High Reliability Healthcare

…the science of safety and operational excellence

SCORCH

October 23, 2015
Topics

1. Overview of High Reliability Organizations (HROs)
2. Role of the Board, Senior Leaders and Medical Staff Leaders in Creating a Safe Day
3. Serious Safety Event Rate – A Broad Measure of Harm
4. Emerging Themes in Healthcare Serious Safety Events
5. Evidence-Based Leadership Methods for Reliability
6. Best-Practice, Behavior-Based Error Prevention
7. The Unique Role of the Medical Staff in a HRO
8. Closing Thoughts and Additional Discussion
Overview of High Reliability Organizations (HROs)
Key Points

1. Safety is a science. Ultra-high levels of safety can be achieved by employing High Reliability principles.

2. “Attention is the currency of leadership.” The role of senior leaders is absolutely critical to HRO success.

3. Safety is a “dynamic, non-event.” Everyone has a role in creating and maintaining a high reliability, safe culture.

4. The medical staff is critical to sustain safety as a core value.

5. Everyone makes errors – serious patient harm events are almost always a result of the “system” failing – not an individual human error.

6. Staff, physicians and leaders must make proven error prevention strategies practice habits.
Reliability

Reliability: The probability that a system, structure, component, process or person will successfully perform the intended function(s).
High reliability organizations (HROs) “operate under very trying conditions all the time and yet manage to have fewer than their fair share of accidents.”

*Managing the Unexpected* (Weick & Sutcliffe)

Risk = Probability x Consequence
Reliability from the patient’s perspective…

1. Don’t Harm Me\textsuperscript{SM}
2. Heal me
3. Be nice to me

...in this order
Complementary Strategies

Wrong Site Surgeries

Shock Recognition

Medication Errors

Patient Satisfaction

Hand Hygiene

and on, and on, and on...

Culture
Journey to improving reliability – the next zero

- Human Factors Integration
  - Intuitive design
  - Impossible to do the wrong thing
  - Obvious to do the right thing

- Reliability Culture
  - Core Values & Vertical Integration
  - Hire for Fit
  - Behavior Expectations for all
  - Fair, Just and 200% Accountability

- Process Design
  - Evidence-Based Best Practice
  - Focus & Simplify
  - Tactical Improvements (e.g. Bundles)

- Optimized Outcomes
Five Principles of HROs

*Three Principles of Anticipation*

**Preoccupation with Failure**
Regarding small, inconsequential errors as a symptom that something’s wrong

**Sensitivity to Operations**
Paying attention to what’s happening on the front-line

**Reluctance to Simplify Interpretations**
Encouraging diversity in experience, perspective, and opinion

*Two Principles of Containment*

**Commitment to Resilience**
Developing capabilities to detect, contain, and bounce-back from events that do occur

**Deference to Expertise**
Pushing decision making down and around to the person with the most related knowledge and expertise
Commercial Aviation

U.S. and Canadian Operators Accident Rates by Year

1935 – Advent of the checklist
1945 – Fitts & Jones study of cockpit design

Source: Boeing, 2007 Statistical Summary, July 2008
Naval Aviation Mishap Rate

776 aircraft destroyed in 1954

15 aircraft destroyed in 2008

USN/USMC, FY50-06

Mishap rates per 100,000 flight hours

Source: www.safetycenter.navy/mil ORM Flight Mishap Rate
Significant Events at US Nuclear Plants

Significant Events per Plant
Annual Industry Average, Fiscal Year 1988-2013

Significant Events are those events that the NRC staff identifies for the Performance Indicator Program as meeting one or more of the following criteria:

- A Yellow or Red Reactor Oversight Process (ROP) finding or performance indicator
- An event with a Conditional Core Damage Probability (CCDP) or increase in core damage probability (CDP) of $1 \times 10^{-5}$ or higher
- An Abnormal Occurrence as defined by Management Directive 8.1, “Abnormal Occurrence Reporting Procedure”
- An event rated two or higher on the International Nuclear Event Scale

Source: NRC Information Digest, 2008 is the confidence level data unavailable; Updated: 5/11
Nuclear Power at Sea

• 6,200 cumulative years of nuclear reactor operations involving 526 nuclear reactor cores
• 127 million miles submerged (265 round trips to moon)
• Zero radiological/reactor incidents over 50 years
• Operated by 20 year olds
How Safe Is Healthcare?

Total lives lost per year

Number of encounters for each fatality

- Health Care (1 of ~600)
- Driving In US
- Scheduled Commercial Airlines
- Chartered Flights
- European Railroads
- Chemical Manufacturing
- Nuclear Power
- Mountaineering
- Bungee Jumping

Dangerous (>1/1,000)

Ultra Safe (<1/100K)
But Healthcare is Different…Right?
The Role of the Board, Senior Leaders and Medical Staff Leaders
The High Reliability Operating System

1. Safety As The Precondition & Core Value
2. Knowledge of Reliability Science
3. Reliability Principles as an Operating System
4. Knowing → Doing
5. High Reliability Leadership Method
6. Non-Technical Skills for Individuals & Teams
7. Resilience Engineering
8. Human Factors Integration

Mutual Respect
Safety as an *Explicit* Core Value

"Safety is not a priority at Alcoa, it is a precondition."

“There is no priority higher than patient safety. If there is a conflict between safe practice and speed, efficiency or volume, then safety wins – hands down.”

