RCA: Improving Your Corrective Actions

About ECRI Institute
ECRI Institute is an independent, nonprofit organization that researches the best approaches to improving the safety, quality, and cost-effectiveness of patient care

► 40+ year history, 425 person staff
► AHRQ Evidence-Based Practice Center
► Federally designated Patient Safety Organization
► National Guidelines Clearinghouse

About ECRI Institute
ECRI Institute’s 40 years of experience includes:

► Analyzing more than 1 million adverse event reports
► Operating problem reporting systems and safety initiatives
► Creating programs in patient safety, quality management, and related analytics
► Investigating events
► Publishing authoritative risk reduction strategies and interactive tools
ECRI Institute PSO’s System

What We are Seeing

- Experienced
- Independent
- Pioneering
- Evidence-based

Terminology and Icons

- Remember that:
  - Adverse event will often be substituted for the word accident except where it is used as a term-of-art such as organizational accident.
  - An adverse event is presented as being synonymous with an accident and a mishap.

Important or advanced human factors concept.

Take home message

Value proposition

Strategies Employed

- Low Impact – 33%
- Medium Impact – 57%
- High Impact – 10%
Recommendation Scoring

- **Timing**
  - Less than 60% are On Going

- **Scope**
  - More than 30% are limited to a single department

- **Measure of Effectiveness**
  - 65% had no quantifiable measures of effectiveness

Strengths of Corrective Actions. Source: ECRI Institute PSO.Component of ECRI Institute

Corrective Actions & Hazard Mitigation

This is by far the most important part of the process. Once you have explained the adverse event, you have to fix the dysfunction!

- When looking to redesign your process to correct “causes” and mitigate hazards look to “best practices” and “established science” from sources such as...
- Other facilities & colleagues
- Professional and human factors literature
- “No copying answers” remember “once you’ve seen one problem, you’ve seen one problem!”
- Develop corrective actions that are not only meeting the mission of your system, but are also flexible enough to be effective over the spectrum of scenarios encountered.
**“Safety Hierarchy”**

- Eliminate hazard “source” by redesign.
- Control “path” by safeguard.
- Control at “person” by warning device or behavior modification.
- Administrative Procedures.

You need management policies that effectively mitigate hazards and “causes”.

**Notable Differences**

- Extreme diversity of activity, equipment and hazards from other industries.
- High degree of uncertainty of outcomes.
- Vulnerability and variability of patients.
- One to one / few to one delivery ratio.

This is perhaps the most significant difference. Healthcare is a very “personal” business, where safety hinges greatly on an individual caregiver’s skills, including the ability to identify and act to counteract hazards and variability. Other industries typically have a few individuals servicing a large number of end users where human operator performance is moderated by safety automation.
Relative Impact!

High
- Automate
- Incorporate forcing functions
- Incorporate fail-safe mechanisms

Moderate
- Simplify the process
- Standardize to reduce process variability
- Minimize choices
- Increase detectability
- Optimize redundancy

Low
- Document
- Educate or train
- Implement policies

As we just indicated, this oft used general model of barrier effectiveness is not the be all, end all of how things may apply to healthcare. Context, context, context!

“Safety Hierarchy” in Healthcare

- Remember some of the factors in healthcare we have discussed that will affect your barrier development:
  - The potential effect of “automaticity” – too much technology brings potential error issues.
  - Unless technology is automatically monitored, physical, functional, symbolic, and incorporeal barriers ultimately rely on a human(s).
  - Most of healthcare errors are skill-based, omission errors which require proper P&Ps with good reminders (cues).
  - Barrier development must consider human factors issues to maximize effectiveness and minimize usability issues.

Redesign Strategies Examples

- Detect and decrease unwanted variability
- Standardize – use checklists, training, and P&Ps with proper reminders
- Simplify – remove unnecessary steps
- Optimize redundancy in barriers – “defense-in-depth”
- Loosen coupling of process steps where needed
- Use thoughtful deliberate interface (communication)
- Document, document, document
- “Test drive” and train as a team on new P&Ps and technology to establish “common ground”
- Use technology to automate where appropriate

Remember you can combine as many barriers as long as they compliment, supplement one another and are effective!
Tips for Robust Barrier

- Review and refresh barrier regularly – remember no adverse event happens twice the same exact way.
- Look to identify “gaps” in the barriers.
- Always be cognizant that no organizational safeguards are 100% efficient.
- Despite attempts at automation, people will still be healthcare’s primary last line of defense.

Briefs/ED Wrap Up
- Teambuilding / Planning
  - Good vs. Not so Good
  - Improvement

Huddle
- meetings to regain situation awareness
- discuss critical issues and emerging events
- anticipate outcomes and likely contingencies
- assign resources
- express concerns

TeamSTEPPS

Debrief
- Reconstruction
- Analysis
- Corrective action

Two-Challenge/CUS
Empowers any member of the team to “stop the line” if he or she senses or discovers an essential safety breach.

Debrief Checklist

- Communication clear?
- Roles and responsibilities understood?
- Situation awareness maintained?
- Workload distribution?
- Did we ask for or offer assistance?
- Were errors made or avoided?
- What went well, what should change, what can improve?

Checklists should always be specific to the tasks at hand based on a good task analysis other wise their usability is questionable at best!
Checklists

- An excellent form of "reminder"
- Atul Gawande – *The Checklist Manifesto*
  - help us be more systematic, less automatic
  - must go through and use the checklist completely
  - partial adherence may be recipe for total failure
  - evidenced by circumstances when physicians adopted the WHO Surgical Safety Checklist
- Beware “involuntary automaticity” – not really identifying errors because you’re just going through the motions (checking things off) but not paying attention.

