LEADING FOR RELIABILITY: THE ONE CHASSIS FOR SAFETY, QUALITY AND SATISFACTION

Learning Objectives

1. Discuss the principles of high-reliability that can be used to achieve outcomes in patient safety, quality and patient satisfaction

2. Describe evidence-based leadership methods for building and sustaining a high-reliability culture.

3. Design an approach to implement learned principles in your organization and set the stage for next generation best practices
# Leading for Reliability: the ONE Chassis for Safety, Quality and Satisfaction

2012 IHI National Forum on Quality Improvement in Healthcare  
Session M 22

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## Plan for the Day

- Introduction Of Faculty And Participating Organizations
- High Reliability As A Chassis For Delivering On Outcomes
- Strategies To Lead For Reliability –
  - Illustration Of These Concepts By Faculty
- Sustaining The Gains
  - Illustration Of These Concepts By Faculty
- Measuring For Reliability
- Physician Engagement
- Design Of Reliability Culture
- Next Generation Strategies – CIT, Triple Play, Focus & Simplify, Human Factors
- What Is The Future For High Reliability

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## New Thinking

1. Was safety culture - now high reliability
2. Was safety story - now *messaging on mission*
3. Was process improvement - now system reliability
4. Was human error - now human factors
5. Was metrics - now making harm (risk) visible
6. Was teamwork – now *thinking in teams*
7. Was critical thinking – now anticipatory thinking
8. Was accountability – now *maintenance of competency*
9. Was leadership - now *operational leadership*
10. Was speaking-up for safety - now resilience
Tell Us about Your High Reliability Journey...

Amy Vance
Chief Operating Officer, Presbyterian Hospital; Chief Nursing Officer, Novant Presbyterian Healthcare

Tom Zweng, MD
Senior Vice President for Medical Affairs, Novant Presbyterian Healthcare

Craig Clapper
Founding Partner & Chief Knowledge Officer

Steve Kreiser
Senior Consultant

Steve Muething, MD
VP Patient Safety, Cincinnati Children's Hospital Medical Center

Gary Yates, MD
Chief Medical Officer, Sentara Healthcare, Norfolk, VA
523 Bed Medical Center
Admissions/Year – 32,581
900,000 outpatient visits
$143 million externally funded research
$1.3 billion dollar endowment

12,000+ employees
Surgical Procedures – 31,000 cases (20% Inpt)
17% average annual growth over past decade
National / International partnerships and affiliates

OUR QUALITY JOURNEY

1994
- Robert Wood Johnson Foundation
  Pursuing Perfection (P2) grant –
  Acute evidence-based care & CF

1999
- IOM Report: To Err is Human
- Business Units incorporated
- Launched Strategic planning process
- Strategic plan called for complete transformation
- IOM dimensions into dashboards

2001
- Focus on 6 dimensions of quality

2004
- Strategic Planning focus on integration of all 3 mission
- CBI Teams Launched
- Application of reliability science

2006
- Launched Intermediate Improvement Science Series (252)
- Serious safety events reduced from 14 to 7
  50% reduction from 2007

2008
- Launched Academic Collaborative

2011
- ALS Launched

2012
- AC External Advisory Council Convened

- CHCA Race for Results Award – reduction in PICU mortality due to reduction in hospital acquired infections
- Picker Institute Award: Family centered care
- Godman Award for SSI reduction
Pyramid of Harm (Patient and Employee)

- SSE's & Lost-time Injuries
- Serious Harm Index & OSHA Recordable Injuries
- Events of Minimal to Moderate Harm & All Employee Injuries
- Near-Miss Events Patient and Employee

James M. Anderson
Center for Health Systems Excellence

Serious Safety Events per 10,000 Adj. Patient Days
Rolling 12-Month Average

 Desired Direction of Change

 ASSERT began July 2008

OCT 2012: 0.130

Chart Last Updated NOV 8 2012 by T. Bracke, AC
Source: Legal Dept.
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Serious Harm Rate per 10,000 Adjusted Patient Days
CCMC Internal Metric (Monthly)

FY2013 Goal: Less than 95 Events
Current Total: 76 Events, OCT 2013

Events of Serious Harm Include:
- Serious Safety Events
- Surgical Sepsis
- Serious Falls
- Pressure Ulcers outside ICU
- Ventilator Associated Pneumonias
- Catheter Associated Bloodstream Infections
- Adverse Drug Events (Level 0-5)
- Serious Perineal Infections
- Surgical Site Infections

Quarterly Rate Of OSHA Recordable Injuries
(Annualized Rate per 100 FTEs)

Fiscal Quarter, Number of Events, Payroll Hours [MM], Rate

Last Updated 10/3/13 by K. Selvin, AC

Source: CCMC 2010 OSHA Log 300
Who Are We?

• Amy Vance, RN, MBA
  – 16 years Cornell Medical Center
    • Direct care to ASC leadership
  – 2002
    • CNO Presbyterian Healthcare
    • COO Presbyterian Hospital

• Tom Zweng, MD, FACS
  – General surgeon
    • Univ. KY faculty for 5 years
    • Private practice in Charlotte for 11 yrs
  – SVP of Medical Affairs for Presbyterian Healthcare

Novant Health - Integrated Healthcare System

• Fiscal year 2011: $3.5 billion operating revenue
• Primarily serve North and South Carolina and parts of Virginia and Georgia
• 13 acute care hospitals
• 158 ambulatory centers
• Over 5,000 physician
  • > 1,100 NMG physicians at 360 locations

2011 Vital Statistics

• 120,000 discharges
• 122,000 surgeries
• 18,000 births
• 520,000 ED visits
• 899,000 outpatient cases
• 3,750,000 physician encounters
**Novant Health**

**Mission**
Novant Health exists to improve the health of communities, one person at a time.

**Vision**
We, the employees of Novant and our physician partners, will deliver the most Remarkable Patient Experience, in every dimension, every time.

**Values**
- Compassion
- Personal Excellence
- Diversity
- Teamwork
Awards and Recognitions

- **PRC President's Award** (2004, 2011) - only two-time recipient (462 additional awards in 2011)
- Five “Magnet” recognized nursing programs - excellence and quality in nursing
- CMS indicators – 90% of indicators above 90th percentile
- Listed in *Top 100 Integrated Healthcare Networks* by Verispan (2010)
- VHA National President's Award of Honor - clinical and supply chain excellence (2009)
- Two-time VHA Superior System Performance Award - FMC and PHC (2008, 2009)
- HRET recognition in *Striving for Top Box: Hospitals increasing Quality and Efficiency* (2011)

Our Vision

We, the employees of Novant and **our physician partners**, will deliver the most remarkable patient experience in every dimension, every time.
Novant HEALTH®
Washing hands saves lives.

The Remarkable Patient Experience
Novant HEALTH®
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Building a Culture of Patient Safety at Novant Health

Safety Governance Index – Novant Health
A comprehensive model for realizing High Reliability Organization (HRO) potential

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| Safety Governance Index = 44.7 |

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Prepared for Novant Health for its non-exclusive, internal use only.
Novant Health’s Safety Program

• Partnered with HPI
  – 3 year journey with a goal to drop SSE by 80%
• Executive Team sponsorship
• Leadership engagement and participation at every level
• Mandatory 4 hour safety training for all 26,000 employees
  – Taught by leaders
• Eventually, safety training for the medical staff

Novant Safety Behaviors

1. Practice with a Questioning Attitude
   A. Stop, Reflect & Resolve in the face of uncertainty

2. Communicate Clearly
   A. Use SBAR-Q to share information
   B. Communicate using three-way repeat backs & read backs
   C. Use phonetic and numeric clarifications

3. Know & Comply with Red Rules
   A. Practice 100% compliance with Red Rules
   B. Expect Red Rule compliance from all team members
   C. If compliance with a Red Rule is not possible, stop action until any uncertainty can be resolved

4. Self-Check: Focus on Task
   A. Use the STAR technique

5. Support Each Other
   A. Cross-check and Assist
   B. Use 5:1 Feedback to encourage safe behavior
   C. Speak up using ARCC – “I have a concern”
Novant Health Safety Journey (Oct 2009-current)

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Sentara Healthcare

- 123-year not-for-profit mission
- 10 hospitals; 2,349 beds; 3,700 physicians on staff
- 10 long term care/assisted living centers
- Extended stay hospital
- 3 Medical Groups (600+ Providers)
- 432,600-member health plan
- Sentara College of Health Sciences
- $3.9B total operating revenues
- $5.0B total assets
- 23,000 employees
- Sentara eCare® HIMSS Analytics Stage 7 and HIMSS Davies Award
- SDI #1 Integrated Healthcare System 2009, 2010
- AHA Quest for Quality award 2004, John M. Eisenberg award 2005
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Sentara Serious Safety Event Rate

Sentara Hampton Roads Hospitals

80% Reduction Since 2003

Each monthly data point is a rolling 12-month average of serious events of harm expressed per 10,000 adjusted patient days.

Other Dashboard Trends

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<th>Complication</th>
<th>Reduction</th>
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<td>VAP</td>
<td>98%</td>
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<tr>
<td>CLABSI</td>
<td>93%</td>
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<tr>
<td>CR-UTI</td>
<td>62%</td>
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<td>Inpatient Falls w/Injury</td>
<td>34%</td>
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<td>Hospital-acquired decubiti</td>
<td>44%</td>
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<td>(Stage 2 or higher)</td>
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Actions to Create a Reliability Culture

1. Elevate safety – NO HARM – as the core value that is reflected in the words and actions of leaders, medical staff, and employees.

2. Adopt behavior expectations for error prevention a “people bundle” for all (leaders, staff, and medical staff) and engrain the behaviors as individual and team work habits.

3. Adopt a Leadership Method techniques for (1) reinforcing and building accountability for performance expectations and (2) detecting system problems and correcting causes.

| Organization’s Values & Beliefs | Individual & Team Behaviors | Our Outcomes in SAFETY as well as in quality, satisfaction, and financial performance | Leader Behaviors | Action

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OVERVIEW OF HIGH RELIABILITY AS A CHASSIS FOR DELIVERING ON OUTCOMES

Healthcare Reliability Dictionary

**Quality**  An objective appraisal (from a producer perspective) of safety (protection from harm) and effectiveness

**Satisfaction**  A subjective appraisal (from a user perspective) of quality > expectations

**Value**  A subjective appraisal of satisfaction relative to cost and time (to realization).

**Reliability**  A probability that a system will yield a specified result; expressed as a ratio (0.98 or 98%) or a frequency (1 per year)

**Risky**  A proposition where effectiveness > potential harm

**Unsafe**  A proposition where potential harm > effectiveness
Measuring Reliability

- **Probability**: count number of satisfactory events and divide by the total number of demands to obtain reliability

- **Frequency**: count number of events (typically adverse) and divide by time interval of sample to obtain reliability

- **Process**: estimate reliability with Reverse Tracer Method

- **System or process**: quantitative methods using functional decomposition for equipment and task analysis for humans:
  - Probabilistic Safety Assessment (PSA), aka Probabilistic Risk Assessment (PRA)
  - Human reliability analysis techniques such as THERP, COCOM, CREAM, and SAPHIRE

Healthcare Reliability – Getting Better?