James M. Anderson
President & CEO
Cincinnati Children’s Hospital Medical
Seven Outcome Domains - Powered by a Reliability Operating System

- Patient Safety
- Worker Safety
- Clinical Quality
- Patient Satisfaction
- Employee Satisfaction
- Physician Satisfaction
- Financial Strength

Goals & Tactics

Reliability
Performed as Intended, Consistently Over Time
Boards and Executives
The “ATM” of Safety Management

A – Attention
Attention is the currency of leadership.

T – Transparency and Trust
Transparency = learning. Trust is the enabler of transparency.

M – Measure, Measure, Measure

from Lee Carter, Chairman of the Board – Cincinnati Children’s Hospital Medical Center
Leadership – An Evolution in Perspective

“If you do the things you’ve always done, you’ll get the results you’ve always gotten.”

<table>
<thead>
<tr>
<th>From…</th>
<th>To…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externally driven focus</td>
<td>Internally driven focus</td>
</tr>
<tr>
<td>(e.g. Joint Commission, CMS)</td>
<td>(first, do no harm</td>
</tr>
<tr>
<td></td>
<td>– it’s the right thing to do)</td>
</tr>
<tr>
<td>Safety is a priority</td>
<td>Safety is a core value that cannot</td>
</tr>
<tr>
<td></td>
<td>be compromised</td>
</tr>
<tr>
<td>We are creating a safety culture</td>
<td>We are shaping a reliability culture</td>
</tr>
<tr>
<td></td>
<td>that creates safety</td>
</tr>
<tr>
<td>The board and senior leader support</td>
<td>The board and senior leader own</td>
</tr>
<tr>
<td>culture change</td>
<td>and manage the culture</td>
</tr>
<tr>
<td>Medical staff support culture change</td>
<td>Medical staff own and promote safety culture</td>
</tr>
</tbody>
</table>
Barriers to Events - *Defense in Depth*

- **Individual**
- **Leader/Chair of Department**
- **Internal Oversight**
- **External Oversight**

High-Risk Environment Or Condition

Unwanted Outcome

Most Effective ➔ Least Effective
Defense in Depth – Medical Staff

Individual Intrusional Oversight

External Oversight

High-Risk Environment Or Condition

Most Effective

Least Effective

Unwanted Outcome

Practicing Physician

Department Chair

MEC – Board

Licensing/Regulatory

Defense in Depth – Medical Staff

Individual Intrusional Oversight

External Oversight

High-Risk Environment Or Condition

Most Effective

Least Effective

Unwanted Outcome

Practicing Physician

Department Chair

MEC – Board

Licensing/Regulatory
Culture Change: It’s Different Work

From The Dilemma of Foundation Leadership, by Ronald Heifetz

Disequilibrium

Equilibrium

Productive Range of Distress

Technical Problem and Solution

Adaptive Problem and Solution

Time
A Broad Measure of Serious Preventable Harm

Serious Safety Event Rate (SSER)
Unreliability and Patient Safety

Deviations from best-practice care causing Significant Patient Harm = Serious Safety Event

Serious Safety Events include errors that result in death, permanent loss of function, or injury, such as:

- transfusion reaction
- medication event
- misdiagnosis
- hospital-acquired Infection
- treatment error
- delay in treatment
- wrong site/side surgery or procedure
- fall with serious injury
1. The HPI Taxonomy of Safety Events is intended to be a mutually exclusive and comprehensively exhaustive list of event types for classification of patient harm experienced. The taxonomy is based in part on the National Quality Forum’s (NQF) Serious Reportable Events (SRE). The taxonomy is revised from time to time to maintain the integrity of purpose.

2. Retired Codes – PP1: Infant Discharged to Wrong Person (see to PP4.1); CM4: Hypoglycemia; CM5: Kernicterus; CM6: Spinal Manipulative Therapy; and CM9: Artificial Insemination with Wrong Donor Sperm or Egg; CE1: Non-Licensed Individual Orders Care
### Top 10 Patient Safety Event Types

Based on 1,613 events from 72 hospitals in HPICompare CCA database

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Event Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.6%</td>
<td>Delay in Diagnosis or Treatment</td>
</tr>
<tr>
<td>21.3%</td>
<td>Medication Event</td>
</tr>
<tr>
<td>15.2%</td>
<td>Other Care Management/HAIs</td>
</tr>
<tr>
<td>10.2%</td>
<td>Fall</td>
</tr>
<tr>
<td>7.4%</td>
<td>Other Procedural</td>
</tr>
<tr>
<td>4.2%</td>
<td>Retained Foreign Object</td>
</tr>
<tr>
<td>2.2%</td>
<td>Wrong Site Surgery</td>
</tr>
<tr>
<td>2.2%</td>
<td>Wrong Patient Surgery</td>
</tr>
<tr>
<td>1.2%</td>
<td>Suicide or Attempt</td>
</tr>
<tr>
<td>1.1%</td>
<td>Grade 3 or 4 Pressure Ulcer</td>
</tr>
</tbody>
</table>
A deviation from generally accepted performance standards (GAPS) that...

**Serious Safety Event**
- Reaches the patient *and*
- Results in moderate harm to severe harm or death

**Precursor Safety Event**
- Reaches the patient *and*
- Results in minimal harm or no detectable harm

**Near Miss Safety Event**
- Does not reach the patient
- Error is caught by a detection barrier or by chance
Safety Event Classification (SEC)®
Flowchart & Guide

Was there a deviation from (GAPS)?
• Was there a deviation from defined policy/procedure (P/P)?
• Is the P/P substandard compared to other local/national healthcare practice?
• Is the P/P substandard compared to other industries?
If any of the above are answered yes, proceed with the classification.

