Building a Safe Healthcare System
Objectives

- Discuss the process of improving healthcare systems.
- Introduce widely-used methodologies in QI/PS.
What is Quality Improvement?

- Process of continually evaluating clinical practices using patient outcomes as the basis.

- Patient safety is a subset of QI.
  - Minimizing risks of errors and injury.
  - Increase chances of catching errors before they occur – through system performance.

Quality Is a Team-Oriented Process

Goal: Patient-centered care

- Quality Management departments
- Regulatory requirements
- Risk Management departments
- Surveys of patient satisfaction
- Adverse event reviews

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Effecting System Change: Process

Planning

Defining the process

Effecting Change

• **Benchmarking**: Compare ourselves with others or from an historical internal perspective.

• Root Cause Analysis
• Fishbone (Ishikawa) Diagrams
• Flow Charts
• Brainstorming

• Recognize and accept need for change
• Identify participants, resources, and the value of change.
• Implement interventions.
• Monitor outcomes.
Effecting System Change: Culture

- Organizational culture: patterned way that an organization responds to challenges.
- Organizational learning: process of increasing the capacity for effective organizational action through knowledge and understanding.
- Culture of safety: safety is everyone’s responsibility; avoids shame-and-blame; errors are learning opportunities.

Effecting System Change: Culture

**Suppression**—Harming or stopping the person bringing the anomaly to light; “shooting the messenger”

**Encapsulation**—Isolating the messenger, so that the message is not heard

**Public relations**—Putting the message “in context” to minimise its impact

**Global fix**—An attempt to respond to the problem wherever it exists. Common in aviation, when a single problem will direct attention to similar ones elsewhere

**Inquiry**—Attempting to get at the “root causes” of the problem

- **Pathological**
- **Bureaucratic**
- **Generative**
Highly Reliable Systems

- Necessary resources are allocated to safety.
- Openness exists regarding errors and problems.
- Communication is frequent and candid and organizational learning is promoted.

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<tr>
<th>Property</th>
<th>Contrasted with</th>
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<td>Pessimism about possibilities of failure</td>
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Focus on representational mistakes | Optimism that safety is an achieved property
Focus on safety awards and specific performance milestones | Culture of doubt and scepticism
Procedural counter checks |
| Generalised failure concern       | Punishment of failure at performance level                               | Regulation against action outside analysis
Procedural revisions |
| Wide distribution of reliability responsibility | Focus on specified safety issues | Extended root cause analysis
Constant search for improvement
Use of reliability proxy variables |

Highly Reliable Systems: Teams

- Highly reliable teams:
  - Adapt to changes in task environment.
  - Maintain open and flexible communication.
  - Anticipate the needs of each team member.

Entin EE and Serfaty D, Hum Factors 1999 41:312-325
Highly Reliable Systems: Microsystem

- Each local group of clinicians, staff working together with shared clinical purpose to provide care for their patients.

**Box 1. Eight dimensions of high performing microsystems**

- Constancy of purpose
- Investment in improvement
- Alignment of role and training for efficiency and staff satisfaction
- Interdependence of the care team to meet patient needs
- Integration of information and technology into work flows
- Ongoing measurement of outcomes
- Supportiveness of the larger organisation
- Connection to the community to enhance care delivery and extend influence

Highly Reliable Systems: Reducing Error

- Decrease complexity.
- Optimize information processing.
- Automate intelligently.
- Employ constraints.
  - Physical
  - Procedural
  - Cultural
- Avoid the unwanted side effects of change.
Analyzing Data to Improve

- PDCA
- Human Factors Engineering
- Lean
- RCA
- FMEA/HFMEA
- Six Sigma
Common Methodology: RCA

- Root Cause Analysis: identify the basic causal factors underlying a variation or adverse event.

The error is like a weed – only a symptom of more widespread underlying problems.

RCA analyzes underlying causes of adverse events – problems that are below the surface and not obvious.

Common Methodology: PDCA

- Hospital and private practice systems use the Plan, Do, Check (Study), Act cycle methodology.
- Used by the Joint Commission (JC), the Centers for Medicare and Medicaid Services (CMS), and other regulatory agencies.
Common Methodology: PDCA

**Plan:** Explore a challenge, perform a literature search, and develop an action plan that is measureable, achievable, and relevant.

**Do:** Implement your action plan with quantifiable data measurement.

**Act:** Develop plan to implement change. If successful, periodically reevaluate to maintain levels of success. If not successful, modify action plan and repeat cycle.

**Check (Study):** Evaluate progress to plan change.

Common Methodology: Lean

- Cultural commitment to know and provide what customer wants.
- Revise process to:
  - Eliminate waste.
  - Add value.

Sample tool: Fishbone diagram – Map out all the variables.

Common Methodology: Lean

- **Push**: Reactively dealing with delays.
- **Pull**: Anticipate problems and optimize the system.

Eliminate “Pushes” and adopt “Pulls.”

Common Methodology: Human Factors

- Study human behavior, abilities, limitations and interaction with system components.
- Human Error Theory: inherent risks for organization-wide and personal error – therefore, layers of defense.

Common Methodology: Human Factors

- **Swiss cheese model:**
  - Human error is *inevitable*.
  - An error-free system cannot be created.
  - Systems require *layers of defense*.

http://patientsafetyed.duhs.duke.edu/module_e/swiss_cheese.html
Common Methodology: Human Factors

Common Methodology: Human Factors

Some mechanisms already adopted based on human factors.

**Universal Protocol For Preventing Wrong Site, Wrong Procedure, Wrong Person Surgery™**

- Preoperative verification process
- Operative site marking
- Time Outs

All Joint Commission mandates since July 2004
There are many other QI methodologies and tools. Additional resources are available on the EQuIP website.
Analyzing Data to Improve

- If corrective action is validated by improved outcomes, plan to roll out with good communication and training for staff.
- Plan to monitor frequently.

Quality improvement is an ongoing process!
Summary

- System change and improvement is long-term and continual process.
  - Both cultural and process issues are important.
- There are many methodologies and tools, but the keys to success are the same.
  - Analysis of current performance.
  - Communication.
  - Measurable outcomes and monitoring.
- Every system has inherent risks for error.
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