**Probability of Death**
- 44,000 to 98,000 patient deaths per year due to medical error (IOM To Err Is Human, 2000)
- 298,865 patient deaths from 2001-2003 due to patient safety incidents (HealthGrades, 2005)

**Macro-System Reliability**
- 50% probability of standard of care being met by randomly selected physician (Harvard, 1913)
- 43% of care rated “less than good” (Morehead & Trussell, 1962)
- 54.9% standard of care based on chart reviews (Rand / NEJM, 2003)
What Will It Take?

Patient Safety Rounds
+ Address TJC Patient Safety Alerts
+ Non-Punitive Approach to Reporting
+ Crew Resource Management
+ Strategies in Targeted Venues
   (e.g. bundles to reduce VAP or SSI)

*But will this produce significant, sustained reduction in Serious Safety Events and improved Quality across the organization?*

New Thinking

**Systems Thinking**
- All people are fallible and experience errors
- System factors are the majority cause of error
- Reliable outcomes can be obtained using the right mix of people and process.

**Bad Apple Theory**
- People who make mistakes are poor performers
- System performance is assured by removing poor performers
The Swiss-Cheese Effect

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

Adapted from James Reason, Managing the Risks of Organizational Accidents (1997)

Influencing Behaviors at the Sharp End

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

Behaviors of Individuals & Groups

You have to manage a system. The system doesn't manage itself.

W. Edwards Deming

A bad system will DEFEAT a good person every time.

W. Edwards Deming

Outcomes

Adapted from R. Cook and D. Woods, Operating at the Sharp End: The Complexity of Human Error (1994)
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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 is a function of probability and consequence.
By decreasing the probability of an accident, HRO’s recast a high-risk enterprise as merely a high-consequence enterprise.

HROs operate as to make systems ultra-safe.
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Reliability Culture - Genius of the AND

Safety Focus + performed as intended consistently over time = No Harm

Evidence-Based Process Bundles + performed as intended consistently over time = Clinical Excellence

Patient Centered + performed as intended consistently over time = “Satisfaction”

Financial Focus + performed as intended consistently over time = Margin

Descriptive Theories of HRO

Karl Weick & Kathleen Sutcliffe
1. Preoccupation with failure
2. Sensitivity to operations
3. Reluctance to simplify interpretations
4. Commitment to resilience
5. Deference to expertise

Rene Amalberti
1. Accepting limits on discretionary action
2. Abandoning autonomy
3. Transition from craftsman to equivalent actor
4. Sharing risk vertically in the organization
5. Managing the visibility of risk

Admiral Hyman Rickover
1. Rising standards over time (more than the minimum)
2. Highly capable people trained over a wide range
3. Leaders face bad news (mobilize effort, report up)
4. Healthy respect for dangers
5. Training is constant and rigorous
6. All functions fit together
7. Learning from the past
The Trouble with Descriptive Theories

Every one tells us what one looks like - no one tells us how to make one.

Sidney Dekker
1. Leadership safety objectives
2. Redundancy in duplication & overlap
3. Delegation & decentralized authority
4. Organizational learning

Christine Sammer et al.
1. Leadership
2. Teamwork
3. Use of evidence-based practice
4. Communications
5. Learning environment
6. Just
7. Patient centered


Optimizing Reliability

- Safety as the core value
- Behavior expectations for error prevention
- Collaborative Interactive Teams
- Leadership behaviors for reliability

- Resource allocation
- Evidence-based practice (e.g. bundles)
- Technology enablers

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Complementary Strategies

Central Line Infections

Codes Outside the ICU

Surgical Site Infections

Hand Hygiene

Culture

Process Bundle + People Bundle

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)

Read More: Community Health Network Reduces Deadly Infections Through Culture of Reliability, American Society for Quality (June 2008)
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**Fiscal Year 2012 Playbook, Queen’s Medical Center, Honolulu, HI**

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**Kina’ ole**
(flawlessness)
Doing the right thing in the right way, at the right time, in the right place, to the right person, for the right reason, with the right feeling, the first time.

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**High Reliability is the right mix of Blunt End behavior shaping factors.**

**Culture is not just one of the spaces**

**Culture makes the other shaping factors work as intended.**

**Culture is also the space between the other spaces**
**New Thinking**

1. Was safety culture - now high reliability
2. Was safety story - now **messaging on mission**
3. Was process improvement - now system reliability
4. Was human error - now human factors
5. Was metrics - now making harm (risk) visible
6. Was teamwork – now **thinking in teams**
7. Was critical thinking – now anticipatory thinking
8. Was accountability – now **maintenance of competency**
9. Was leadership - now **operational leadership**
10. Was speaking-up for safety - now resilience
LEADING FOR RELIABILITY

High Reliability is the right mix of Blunt End behavior shaping factors.

Culture is not just one of the spaces

Culture makes the other shaping factors work as intended.

Culture is also the space between the other spaces
HRO Leadership Functions

Message the Mission
Safe + Effective + Patient Centered + Efficient
High Reliability Organization

Design Reliable Systems
Process to Process + People to Human Factors
People think – machines do

Lead Learning
Internal / external, success / failure
Prospective / retrospective

Maintenance of Competency
Hiring for fit / building skills
Managing drift / managing change
Accountability (engagement) of staff

Operational Leadership
Work load / resource mismatch
Infrequent / complex work
Anticipate to avoid events

Design Reliable Systems

Message the Mission
Safe + Effective + Patient Centered + Efficient
High Reliability Organization

Design Reliable Systems
Process to Process + People to Human Factors
People think – machines do

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The Loudest Message Wins 
in the millions of moment-to-moment decisions 
made each day

Safety as a core value

What would staff say 
if asked: “What comes across as most important at 
your hospital?”

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Slide 55

Safety at Norfolk Southern

Our Vision
Be the safest, 
most customer-focused and successful 
transportation company in the world

Six Tenets of Safety
1. All injuries can be prevented. 
2. All exposures can be safe-guarded. 
3. Prevention of injuries and accidents is the responsibility of each employee. 
4. Training is essential for good safety performance. 
5. Safety is a condition of employment. 
6. Safety is good business.
“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 Center

“We as leaders are responsible for culture, and there is nothing more important than developing a culture of safety so that we don’t hurt our patients.”

Greg Beier
President, Acute Care Services, Novant Health
Leading for Reliability:
the ONE Chassis for Safety, Quality and Satisfaction
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Session M 22

Design Reliable Systems

Message the Mission
Safe + Effective + Patient Centered + Efficient
High Reliability Organization

Design Reliable Systems
Process to Process + People to Human Factors
People think – machines do

Lead Learning
Internal / external, success / failure
Prospective / retrospective

Maintenance of Competency
Hiring for fit / building skills
Managing drift / managing change
Accountability (engagement) of staff

Operational Leadership
Work load / resource mismatch
Infrequent / complex work
Anticipate to avoid events

Optimizing Reliability

Design to Optimize Human Performance
at the point of people interface:
- Easy to do the right thing – impossible to do the wrong thing
- Intuitive design
- Mistake proofing by design (i.e. poka yoke)

Reliability Culture
- Safety as the core value
- Behavior expectations for error prevention
- Collaborative Interactive Teams
- Leadership behaviors for reliability

Process, Protocol & Technology
- Resource allocation
- Evidence-based practice (e.g. bundles)
- Technology enablers

Behavior Accountability
Human Factors

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Influencing Behaviors at the Sharp End

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

Behaviors of Individuals & Groups

Outcomes

"You have to manage a system. The system doesn't manage itself."
W. Edwards Deming

"A bad system will DEFEAT a good person every time."
W. Edwards Deming

What is Human Factors?

- The science of understanding the properties of human capability (Human Factors Science).
- The application of this understanding to the design and development of systems (Human Factors Engineering).
- The practice of applying Human Factors Engineering to a system (sometimes referred to as Human Factors Integration).
Poor Human Factors

Know What You Don’t Know

System Failure Modes
HPI System Failure Modes

Human Factors Failure Modes
HPI Human Factors Failure Modes

Error Proofing
AHRQ Mistake Proofing the Design of Health Care Processes
Upside-Down Failure Modes

Structure
- job design & workload

Culture
- cognitive ergonomics

Process
- cognitive ergonomics

Policy & Protocol
- cognitive ergonomics

Technology & Environment
- design & usability

Human Factors Failure Modes

Input / Output Interface not Effective

H1 – Visual Interface
- Poor Scales
- Non Differentiable Colors
- Parallel
- Inadequate Size

“Can’t See it because of the interface”

H2 – Auditory Interface
- Inaudible
- Masked
- Similar Sounds

“Can’t Hear it because of the interface”

H3 – Control Configuration
- Anti- Stereotype
- Non-Intuitive
- Inadequate Feedback

“Can’t Connect the Control to the Process because of the interface”

Human Capability not Considered

HC1 – Text – Graphics- Symbols - Codes
- Cryptic
- Ambiguous
- Foreign
- Inconsistent with culture

“Can’t Understand it”

HC2 – Anthropometrics
- Too high or low
- Not intended for humans
- Wrong spacing or fit

“Can’t Reach it, Hold it or Move it”

HC3 – Human Control
- Constant Vigilance
- Fine Motor Control

“Requires too much precision or accuracy”

HC4 – Physical Work
- Exceed Capabilities (Acute)
- Fatigue Inducing (Chronic)

“Requires too much energy”

Poor Workplace Arrangement

HA1 – Poor Layout of Room or Floor
- Poor sight lines
- Traffic Patterns
- Large Distances

“Layout not designed for multiple people or tasks”

HA2 – Poor Workspace Layout
- Inadequate space
- Poor Workflow
- Lack of visual cues

“Individual task area not efficient”

HA3 – Tools & Devices
- Lack of Jigs, tools and guides
- Difficult to manipulate
- Non-intuitive

“Task Specific Tools not Effective”

Environmental Conditions

HE1 – Ambient Light
- Too Bright
- Too Dim
- Color Shifting
- Fluctuating

“Can’t See it Because of the Environment”

HE2 – Noise
- High Ambient Noise
- Intermittent Loud Noise

“Can’t Hear it because of the Environment”

HE3 – Climate
- Temperature
- Humidity
- Pressure

“Can’t Tolerate this Environment”

HE4 – Motion
- Vibration
- Acceleration
- Distractions

“Can’t Work in this Environment”
Mistake Proofing by Design
a.k.a. Poka-Yoke (ポカヨケ)

Eliminate: Redesign so error prone task is no longer necessary
Replace: Automate a manual task
Prevent: Design components so that a mistake is impossible
Facilitate: Provide visual cues and reminders
Detect: Add requirements designed to detect mistakes
Checklists
Second checks and double checks
Mitigate: Add redundancy to mitigate the impact of a process failure

“When the designers fail to provide a conceptual model, we will be forced to make up our own, and the ones we make up are apt to be wrong.”