Deviation from Generally Accepted Performance Standards (GAPS)?

Yes

Did the deviation reach the patient?

Yes

Did the deviation cause more than minor or minimal temporary harm to the patient?

Yes

Serious Safety Event
Death, severe or moderate permanent harm, or moderate to severe temporary harm

No

Near Miss Safety Event

No

Precursor Safety Event

No

Not a Safety Event

Note: Known complication is defined as an adverse outcome, supported in the literature as a potential risk related to care, and is not present at the time of admission or outpatient encounter.
The Known Complications Test

Four questions:

1. Was the procedure, treatment, or test **appropriate and warranted** based on nationally recognized standards of care?
2. Was the complication a **known risk**, was it **anticipated**, and did the care team plan ahead to take **steps to prevent it**?
3. Was the complication **identified in a timely manner** (i.e. at the time of occurrence)?
4. Was the complication **treated according to the standard of care** and in a **timely manner**?

If the answer to **ALL four questions** is **YES**, the event is considered a known complication and not a Safety Event.

If the answer to **ANY question** is **NO**, the event is a Safety Event.
Case Studies: Practicing Event Classification

Pediatrician performs a circumcision on Baby Boy B after verbally confirming with the nursery nurse that this is correct patient. Post-procedure, the physician discovers that she was to perform the procedure on Baby Boy A. The pre-procedure review and time out were not performed. It was discovered that both boys (A & B) were scheduled for circumcision that day.

Deviation from GAPS?

Yes

Did the deviation reach the patient?

Yes

Did the deviation cause moderate to severe harm or death?

Yes

Serious Safety Event
Death, severe or moderate permanent harm, or moderate to severe temporary harm

No

Not a Safety Event

No

Near Miss Safety Event

No

Precursor Safety Event

No
Case Studies: Practicing Event Classification

RN preparing to give Zosyn to patient notes that an allergy to penicillin was documented during the patient’s last admission. She talks to the patient who states that she had a severe reaction to penicillin two years prior. The nurse calls the physician who ordered Zosyn. The physician checks his office notes and realizes that the patient did have a documented allergy and orders a different medication.

Deviation from GAPS?
- Yes
  - Did the deviation reach the patient?
    - Yes
      - Did the deviation cause moderate to severe harm or death?
        - Yes
          - Serious Safety Event
            - Death, severe or moderate permanent harm, or moderate to severe temporary harm
        - No
          - Near Miss Safety Event
    - No
      - Not a Safety Event
  - No
    - Not a Safety Event

The diagram outlines the classification of safety events based on deviations from GAPS (Goal, Action, Patient, System). It considers whether the deviation reached the patient, caused moderate to severe harm or death, and whether the event was classified as a serious, near miss, or not a safety event.
Elderly patient with CHF and multiple meds determined to be a high falls risk. Policy calls for bed alarm to be placed but RN and tech busy with a new admission. Patient found on floor by respiratory therapist complaining of hip pain. X-ray reveals a fractured hip. Requires surgical repair.

Case Studies: Practicing Event Classification

Deviation from GAPS?
- Yes
  - Did the deviation reach the patient?
    - Yes
      - Did the deviation cause moderate to severe harm or death?
        - Yes
          - Serious Safety Event
            - Death, severe or moderate permanent harm, or moderate to severe temporary harm
        - No
          - Near Miss Safety Event
    - No
      - Not a Safety Event
  - No
    - Not a Safety Event
A healthy 26 year old 40 week gestation mother presents in active labor which progresses to the delivery of a 7 lb. baby girl with Apgar’s of 10 and 10. Within 2 minutes of delivery the mother experiences escalating respiratory distress and signs of DIC. Despite all interventions, she codes and expires. Autopsy reveals an amniotic fluid embolism. Subsequent physician and nursing review of the case find that care was appropriate during the delivery, post-delivery, and during the code.

Case Studies: Practicing Event Classification

Deviation from GAPS?

- No
  - Not a Safety Event
  - Deviation from GAPS?
    - Yes
      - Did the deviation reach the patient?
        - No
          - Near Miss Safety Event
        - Yes
          - Deviation from GAPS?
            - Yes
              - Did the deviation cause moderate to severe harm or death?
                - No
                  - Precursor Safety Event
                - Yes
                  - Serious Safety Event
                    - Death, severe or moderate permanent harm, or moderate to severe temporary harm
Potential Safety Events

Input
Identify events from various sources

JC Sentinel Events
State reportable events
RCAs
Claims and suits
Medication events
Falls
HAPUs

Clinical quality incidents
Peer review cases
Pt. Complaints/Grievences
Readmissions
HAI’s
Others...

SEC Process
Screen events based on organization or individual culpability and level of harm to the patient

Output
SEC classification & SSER

HPI
Rolling 12-month rate of Serious Safety Events per 10,000 adjusted patient days

SSER = \( \frac{\text{# SSE during past 12 months}}{\text{# APD for past 12 months}} \times 10,000 \)

Why a 12-month rolling average?
- Smoothes the curve for infrequent events
- Encourages sustainability in reliable safety performance
  (it takes 12 months for an event to “drop out” of the average)
Serious Safety Event Rate
Nationwide Children’s Hospital

Rolling 12-month Serious Safety Events expressed per 10,000 adjusted patient days

NCH experiences a Serious Safety Event once every 183 days

HPI Engaged

Zero Hero Began

Desired Direction of Change
Serious Safety Event Rate

Rate over 7 Years
Serious Safety Event Rate
5 Hospital System – Southern US
January 2008- June 2014

88% Reduction in SSER
Putting A Face on Safety, Baseline 2008
2010 Events….a 76% Improvement!

