RCA²: Demystifying the Purpose, Presentation, and Power of the Root Cause Analysis and Action Plan

Kentucky Hospital Association

Representing Kentucky Hospitals and Health Systems

Hi! I'm Casey. ☺

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What is RCA² ?

Root **C**ause **A**nalysis and **A**ction

What is RCA² ?

A process by which the primary reason (or reasons) of an event or unsafe circumstance are determined and eradicated, using an interdisciplinary and multi-step process.

In Casey-ese: Why what happened (or could happen) did/could based on everyone's collective point of view, and what we can do about it.

First Pulse-check

(please respond in Chat.)

How many RCAAs does your organization conduct in a year on average?

Why would I do that?

UK vs. Bunnell (yeah, it's a real thing.)

- Wrong-site surgery
- "Incident report" requested by prosecutor
- UK pushed back.
- This is a new day! ☺

Two primary RCA² categories:

1. **Reactive** RCA² = Following a safety event.
2. **Proactive** RCA² = This is a prophylactic intervention to deter safety events from occurring*.

   *Oftentimes, organizations will find that using an FMEA (Failure Mode and Effects Analysis) or Probabilistic Risk Assessment will produce an excellent prospective snapshot of possible risks. You may hybridize these two tools, or else choose the one that fits your needs best.

Note= A “near miss” situation can be classified under either reactive or proactive based upon the details.

Near Miss Classification Examples:

- A wrong med identified at bedside prior to administration would be **reactive**.
- A condition causing a generally perceived risk factor that is called out ahead of any specific situations in which safety was threatened would be **proactive**.

Why **Proactive** RCA² processes are extra-cool:

Applying the RCA² process **proactively** can greatly reduce the anxiety individuals feel around them by establishing familiarity with the process, as well as the Just Culture principles behind the process.

When an RCA² is appropriate:

- Sentinel event (required by TJC)
- Major event
- Recurring events
- Recurring deviation from Best Practice standards
- Near miss
- Multi-disciplinary issues
- Multi-step processes
- Archaic processes
- High-risk field assessment
- Significant shifts in policy or procedure
- Any time solutions are obscure or difficult to nail down (use your team!)

The RCA² Process:

- Definition of the event, procedure, or circumstance: *What happened*?
- (**Reactive** RCA² only) ➡ Exploration (or "discovery") of all components surrounding the event, process/procedure, or circumstance.
- Determination of all possible reasons an event occurred or could occur. *Why did/could it happen?*
- Formulation of possible solutions. *What can we do?*
- Selection of most viable and effective solutions. *What's best?*
- Implementation of chosen solutions.
- Evaluation of efficacy once solutions are in place.

Step 1: Define the problem.

(What's up?)

- Can be an error, safety event, near miss, procedure, or circumstance.
- May involve interdisciplinary, multi-planar input.
- Does not have to encompass the source of the issue (yet.)

Sample problem definitions

- Obvious: “Wrong-site surgery”
- Median: “We’ve had 5 mislabeled blood specimens in the past 3 days”
- Subtle: “The check-in and triage process at our clinics takes 45 minutes on average”
- Obscure: “We don’t have a policy regarding removal of indwelling catheters.”

Step 2: Discovery
(*What happened?)*

Purpose for discovery in a **reactive** RCA²: Find out what happened in an event. (In other words, re-create the event.)

Quick note: Try to avoid the word “investigation” internally if the issue is not associated with violence or an allegation of harm. “Discovery” is a good alternative.

Another pulse check!

What are some barriers that we might anticipate as we begin a discovery process?

Step 2: Discovery

Remember: Your purpose is here is to determine **WHAT** happened, not **why** it did (yet.)

Establish non-punitive purpose. (i.e., Just Culture.)

Two schools of thought: One-on-one interviews preferred in some situations, but many experts recommend group discovery. Apply critical thinking/ use your **judgement**.

Don't "gang up" on your interviewee for one-on-one interviews, but don't go alone. (2:1 or 3:1 max)

Consider the best person to ask the questions.

Choose a neutral location.

Remain calm. This is not the time to share your opinion.

Use therapeutic silence when indicated.

Step 2: Discovery

Take notes, but be as transparent as possible.

Go and see (Gemba)

Don’t fear the rabbit hole.

Do not dismiss information

Allow for incoming emotion.

Reword a question later if not satisfied with initial response.

Recreate the picture

Be prepared to explore both clinical and non-clinical components

Step 3: Define reasons
(Why did/could it happen?)

Reactive RCA² : Where were best practice standards not followed? Why?

Proactive RCA²: What factors could potentially interfere with best practice standards and/or lead to harm?

Possible answers:

- Lack of knowledge
- Mechanical or technological failure
- Environmental interference
- Inadequate training
- Inadequate supervision
- Communication errors
- Inefficient workflow
- Lack of redundancy
- Understaffing
- What else? There's often a one-off!

Pulse check 3!

Of all of the causes listed on the previous slide, which do you think are cited as prevalent root issues that lead to errors?

It has been estimated that 27% of medical **malpractice** is the result of the **communication failures**. - Poor communication by health care professionals may lead to life-threatening complications: examples from two case reports - PMC (nih.gov)

Tools to consider for Step 3

- Fishbone (i.e. Ishikawa) Diagram
- Affinity Diagram
- Flow Chart
- Failure Mode and Effects Analysis (FMEA)*
- Spaghetti Diagram

*Note: FMEA is especially fantastic for a **proactive** RCA^2!