Intuitive Design?
Intuitive Work Processes

Our responsibility as leaders…

To design work processes that *make it easy* for our employees to do the *right thing*
Lead Learning

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Anticipate to avoid events

Five Principles of HROs

Preoccupation with Failure
Operating with a chronic wariness of the possibility of unexpected events that may jeopardize safety by engaging in proactive and preemptive analysis and discussion

Sensitivity to Operations
Paying attention to what’s happening on the front-line – Ongoing interaction and information-sharing about the human and organizational factors that determine the safety of a system as a whole

Reluctance to Simplify interpretations
Taking deliberate steps to question assumptions and received wisdom to create a more complete and nuanced picture of ongoing operations

Commitment to Resilience
– We talk about mistakes and ways to learn from them
– When errors happen, we discuss how we could have prevented them

Deference to Expertise
During high-tempo operations, decision-making authority migrates to the person or people with the most expertise with the problem at hand, regardless of rank
Developing capabilities to detect, contain, and bounce back from errors that have already occurred, before they worsen and cause more serious harm.

Commitment to Resilience

We talk about mistakes and ways to learn from them… When errors happen, we discuss how we could have prevented them…

- Enhanced cause analysis
- Transparency
- Story telling and lessons learned

"It is necessary for us to learn from others’ mistakes. You will not live long enough to make them all yourself."

Admiral Hyman G. Rickover
### Individual Failure Modes

**HOW** the individual experienced the error

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency</td>
<td>The person does not have the knowledge of how to perform the task or a well-developed skill in performing the task.</td>
</tr>
<tr>
<td>Consciousness</td>
<td>The person knows exactly what to do and how to do it, yet they fail to carry out the task or they do it incorrectly because their thoughts are not on – or fully on – the task at hand.</td>
</tr>
<tr>
<td>Communication</td>
<td>The person receives information and hears it incorrectly or ascribes incorrect meaning to the information.</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>The person fails in the cognitive processing of information or in decision making based on information.</td>
</tr>
<tr>
<td>Compliance</td>
<td>The person knows the performance expectation, thinks about it at the time, and makes a choice to act differently.</td>
</tr>
</tbody>
</table>

### System Failure Modes

**WHY** the individual experienced the error

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td>The organization did not provide the people, resources, or oversight to support the process or activity being performed.</td>
</tr>
<tr>
<td>Culture</td>
<td>The organization’s values and behavior expectations for leaders, physicians, and staff serve as a counter-influence to safe, reliable individual and team performance.</td>
</tr>
<tr>
<td>Process</td>
<td>There are deficiencies in the design of the expectations or flow of the work process expectations</td>
</tr>
<tr>
<td>Policy &amp; Protocol</td>
<td>There are deficiencies in the documents – policies, procedures, and job aids – that are intended to support the work process and guide individual decision making.</td>
</tr>
<tr>
<td>Technology &amp; Environment</td>
<td>The design of the workplace, equipment, and information systems makes it difficult for the person to carry out the task at hand.</td>
</tr>
</tbody>
</table>
Anatomy of an Inappropriate Act

**WHY** did they experience the error (system failure mode)

and...

**HOW** did they experience the error (individual failure mode)

What went wrong...

**WHO** did **WHAT** because...

---

Institute for Nuclear Power Operations

Significant Event Evaluation-Information Network (SEE-IN)

Event Data

Not Significant -> Screening -> Significant Event

Not Significant: Record & Save

Screening: No Action, Detailed Field Investigation, Analysis & Evaluation Report

Significant Event: Action Analysis, Action Required

Alert Utilities Immediately (Significant Event Notification)

Write SOER (Significant Operating Experience Report)
Learning Through Experience

**Internal**
- Lessons from Our Own Events
- Lessons from Individual Experience
- Success Stories of Our Own

**External**
- Event Lessons from Healthcare
- Event Lessons from Other Industries
- Success Stories from Other Organizations

---

Serious Safety Event Communication

- **Lower Level Analysis Investigation**
- **Root Cause Analysis Needed?**
  - No
  - Yes
    - **Root Cause Analysis Investigation**
    - **Hospital Quality Office**
    - **Corrective Actions to Prevent Recurrence**

---

**Communications Across System Hospitals**
- **Serious Safety Event Alert**
  - to Hospital Leaders
  - Corporate Quality Office

---

**Response/Action Plan Within 30 Days**
- Hospital Leadership

---

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Lessons Learned Lunch Series

- Held at each site – open to all
- “SBAR” presentation of Serious Safety Event RCA
  - S – Brief description of event
  - B – Sequence of events
  - A – Inappropriate acts and root causes
  - R – Corrective actions to prevent recurrence
- Layman’s language
- Discussion about lessons learned
  - Link to Safety Behaviors
  - How could this happen in other places?
  - How can we apply lessons learned?

Maintenance of Competency

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Dekker’s Certaintudes

#1 People Make Mistakes #2 People Drift

HRO Lesson: Do not detect drift through actual events.
Find drift before it finds you.

Maintenance of Competency
Periodic Checkrides

- Commercial Aviation – Annual stan check
  - Maneuver validation (MV) - series of critical maneuvers that are graded according to FAA and airline standards.
  - Line Operational Evaluation (LOE) - Because the LOE provides greater contextual cues and integrates CRM skills with technical skills, it should simulate typical line operations more accurately than a traditional maneuver validation.

- Naval Aviation – Annual NATOPS and Instrument check

- Nuclear Power
Safety Culture Accountability Systems

Programs and processes to reinforce and engrain behavior expectations as organizational work habit:

- Aligning goals, metrics, and incentives
- Leadership rounds to reinforce
- Safety Coach programs for peer observation and coaching
- Safety Success Stories
- Incorporating behavior expectations into hiring practices
- Integrating behavior expectations into performance review process

Rapid Cycle Feedback

- Learning is doing with feedback
- Decrease cycle time for feedback
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5:1 Feedback

Positive Feedback

Encouraging someone to continue practicing an observed behavior

Top Positive Reinforcements
1. Head nod
2. "Yes"
3. "Thank you"

Negative Feedback

Discouraging someone from continuing to practice an observed behavior

Top Negative Reinforcements
1. Furrowed brow
2. "No"
3. Offering a practice tip

Adapted from Bringing Out the Best in People, by Dr. Aubrey Daniels (1994)

Quiz for Knowledge

All in it together – leaders take the quiz, too!

Safety Habit Survey – SBH

Percentage of Respondents Judging SBH Could Name the Error Prevention Tools

[Graph showing data]

HPI Share with permission of Sentara Healthcare

Slide 87

Slide 88
Maintenance of Competency

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We’re able to give real-time guidance and resource allocation…

Admiral’s Daily Update
- 9:00-9:30 am, everyday at sea
- All department heads and warfare commanders
- Held via video tele-conference call
- 100% attendance expected
- Entire day’s schedule (Battle Rhythm) revolves around update

Sensitivity to Operations
Plan of the Day (POD) Meeting in the Nuclear Power Industry

30-minute meeting of operational leadership to provide situational awareness of plant operations and command and control for issue prioritization, ownership, and resolution

Agenda
- Emergent safety issues
- Status of Top 10 Problem List
- Routine reports (operations priorities, operations workarounds, alarms not working, alarms locked-in, temporary modifications)
- Priorities for the day
- Critical questions

Daily Check-In Agenda
1. LOOK BACK – Significant safety or quality issues from the last 24 hours/last shift
2. LOOK AHEAD – Anticipated safety or quality issues in next 24 hours/next shift
3. Follow up on Start-the-Clock Safety Critical Issues

“Talking about safety should not be an event.”
Barbara Summers, President of Community Hospital North

- 9:00-9:15 AM, Monday thru Friday
- Held via conference call
- All departments, all directors
- 100% attendance expectation
- “step out of meeting to attend”
- Facilitated by senior leader
Leaders get out and look for the holes in the Swiss Cheese…

FOD Walkdown

---

Leaders get out and look for the holes in the Swiss Cheese…

Rounding to Influence

It’s not about being seen. It’s about what you see, what you ask and what you say.

What It Is
- A technique for reinforcing behaviors or performance expectations

Why It Works
- Connects expectations to core values
- Assesses knowledge of expectations
- Identify problems impacting the ability of people to follow expectations
- Engages commitment to practice expectations
Rounding to Influence (RTI)
A High Impact/Low Investment Leadership Method
A technique for reinforcing a vital behavior or performance expectation linked to a core value

1. Connect to a core value
2. Assess knowledge and reinforce the specific behavior expectations
3. Identify problems impacting ability to follow the behavior expectations
4. Ask about commitment actions

LEADING FOR RELIABILITY: STRATEGIES IN DEPTH:
LEADERSHIP ATM
PEDIATRIC EARLY WARNING SYSTEM
DAILY CHECK-IN
ROUNDING TO INFLUENCE
Leadership ATM
Pediatric Early Warning System

Many Thanks to
Lee Carter
ATTENTION

First On Every Agenda

- Senior Leader Compensation
- Strategic Plan
- Walk Rounds
- Messaging
TRUST
TRANSPARENCY

SENIOR LEADER MEETING
Leading for Reliability:
the ONE Chassis for Safety, Quality and Satisfaction
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Learning Together

Started With One State
MEASURE
MEASURE
MEASURE
MEASURE
CINCINNATI CHILDREN’S SITUATION AWARENESS

Serious Safety Events per 10,000 Adj. Patient Days
Rolling 12-Month Average

- Desired Direction of Change
- ASSERT Began July 2008
- SA testing begins
- OCT 2012: 0.130

Chart Last Updated NOV 2012 by T. Brackey, AC
Source: Legal Dept.
What is Situation Awareness?