Louis R.
4/16/10
Surgical Fire

Martha B.
5/22/10
Post Procedure Death

Lonny A.
6/3/10
Med Error

Mark C.
1/21/10
Med Error

Kate B.
5/12/10
Delay In Tx

Frank S.
2/22/10
Surgery Cx

Boyd C.
5/25/10
Delay In Dx

Rachel B.
5/30/10
Fall

Donny L.
7/22/10
Med Error

Frank T.
8/26/10
Delay In Dx

Sara R.
11/9/10
Delay In Tx
2012 Events….Three of Five Hospitals at Zero
January – June 2014
All Five Hospitals at Zero
Emerging Common Cause Themes of Serious Safety Events in Healthcare
Anatomy of a Safety Event

**Multiple Barriers** - technology, processes, and people - designed to stop active errors (our “defense in depth”)

**Active Errors** by individuals result in initiating action(s)

**Latent Weaknesses** in barriers

**EVENTS of HARM**

**PREVENT**
The Errors

**DETECT & CORRECT**
The System Weaknesses

Delay in Treatment

Barriers to prevent event fail.

Clerk did not enter “stat” CT with sufficient information

Transport team didn’t transport pt in a timely manner due to short staffing

Patient was not adequately monitored in the radiology holding area post-procedure

Care team did not coordinate well post-procedure resulting in delay in transport to floor

Pt. suffering a retro-peritoneal bleed. Coded and expired in radiology.

Death
Common Cause Analysis

A collective examination of past events for “common causes” (not common outcomes)

Event (E): a condition that results from a deviation from practice expectations or standard of care

Inappropriate Act (IA): a human error that violates performance expectations or takes a task outside acceptable limits

Analyze by:
- Profession
- Department
- Key Process
- Key Activity
- System Failure Mode
- Individual Failure Mode
- Human Error Type

Common Causes
168 Client Hospitals – Aggregate Baseline CCA

Professional Group:

- Nurse: 40%
- Physician: 31%
- Care Team: 8%

N = 7627  EE = 1% (80% CF)

- Professional Group
  - Key Process
  - Key Activity
  - Human Error Type (Skill, Rule, Knowledge)
  - Individual Failure Mode (20)
  - System Failure Mode (26)
168 Client Hospitals – Aggregate Baseline CCA

**Key Activity:**

- Handoffs: 17%
- Checking/verifying: 16%
- Assessing: 10%

N = 7652  EE = 1% (80% CF)

- Professional Group
- Key Process
- ✓**Key Activity**  
  Human Error Type (Skill, Rule, Knowledge)
  Individual Failure Mode (20)
  System Failure Mode (26)
As Humans, We Work in 3 Modes

Skill-Based Performance
“Auto-Pilot Mode”

Rule-Based Performance
“If-Then Response Mode”

Knowledge-Based Performance
“Figuring It Out Mode”
168 Client Hospitals – Aggregate Baseline CCA

*Human Error Type*

**Human Error Type:**

- **Skill:** 16%
- **Rule:** 70%
- **Knowledge:** 14%

N = 4874  EE = 1% (80% CF)

- Department/Professional Group
- Key Process
- Key Activity

- **Human Error Type (Skill, Rule, Knowledge)**
- Individual Failure Mode (20)
- System Failure Mode (26)
Causal Factors of Inappropriate Acts

System & Management Failure Modes (26)

Individual Failure Modes (20)

Inappropriate Act

- Structure (5 modes)
- Culture (8 modes)
- Policy & Protocol (4 modes)
- Process (5 modes)
- Technology & Environment (4 modes)

- Competency (3 modes)
- Consciousness (6 modes)
- Communication (3 modes)
- Compliance (4 modes)
- Critical Thinking (4 modes)
## Individual Failure Modes Baseline CCA

<table>
<thead>
<tr>
<th>Individual Failure Modes (IFM)</th>
<th>168 Recent HPI Clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency</td>
<td>21%</td>
</tr>
<tr>
<td>Consciousness</td>
<td>13%</td>
</tr>
<tr>
<td>Communication</td>
<td>9%</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>34%</td>
</tr>
<tr>
<td>Compliance</td>
<td>22%</td>
</tr>
</tbody>
</table>

### Department/Professional Group
- **Key Process**
- **Key Activity**
- **Human Error Type**
- **Individual Error Mode (20)**
- **System Failure Mode (26)**
## System Failure Modes Baseline CCA

<table>
<thead>
<tr>
<th>System Failure Modes (SFM) Baseline CCA findings</th>
<th>168 Recent HPI Clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>12%</td>
</tr>
<tr>
<td>Culture</td>
<td>55%</td>
</tr>
<tr>
<td>Processes</td>
<td>18%</td>
</tr>
<tr>
<td>Policy &amp; Protocol</td>
<td>10%</td>
</tr>
<tr>
<td>Technology/Environment</td>
<td>5%</td>
</tr>
</tbody>
</table>

**Department/Professional Group Key Process Key Activity Human Error Type Individual Failure Mode (20)**

**System Failure Mode (26)**

![Taxonomy of System Failure Modes Diagram](image)
Observations from Healthcare CCAs

- It’s not communication! (However opportunities exist in handoffs and communication culture.)

- ~77% of the inappropriate acts causing SSEs are failures in Critical Thinking, Compliance or Competency.

