Institute for Healthcare Improvement

Patient Safety Essentials Toolkit:

Action Hierarchy (part of RCA²)

Root cause analysis (RCA) is a process widely used by health professionals to learn how and why errors occurred, but these investigations have had inconsistent results. Prevention of future harm requires action. To emphasize this point, IHI has renamed the process Root Cause Analyses and Actions, or RCA² ("RCA squared").

The purpose of an RCA² review is to identify system vulnerabilities and implement strong actions that will eliminate or mitigate those vulnerabilities. Review teams strive to identify actions that prevent or minimize the chances of the event recurring and reduce the severity or consequences if it should recur. After a comprehensive investigation of root causes, including assessment of human factors and cognitive thinking, a tool such as this Action Hierarchy will assist teams in identifying which actions will have the strongest effect for successful and sustained system improvement.

Action Hierarchy levels and categories are based on Root Cause Analysis Tools from the VA National Center for Patient Safety.

IHI's Patient Safety Essentials Toolkit is a helpful companion for you and your organization on the journey to delivering safe, reliable care every time, for every patient. Each of the nine tools in the toolkit includes a short description, instructions, an example, and a blank template. NOTE: Before filling out the template, first save the file on your computer. Then open and use that version of the tool. Otherwise, your changes will not be saved.

- **Action Hierarchy (part of RCA²)**
- Ask Me 3®
- Cause & Effect
- Developing Reliable Processes
- Five Whys
- Flowchart
- FMEA
- Huddles
- SBAR

Instructions

After completing the RCA² investigation and analysis process, RCA² teams work to identify corrective actions to mitigate root causes of the adverse event using the following steps:

1) Review and clarify causal statements for all identified contributing factors.

   Note: Focus contributing factors and causal statements on system-level issues and do not assign blame to individuals. The RCA² process is not recommended for blameworthy events as defined by the organization (e.g., criminal or deliberately unsafe acts); administrative or human resources systems are the appropriate avenues in such cases.

2) For each causal statement, brainstorm actions that could mitigate the cause and minimize the chances of the event recurring and reduce the severity or consequences should it recur. Patients and families may provide valuable insight and suggestions to identify actions as well as causal factors.

3) Rank the strength of each action using a tool like the Action Hierarchy (see template).

4) Identify at least one strong or intermediate action for each identified cause, focusing on actions that contribute to effective and sustained system improvement.

   Note: In some cases, it may be necessary to recommend "weaker" actions as temporary measures until stronger actions can be implemented. Actions classified as weaker, such as training and policy changes, are often necessary to establish proficiency and expectations, but when used alone are unlikely to be sufficient for sustained improvement.

5) Present the findings of the RCA² process, including each recommended action, to a member of the organization's senior leadership team for approval. If an action isn't approved, document the reason and select a replacement action, as needed. Use an established method like the Model for Improvement to develop and test changes.

6) Assign an individual (could be outside of the RCA² team) responsible for implementation and measurement of each corrective action and set a date by which each action must be completed. Monitor implementation on an ongoing basis to ensure that changes achieve the desired results.

Example: Action Hierarchy Tool

Case Example 1: The nursing staff was providing the patient with routine morning care. This consisted of showering the patient in the shower room on the ward. The patient was seated in a chair being washed when he slid off the chair and hit his face, hip, and shoulder. The doctor examined the patient at 7:55 AM and ordered x-rays and head imaging. No fractures or bleeding were noted. Checks of vital signs, neurological status, pain, and mobility were initiated as per policy and reported as normal. The patient was assisted with mobility in the day following the fall to ensure he was stable.

Stronger Action: Require and implement use of a shower chair with secure straps that prevent sliding.
Intermediate Action: Identify patients at risk for falling and have additional staff help with showering.
Weaker Action: Retrain nursing staff on the required procedure for showering patients.

Case Example 2: An inpatient with pneumonia has an abnormal finding on chest x-ray with recommended repeat chest x-ray in three months. She is released home, and her primary care doctor is not aware of the chest x-ray result. She returns in one year with advanced lung cancer.

Stronger Action: Automatically include and flag test results that require follow-up in the discharge documentation that goes to the primary care doctor and require acknowledgment and follow-up.
Intermediate Action: Develop and implement standard communication with patients who receive a chest x-ray, including explaining the need for follow-up and providing written contact information if the patient has questions or is not reached within a defined timeframe.
Weaker Action: Update a policy on appropriate test result communication and follow-up.

Before filling out the template, first save the file on your computer. Then open and use that version of the tool. Otherwise, your changes will not be saved. Note that you do not need to fill in every action; we recommend that you have at least one strong or intermediate action for every RCA.

Template: Action Hierarchy Tool

	Action Category	Example	Action
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 or SCDs).	
	Simplify process	Remove unnecessary steps in a process.	
	Standardize on equipment or process	Standardize on 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 RCA² process; purchase needed equipment; ensure staffing and workload are balanced.	
Intermediate Actions	Redundancy	Use two RNs 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 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 tools	Use read-back for all critical lab values. Use read-back or repeat-back for all verbal medication orders. Use a standardized patient handoff format.	
	Enhanced documentation, communication	Highlight medication name and dose on IV bags.	
Weaker Actions (these tasks require more reliance 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.	

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.

The full RCA² tool is available here: http://www.ihi.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx