Keep Calm and Row On:
Navigating the RCA Process

Presenters

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Objectives

As a result of participating in this activity, learners will:

a. Recognize the importance of conducting root cause analysis.

b. Differentiate between effective and non-effective RCAs.

c. Understand how to conduct an effective RCA.

A little background. . .

- The root cause analysis (RCA) process has been mandated in response to sentinel events by the Joint Commission since 1997.
- The RCA is a process used by hospitals in an attempt to reduce adverse event rates.
  - **Reduce errors**
  - **Increase patient safety**
- Until recently, the results of the RCA process have not been studied.

Is the RCA Process Working?

- A recent study, in which 302 RCAs were reviewed, concluded that "**the most commonly proposed solutions were weaker actions, which were less likely to decrease event recurrence.**"

- Cite: Kellogg, KM, Hettinger Z, Sha M. *et al*, BMJ *Qual. Saf.* 2017, 26, 381-387.

Study Findings

- Most common event types:
  - Procedure complication
  - Cardiopulmonary arrest
  - Neurological deficit
  - Retained foreign body

Study Findings

- Most common solution types:
  - Training (20%)
  - Process change (19.6%)
  - Policy reinforcement (15.2%)

- **The researchers found that multiple event types were repeated in the study period, despite repeated RCAs.**

Why are RCAs not working as intended?

- RCA in healthcare has been applied without sufficient attention paid to what makes it work in its contexts of origin (aviation and nuclear power) and without adequate customization for the specifics of healthcare.

Why are RCAs not working as intended?

- **The unhealthy quest for "the" root cause.**
- The name implies there is only one underlying problem.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

Why are RCAs not working as intended?

- **Questionable quality of RCA investigations.**
  - An RCA is supposed to involve the convening of a skilled multidisciplinary investigation team.
  - The information obtained directly from health care workers is influenced by their willingness and ability to provide relevant data.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

Why are RCAs not working as intended?

- **Political hijack.**
  - The investigators are not independent from the organization where the event took place.
  - The quest to complete an investigation on time and produce a report risks goal displacement.
  - Investigating teams may end their analysis once they have reached a cause of mutual convenience.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

Why are RCAs not working as intended?

- **Poorly designed or implemented risk controls.**
  - The available evidence points to the endemic tendency of investigators to settle for administrative and perhaps 'weaker' solutions (such as reminders) rather than those that address the latent causes, such as poorly designed technology or defective operational systems.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

Why are RCAs not working as intended?

- **Poorly functioning feedback loops.**
  - Failure to share the outcomes of incident analysis with those involved, those who reported, and those likely to be affected in the future.
  - Learning from the event must be purposeful.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

Why are RCAs not working as intended?

- **Disaggregated analysis focused on single organizations and incidents.**
  - The current RCA approach focuses on individual incidents on a local level.
  - This results in a failure to disseminate painfully acquired learning and to address deeper, institutionally engrained patient safety concerns.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

Why are RCAs not working as intended?

- **Confusion about blame.**
  - The vast majority of mistakes and other errors are the result of systems defects that need to be corrected, but when blatant transgressions, neglect or unacceptable behavior is found, it is clearly wrong to write accountability out of the picture.
  - No-blame is not reality in practice since disciplinary, institutional and legal processes continue to operate and are highly visible to providers.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

Why are RCAs not working as intended?

- **The problem of many hands.**
  - It is difficult to address hazards that arise at the level of the system since many of the actors that are implicated in hazards (drug and equipment suppliers) are outside the director control of individual care organizations.
  - RCA investigations may fail to assign responsibility to such actors, instead reabsorbing responsibility in to the organizations where the incident occurred.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

What can be done to improve the RCA process?

- The reality is that some of ways to improve the RCA process are not within the control of individual providers.
- Recognize those that are and work to improve.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

What can be done to improve the RCA process?

- Professionalization of incident investigation.
- The role of patients and relatives in the investigation process needs to be recognized and valued.
- Better understanding of the role of blame is needed.
  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

What can be done to improve the RCA process?

- Healthcare must focus increasingly on aggregated analysis of incidents.
- Healthcare needs to do more to detect hazards and assess risks proactively.

  - *Cite Peerally MF, Carr S, Waring J et al*, BMJ Qual Saf 2017: 26: 417-422.

What can be done to improve the RCA process?

- **Aligning corrective actions to causal factors.**
  - Dig deeper into system problems.
  - Don't stop at superficial solutions.
  - *Cite Trbovich P, Shojania KG,* BMJ Qual Saf 2017: 26: 350-353.

What can be done to improve the RCA process?

- **Don't focus on what is possible, rather than what is NEEDED.**

  - *Cite Trbovich P, Shojania KG,* BMJ Qual Saf 2017: 26: 350-353.

What can be done to improve the RCA process?

- Example: After investigating a case of a surgical sponge left inside the patient, the RCA team concluded that the entity's policy for counting equipment was effective and that human error was to blame. The 'corrective action' was simply reiterating the current policy.
  - *Cite Trbovich P, Shojania KG,* BMJ Qual Saf 2017: 26: 350-353.

What can be done to improve the RCA process?

- Example: Successful identification of corrective actions often depends on acknowledging that clinicians rarely intentionally violate policies.
- Lack of compliance usually reflects unpractical policies in the context of poorly designed systems.
  - *Cite Trbovich P, Shojania KG,* BMJ Qual Saf 2017: 26: 350-353.

What can be done to improve the RCA process?

- Question from example: Is counting not being performed well or does counting just not work well?
- If no dereliction of the counting policy, then the policy is not working.
- Is there a technology solution? Multi-faceted monitoring strategy?
  - *Cite Trbovich P, Shojania KG,* BMJ Qual Saf 2017: 26: 350-353.

Putting It All Together

THE PROCESS

Step 1 – Identify the Event

- Events and issues can come from several sources (e.g., incident report, risk referral, complaint/grievance) The facility should have a process for identifying events that should undergo an RCA.

Helpful Tips

- Involve leadership in the decision to proceed with an RCA.
- Start with the problem, not the solution.
- Don’t define the problem as a need for something.
- RCA focus is on “systems” issues not individual performance.

Step 2 – Select the Facilitator & Team

- The facilitator is appointed by leadership. Team members are people with personal knowledge of the processes and systems involved in the event to be investigated.

Helpful Tips

- Team members have personal knowledge of processes and systems to be investigated.
- Keep the number of management or supervisory team members at a minimum.
- Make it clear that the RCA process is confidential.

Step 3 – Describe What Happened

Collect and organize the facts around the event to understand what happened.

Helpful Tips

- At the first meeting create a time line that describes just the facts.
  - Does it “tell the story?”
  - Does each step derive from the previous step?
  - Is each step pertinent to the incident?

Event

Tall/large patient (300 lbs.) was placed in a Hoyer lift and elevated in the air above his wheelchair. As the CNAs turned the lift toward the bed it began to sink because the lift arm couldn't handle the resident's weight. In an attempt to complete the transfer before the patient was below the level of the bed, the CNAs swung the lift quickly toward the bed. The lift tilted dangerously to the said and the legs started to move together, narrowing the base of support. The patient dropped to the ground and the lift fell on top of him, causing a serious injury.

Timeline

CNAs get Hoyer lift and position it by patient's bed → Patient is raised from wheelchair w/ Hoyer lift → CNAs swing the patient toward the bed → Lift starts to collapse and tips to one side → Patient drops to the floor, and the lift falls on patient

Step 4 – Identify Contributing Factors

These are the situations, circumstances or conditions that increased the likelihood of the event occurring.

Helpful Tips

- Use the time line as the basis for identification of contributing factors (CF).
- Brainstorm to identify CF.
- Consider that by itself a contributing factor may not have caused the incident, but when occurring at the same time, the probability an incident will occur increases.
- Be careful to avoid “hindsight bias.”