- Error prevention behaviors should emphasize stopping in the face of uncertainty, teamwork and 200% accountability.

- Leaders need to take accountability to monitor and observe for what is expected and daily connect with the “sharp end”

- In the long-term, policies and processes must be simplified to address non-compliance and make it easier to do the right thing.
Dx: Drivers of Non-Compliance

Non-Compliance = \frac{\text{Burden}}{\text{Coworker Coaching} + \text{Perceived Risk}}
Error Rate/Types vs. Level of Control

Relative Error Rate and Distribution

- None
- Optimal
- Excessive

Level of Procedural Control

Note:
S = Skill-Based
R = Rule-Based
K = Knowledge-Based

primarily rule-based communication type errors
primarily rule-based noncompliance type errors

Note: S = Skill-Based, R = Rule-Based, K = Knowledge-Based
Minimizing Policy Burden

<table>
<thead>
<tr>
<th>Safety Critical Task/Activity</th>
<th>Less-Critical Task/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Complex Task/Activity</strong></td>
<td><strong>Simple Task/Activity</strong></td>
</tr>
<tr>
<td>Detailed Procedure with Verbatim Compliance</td>
<td>Guideline Without Verbatim Compliance</td>
</tr>
<tr>
<td>Standing Order or Checklist with Verbatim Compliance</td>
<td>Common Sense or Skill-of-the-Craft</td>
</tr>
</tbody>
</table>
Typical Interventions for a Zero Harm Journey
Overall Goal: Establish Safety as a Core Value
Create a highly reliable environment for safe practices with global safety metrics and control loops to ensure continuous improvement

1. Leadership Methods
   Learn, adopt, and practice leader skills for building and sustaining a culture of safety and performance excellence

2. Error Prevention
   Implement behavior expectations for error prevention, targeted at common causes of past events.

3. Cause Analysis
   Implement the philosophy and tools of a “state-of-the-art” cause analysis program to accelerate learning from events.

4. Lessons Learned
   Implement robust lessons learned program for safety metrics, great catches, and successful tactical strategies aimed at eliminating events
Evidence-Based Leadership Methods
Shaping Behaviors at the Sharp End

Adapted from R. Cook and D. Woods, *Operating at the Sharp End: The Complexity of Human Error* (1994)

Design of Culture
Design of Work Processes
Design of Structure
Design of Policy & Protocol
Design of Technology & Environment

Behaviors of Individuals & Groups

Outcomes

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Leadership Triple Threat for Performance Reliability

Set the set point…
1. Define and demonstrate safety as a core value and adopt reliability as an operating system

Prevent, detect & correct drift…

2. Reinforce and build accountability for behavior expectations at the sharp end

3. Find problems and fix causes in systems and processes
Leadership Method for Performance Excellence

### Reinforce & Build Accountability

<table>
<thead>
<tr>
<th>Walking Rounds, 5:1 Feedback, Fair and Just Accountability</th>
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</thead>
<tbody>
<tr>
<td>I will round with purpose each day to understand what is happening at the front line, engage with our people, and identify problems impacting operations by:</td>
</tr>
<tr>
<td>- asking for problems and acting to fix problems, and</td>
</tr>
<tr>
<td>- rewarding and recognizing our people.</td>
</tr>
<tr>
<td>Full reinforcement: during rounds by:</td>
</tr>
<tr>
<td>- observing performance and practice 5:1 feedback - 5 bits of praise for every 1 bit of negative feedback;</td>
</tr>
<tr>
<td>- no missed messages - focused praise, focused correction,</td>
</tr>
<tr>
<td>- lightest touch possible; get the desired result, and</td>
</tr>
<tr>
<td>- instant feedback so close to time as possible to the act.</td>
</tr>
<tr>
<td>I will manage safely and consistently when a person's actions deviate from performance expectations by:</td>
</tr>
<tr>
<td>- determining and distinguishing between unintended human error and intended non-compliance;</td>
</tr>
<tr>
<td>- evaluating for system or processes issues that influence individual decision making, and</td>
</tr>
<tr>
<td>- implementing fair consequences for intended non-compliance.</td>
</tr>
</tbody>
</table>

### Find & Fix Problems

<table>
<thead>
<tr>
<th>Pre-Task Brief – After Action Review with Thoughtful Task Assignment &amp; Staff Develop</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will conduct a Pre-Task Brief prior to beginning a non-routine or routine task significant task to improve the likelihood of success by:</td>
</tr>
<tr>
<td>- summarizing the critical steps and objectives;</td>
</tr>
<tr>
<td>- anticipating more likely situations and potential problems;</td>
</tr>
<tr>
<td>- ensuring worse-case conditions and contingency plans;</td>
</tr>
<tr>
<td>- evaluating defenses - identify what safeguards</td>
</tr>
<tr>
<td>- reviewing past experience - personal, hospital, industry</td>
</tr>
<tr>
<td>I will conduct an After Action Review following a non-routine or routine task significant task to ensure operating experience is captured and used to improve future performance by:</td>
</tr>
<tr>
<td>- discussing what went right and what went wrong;</td>
</tr>
<tr>
<td>- capturing lessons learned for future activities;</td>
</tr>
<tr>
<td>- identifying improvements to management for resolution;</td>
</tr>
<tr>
<td>- coaching individuals on great performance and opportunities to improve.</td>
</tr>
</tbody>
</table>

I will ensure the individual team members assigned to tasks are capable and willing and I will use Pre-Task Briefings and After Action Reviews to praise and develop individual team members.

