COOK COUNTY HEALTH & HOSPITALS SYSTEM

CCHHS Board of Directors
Quality and Patient Safety Committee
Quality and Reliability in Health Care
Krishna Das, MD, Chief Quality Officer
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Quality: A Definition

The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge

- Institute of Medicine, Crossing the Quality Chasm, 2002
Safety versus Quality

- **Quality** - addresses the intended results of the health care system

- **Safety** - is concerned with the many ways in which the system can fail to function

- **Both are important in improving care**

Vincent et al. NHS Safety Briefing
Quality from a Patient’s Perspective

- ‘Help me’
  Evidence based, high quality practice

- ‘Don’t hurt me’
  Prevent medical errors & adverse events

- ‘Be nice to me’
  Treat me with respect and humanity

Adapted from Don Berwick, MD
Dimensions of Quality

• What are the components of quality?

• IOM listed and defined the dimensions of quality in health care

• This process also summarized research findings in contributors to quality

Institute of Medicine (IOM): Crossing the Quality Chasm, 2002
Safe

• Patients should not be harmed by the care that is intended to help them

• Safe health care systems reduce risks and hazards attributable to the process of care

IOM: Crossing the Quality Chasm, 2002
Timely

• Waits and sometimes-harmful delays in care should be reduced both for those who receive care and those who give care

• In most industries timeliness is an important quality metric

IOM: Crossing the Quality Chasm, 2002
Effective

• Care should be based on scientific knowledge and offered to all who could benefit, and not to those not likely to benefit

• We match the science of medicine to the care we provide

IOM: Crossing the Quality Chasm, 2002
Efficient

• Care should be given without wasting equipment, supplies, ideas and energy

• Don’t allow ideas and suggestions from front line to go to waste

IOM: Crossing the Quality Chasm, 2002
Equitable

• Care should not vary in quality because of personal characteristics such as gender, ethnicity, geographic location or socioeconomic status

• Must close the gap in justice in health care

IOM: Crossing the Quality Chasm, 2002
Patient Centered

• Care should be respectful of and responsive to individual patient preferences, needs and values

• ‘Nothing about me without me’

IOM: Crossing the Quality Chasm, 2002
Six Dimensions of Quality (and care)

• S: Safe
• T: Timely
• E: Effective
• E: Efficient
• E: Equitable
• P: Patient Centered

IOM: Crossing the Quality Chasm, 2002
Over 15 Years Later...

We still see 100,000 deaths annually due to medical care

Equivalent to one 747 full of passengers

Crashing every other day
High Reliability

• The ‘consistent performance at high levels of safety over long periods of time’

• Ability of organizations to avoid preventable adverse events which might be expected due to hazardous or complex environments

• Examples of high reliability organizations (HROs): nuclear industry, aircraft carriers, airlines, amusement parks
Reliability – the Challenge

Application of evidence (effective treatments)

• Evidence is known but not consistently applied
• Over 7,000 patients studied by RAND*
• 55% received recommended care:
  – Preventive care
  – Acute care
  – Care for chronic conditions

* McGlynn et al. The Quality of Healthcare Delivered to Adults in the US. NEJM 2003
Reliability – the Challenge

Complexity of health care

• 99% error free – sounds good?

• If ‘only’ 1% of 1,000,000 surgical procedures contain an error → 100,000 procedures will be performed with an error

• If ‘only’ 1% of 35,760,000 hospitalized patients experience an error in their care → that is 357,607 medical errors
Reliability – the Challenge

Complexity of health care, cont’d

• Medication administration → 10 steps from writing orders to administering medications

• Assume each step is 99% accurate

• To perform all 10 steps = 90% accurate
Building Reliability

M I S S I O N   A N D   V I S I O N   S H A R E D   V A L U E S

R E A D I N E S S   T O   C H A N G E
O R G A N I Z A T I O N A L   L E A R N I N G

L E A D E R S H I P

C U L T U R E

I M P R O V E M E N T

M I S S I O N   A N D   V I S I O N   S H A R E D   V A L U E S

Chassin & Loeb. The Ongoing Quality Improvement Journey. Health Aff. 2011
Reliability – Leadership

- Commitment to the process
  - Board of Directors
  - Senior Leadership
  - Physician Leadership
- Prioritize quality and reliability
- Recognize it is a long term process
- Commit to organizational learning