Simple Definition:
- Knowing what is going on around you.
- Having a notion of what is important.
- Anticipation of possible future consequences of the current situation.

Dr. Mica Endsley (1995)
**SITUATION AWARENESS**

**Huddles:**
Learning together, Coaching, Role Modeling. Real-time systematic escalation of concerns. Developing the Watchstanders.
Daily Check-In
Leading for Reliability:
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Daily Check-In
An HPI Leadership Method for Performance Excellence
We huddle at the start of the day to maintain situational awareness of immediate problems impacting SAFETY & QUALITY of patient care at the front line.
We give direction about priority and responsibility for problem resolution.

How We Do It
• Include direct reports and others who know the status of operations in your areas of responsibility.
• Establish a standing time. Schedule the time on your calendar and stick to it.
• Keep it short – 10 to 15 minutes at the most – and hold it as a “stand-up” meeting.
• Keep it focused. Follow a routine, 3-point agenda:

Tips for Leaders
• Redirect unrelated reports and conversation
• Give clear direction about prioritization
• For issues, identify a single Problem Owner and time for resolution (“page me by 3:00 this afternoon if the equipment has not been fixed”)

Lines for Leaders
to encourage high reliability thinking
• How do you know you had no problems?
• What immediate actions did you take?
• Is this happening in other places? Could this happen in other places?
• What other areas does this impact?
• How are you preparing your team for that task?
• What safety behavior error prevention technique should be used?
If any deficiencies that impact safe care:
• That’s a Safety Critical issue that requires Rapid Response

Start the Clock Safety Critical Issues
Mobilize to solve safety critical issues or deficiencies:
1. Identify the Problem Owner and experts
2. State time to resolve with a “start the clock” sense of urgency – how quickly can we close this hole in the Swiss cheese?
3. Add issue to a “start-the-clock” follow-up list

Prepare to Participate
Consider yourself and ask others:
• Do we have any high-risk patients or procedures?
• Do we anticipate any non-routine procedures or tests?
• Are we dealing with any situations or conditions that distract our ability to focus or think critically about our patients?
• Are there any safety issues that I know about that may impact other departments?
• Do we have what we need to deliver safe, quality care? Are there any deficiencies in information, equipment, supplies, or staff that will make it hard to deliver safe, high quality care?
• What conditions outside our unit or outside our hospital could impact our ability to deliver safe, quality care today? If any of the above:
• What actions am I taking to have a safe day?
• If no issues:
• What can we do to improve or create a safer environment?

Daily Safety Call is a huddle of the leader and direct reports at the start of the day to maintain awareness of operations and to give direction about priority and responsibility for problem resolution.

- 8:30-8:50 am daily (including weekends)
- All departments directors/designee
- Held via conference call
- Facilitated by a senior leader 100% of the time
- 100% attendance expectation
Presbyterian Hospital Safety Huddle Template

Let’s Listen to a Daily Safety Huddle
Rounding to Influence (RTI)

Rapid Cycle Feedback

- Learning is doing with feedback
- Decrease cycle time for feedback

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Rounding to Influence (RTI)  
a High Impact/Low Investment Leadership Method  
A technique for reinforcing a vital behavior or performance expectation linked to a core value

**Connect to a core value**

**Assess knowledge and reinforce the specific behavior expectations**

**Identify problems impacting ability to follow the behavior expectations**

**Ask about commitment actions**

---

**RTI – What’s the Difference?**

<table>
<thead>
<tr>
<th>Sensitivity to Operations Threshold</th>
<th>Time</th>
<th>Theme</th>
<th>Purpose</th>
<th>Location</th>
<th>Implementing Detail</th>
<th>Adopt-a-Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low - Moderate</td>
<td>30 minutes</td>
<td>General awareness</td>
<td>Identify problems that need to be fixed</td>
<td>Work environment or other</td>
<td>Global questions</td>
<td>High Walk a mile in their shoes</td>
</tr>
<tr>
<td>Low - Moderate</td>
<td>5 to 10 minutes</td>
<td>Specific focus</td>
<td>Influence a specific behavior expectation; Identify problems impacting a specific performance expectation</td>
<td>Work environment or other</td>
<td>Targeted questions</td>
<td>Blunt end to sharp end translation of performance expectations</td>
</tr>
<tr>
<td>Moderate</td>
<td>&gt; 30 minutes</td>
<td>Blunt end to sharp end translation of performance expectations</td>
<td>Empathy for sharp end realities; Identify performance deviations and conditions impacting performance that need remediation; Identify performance behaviors impacting performance that need remediation</td>
<td>Work environment</td>
<td>Observation of behaviors and environment</td>
<td>Practical knowledge and experience of unit work</td>
</tr>
</tbody>
</table>
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Structure In Scripts
(i.e. “Talking Points”)

- When continuity of message is important
- Aid for leaders when dealing with an unfamiliar subject or difficult subject
- Provides facts and stories
- Keeps the conversation focused, on-track
- Reduces burden!

RTI: Hand Washing for HAI Prevention

Greeting  Hello! Do you have a few minutes for a brief conversation about hand washing?

| Core Value  | Hand washing is very important to keeping our patients -- and you -- safe. It’s one of the most important things we can do to prevent the spread of MRSA and other hospital acquired infections. Did you know that there are nearly 19,000 deaths each year (CDC) from hospital acquired MRSA? In 2010, we had 10 cases of MRSA in our own hospital... |
| Can Do’s    | In addition to making hand washing your habit, I’d like to ask you to help others build good hand washing habits, too. Give a thumbs up when you see them doing it, and remind when you see them forget. |
| Concerns    | Are there things that make this difficult in your department? |
| Commitment  | Will you try it out today? Leave a message for me and let me know how it goes. |
**RTI Across Leadership Levels**

**Senior Leaders**

*For example:*
- Harm – The Grand Spoiler of the Exceptional Experience
- Speaking Up & Fair/Just Response

**Operational Leaders**

- Glucose Control in Cardiac Patients
- SBAR When Communicating Requests
- HCAHPS: As If You Were My Mom…

**Safety Coaches**

- Never Leave Your Wingman – Peer Checking & Peer Coaching
- Two Patient Identifiers – A Red Rule for Safety
- Wash-In/Wash-Out to Prevent Infection

**Medical Staff Leaders**

- Use of Eye Protection at the Surgical Field
- Time Out – Setting the Tone for Safety

---

**Rounding To Influence Lectionary**

- Provides uniform schedule
- Forces leaders to take on tough topics – not just the easy messages
- Aids in sharing resources and insights while preparing to influence

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Rounding-To-Influence (RTI) Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Speak Up for Safety Using ARCC</td>
</tr>
<tr>
<td>2</td>
<td>Reporting of Safety Events, Errors, &amp; Unsafe Conditions</td>
</tr>
<tr>
<td>3</td>
<td>Safety Practice: Time outs</td>
</tr>
<tr>
<td>4</td>
<td>SBAR</td>
</tr>
<tr>
<td>5</td>
<td>Red Rule: Patient Identification</td>
</tr>
<tr>
<td>6</td>
<td>Communicating Clearly by Asking &amp; Encouraging Clarify Questions</td>
</tr>
<tr>
<td>7</td>
<td>Hand Hygiene for HAI Prevention</td>
</tr>
<tr>
<td>8</td>
<td>Staffing Shortages: Crisis or Chronic?</td>
</tr>
</tbody>
</table>
SUSTAINING THE GAINS

Not a sprint – a marathon

Getting Stuck
1. Slow progress
2. Repeat events
3. Distracters
4. Stressors

Getting Unstuck
1. Phoenix effect
2. The real work
3. Change beats rest
4. Making gaps visible
5. Active defense
Three Complacency Breakers

1. A Transparent Gap through measurement, observation, and feedback

2. Benchmarking to identify best practice

3. Continuously Rising Standards aligned with mission

Phoenix Effect

The mythical Phoenix is continually reborn of its own ashes.

Faltering patient culture transformations can also be reborn of the ashes of a single case of patient harm.

Getting Unstuck Lesson 1:
Use patient stories as a local case for action – it can happen here (and has).

“Turn poison into medicine.”
Rosemary Gibson, Wall of Silence.
The Real Work

Too many culture transformations are done as a hobby.

We have the real work – and then we have our safety culture work, or our high reliability organization work, on the side.

**Getting Unstuck Lesson 2:**
Use safety culture and high reliability principles to make the real work better and better to do. Where is the pain? And take that pain away.

“The main thing is to keep the main thing the main thing.”
Stephen Covey, *First Things First.*

A Change is Better than a Rest

Making change happen is hard (but rewarding) work. And culture change is not a sprint – it’s a marathon.

The saying in recharging your people goes "a change is often better than a rest."

**Getting Unstuck Lesson 3:**
Jump start culture transformation by involving new people as change agents, educators, and safety coaches.

“Many hands make light work.”
John Heywood

“I never blame myself when I'm not hitting. I just blame the bat and if it keeps up, I change bats….”
Yogi Berra
Five Actions for Slowing Drift

Cope with turnover
1. CEO and medical staff leaders: select for commitment, get the board on board as influencers
2. Change agent(s): make redundant & diverse, use a Transformation Team
3. Staff: train in orientation and make mandatory for appointment, manage their first care experience

Slow the drift
4. Leaders need structure: use more leader structures (Check-In, Work Group, etc) and use fewer behaviors
5. Staff need cross-monitoring: make peer checking the core of the safety culture behaviors

Deep Dive on Drift

Leader Structures
- Daily Check-In or Safety Huddle
- Start the Clock or Safety Concerns (priority actions for the day)
- Rounding to Influence
- Work Group with Top 10 List and Action Plans

Staff cross-monitoring
- Peer checking and peer coaching
- Rapid cycle feedback
- Inquiry, advocacy, assertion

A proposed solution
Containment:
Give the slush structure
Deep Dive on New Leaders

During transformation, leaders select new culture.
In sustainment, culture selects new leaders.

Select new leaders from those who get the right results using the right methods.

HRO Lesson: Culture selects leaders.

Make Gaps Visible

People only change when they personally perceive a performance gap – a difference between who they are and who they want to be.

People only change behaviors to improve safety when they personally perceive a gap.

Getting Unstuck Lesson 4:
Change harm measures and communication channels to make the safety gap visible.

If you cannot measure it, you cannot improve it.
Sir William Thomson, Lord Kelvin
Active Defense

Sustaining culture change is just an optimistic way to say that we are waiting for drift in practice habits to erode our progress.

The best way to maintain a math skill is not to teach that same skill again, but to teach a new skill that uses the older skill.