Timeline

CNAs get Hoyer lift and position it by patient's bed → Patient is raised from wheelchair w/ Hoyer lift → CNAs swing the patient toward the bed → Lift starts to collapse and tips to one side → Patient drops to the floor and the lift falls on the patient

Contributing Factors

- CNAs hurried to find lift to avoid the patient waiting
- No sign on the lift indicating weight limit
- Pt moved rapidly toward bed due to lift are starting to slip
- Sharp movement of patient by CNAs
- CNAs unaware the lift they used was not for heavy patients
- Lift not strong enough to hold patient
- Facility's 1 heavy duty lift being used in another area
- CNAs not trained to respond to lift malfunctions

Step 5 – Identify the Root Causes

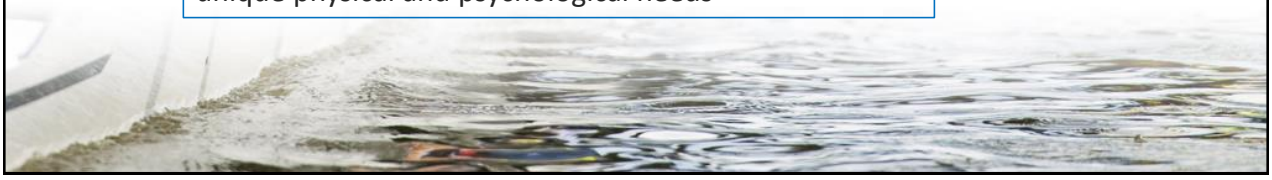
A thorough analysis of contributing factors leads to identification of the underlying process and system issues (root causes) of the event.

Helpful Tips

- Dig deeper…use the “five whys” technique.
- Ask these questions about each potential root cause:
  - Would the event have occurred if this cause had not been present?
  - Will the problem recur if this cause is corrected or eliminated?
- If the answer is YES, dig deeper and ask “why”
- If the answer is NO, the team has identified a root cause.

Five Whys Technique

1. CNAs didn't have the equipment needed to care for the patient
   - Why is that?
2. Needed equipment is sometimes hard to find
   - Why is that?
3. Not enough specialized equipment to care for patients with unique needs
   - Why is that?
4. The anticipated # of patients w/ unique needs and their equipt. requirements are not known
   - Why is that?
5. The strategic planning/budgeting process does not include projections for equipt. Needs of patient w/ unique physical and psychological needs



Step 6 – Design and Implement Changes to Eliminate the Root Causes

The team determines how best to change processes and systems to reduce the likelihood of another similar event.

Helpful Tips

- Choose actions that address each root cause.
- Will generally require creating a new process or making a change to a current process.
- At least one corrective action for each root cause.
- Action plans may include “short-term” fixes, i.e. buying an additional Hoyer lift for patients > 250 lbs. But short term solutions rarely fix root causes.
- Aim for corrective actions with a stronger or intermediate rating.
- When designing, clearly state what is to be done, by whom and when.

Stronger Actions

- Change physical surroundings.
- Usability testing of devices before purchasing.
- Engineering controls into system (forcing functions which force the user to complete and action).
- Simplify processes and remove unnecessary steps.
- Standardize equipment or process.
- Tangible involvement and action by leadership in support of patient safety, i.e. leaders are seen and heard making or supporting the change.

Intermediate Actions

- Increase staffing/decrease in workload.
- Software enhancements/modifications.
- Eliminate/reduce distractions.
- “Read back” to assure clear communication.
- Enhanced documentation/communication.

Weaker Actions

- Double checks.
- Warnings and labels.
- New procedure/memorandum/policy.
- Training.
- Additional study/analysis.

Step 7 – Measuring the Success of Changes

Like all improvement projects, the success of improvement action is evaluated.

Helpful Tips

- Concurrent with implementation of action plans, mechanisms are established to gather data to measure success.
- RCA should reduce the risk of future harmful events by minimizing or eliminating root causes.
- What you measure should provide answers to 3 questions:
  - Did the corrective action actually get done?
  - Are people complying with the recommended changes?
  - Have the changes made a difference?

Criteria for Completion

- Measures of success were monitored over time.
- The goal was attained (changes were made and sustained with no recurrent events).
- You are confident the change is permanent.

RCA PIP Template

This template can be used to document the completed RCA PIP process, including follow-up actions, and measures. Revise it as necessary to meet your needs.