### Red Rules for Safety – Our Safety Absolutely!

| Red Rules for Safety compliance challenging. |
| Implementing reminders and forcing functions into work processes to make it easy to comply. |
| Standing behind individuals who “cross the line” when they cannot comply with a Red Rule, and |
| Recognizing Red Rule compliance and following through with fair consequences for intended non-compliance with Red Rules. |

### Rapid Response to Safety Critical Issues “Confuse-Problem-Cause Solving”

<table>
<thead>
<tr>
<th>Top 10 Problem List with Problem Owners &amp; Actions Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will maintain a list of the Top 10 problems compromising safe operations in my area. Each problem has a problem owner, and a 1 &amp; 2 Action Plan.</td>
</tr>
<tr>
<td>- Do our workers think the problem is a problem?</td>
</tr>
<tr>
<td>- Does our action plan address both process changes as well as behavior changes needed to solve the problem?</td>
</tr>
<tr>
<td>- Do actions map back to causes related to the problem?</td>
</tr>
<tr>
<td>- Will we complete all of these actions, will we resolve the problem? If no, what are we missing?</td>
</tr>
</tbody>
</table>

Find & Fix Problems

- Pre-Task Brief
- After Action Review
- Rapid Response to Safety Critical Issues
- Top Ten Problem List With Problem Owners & Actions Plans
Leveraging Leaders

**Leveraging Leaders**

**Impact**

- **Visibility, Relevance**
- **Degree of Influence**

**Investment**

- **Time, Money, Other Resources**

---

**Leadership Method for Performance Excellence**

**Reinforce & Build Accountability**

- Walking Rounds, 1:1 Feedback, Fair and Just Accountability

**Find, Fix, and Prevent Problems**

- Pre-Task Brief - After Action Review with Thoughtful Task Assignment & Staff Development

---

**Red Rules for Safety - Our Safety Absolute!**

- I will reinforce Red Rules - our safety absolute - as an important part of protecting lives here and what it takes to comply with Red Rules.
- Safety and living problems that make Red Rules compliance challenging.
- Implementing sanctions and forcing functions into work.
- Standing behind individuals who "keep the line" when they cannot comply with Red Rules.
- Recognizing Red Rule compliance and following through with consequences for unintended non-compliance with Red Rules.

---

**Daily Check-in**

- I will handle the start of the day to maintain awareness of operations and give direction of priority and responsibility for resolutions.
- Review significant activities from the last 24 hours.
- Participate in activities in the next 24 hours.
- Prioritize, problems, and resolutions.
- Meet with any direct reports at least weekly to review current team performance, identify and resolve problems, and mediate to solve causes and achieve outcomes.

---

**HPI**

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First-Focus Leadership Methods

1. Define and demonstrate **safety as a core value**
   - A. Safety Moment at the start of every meeting
   - B. Link decisions to safety
   - C. Encourage reporting of events/problems
   - D. Recognize, protect and thank those who ask the safety question

2. **Reinforce and build accountability** for behavior expectations at the sharp end.
   - A. Rounding To Influence with 5+:1-Feedback
   - B. Fair and Just Culture

3. **Find problems and fix causes** in systems and processes
   - A. Safety Huddle/Check-In
   - B. Top 10 Reliability Problem List with Level 1 & 2 Action Plans
     - Patient Safety
     - Employee Safety
     - Quality

### 168 Hospital Composite CCA System Failures

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td>12%</td>
</tr>
<tr>
<td><strong>Culture</strong></td>
<td>55%</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>18%</td>
</tr>
<tr>
<td><strong>Policy &amp; Protocol</strong></td>
<td>10%</td>
</tr>
<tr>
<td><strong>Technology &amp; Environment</strong></td>
<td>5%</td>
</tr>
</tbody>
</table>
Best-Practice, Behavior-Based Error Prevention
How do serious safety events occur?

High Risk Situation + High Risk Behavior = Safety Event
What is Your Safety Story?

Reflect on a time when you experienced an unsafe situation while at work or a personal example.

Write your safety story on a piece of paper and discuss it with a colleague if you feel comfortable.

We will return to these stories later.
Creating Vertical Alignment

For example:

*Safest Hospital in America*

- Zero events of harm
- Communications required by processes and protocols

**“Communicate Clearly”**

- Repeat & Read backs
- Clarifying questions
- Phonetic & numeric clarifications
4 for VAP Prevention
1. Elevation of the head of the bed to between 30 and 45 degrees
2. Daily “sedation vacation” and daily assessment of readiness to extubate
3. Peptic ulcer disease (PUD) prophylaxis
4. Deep venous thrombosis (DVT) prophylaxis (unless contraindicated)
### Best-Practice Error Prevention Toolkit