**Getting Unstuck Lesson 5:** Complete habit formation for safety behaviors by teaching thinking skills and/or thinking-in-teams skills.

“Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat.”

Sun Tzu, *The Art of War*

Gaie Rubenfeld, *Critical Thinking Tactics for Nursing.*

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Make Reliability a Reality

**Safety Culture**

- Critical Thinking
  - Questioning Attitude
  - Proactive hindsight
  - STEP
  - SORT (Train using case study in modules)

**Critical Thinking**

- Collegial Interactive Teams
  - Situation awareness
  - Communication bundle:
    - Repeat-back
    - Call out
    - Phonetic & numeric clarification
    - Clarifying questions
  - Speak-up (inquiry-advocacy-assertion)
  - Brief-Execute-Debrief (Train in teams using simulation)

**Culture of Safety**

- Patient first, every time
- Safety first
- Importance of attention (self-check)
- Importance of compliance (Red Rules)
- Cross monitoring
- Speaking-up for safety as a concept
  (Train using leader modules)
Sustaining the Gains

Novant - Sustaining the Gains

- FDNH corporate and regional committees
- Risk management investigations
  - Discuss in terms of skill-based, rule-based and knowledge-based errors
  - Recognize the “point person” is only the “tip of the iceberg”
- Performance management decision guide
  - Assists management in working thru errors created by employees
- Leadership influence
  - Looking for signs of normalized deviance
  - Rounding - out to the “sharp end” on a regular basis for influence
- The Five Safety Behaviors
Novant Sustaining the Gains (cont.)

- Deeper dive into several common concerns:
  - Falls, med errors, handoffs, specimen mishandling

- Patient safety coach program

- Patient safety managers

- Work environment
  - Flatten hierarchies and authoritative personalities
  - Reduced power distance "work environment"
  - Strongly encourage croschecks

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**Tools:** Performance Management Decision Guide

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<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Sentara Serious Safety Event Rate

Each monthly data point is a rolling 12-month average of serious events of harm expressed per 10,000 adjusted patient days.

80% Reduction Since 2003

What We Observed

- Serious Safety Event review raised concerns
- “Pulse check” revealed decreasing levels of staff/physician knowledge and use of error prevention tools
- Significant influx of new employees into the organization over time
- Employee concerns that safety and patient satisfaction were in competition
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Actions

• Leadership
  – Implemented leadership structures
  – Changing leadership behaviors is challenging
• Medical staff
  – Focused on developing physician safety champions
• Re-messaging
  – Combining with “Sentara Commitments” to help staff/physicians see “one overarching approach” rather than competing programs
  – Focused on teaching and supporting unit managers

Sentara Leadership Method

1. Daily Check-In to share situational awareness
2. Rounding to coach and influence
3. Level 1 & 2 Action Plans to manage work

Best Practice Tools & Techniques
Adopted and practiced as Management Habit
Resulting in Predictable Leadership & Improved Results

“Attention is the currency of leadership.”
Ronald Heifetz
Director of the Leadership Education Project
Harvard University’s John F. Kennedy School of Government
Design for Sustainability

• Periodic “Pulse Check”:
  – Assess engagement of
    • CEO/leadership
    • Medical staff/medical staff leadership
    • Operational leadership/safety coaches
    • Staff/physician knowledge and use of error prevention tools
    • Application of cause analysis
  – Have we implemented the right things and are they still effective?

Design for Sustainability: Others

• A complacency/”drift” early warning system
• Effective use of Collegial Interactive Teamwork (CIT) and simulation
• Application across organization including outpatient, post-acute
  – Limited application sends a cultural message
• Reliability Dashboard
  – Includes patient safety, employee safety, quality, patient satisfaction, employee satisfaction, physician satisfaction, and financials
Discussion re: implementation considerations/questions)

RELIABILITY AS THE CHASSIS:

MEASURING RELIABILITY
WEEKLY REVIEW OF SERIOUS EVENTS
PHYSICIAN LEADERSHIP/ENGAGEMENT FOR RELIABILITY
BUILDING RELIABILITY IN INITIAL DESIGN OF CULTURE
Strategies for Measuring Reliability

A deviation from generally accepted performance standards (GAPS) that…

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

**Precursor Safety Event**
- Reaches the patient
- 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
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Midwestern Children’s Hospital

Finance’s Interest in Safety
Multi-Hospital East Coast System

National Data Source: ASHRM Hospital Professional Liability & Physician Liability 2009 Benchmark Analysis
Indicators In Time

Leading Measures
Indicator of Performance Potential
Examples: Safety Culture, Teamwork Culture

Real-Time Measures
Measures: System or Process Capability
Example: Medication Reliability (reverse tracer)

Lagging Measure
Indicator of Outcomes or Results
Examples: Sentinel Events, ADE

BECKY: What are the most important economic indicators that you watch? Is there a series of numbers? Are there some statistics that you look at most closely?

BUFFETT: Well, I look at our businesses every day. But I— I look at everything. I mean I—I look at car loadings. I look at the FedEx's balance sheet. Whatever it may be. I mean I— and—and we have not bounced—but we've quit going down. I'm and—and it—the world will come back. I've never been able to tell whether it's gonna be a week or a month or— six months. But we are on the mend. And—and if you look at— at housing prices and activity in the mid to lower price range, it changed dramatically from a year ago. We're seeing some stability.

BECKY: All right. Let me go at this another way. Let's pretend you're on a desert island for a month. There's only one set of numbers you can get. What would it be?

BUFFETT: Well, I would probably look at— perhaps freight car loadings and— perhaps— and—and truck tonnage moved and—and I'd want to look at a lot of figures. (LAUGHTER)
Sentara Safety Dashboard

**Leading Indicator**
- Safety Culture Survey Scores

**Real Time Indicators**
- Safety Behavior Pulse Checks
  - Leaders
  - Staff
  - Physicians
- Safety Success Stories
- Number of Events Reported

**Lagging Indicators**
- Serious Safety Event Rate (SSER)
- # Serious Safety Events
- # Precursor Safety Events
- #/$ Professional Liability Claims
- OSHA Employee IRR
- #/$ Worker’s Comp Injuries

---

Progress Report

---

Slide 158
Making Harm Visible

**Leading Indicator** (Potential)
- Culture
- Climate
- Morale (work stress)

**Real-Time Indicator** (Capability)
- System reliability
- Process reliability
- Activity reliability

**Lagging Indicator** (Outcome)
- Negative outcome (H-1)
- Condition other than illness/injury (H-2)
- Serious preventable harm (H-3)

Weekly review of Serious Events
Weekly Review of Serious Safety Events

• SSE review meeting
  • Risk, Safety managers, QI
  • Review each potential SSE
  • Score the event.
  • Refer to VPMAs if uncertain

• Core Team teleconference
  • Leaders of hospitals, CNOs, VPMA, Risk, QI & Reg
  • Discuss significant safety events from the past 7 days, assign RCAs
  • Add further resources as needed
  • Immediate gap analysis started
  • Review and follow-up of investigations and RCAs

Novant Health Safety Journey (Oct 2009-current)

Serious Safety Event Rate (SSER) per 10,000 Adjusted Patient Days
GCM SSE Rate Dashboard

Serious Safety Event Rates

<table>
<thead>
<tr>
<th>Facility</th>
<th>Baseline</th>
<th>Aug-11</th>
<th>Sep-11</th>
<th>Oct-11</th>
<th>Nov-11</th>
<th>Dec-11</th>
<th>Jan-12</th>
<th>Feb-12</th>
<th>Mar-12</th>
<th>Apr-12</th>
<th>May-12</th>
<th>Jun-12</th>
<th>Jul-12</th>
<th>Aug-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novant Health</td>
<td>0.86</td>
<td>0.33</td>
<td>0.31</td>
<td>0.30</td>
<td>0.29</td>
<td>0.28</td>
<td>0.20</td>
<td>0.31</td>
<td>0.27</td>
<td>0.29</td>
<td>0.20</td>
<td>0.31</td>
<td>0.29</td>
<td>66.28%</td>
</tr>
<tr>
<td>GCM</td>
<td>0.92</td>
<td>0.38</td>
<td>0.38</td>
<td>0.36</td>
<td>0.36</td>
<td>0.38</td>
<td>0.48</td>
<td>0.48</td>
<td>0.42</td>
<td>0.44</td>
<td>0.42</td>
<td>0.43</td>
<td>0.40</td>
<td>96.52%</td>
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<tr>
<td>PNC</td>
<td>0.91</td>
<td>0.28</td>
<td>0.28</td>
<td>0.29</td>
<td>0.29</td>
<td>0.29</td>
<td>0.41</td>
<td>0.41</td>
<td>0.40</td>
<td>0.41</td>
<td>0.40</td>
<td>0.40</td>
<td>0.37</td>
<td></td>
</tr>
<tr>
<td>PPH</td>
<td>0.85</td>
<td>0.43</td>
<td>0.44</td>
<td>0.66</td>
<td>0.66</td>
<td>0.58</td>
<td>0.89</td>
<td>0.89</td>
<td>0.45</td>
<td>0.67</td>
<td>0.98</td>
<td>1.21</td>
<td>1.10</td>
<td></td>
</tr>
</tbody>
</table>
| PHM            | 0.80     | 0.27   | 0.27   | 0.27   | 0.28   | 0.28   | 0.28   | 0.28   | 0.14   | 0.15   | 0.00   | 0.00   | 0.00   | 100.00%
| PHM            | 0.80     | 0.99   | 0.99   | 0.99   | 1.01   | 1.02   | 1.02   | 1.02   | 0.51   | 1.51   | 1.03   | 1.11   | 1.03   | 21.97% |
| POH            | 1.32     | 1.01   | 1.02   | 0.69   | 0.69   | 0.70   | 0.70   | 0.71   | 0.72   | 0.36   | 0.39   | 0.38   | 0.30   | 0.00   |

Progress Away From Goal / Previous Month
Progress Toward Goal / From Previous Month
Goal Achieved / Reduction 80% or Greater

ALL Safety Event Rate by Facility
August 2011 – August 2012

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Session M 22
### Days Since Last SSE

<table>
<thead>
<tr>
<th>Facility</th>
<th>Days Since last SSE (through August 31, 2012)</th>
<th>Date of Last Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHC</td>
<td>85</td>
<td>06/07/2012</td>
</tr>
<tr>
<td>PHH</td>
<td>32</td>
<td>07/30/2012</td>
</tr>
<tr>
<td>PHM</td>
<td>465</td>
<td>06/23/2011</td>
</tr>
<tr>
<td>POH</td>
<td>113</td>
<td>05/10/2012</td>
</tr>
<tr>
<td>UCMC</td>
<td>444</td>
<td>07/09/2011</td>
</tr>
</tbody>
</table>

### Top 3 Event Categories - August 2012

<table>
<thead>
<tr>
<th></th>
<th>PHC</th>
<th>PHH</th>
<th>PHM</th>
<th>POH</th>
<th>UCMC</th>
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<tr>
<td>#2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SSE Case Description

SSE 5 – Untreated Pneumonia with Readmission

- Date of Event: 08/18/2012
- Presented to ED – diagnosed with pneumonia, IV Abx started
- Discharged home: No Abx given
- 4 days later admitted with worsening pneumonia.