Team Facilitator:_____ Date RCA Started:_____ Date RCA Completed:_____

Team Members:

Name	Position	Name	Position

Brief Narrative Description of Event (include time line if available)

Timeline

Root Causes and Contributing Factors

Conduct your systematic analysis to determine your contributing factors and root causes. Use techniques such as the five whys, flowcharting, or the fishbone diagram to assist in identifying the root causes. It is helpful to keep any of these analyses with your PIP documentation for future reference. Describe each root cause as identified by the team. Enter these in the table below.

Corrective Action Plans

For each root cause identifies, enter the corrective action plan intended to prevent the root cause from causing another harmful event. There can be more than one corrective action for each root cause and some may be short-term. For each action plan designate the individual or group responsible for completion and the time frame.

Root Cause	Corrective Action	Responsible Individual/Group	Completion Deadline

Measures of Success

Corrective Action	Measures of Success (How will we know this action is successful)	Reporting Schedule and Individual/Group responsible for reviewing results

Signature of RCA Team Leader_____Date_____

Acknowledgement: This guide draws on information from the VHA National Patient Safety Improvement Handbook (March 2011*), Error Reduction in Health Care: A Systems Approach to Improving Patient Safety*, 2nd ed. (Jossey-Bass, 2011) and the *Minnesota Adverse Health Events Measurement Guide* (Minnesota Department of Health, 2010).

Scenario 1

82 y/o F admitted from Nursing Home through ER w/ chief c/o weakness and Hx of 20 cc “coffee ground” emesis 2 hours prior. Gastric lavage in ER – coffee-grounds to clear effluent. BP 117/60 decreased to 90/60 but restored w/ IV fluids. Temp 97 degrees, pulse 90 and regular. Hct 30% (her baseline) and WBC 17,000. Sent to GI endoscopy suite.

Scenario 1

Hct 19% (nurse had not seen this report – she had 7 patients that night). Blood Bank reported back to unit that the patient had not had a type and cross-match and that no blood was available for this patient. CPR initiated, but the patient expired at 11:55 PM.

Scenario 1

UGI Endoscopy revealed “stomach filled w/ clots. Active bleeding from duodenal ulcer controlled with cauterization…Rec. tx. Plan – ICU for obs., blood transfusion, HCT q6 X 3, IV Protonix.” Plan discussed w/ admitting medical resident who sign off to on-call resident at 5:30 PM.

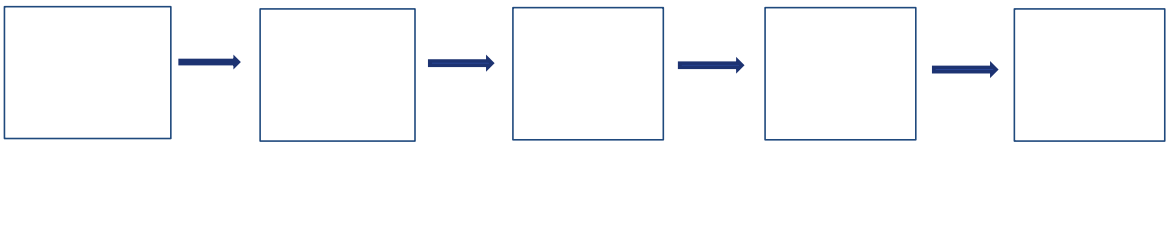
Scenario 1

ICU was full that evening. After discussion between residents, the patient was admitted to the nursing unit on the Medicine service ~ 6PM. At 11:30 PM, nurse found patient in resp. distress and hypotensive. On-call resident called to BS. (1st time he had seen the pt. – busy night w/ 4 admissions). After quickly reviewing the chart, he ordered a 2 unit stat blood transfusion and asked for the most recent Hct.

Case Summary

- 82 y/o F
- 200 cc coffee ground emesis
- BP: 90/60 restored to 117/60
- Temp: 97 degrees F
- Pulse: 90 and reg.
- HCT: 30 (her baseline)
- UGI: stomach filled w/ clots & active bleeding from duodenal ulcer controlled w/ cauterization
- Tx Plan: ICU, blood transfusion, serial HCTs, IV Protonix

Timeline



What Happened?

- HCT dropped
- Pt. became hypotensive
- Pt. went into resp. distress
- Blood not available
- Pt. expired

THANK YOU

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