An important note on Step 3:

If you didn’t do a Gemba in Step 2 (Discovery), you’ll want to **strongly** consider one in Step 3!

Rationale: Failure to “go and see” can result in inadequate solutions being put into place.

Step 4: Formulate possible solutions
(Whatcha gonna do about it?)

- Dream big.
- Ensure strong association between solutions and the actual problem.
- Engage every single member of the RCA² team…plus a few.
- Consider the efficacy of education (more on this in a sec.)

Tools to consider for Step 4

- Brainstorming
- Interrelationship Diagram
- Prioritization Matrix
- Process Decision Program Chart

Step 5: Select the most viable solution(s)

- Ensure you are selecting the strongest interventions possible, especially in the wake of serious events. (See next slides)
- Walk through a hypothetical process with the solutions in place. Did you consider every contingency?

Still beating?

What solution do you feel is a “go-to” option when trying to fix root cause issues?

TABLE A-2. ACTION STRENGTH

Action Strength	Action Category	Example
Stronger Actions (These tasks require less reliance on humans to remember to perform the task correctly)	Architectural/physical plant changes	Replace revolving doors at the main patient entrance into the building with powered sliding or swinging doors to reduce patient falls.
	New devices with usability testing	Perform heuristic tests of outpatient blood glucose meters and test strips and select the most appropriate for the patient population being served.
	Engineering control (forcing function)	Eliminate the use of universal adaptors and peripheral devices for medical equipment and use tubing/fittings that can only be connected the correct way (e.g., IV tubing and connectors that cannot physically be connected to sequential compression devices [SCDs]).
	Simplify process	Remove unnecessary steps in a process.
	Standardize on equipment or process	Standardize the make and model of medication pumps used throughout the institution. Use bar coding for medication administration.
	Tangible involvement by leadership	Participate in unit patient safety evaluations and interact with staff; support the RCA^2 process (root cause analysis and action); purchase needed equipment; ensure staffing and workload are balanced.

Reference: Action Hierarchy levels and categories are based on *Root Cause Analysis Tools*, VA National Center for Patient Safety, http://www.patientsafety.va.gov/docs/joe/rca_tools_2_15.pdf. Examples are provided here.

Source: National Patient Safety Foundation. *RCA^2 Improving Root Cause Analyses and Actions to Prevent Harm.* Boston, MA: National Patient Safety Foundation; 2015.

TABLE A-2. ACTION STRENGTH

Action Strength	Action Category	Example
Intermediate Actions	Redundancy	Use two registered nurses to independently calculate high-risk medication dosages.
	Increase in staffing/decrease in workload	Make float staff available to assist when workloads peak during the day.
	Software enhancements, modifications	Use computer alerts for drug–drug interactions.
	Eliminate/reduce distractions	Provide quiet rooms for programming patient-controlled analgesia (PCA) pumps; remove distractions for nurses when programming medication pumps.
	Education using simulation-based training, with periodic refresher sessions and observations	Conduct patient handoffs in a simulation lab/environment, with after-action critiques and debriefing.
	Checklist/cognitive aids	Use pre-induction and pre-incision checklists in operating rooms. Use a checklist when reprocessing flexible fiber optic endoscopes.
	Eliminate look- and sound-alikes	Do not store look-alikes next to one another in the unit medication room.
	Standardized communication	Use read-back for all critical lab values. Use read-back or repeat-back for all verbal
	tools	medication orders. Use a standardized patient handoff format.
	Enhanced documentation, communication	Highlight medication name and dose on IV bags.

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TABLE A-2. ACTION STRENGTH

Action Strength	Action Category	Example
Weaker Actions (These tasks rely more on humans to remember to perform the task correctly)	Double checks	One person calculates dosage, another person reviews their calculation.
	Warnings	Add audible alarms or caution labels.
	New procedure/ memorandum/policy	Remember to check IV sites every 2 hours.
	Training	Demonstrate correct usage of hard-to-use medical equipment.

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Tools to consider for Step 5

- Multivoting
- Nominal Group Technique
- Value Stream Mapping
- Pareto Chart
- Scatter Chart

Step 6: Implement Solutions
(Let's Go!)

- Communicate, communicate, communicate
- Consider your audience
- Support decisions with facts
- Connect to purpose
- Communicate some more.

Tools to consider for Step 6

- Deployment Chart
- Plan/Do/Check/Act (PDCA)

or

Plan/Do/Study/Act (PDSA)

Step 7: Assess efficacy and sustainability

(So…how's it going?)

- Document your assessments
- Consider random audits
- Go back to the drawing board ad hoc
- Continue to reassess on routine basis, especially after significant changes made to conditions that may surround your solution milieu.

Shameless plugs:

Wanna see what an RCAA looks like for real? Stay tuned for a soon-to-come announcement on a MOCK RCAA that you can “spy” on!

Process Improvement 101 Courses also coming soon to a slide deck near you!

Want in?

- Watch the KHA Weekly Quality Newsletter
-Watch your email for invites

Thank you!

Kentucky Hospital Association

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