Chassin & Loeb. The Ongoing Quality Improvement Journey. Health Aff. 2011
## The Path to High Reliability

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Early</th>
<th>Developing</th>
<th>Approaching</th>
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<tbody>
<tr>
<td><strong>Leadership</strong></td>
<td>Focus on regulatory</td>
<td>CEO leads quality</td>
<td>Commitment to high reliability</td>
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<td>Little IT support</td>
<td>Measurable QI targets set</td>
<td>Goal of zero harm</td>
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<td>Culture not assessed</td>
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<td><strong>Process Improvement</strong></td>
<td>No formal QI/PI process</td>
<td>Adoption of QI strategy</td>
<td>‘Robust’ PI with staff training</td>
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<td>PI focused on regulatory</td>
<td>PI expanded to all adverse events</td>
<td>Patients engaged in QI/PI</td>
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- **Leadership**: Focus on regulatory, little IT support, MDs not engaged, CEO leads quality, measurable QI targets set, commitment to high reliability, goal of zero harm.
- **Safety Culture**: Culture not assessed, RCAs limited to sentinel events, initial safety culture measures done, safety culture is given a high priority, safety culture established, near misses reported.
- **Process Improvement**: No formal QI/PI process, PI focused on regulatory, adoption of QI strategy, PI expanded to all adverse events, ‘Robust’ PI with staff training, patients engaged in QI/PI.
Principles of High Reliability

• Preoccupation with failure
  – Attentiveness to possibility of an error
• Reluctance to simplify
  – Processes are complex, always ‘dig deeper’
• Sensitivity to operations
  – Awareness of what’s working, or not
• Commitment to resilience
  – Ability to handle, learn from adverse events
• Deference to expertise
  – Who really knows the work? (front line staff)
Reliability – Culture

• Safety culture required to maintain reliability
• **Trust** – front line workers must trust each other to report safety issues
• **Report** – must occur without negative feedback
• **Improve** – management must help fix the problems reported

Chassin & Loeb. The Ongoing Quality Improvement Journey. Health Aff. 2011
Errors: Role of Serial Defenses

The Swiss cheese model of how defences, barriers, and safeguards may be penetrated by an accident trajectory

Reason, J. 2000 BMJ
Errors versus Adverse Events

- Adverse event – final outcome in chain of events
- Error *may* play a causal role in an adverse event
- Adverse events which result from errors are *potentially* preventable
Concept of Latent Errors

Patient Safety Events

Latent Errors

Reporting Latent Errors → Patient Safety
Culture of Safety

- Safe Practice
  - Reporters must feel safe
  - Leaders must commit to correct latent errors
  - Increases reporting
  - Increases staff satisfaction and retention
  - Improves safety and reliability

- Improve Process
- Report Events
- Learn from Errors
- Praise for Reporting
Reliability – Process Improvement

• Reliability = Number of actions that achieve the desired result / Total number of actions taken

• $10^{-1}$ = one defect in 10 attempts
• $10^{-2}$ = one defect in 100 attempts and so on
Reliability – Process Improvement

• Industrial approaches to quality improvement
• Lean approach
• Six sigma
• ‘Robust process improvement (RPI)’
  – Reliable measurement
  – Ascertain root causes
  – Sustain improvement

Chassin & Loeb. The Ongoing Quality Improvement Journey. Health Aff. 2011
Hierarchy of Reliability

Audit
Hardwire Processes
Training and Competency
Policies plus Education
Policies and Procedures
IHI Triple Aim

- Experience of care – quality and safety, ‘STEEEP’
- Population health – SES, behavioral factors, prevention, access
- Cost of care – PMPM or equivalent
National Quality Strategy - 2011

- Builds on the Triple Aim
- Patient experience of care – improve overall quality by making health care more patient-centered, reliable, accessible and safe
- Population health – improve the health of the US population by supporting proven interventions to address behavioral, social and environmental determinants of health in addition to delivering higher quality care
- Cost and value – reduce the cost of quality health care for individuals, families, employers and government
Summary

• Goals of quality are enunciated in the IOM reports, the Triple Aim and the National Quality Strategy

• Patient experience of care may be summarized in STEEEP

• Reliability strategies are based on leadership, culture of safety and robust process improvement

• Shared values and organizational learning are drivers of quality