

--This would create institutional financial incentives to:

1. Reconsider what is mandatory
2. Creates an economic force that causes the mandatories to be made shorter, more efficient to complete
3. Helps rethink what really is key to learn and what is optional to learn.
In one week, with assistance of patients, families, clinical and non-clinical staff, multiple Alliance Hospitals asked:

“Breaking the Rules for Better Care Week”

“‘If you could break or change any rule in service of a better care experience for patients or staff, what would it be?’

Results (IHI- “Breaking Rules”)

- 24/42 organizations participated
- Identified **342 rules** perceived to provide little or no value to patients and staff.
- Classified into 3 Types
  1. **Habits** embedded in organizational behaviors, based upon misinterpretations of legal, regulatory or administrative requirements [16%]
  2. **Organization-specific requirements** that local leaders could change without running afoul of any formal statute or regulation [62%]
  3. **Actual statutory and regulatory requirements** [22%]

**The unexpected surprise:** Majority [78%] were fully within administrative control to change.
Four Types of Action of Alliance Members (IHI)

1. Debunking myths about nonexistent or misinterpreted rules through staff education
2. Seeking clarity from appropriate regulatory agencies about true scope and intent of rules
3. Changing local administrative policies for which no sufficient rationale was found
4. Speaking with “collective voice” to policy makers about regulations harmful to care or wasteful of limited resources.
## Responsibility Matrix

<table>
<thead>
<tr>
<th>Clinician Responsibility</th>
<th>Administrator Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong></td>
<td><strong>Action</strong></td>
</tr>
<tr>
<td>Acknowledge Change</td>
<td>Validate Suffering</td>
</tr>
<tr>
<td>Own Safety and Quality</td>
<td>Communicate</td>
</tr>
<tr>
<td>Promote Accountability and Peer Mentoring</td>
<td>Help Physicians Understand the Business</td>
</tr>
<tr>
<td>Stop Bad Behavior</td>
<td>Be Inclusive</td>
</tr>
<tr>
<td>Practice Humility</td>
<td>Recognize the Need for Symbiosis</td>
</tr>
<tr>
<td>Lead By Example</td>
<td>Beware of Trigger Issues</td>
</tr>
</tbody>
</table>

Strategies Designed to Prevent Individual Error, Grounded in System-Based Cognitive Psychological Research

- Manage workplace fatigue and stress
- Decrease reliance on memory
- Decrease reliance on vigilance
- Reduce need for manual calculations
- Design and redesign useful policies
- Develop standardized unit practices based on evidence and guidelines from professional associations
- Have accurate up-to-date readily available when needed.