- **Skill Based Error** – Lapse, failure to ensure patient received appropriate d/c medications.

- **Error Prevention Tool** – Self Check, Focus on Task. Nurse and MD Peer Review

RCA Update

Fall RCA Update

Team Leader
Executive Sponsor
Physician Leadership / Engagement for Reliability and Safety Culture

Objectives

• Understanding the importance of partnering with the medical staff to improve patient safety.

• Appreciate the value of using a home grown video to raise medical staff awareness about patient safety
Pt. Safety - Scope of the Problem – Novant Health

- Large organization with unique facility, region, and specialty cultures
- Majority of medical staff are independent
- Medical staff’s lack of awareness about patient safety
- Lack of precedent to require medical staff safety education

Safety and the Medical Staff

- What was the medical staff’s awareness about safety?
- Where was the medical staff’s ownership to be “safe?”
- What was the medical staff’s resolve to address the issue?
So, How Do We Get The Ball Rolling?

- Find physicians that were interested

- Conversations in the hall
  - The value of a one-on-one interaction

- Check in with Medical Staff leaders

Safety and Medical Staff - it was there!

- Just needed to start a conversation
- A few physicians were already involved
  - Singular & group efforts
    - Anesthesia  Radiology  Pathology
- Not a well-orchestrated effort
- Enthusiasm to make it a more widespread discussion
- Which ultimately lead to…
A small group of dedicated medical staff leaders focused on patient safety

Decision to make the video - MEC’s Role

- Safety discussion at med staff meetings
  - Shared 26,000 employee’s mandatory four hour training
- Support / engagement by the med staff is needed and would be appreciated
- A successful safety program favorably impacts pt. care
- After several conversations… MEC’s decision:
  - Require two hour safety video viewing at appointment and reappointment
### MEC’s Safety Video Requirement

- Required viewing of two – 1 hour safety videos
- Post-viewing test of each video – 80% score to pass
- Two units of category one CME
- Link to reappointment and initial application
  - And we mean it.....

### Creating the videos – Video Workgroup Members

- Novant’s Chief Medical Officer
- Regional VPMAs
- Senior Directors of Clinical Improvement (2)
- Patient Safety Managers (2)
- HPI consultant
Video Content

- Two - 1 hour videos
  - First hour
    - Theory behind human error
  - Second hour
    - Strategies to minimize human error
    - The five safety behaviors
- Script supplied by Steve Kreiser – HPI
  - Novant altered and “personalized” for us
- Don’t waste this teaching opportunity!

Video Content – Details

- Content based on Novant’s Five Safety Behaviors
- Clinical scenarios outlined medical staff examples of harm
  - Reinforced that adapting the behaviors will reduce the risk of harm
- Included aviation examples to reinforce high reliability concepts
  - These examples really resonated – but why?
  - Two reasons:
    1. Planes, trains and automobiles
    2. Allows a dispassionate look at safety concepts from a different perspective
Filming the video - Creating The “Tiffany Box”

- Do you want to present the diamond ring in a Wal-Mart box or a Tiffany box?
- Safety theory is the “diamond” for the medical staff
- Poorly produced video (box) equates to “lousy” concepts
  - unwillingness by med staff to engage in safety behaviors
  - An indirect message that we do not value the med staff’s time
- Road trip to Florida ACPE production studios!

Video Viewing – Make it “Easy for me”!

- Make video viewing “easy” – lots of options
- MEC wanted to weigh in on this
- Online, web-based: hospital, home… anywhere
- CD
- Live group sessions – hospital
- Live group sessions – practice group settings
  - Group sessions- no post-video testing!
The Reviews Are In…
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Tracking the video rollout

First Do No Harm Statistics - Medical & Allied Health Staff by Facility as of September 2, 2011

<table>
<thead>
<tr>
<th>Facility</th>
<th>Medical Staff Required to Complete FDNH</th>
<th>FDNH Completed</th>
<th>Medical Staff Percent Complete</th>
<th>Allied Health Staff Required to Complete FDNH</th>
<th>FDNH Completed</th>
<th>Allied Health Percent Complete</th>
<th>Overall Total Required to Complete FDNH</th>
<th>Overall Total FDNH Completed</th>
<th>Overall Total Percent Complete</th>
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</thead>
<tbody>
<tr>
<td>Brownwood Community Hospital</td>
<td>149</td>
<td>133</td>
<td>79</td>
<td>21</td>
<td>15</td>
<td>71</td>
<td>110</td>
<td>140</td>
<td>70</td>
</tr>
<tr>
<td>Forsyth Medical Center &amp; Medical Park</td>
<td>192</td>
<td>101</td>
<td>102</td>
<td>26</td>
<td>21</td>
<td>96</td>
<td>133</td>
<td>152</td>
<td>66</td>
</tr>
<tr>
<td>Franklin Regional Medical Center</td>
<td>132</td>
<td>58</td>
<td>43</td>
<td>72</td>
<td>35</td>
<td>26</td>
<td>172</td>
<td>94</td>
<td>55</td>
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<tr>
<td>Presbyterian Healthcare (2 facilities)</td>
<td>175</td>
<td>114</td>
<td>64</td>
<td>42</td>
<td>229</td>
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<td>234</td>
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<td>74</td>
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<td>361</td>
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<tr>
<td>Raven Regional Medical Center</td>
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<td>14</td>
<td>82</td>
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<td>383</td>
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<tr>
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<td>190</td>
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<td>22</td>
<td>74</td>
<td>71</td>
<td>246</td>
<td>225</td>
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<tr>
<td>Upstate Carolina Medical Center</td>
<td>121</td>
<td>58</td>
<td>49</td>
<td>22</td>
<td>14</td>
<td>14</td>
<td>82</td>
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<td>1204</td>
<td>795</td>
<td>66</td>
<td>5333</td>
<td>3782</td>
<td>71</td>
</tr>
</tbody>
</table>

Fast Forward… Two Years Later

- Uh - oh, be careful what you ask for…

- Two new videos every two years (linked to reappointment)

- What are we gonna talk about?
Video Set Two: Content

- What did we talk about?
- Part one - a review of the first videos
- Part two?

POWER

GRADIANTS!!!

Really, do those exist…?
Video Set Three: What’s on the menu?

- Depends on what we are “seeing”

- Need to involve our nursing and pharmacy partners

- “Believe your indicators”
  - Act now, then second guess

Summary

- Engagement of medical staff is essential for success of a safety program
  - Start with the med staff leaders- official and unofficial

- A safety video is a real opportunity to initiate the conversation
  - Make it relevant – use examples that are close to home
  - Take the time to make it a credible production
Building Reliability in Design of Culture

Patient as Team Member

Why do we have one culture for us and one culture for them?

Cure Team

Hourly rounding (structure)
Bedside reporting (structure)
AIDET (tool + tone)
Communication boards (structure)
Discharge phone calls (process)

Power Distance minimizing behaviors (tone)
Thinking behaviors (tool)
Thinking in team behaviors (tools)

High reliability innovator, W. Edwards Deming, dramatically broadened the definition of “customer” to include both internal and external customers. Each person or step in a process was to be treated as a “customer” and to be supplied with exactly what was needed, at the exact time needed.

Include patient and family as members of the Collegial Interactive Team (CIT). Unify all behaviors into a single high-reliability bundle, and treat everyone like a customer (i.e. tone plus tools).
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Issaquah - Blue Print for the Patient Experience

My Focus areas for the greater Patient Experience

Safety

Quality

Satisfaction

6 Tools for high reliability
1. Pay attention to detail
2. Clear communications
3. Questioning attitude
4. Cross-checking
5. Speak-up for safety
6. Mess-up, fess-up

6 Tones for collegial teams
1. Smile and say hello
2. Use preferred names
3. Listen with empathy
4. Positive intent
5. Provide for questions
6. Respect

Getting Started

1. Recast “safety first” leadership as “high reliability” leadership
2. Modify the transformation team(s)
3. Study strengths, weaknesses, and opportunity
4. Culture (re)design for leadership and staff/medical staff
5. Align behavior, structure, and process/protocol:
   a. Include behaviors in behavior bundles
   b. Develop specific bundles for structure, process, and protocol
6. Educate/train leaders, medical staff, and staff
   a. Shrink the Change to minimize disruption
   b. Use culture in a box to maximize learning effectiveness
Evidence-based leadership for Safety (high reliability) requires less change.

Lead the "safety" journey
Message safe, effective, patient-centered

Expand purpose and scope

Expand purpose and scope

Use as opportunity to adjust leader behaviors

Staff/medical staff behaviors require some additions

Recast purpose for safe, effective, patient-centered

Add the Tones

Add some Tools (AIDET)

Use as opportunity to adjust staff behaviors
Innovators

Sentara
Five Promises with Promise 1: *Always keep you safe* (with 5 behaviors)

Lee Memorial
Safety Culture first then expanded to Safety + Service on HRO platform

CHRISTUS Spohn
Safety + Service on HRO platform as first intervention

Queen’s Medical Center
Tones & tools of the CIT to reduce power distance

Cancer Treatment Centers of America
Service Culture first then expanded to Safety + Service on HRO platform

Lessons-Learned

1. Patient Experience ≠ satisfaction
2. Tones & tools shrink the change for staff
3. *Blue printing* further shrinks change (for nursing)
4. Train in simulation – learning is doing with feedback
5. *High Reliability* is good leadership – not necessarily good marketing (to patients and staff)
6. Leader structure still makes all work
NEXT GENERATION STRATEGIES:
COLLEGIAL INTERACTIVE TEAMS [CIT] & TRIPLE PLAY

APPROACH TO CIT WORKSHOPS - CITs & SIMULATION

HUMAN FACTORS – GETTING READY TO FOCUS ON HUMAN FACTORS INTEGRATION

Overview of CIT & Triple Play
A Triple Play

A fool’s choice:
- technical skills in isolation, or
- team skills in isolation

Practice only makes permanent.