**Safety Behaviors for Everyone**

<table>
<thead>
<tr>
<th>EXPECTATIONS:</th>
<th>TECHNIQUES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am accountable for and commit to:</td>
<td>I will:</td>
</tr>
<tr>
<td><strong>Personal, Patient &amp; Team Safety</strong></td>
<td>1. Practice Team Member Checking and Team Member Coaching using ARCC <em>(Ask a question, Request a change, voice a Concern, invoke Chain of Command)</em></td>
</tr>
<tr>
<td><em>I will demonstrate an open, personal and team (200%) commitment to safety</em></td>
<td></td>
</tr>
<tr>
<td><strong>Clear &amp; Complete Communications</strong></td>
<td>1. Include the “5 Ps” as part of standardized structured hand-off process when transferring &amp; sharing patient care or other work responsibilities <em>(Patient/Project, Plan, Purpose, Problems, Precautions)</em></td>
</tr>
<tr>
<td><em>I am responsible for professional, accurate, clear and timely verbal, written, and electronic communication.</em></td>
<td>2. Use SBAR to communicate issues or concerns requiring action <em>(SBAR = Situation, Background, Assessment, Recommendation)</em></td>
</tr>
<tr>
<td></td>
<td>3. Use Repeat-Backs and Read-Backs with 1 or 2 Clarifying Questions</td>
</tr>
<tr>
<td><strong>Have A Questioning Attitude</strong></td>
<td>1. Stop and resolve when questions arise <em>(validate &amp; verify)</em></td>
</tr>
<tr>
<td><em>I will “think it through,” and ensure that my actions are the best.</em></td>
<td></td>
</tr>
<tr>
<td><strong>Pay Attention To Detail</strong></td>
<td>1. Practice Self-Checking with STAR <em>(Stop, Think, Act, Review)</em></td>
</tr>
<tr>
<td><em>I focus on the details at hand to avoid unintended errors.</em></td>
<td></td>
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</tbody>
</table>
Pause for the Cause

*The Time-Reliability Correlation*

- **Skill-Based**: (Familiar, routine) - Such as: Suturing, Taking vital signs
- **Rule-Based**: (“If-Then” response) - Such as: Simple Diagnoses, Prescribing
- **Knowledge-Based**: (New, unfamiliar) - Such as: Complex diagnoses, Condition outside area of expertise

- **1-2 sec pause**

**Graph:**
- X-axis: TimePaused in Thought
- Y-axis: Probability of Error
- Order of magnitude decrease in error probability

The Stroop Test – *The Power of the Pause*

Instructions: For each box, say the font color, not the word.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>YELLOW</td>
<td>GREEN</td>
<td>RED</td>
<td>ORANGE</td>
</tr>
<tr>
<td>BLACK</td>
<td>RED</td>
<td>YELLOW</td>
<td>PURPLE</td>
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<tr>
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<td>ORANGE</td>
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<tr>
<td>GREEN</td>
<td>BLUE</td>
<td>BLACK</td>
<td>YELLOW</td>
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Group Discussion
## Best-Practice Error Prevention Toolkit

### Safety Behaviors for Everyone

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Remember Your Safety Story?

Return to the safety story you wrote on your index card.

1. Did you use any of the error prevention techniques?

2. What error prevention technique(s) might have been helpful?
The Performance Management Decision Guide for Medical Staff
Changing Behaviors

Set Expectations

Educate & Build Skill

Reinforce & Build Accountability

MIND THE GAP

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Accountability

Building intrinsic motivation of the individual to meet performance expectations (Commitment)

NOT about punishing the person!
Sources of Accountability

- Leaders (Vertical Accountability)
- Peers (Horizontal Accountability)
- Individual (Intrinsic Accountability)

Optimal Accountability
Fair and Just Accountability
Performance Management

Striking the Right Balance

Human Error Rate

- Blame-Free (post-1990)
- “Fair or Just Culture”
- Blame & Punishment (pre-1990)
Unintended Human Error vs. Non-Compliance

- In a fair, accountable, culture…
  - **No punishment** for unintended error or mistakes driven by system problems
  - **Fair consequence** for intended decisions to act against the rule

> “If everything ‘goes,’ then in the end no problem may be seen anymore as safety critical – and people will stop talking about them for that reason.”


- It’s the leader’s responsibility to differentiate, and we can differentiate…
How Leaders Respond

**HONEST MISTAKE:**
An action taken with good intentions by a person who believes they are complying with performance expectations such as rules, policies, or procedures. It is inadvertent, not deliberate, and may be a result of a weakness in a system process or structure.

- May require coaching on individual error prevention techniques, management actions to improve team knowledge and practice, or system or work process changes.
How Leaders Respond

KNOWING VIOLATION:
A decision-based act in which the individual knows the rule, thinks about it at the time, and makes a decision to deviate from the performance expectation. The deviation is intended, although the consequences are not necessarily intended.

- May fairly require application of corrective action according to organization policy.
Performance Management Decision Guide for Medical Staff

Adapted from James Reason's Decision Tree for Determining the Culpability of Unsafe Acts and the Incident Decision Tree of the National Patient Safety Agency (United Kingdom National Health Service)

Start

Deliberate Act Test

D1 Did the physician intend the act? Yes

D2 Did the physician act with malicious intent (i.e. to cause physical/mental harm or other damage)? Yes

Impairment Test

I1 Is there suspicion of ill health (either mental or physical) or substance abuse? Yes

I2 If ill health or a medical condition: Was the physician aware of the illness or medical condition? Yes

Compliance Test

C1 Did the physician depart from policies, procedures, protocols, or generally accepted performance expectations? Yes

C2 Were the policies, procedures, protocols, and performance expectations available, understandable, workable, and in routine use? Yes

C3 Is there evidence that the physician chose to take an unacceptable risk OR has a history of poor performance or decision making? Yes

C4 Were there significant mitigating circumstances that support the act in this case? Yes

Substitution Test

S1 Would physicians in the same profession and with comparable knowledge, skills, and experience act the same under similar circumstances? Yes

S2 Were there any deficiencies in related training, experience, or supervision? Yes

Malevolent or Willful Misconduct

Suspected Medical Condition and/or Substance Abuse

Possible Reckless or Negligent Behavior

Possible Unintended Human Error

Possible System Induced Error

Actions to Consider

- Disciplinary action such as restricted practice, probation, suspension, or termination
- Mental health evaluation
- Report to professional group or regulatory body
- Law enforcement referral

Identify Contributing System Factors

Console and/or Coach the Individual

Find & Fix Process Problems

Revision 1, July 2009

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The Unique Medical Staff in a HRO
Medical Staff as Leaders

“Physicians hold a peculiar trump card – they do not make safety transformation happen, but they can prevent it from happening.”

