UCLA Head & Neck Surgery
Patient Safety and Quality Improvement:

Root Cause Analysis and Action

9/11/19
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QI Resident Representative
1999
- To Err is Human, an IOM report, reported that the health care system was causing as many deaths as three fully loaded jumbo jets crashing and killing everyone on board every other day.

2002
- The concept of "never events" arose from the National Quality Forum, the genesis of the Serious Preventable Adverse Events List.

2004
- The Joint Commission published national patient safety goals.
- IHI launched its 100,000 Lives Campaign, engaging more than 3,000 US hospitals to improve safety and outcomes.

2010
- The HITECH act passed, providing $30 billion to incentivize use of electronic health records.

2001
- Crossing the Quality Chasm, an IOM report, listed six aims for health care.
- IHI developed bundles, small sets of evidence-based interventions that significantly improved outcomes.

2003
- The ACGME limited residents in the US to 80-hour work weeks.

2007
- Dr. Peter Pronovost published a checklist to improve safety in ICUs.
- NPSF developed the Lucian Leape Institute and began publishing white papers.

2015
- HHS announced a change in Medicare’s payment policies, projecting >50% of payments would be based on value rather than volume by 2018.
The Quadruple Aim

- **Safe**: Avoiding injuries to patients from the care that is intended to help them
- **Timely**: Reducing waits and sometimes harmful delays for patients and providers
- **Effective**: Providing the appropriate level of services based on scientific knowledge
- **Efficient**: Avoiding waste, including waste of equipment, supplies, ideas, and energy
- **Equitable**: Providing care that does not vary in quality because of personal characteristics
- **Patient-Centered**: Providing care that is respectful of and responsive to individual patients
Goals of PS/QI

1. Organizational culture of safety
   - Encouraging questions and concerns
   - Accountability
   - Negotiation and communication

2. Learning systems and improvement
   - Measurement and transparency
   - Continuous learning
   - Evidence-based practices
Swiss cheese model of accident causation

• Harm is caused by a series of systemic failures in the presence of hazard.
• A front-line provider may be cause of the active error, but the real root causes of the error have often been present within the system for a long time.
All Health Care Encounters

All Errors

“Near Misses”

Preventable Adverse Events

Negligent Adverse Events

All Harm

Non-Preventable Adverse Events

Wachter, Understanding Patient Safety, 2012
Root Cause Analysis

Factors that influence health care outcomes:

- Institutional context
- Organizational and management factors
- Work environment
- Team factors
- Individual staff members
- Task factors
- Patient characteristics

- There can be more than one root cause
- Analysis allows for targeted action
Five Whys

• Why did the patient receive the wrong medication?

  The nurse did not complete patient identification. Why?
  • The patient did not have a wristband. Why?
  • The wristband had been removed for a procedure and not replaced. Why?
  • The printer for the wristbands was not working. Why?

• **ROOT CAUSE**: The staff needed to support IT had been reduced and was overworked.
RCA Steps

1. Understand what happened, how, and when
   • Flow diagram

2. Identify any gaps in knowledge

3. Collect more information
   • Cause and effect (fishbone) diagram
   • Literature search

4. Create a causal statement

5. Action plan
RCA – Fishbone Diagram

People
- Physician order illegible
- Not available to get results
- Lab tech
- Dispatcher
- Heavy workload
- No tracking process
- Secretary
- Heavy workload
- Unavailable when lab called
- Escort
- Lab secretary
- Phlebotomist

Materials
- Specimen vials
- Lab supplies
- Unavailable
- Spoiled

Methods
- Too many people involved
- Handling in lab
- Unnecessary steps
- Escort stopped other places before lab
- Lab not following FIFO

Equipment
- Lab equipment
- Slow
- Do-over
- Capacity
- Pager malfunction
- Hard to use
- Inadequate training

Environment
- Clocks
- Inaccurate
- Don’t agree
- Rounding
- Transcription error

Long test results time
Causal Statement

The **cause**: “This happened…”
The **effect**: “…which led to something else happening…”
The **event**: “…which caused this undesirable outcome.”

- Clearly show the cause and effect relationship.
- Use specific and accurate descriptors for what occurred.
- Human error must have a preceding cause.
- Violations of procedure are not a cause and must have a preceding cause.
- Failure to act is only causal when there is a pre-existing duty to act.
RCA Steps

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   • Flow diagram
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Action Plan for Systems Change

• Create redundancy, such as using double checks or backup systems
• Use forcing functions
• Change the physical architecture
• Update or improve software
• Cognitive aids, such as checklists, labels, or mnemonic devices
• Simplifying a process
• Educating staff
• Developing new policies
Example case

63F with history of breast cancer and choledocholithiasis c/b biliary stent, PPD0 s/p ERCP in PACU. Reported onset of facial and lip swelling about 15 minutes after arrival in PACU. Patient reporting voice changes.
American Journal of Infection Control
Volume 37, Issue 5, June 2009, Pages 408-413

Major article

Microbiologic assessment of disposable sterile endoscopic sheaths to replace high-level disinfection in reprocessing: A prospective clinical trial with nasopharyngoscopes

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References