Perfect practice makes perfect.

12 Steps: Work Process Simplification

1. Map the process as performed today.
2. Identify requirements the process must meet
3. Identify the measures of process effectiveness.
4. Evaluate the process for risk and effectiveness.
5. Modify the process to reduce risk and improve effectiveness.
6. Develop job aids.
7. Update the process map.
12 Steps: Procedure Simplification

8. Document the process as a procedure.
9. Format the procedure effectively.
10. Determine if a policy is needed.
11. Review for ease of understanding and use.
12. Obtain appropriate reviews and approvals.

Focus & Simplify™
Form follows function

- Two columns for novice-to-expert application
  - “Required Action Steps” for all
  - “Supplemental Guidance” when further information is needed
- Three columns for multi-actor procedure
- Sequential action steps written as clear, concise phrases beginning with an action word
- Cautions and Notes placed before the step to which they apply
- Job Aids referenced with related action steps

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Referring Unit (e.g., Cath Lab, Surgery, Intensive Care, Pediatrics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept</td>
<td>Referring Unit (e.g., Cath Lab, Surgery, Intensive Care, Pediatrics)</td>
</tr>
<tr>
<td>Category</td>
<td>Referring Unit (e.g., Cath Lab, Surgery, Intensive Care, Pediatrics)</td>
</tr>
<tr>
<td>Location</td>
<td>Referring Unit (e.g., Cath Lab, Surgery, Intensive Care, Pediatrics)</td>
</tr>
</tbody>
</table>

- Referring Unit (e.g., Cath Lab, Surgery, Intensive Care, Pediatrics)

- Two columns for novice-to-expert application
  - "Required Action Steps" for all
  - "Supplemental Guidance" when further information is needed

- Three columns for multi-actor procedure
  - Sequential action steps written as clear, concise phrases beginning with an action word
  - Cautions and Notes placed before the step to which they apply
  - Job Aids referenced with related action steps
Example: Laboratory Proficiency Testing

6 departmental procedures…

- Receive kit. Initiate External Proficiency Testing (1st independent check)
- Date & store kit.
- Order in Cerner.
- Notify appropriate person.
- Prepare & perform testing.
- Enter test results on forms.
- Transcribe results to Master.
- Validation of transcribed results.
- Schedule follow-up with Process Owner.

Checklist:

<table>
<thead>
<tr>
<th>Required Action Steps</th>
<th>Completed by</th>
<th>2nd Checks</th>
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</thead>
<tbody>
<tr>
<td>1. Receive kit. Initiate External Proficiency Testing</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
<tr>
<td>2. Date &amp; store kit.</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
<tr>
<td>3. Order in Cerner.</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
<tr>
<td>4. Notify appropriate person.</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
<tr>
<td>5. Prepare &amp; perform testing.</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
<tr>
<td>6. Enter test results on forms.</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
<tr>
<td>7. Validate transcribed results.</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
<tr>
<td>8. Schedule follow-up with Process Owner.</td>
<td>Tech No._________</td>
<td>Tech No._________</td>
</tr>
</tbody>
</table>

References:
- Policy: Laboratory Proficiency Testing
- Workflow: Laboratory Proficiency Testing

Key Process, If Applicable:

- Obtain sample
- Testing
- Interpretation
- Reporting
- Follow-up

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…”

Slide 205
Slide 206
### Slide 207

**Leading for Reliability:**

*the ONE Chassis for Safety, Quality and Satisfaction*

**2012 IHI National Forum on Quality Improvement in Healthcare**

**Session M 22**

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**Five Tones**

To reduce power distance and level authority gradient

1. Smile and greet others (say hello)
2. Refer to others by preferred (usually first) name
3. Listen with empathy and intent to understand
4. Communicate positive intent of your actions
5. Provide opportunities for others to ask questions

---

**Make Reliability a Reality**

**Safety Culture**

- Patient first, every time
- Safety first
- Importance of attention (self-check)
- Importance of compliance (Red Rules)
- Cross monitoring
- Speaking-up for safety as a concept (Train using leader modules)

**Critical Thinking**

- Questioning Attitude
- Proactive hindsight
- STEP SORT (Train using case study in modules)

**Collegial Interactive Teams**

- Situation awareness
- Communication bundle:
  - Repeat-back
  - Call out
  - Phonetic & numeric clarification
  - Clarifying questions
- Speak-up (inquiry-advocacy-assertion)
- Brief-Execute-Debrief (Train in teams using simulation)

STEP = Story, Test story, Eliminate gaps in story, Plan to proceed
SORT = Statement of problem, Options, Rule-out options, Test and take action
Leading for Reliability: 
the ONE Chassis for Safety, Quality and Satisfaction
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Critical Thinking: STEP
Decision-making Under Stress

Story
Create a story:
- What has happened
- What will happen

Test
Test for conflicts.
Change story to fit the facts.

Evaluate
Evaluate the story.
Does the story make sense?

Plan
Develop the plan predicted by the story.

Assess the situation

Source: Cohen, Freeman, & Thompson. 

New Frontier: Resiliency in Practice

Responding
(actual)
Knowing what to do

Learning
(factual)
Knowing what has happened

Monitoring
(critical)
Knowing what to look for

Anticipating
(potential)
Knowing what to expect

Resilience Engineering in Practice
Erik Hollnagel, et. al., 2011.
### Lessons

1. **Focus & Simplify™ protocol first!**
   - Evidenced-based care
   - Human factors in policy and protocol
2. **Clinical protocols manufacture physician interest**
   - Sepsis in ED, ICU, Med-Surg
   - Post-partum hemorrhage
   - Malignant hyperthermia
3. **Educate on CIT bundle and protocol before sim**
4. **Videotape sim for debrief**
5. **Practice sim/debrief on your friends**
6. **Start with Triple Play – keep alive with Real-time**

---

**Simulation Continuum**

<table>
<thead>
<tr>
<th>Simulation in the Lab</th>
<th>Simulation at the Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Skills</td>
<td>Technical + Non-Technical Skills</td>
</tr>
<tr>
<td></td>
<td>Non-Technical Skills (Individual &amp; Team)</td>
</tr>
<tr>
<td>Pre-Job Briefing</td>
<td>Real-Time Sim Teaching on the Spot</td>
</tr>
</tbody>
</table>

**Off-Line Education & Training**

- **Best Use**: Initial education on new concepts; intensive skill development
- **Location**: Classroom, training lab, meeting
- **Prep Time**: Longer
- **Touch Time**: Longer (>30 minutes, typically hours)
- **Facilitator**: Trained instructors or manager
- **Costs**: Salary of instructors/learners; supplies

**Real-Time Simulation**

- **Best Use**: Reinforcement and application of known concepts; development of critical thinking and analytical problem solving
- **Location**: On-the-job
- **Prep Time**: Short to none
- **Touch Time**: Short (30/60/90 seconds; typically <5 minutes)
- **Facilitator**: Manager or coworker
- **Costs**: None

---

**Simulation Continuum**

<table>
<thead>
<tr>
<th>Off-Line Education &amp; Training</th>
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<tr>
<td>Touch Time</td>
<td>Objective-bound</td>
</tr>
<tr>
<td>Frequency</td>
<td>Time-bound</td>
</tr>
<tr>
<td>Facilitator</td>
<td>Trained instructors or manager</td>
</tr>
<tr>
<td>Costs</td>
<td>Manager or coworker</td>
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CIT Workshops:
Using Collegial Interactive Teamwork to Reduce Harm in Healthcare

Hierarchy of Reliability Culture

1. Values & Beliefs About Safety & Reliability
2. Knowledge of Reliability “Science”
3. High Reliability Leadership
4. Human Error Prevention
   - 4.1 Critical Thinking
   - 4.2 Collegial Teamwork
5. Human Factors Integration

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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  
– We discuss alternatives on how to go about our normal work activities  
– We’re not afraid to ask questions and voice safety concerns

Two Principles of Containment
Commitment to Resilience  
Developing capabilities to detect, contain, and bounce-back from events that do occur

Deference to Expertise  
– We take advantage of the unique skills of our colleagues  
– When a patient crisis occurs, we rapidly pool our collective expertise to resolve it

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…”
Good News

It Doesn’t Take Much Time
Two studies timed Briefing/Debriefing:
- Study 1 – Timed activity at a mean of 3.5 minutes with range of 1-6 minutes
- Study 2 – Mean of 2.9 minutes for the brief and 2.5 minutes for the debrief with a range of 1-5 minutes for each

It Saves Time
- 31% reduction in unexpected delays
- 16% reduction in communication breakdowns leading to unexpected delays

It Saves Lives
2010 Association Between Implementation of a Medical Team Training Program and Surgical Mortality
- 108 VHA facilities studied
- 74 facilities received team training / 34 did not
- 18% reduction in annual mortality in those receiving training
- 7% reduction in those who had not
- Training included briefings and debriefings in the OR using checklists as an integral part of the process.

A follow-on 2011 study in the Archives of Surgery demonstrates a significant reduction (17%) in surgical morbidity as well

More Good News


Methodology

- Preoperative brief similar to preflight checklists – consists of key questions regarding patient safety segregated by function, e.g. surgeon, scrub, anesthesiologist and circulator.
- Four indicators of safety tracked – number of wrong-site procedures, attitudinal survey data, near-miss reports, and nursing turnover

Results

- Wrong site surgeries decrease from 3 to 0 per year
- Employee satisfaction increased by 19%
- Nursing personnel turnover decreased by 16%
- Perception of safety climate improved from “good” to “outstanding”

Checklists – HRO mainstays
Barriers to Effective Communication

Preconceptions / Assumptions
Rank / Experience (authority gradient)
Task / Information Overload
Task Underload
Noise / Distractions / Jargon
Social / Cultural
Interpersonal

Power Distance

Geert Hofstede’s Power Distance
• Extent to which the less powerful expect and accept that power is distributed unequally
• Leads to strong Authority Gradients, which is the perception of authority as perceived by the subordinate

United States
• Moderate to low Power Distance (38th of 50 countries)
• High between certain professional groups:
  • Some physicians and nurses
  • Some nurses and other clinical staff
  • Some leaders and staff

Cultural differences are a nuisance at best and often a disaster.”
Geert Hofstede, Emeritus Professor, Maastricht University
We’re not afraid to ask questions and voice safety concerns…

Weick & Sutcliffe HRO Principle #3: Reluctance to Simplify

Overcoming Communications Barriers

- Inform others of progress
- Feedback results to others

Call-out to maintain SA

Phonetic & Numeric Clarifications

SBAR quick & to the point:
- Situation
- Background
- Assessment
- Request
- Questions

Speak up for Safety with ARCC:
- Ask
- Request
- Concerned
- Chain of Command

3-Way Repeat Back:
- Sender initiates communication
- Receiver repeats back
- Sender acknowledges accuracy by saying, “That’s correct”

Clarifying Questions:
- Ask 1 or 2 questions to ensure understanding in high risk situations or when information is incomplete or ambiguous
Can We Function as a Team?