Scenario: A Red Rule was adopted for non emergent surgeries, that all supplies, equipment, and personnel (the key here is all: nurses, techs, physicians) are ready to accept the patient 10 minutes before the scheduled procedure.”

Results of apparent systems analysis:

- “Only one person signing off on the time out and other signoffs and documentations done later “Some fields on the form pre-filled out (policy requires all items to be documented in the OR suite)”
- “Time notations for fields not documented correctly
- “Forms completed after the procedure with the staff involved stating they all “remembered” doing the time out and mentally going through the
- “Initially missed items on the form were then back filled when the form was found to be incomplete

TeamSTEPPS Tenets

- Empower team members to speak freely and ask questions
- Utilize resources efficiently to maximize team performance
- Balance workload within the team
- Delegate tasks or assignments, as appropriate
- Conduct briefs, huddles, and debriefs

Remember that TeamSTEPPS has roles and responsibilities for both frontline and leadership!
TeamSTEPPS Tenets

- Foster a climate supportive of task assistance
- Provide timely and constructive feedback
- Be assertive and advocate for the patient
- Utilize conflict resolution techniques (i.e., Two-Challenge rule and DESC script)

Super bonus question, name as many human factors principles that Team STEPPS addresses?

Foresight Training

- Foresight is the ability to identify, respond to, and recover from the initial indications that a patient safety incident could take place.
- It involves frontline healthcare staff recognising the potential safety risks in the healthcare system, and considering intervening to prevent an incident.
- Increased error wisdom through skills including intuition, wariness, vigilance


Three Bucket Model

1. SELF
2. CONTEXT
3. TASK

The fuller your buckets, the more likely something will go wrong, but your buckets are never empty.

### Self Bucket

<table>
<thead>
<tr>
<th>Level of knowledge</th>
<th>Newly qualified</th>
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<tbody>
<tr>
<td>Level of skill</td>
<td>Competence and experience</td>
</tr>
<tr>
<td>Level of experience</td>
<td>Involuntary automaticity, Under/over confidence</td>
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<tr>
<td>Current capacity to do the task</td>
<td>Fatigue, time of day, Negative life events</td>
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### Context Bucket

<table>
<thead>
<tr>
<th>Equipment and devices</th>
<th>Usability, not available</th>
</tr>
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<tbody>
<tr>
<td>Physical environment</td>
<td>Lighting, noise, temperature</td>
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<tr>
<td>Workspace</td>
<td>Working environment, writing space,</td>
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<tr>
<td>Team and support</td>
<td>Leadership, stability and familiarity, trust</td>
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<tr>
<td>Organisation and management</td>
<td>Safety culture, culture, targets and workload</td>
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### Task Bucket

<table>
<thead>
<tr>
<th>Errors</th>
<th>Omission errors, primary goal achieved before all steps complete, lack of cues from previous steps</th>
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<tr>
<td>Task complexity</td>
<td>Calculations</td>
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<td>Novel task</td>
<td>Unfamiliar or rare events</td>
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<tr>
<td>Process</td>
<td>Task overlap, multi-tasking</td>
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Benefits of Foresight Training?

- Facilitates learning about patient safety risks from more experienced nurses.
- Improves nurses’ ability to recognise and intervene at the first signs of a problem.
- Raises awareness of patient safety incidents, and in particular, near misses.
- This in turn could lead to improved near miss and error reporting rates and therefore important learning opportunities.

James Reason saw foresight training as the means to move more to human-as-hero by giving persons the tools and empowering them to “rescue a bad situation at the last minute or prevented something bad from happening by foreseeing and controlling the risks.”

Take a Test Drive First

- Remember, with a new process comes new inherent risks. Always analyze/test each redesign or hazard mitigation strategy for potential hazards before committing to full implementation.
- Look to see how your changes effect other processes, not just the one you redesigned!

Don’t Jump the Gun!

Who, What, When, Where & How

<table>
<thead>
<tr>
<th>Causal Factor</th>
<th>Corrective Action</th>
<th>Responsible to Implement</th>
<th>Implementation Deadline</th>
<th>Effectiveness Measure</th>
<th>Corrective Action Revision</th>
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Use a chart like this to establish and clearly communicate the roles, accountability, and expectations of those involved in the corrective action roll out plan, to measure the plan’s effectiveness, and chart future corrective actions.
Your Report and Corrective Actions

- Create your report findings which includes your recommendations for corrective actions.
  - Background Info
  - Account of incident
  - Discussion/Analysis
    - Task analysis
    - Adverse Event analysis
  - Recommendations for corrective actions

Discussion & Conclusion

- Present your discussion and conclusions regarding each of the:
  - Direct causes (energy source or hazardous materials)
  - Indirect causes (unsafe acts or conditions)
  - Root causes (errant management systems or processes)

- It is a best practice to distinguish between factual data and analysis.
  - Use a table (for example) to list factual data (e.g., physical evidence) versus data that you derived or inferred.
  - If you can effectively show (i.e., have structure) behind your inferences and therefore the conclusions you derive based on those inferences, you may present the data as factual evidence.
Other Report Content

- Executive summary
- Introduction
- Investigation guidelines
- Investigation difficulties
- Test methods, calibration & results
- Chain-of-custody
- Mechanisms of Injury/Accident Causes
- Appendices
- Bibliography
- Photographs/video
- Photo log

Recommendations

- Recommend and document corrective actions for each of the:
  - Root causes
  - Indirect causes
  - Direct causes

Remember you corrective actions must be within your organization’s ability to fix.

Questions