James Reinertsen MD

HPI has come to believe after working with over 700 hospitals to improve safety and reliability:

“No hospital can achieve a state of high reliability without the full engagement of the medical staff.

True physician leadership, optimally from the outset, is required to achieve and sustain a safe environment for patients.”
Critical Impact of Physicians on Safety Transformation

- Significant contribution to errors associated with patient injury

- Unequaled impact on hospital morale through their considerable influence on hospital staff and leaders

- Strengths may become liabilities if left unchecked

- Profound impact on long-term hospital culture – sustained improvements require physician support

- There is no one else to do it!
Sharp End Provider to Blunt End Influencer

Proportion of time by:
Residents?
Attendings?
Division chiefs?
Department chairs?
CMO?

HPI
Vive la Difference

Blunt End Leader
- Demonstrate in word and actions safety as a core value that cannot be compromised at any time
- Find and fix causes of system and process problems that challenge safe, high quality care
- Reinforce and build accountability for behavior expectations for error prevention

Sharp End Provider
- Know and comply with behavior expectations for error prevention – make them personal work habits
- Encourage the practice of behavior expectations for error prevention in others
Managing Your Strengths…

PERSONAL ATTRIBUTES

LIABILITIES

ASSETS

RELIABILITY

UNRELIABILITY

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The Disruptive Path

Attributes
- Intelligence
- Independence
- Objectivity
- Analytic Capability
- Sense of Urgency
- Influence

Liabilities
- Elitest
- Team averse
- Impersonal
- Critical
- Impatient
- Aggressive

Unreliability
- Condescending
- Abrasive
- Belligerent
- Blaming
- Insensitivity
- Sabotage

Derived from Overcoming Your Strengths, by Lois P. Frankel, PhD
The Success Path

Attributes

- Intelligence
- Independence
- Objectivity
- Analytic Capability
- Sense of Urgency
- Influence

Strengths

- Competence
- Confidence
- Thinking Critically
- Problem Solving
- Safety First
- Team Building

Reliability

- Preoccupation with failure
- Sensitivity to operations
- Reluctance to simplify
- Commitment to resilience
- Deference to expertise
Power Distance

**Large Distance**
- Relations are autocratic and paternalistic
- Power acknowledged based on formal, hierarchical positions

**Small Distance**
- Relations are consultative and democratic
- Relate as equals regardless of formal positions

The *perceived* distance – not necessarily the real difference – as seen by the *subordinate*

Collegial Interactive Teams (CIT) = Tone + Tools

Setting the tone…

- “You had me from Hello”
  - Greetings – include first names
  - Cordiality, openness
  - Eye contact and body language

- Team goals
  - Use “we” and “us” vs. “I” and “you”
  - What’s best for the patient…

- Invite a Questioning Attitude
  - Leaders set the tone for the flow of information
  - “If any member of the team sees anything that is unsafe, I expect you to speak up…”
Physician Safety Champions

Concept—select a respected, influential group of physician leaders to mold a high-reliability medical staff culture, beginning with patient safety

- Not necessary to influence everyone to tilt the culture, only a segment equivalent to the square root of the number of participants—
  Edwards Deming, Ph D
Group Discussion
What could we do to create *ownership* – not buy-in?

<table>
<thead>
<tr>
<th>Buy-In</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motivation</strong></td>
<td></td>
</tr>
<tr>
<td>Extrinsic driver – imposed</td>
<td>Internal value – a choice</td>
</tr>
<tr>
<td><strong>Objective</strong></td>
<td></td>
</tr>
<tr>
<td>Minimum standard compliance</td>
<td>Best practice and beyond</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td></td>
</tr>
<tr>
<td>Individual performance</td>
<td>Individual &amp; team Performance</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td></td>
</tr>
<tr>
<td>Passive obligation</td>
<td>Active passion</td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td></td>
</tr>
<tr>
<td>Short term results</td>
<td>Long term sustainability</td>
</tr>
</tbody>
</table>

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In Closing...
Four Key Points

1. Create *Safety as an uncompromisable core value*
   - It starts at the top – the “ATM” of safety management
   - Give people the “license” to put safety first
   - Personally demonstrate safety as a core value

2. Adopt *Reliability Principles as an Operating System*
   - Expect positive outcomes in all domains – not just safety
   - Build high reliability as a step-wise approach (you can’t skip steps)

3. Create *alignment in leadership perspective*
   - Board, C-Suite, Medical Staff Leaders

4. Actively detect drift to sustain the journey towards zero
   - Recognize reliability culture transformation is an *Adaptive Change*
   - Avoid Organizational Complacency - Harm Early Warning System
Closing Thoughts…

1. Safety is fundamental to our mission.
2. Harm happens on our watch, in our hospital.
3. Serious harm events are preventable and a continuous journey towards ZERO is the only acceptable goal.
4. We improve reliability and safety by the right mix of process, people and system design.
5. It will take everyone: Board, senior leaders, operational leaders, staff and physicians.
Is Patient Safety a Core Value or just another priority?
Camp Rules

1. Lights out at 10 PM
2. No food in the cabins
3. Safety first
4. No cohabitation