- 75% of surgeons rated teamwork “High”
- Others on the team “not-so-much”
  - 39% of anesthesiologists
  - 28% of surgical nurses
  - 25% of anesthesia nurses
  - 10% of residents

Source: Internal Bleeding, Whachter & Shojania, 2004

CIT’s - What it Takes

“Since humans are fallible, the only chance to keep human error from hurting patients is to crosscheck each other by creating Collegial Interactive Teams (CIT’s).”

- John Nance

1. Team leaders are required to lead with the full participation of their crews – while crews need to be assertive with respect.
2. CIT’s can’t be effective without mutual caring, respect and support.
3. CIT’s can’t be effective without barrier-less communication, which can’t occur if the culture discourages people from speaking up.
4. There can’t be barrier-less communication if the team leader’s control is based on hierarchical snobbery, defensiveness or high power distance.
5. Culture change is exponentially faster when the culture itself decides to make the change.
Just in Time Simulation at HDVCH

- Medical Staff as champions
- Medical Staff as role models
- Medical Staff as continuous educators

CIT Simulation Exercise at Main Line

Background: Dr. Henry Jones, assisted by Dr. Bob Harvey, is finishing a reversal of a colostomy in a 64 year old male who is six months status post Harmann’s procedure for perforated diverticulitis.

The pelvic dissection was difficult. While digging small bowel out of the pelvis, Dr. Jones made two enterotomies.

Dr. Jones has three additional cases for the day and is 3 hours behind schedule. He is not in a good mood.

The scrub tech and circulating nurse from the day shift have changed, so those who started the case are no longer present.
A Rough Day in the OR

Scrub Tech: Dr. Jones, do you have any instruments up there?
Dr. Jones: Nope – I sent everything back to you. I’ve got my needle holder and my forceps – and we’ll be finished in 5 minutes.
Scrub Tech: Well, I’m missing a hemostat.
Dr. Jones: Well, look on the floor.
Circulator: I’ve already looked. There’s nothing on the floor.
Dr. Jones: Well, I assure you it’s not in the abdomen. How the hell could you be missing a hemostat?
Scrub Tech: Dr. Jones, do you mind just looking one more time to see if its in the drapes? Maybe you used one to attach the cautery?
Dr. Jones: [looks around] There’s nothing up here on the drapes.
Circulator: We can’t find it – we’ll need to take an x-ray.
Dr. Jones: Oh that’s just great! Go ahead – delay me another hour! I’m telling you we don’t need a freakin’ x-ray! Look [struggles to get hand in abdomen] I’ve got my hand in here. I’m telling you there is no way we left a hemostat in here. An x-ray is another waste of time. No! No x-ray! And by the way, did someone send for my next patient?
Dr. Harvey: Henry, they did the same thing to me last week. I did a right colectomy. I would have been skin to skin in 45 minutes. Instead, they delayed me for over an hour looking for a freakin’ hemostat. The x-ray was negative of course. I think they found it in the circulator’s back pocket!

A Rough Day in the OR

Circulator: Dr. Jones, I’m CONCERNED that our count is off. It’s possible that the initial count was off, but the previous team said we started with 8 hemostats, and now we can only find 7. I’m sorry, but we need to take an x-ray to resolve this.
Dr. Jones: Don’t you understand?! I’ve checked the abdomen and I’m already 3 hours behind!
Circulator: Dr. Jones, its protocol to obtain an x-ray if the count is off. Do you mind if we call the OR manager to get further guidance?
Dr. Dreemer: [Anesthesia] Henry, the patient is doing fine from my standpoint. I’m happy to keep her asleep for 10 more minutes for you to get the x-ray if you want.
Dr. Jones: Oh all right! For Pete’s sake – go ahead! Get your slow-as-molasses x-ray techs up here and get on with it. And while you’re at it, give me the damn skin stapler, because we’re finished up here.

The End?
The X-ray

The best comment from Dr. Jones to the Scrub Tech would be…

A. Didn’t I tell you there was no hemostat in the abdomen? Tell your colleagues to try to get the pre-operative count right next time.

B. Thanks for wasting another 30 minutes of my time that I’ll never get back!

C. [No comment whatsoever. Just leave the room with a look of disgust after x-ray is negative]

D. Thanks, Nancy. I really appreciate you speaking up. I’m sorry if I seemed impatient, but what you did was important. Even though the x-ray was negative, the next time you might stop something really bad from happening. Thanks!
Better leadership and crosschecking from Dr. Harvey to Dr. Jones would have been…

A. I can’t stand when they do that to me. What butt pain!

B. If it weren’t for these regulations constantly wasting my time, I’d have more time to work on my golf game.

C. Henry, maybe we should appreciate the fact the staff is watching our backs with these counts and take a few minutes to get that x-ray.

D. I think we should fight these draconian rules at the next Medical Staff meeting.

Culture and Compact

- Compacts are the “give” and “get” that people expect as members of their organization

- History of compacts:
## A Novant Example

### Women and Children’s CIT Commitment

Make our 5 Safety Behaviors become a habit
- Practice with a Questioning Attitude
- Communicate Clearly
- Know & Comply with Red Rules
- Self-Check: Focus on Task
- Support Each Other

Show Respect:
- Say “Please” and “Thank You”
- Recognize the entire team for their efforts and contributions
- Value team members and support each other

All Team Members are asked to:
- Get to know each other personally and by name.
- Coach and mentor new team members – remember, we were all the “new” person on the team at one time.
- Speak in a pleasant tone of voice, and treat all team members the way you would want to be treated.
- Refrain from using foul/derogatory language, or aggressive behaviors.
- Avoid discussing personal issues or grievances with others on the unit. If needed, discuss issues with those individuals in private where patients, family and team members cannot overhear the conversation.
- If confrontation arises, give one another time to process the situation before debriefing, if possible.
- Participate in decision making and strive to find solutions that the entire team can agree upon.
- Communicate the Shared Mental Model (the plan of care, pertinent patient information, potential complications, etc.).
- Be timely and make every effort to start procedures on time.
- Acknowledge, understand and respond to the needs of the patient, family and team members when there is a crisis.
- Have necessary instruments and equipment in the room.
- Plan ahead for anticipated complications – shoulder dystocia, post-partum hemorrhage, etc.
- Pay attention/remain engaged during procedures and anticipate needs – patient care first, chart later.
- Be encouraging and supportive of team members at all times, especially in the presence of patients and family members. Foster a unified team!

I have read the CIT Commitment and agree to model these behaviors.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Printed Name</th>
<th>Date</th>
</tr>
</thead>
</table>

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### Human Factors:

**Getting Ready to Focus on Human Factors Integration**
Leading for Reliability:  
the ONE Chassis for Safety, Quality and Satisfaction  
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Hit the Books

Novice - Advanced Beginner - Competent - Proficient - Expert  
Source: Patricia Benner, From Novice to Expert (1984)

...and take a lesson.

Center for Quality & Productivity Improvement  
Systems Engineering Initiative for Patient Safety  
American College of Physician Executives  
Reliability 2.0

Mistake Proofing by Design  
a.k.a. Poka-Yoke (ポカヨケ)

Eliminate: Redesign so error prone task is no longer necessary  
Replace: Automate a manual task  
Prevent: Design components so that a mistake is impossible  
Facilitate: Provide visual cues and reminders  
Detect: Add requirements designed to detect mistakes  
Checklists  
Second checks and double checks  
Mitigate: Add redundancy to mitigate the impact of a process failure
Error Proofing Tactics

Norman’s Tactics for Knowledge in the Environment

<table>
<thead>
<tr>
<th>Constraints</th>
<th>Provide design features that compel or exclude actions. Constraints may be physical, semantic, cultural, or logical.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordances</td>
<td>Provide guidance for operation of device by providing features that allow certain actions.</td>
</tr>
<tr>
<td>Natural Mappings</td>
<td>Design one-to-one correspondence between controls and device being controlled.</td>
</tr>
<tr>
<td>Visibility</td>
<td>Make operation of the device visible.</td>
</tr>
<tr>
<td>Feedback</td>
<td>Give each action an immediate and obvious effect.</td>
</tr>
</tbody>
</table>

Agency for Healthcare Research and Quality
Prepared by John Grout (Berry College)

HIT-Related Errors

- Growing number of descriptive articles
  - “e-iatrogenesis” (Weiner, JP et al)
  - “technological iatrogenesis” (Palmieri, PA et al)

- One classification system:
  - People, environment, process, and technology-related
  - Described for Bar-code admin, CDSS, CPOE and others

- Another way to categorize:
  - Errors occur when HIT is:
    - unavailable for use,
    - malfunctions during use,
    - is used incorrectly by someone,
    - when HIT interacts with another system incorrectly
Selected HIT Issues

- How workflows support effective decision-making
  - Effective implementation, workarounds, routing of results
- How alerts support decision-making
  - Volume, type, escalation, notification
- How critical/important information is accessed
  - Cut and paste, note bloat
- How “incorrect” information is identified prior to impact
  - Wrong patient, auto-populated fields, assuming information in the EHR is correct
- How IT staff can avoid errors when making changes
- Downtime and recovery procedures (resiliency)

Human Factors Integration

- Design of systems from fundamental principles
- Training of teams using in-situ simulation
- Change management of protocol and equipment
  - Design control
  - Configuration control
- Next generation of eHR
  - Clinical decision support systems
  - Transition for “chart” to patient information
New Thinking

1. Was safety culture - now high reliability
2. Was safety story - now *messaging on mission*
3. Was process improvement - now system reliability
4. Was human error - now human factors
5. Was metrics - now making harm (risk) visible
6. Was teamwork – now *thinking in teams*
7. Was critical thinking – now anticipatory thinking
8. Was accountability – now *maintenance of competency*
9. Was leadership - now *operational leadership*
10. Was speaking-up for safety - now resilience

Thinking About The Future

- Debrief on lessons-learned & critical success factors (CSF)
- What does it take to work toward reliability in various dimensions?
- Next strategies on the horizon
QUESTIONS??

DON’T FORGET YOUR EVALUATIONS