Root Cause Analysis and Actions (RCA²)

A Process for Identifying and Addressing Patient Safety Issues

Sources: The Joint Commission, College of American Pathologists

by Fertility Guidance Technologies

Introduction to Root Cause Analysis

Root cause analysis (RCA) is a process widely used by health professionals to learn how and why errors occurred, but there have been inconsistencies in the success of these initiatives.

To identify best practices around RCAs and develop guidelines to help health professionals standardize the process and improve the way they investigate medical errors, adverse events, and near misses, we have concentrated on the ultimate objective: preventing future harm. Prevention requires actions to be taken, and so we have renamed the process Root Cause Analyses and Actions, or RCA^2 (RCA "squared") to emphasize this point.

> ⓘ **Key Point:** The intent of an RCA^2 review is to identify system vulnerabilities so that they can be eliminated or mitigated; the review is not to be used to focus on or address individual performance, since individual performance is a symptom of larger systems-based issues.

Purpose of RCA²

The purpose of RCA² is to identify and implement sustainable systems-based improvements that make patient care safer in settings across the continuum of care.

Identify Effective Methodologies

Identify methodologies and techniques that will lead to more effective and efficient RCA²

Provide Evaluation Tools

Provide tools to evaluate individual RCA² reviews so that significant flaws can be identified and remediated to achieve the ultimate objective of improving patient safety

After completing the RCA² investigation and analysis process, RCA² teams work to identify corrective actions to mitigate root causes of the adverse event. A tool such as the Action Hierarchy will assist clinical teams in identifying which actions will have the strongest effect for successful and sustained system improvement.

Conducting a Preventive Analysis

Conducting a preventive analysis can help bring to light any underlying contributing factors that help explain why an issue occurred in the first place. This training module will help healthcare organizations understand tools and strategies to identify the most salient contributing factors to quality gaps and patient safety risks.

The Preventive Analysis section of the Evidence of Standards Compliance (ESC) form for higher risk findings asks organizations to not only correct the issue(s) noted in the Requirement for Improvement (RFI), but also supports an analysis to identify the underlying contributing factors that drive the issue(s) to occur. It helps address all factors leading to the high-risk issue(s) so that the organization can address all aspects of the patient safety risks.

What is a Preventive Analysis?

A Preventive Analysis is an examination into the underlying factors that contributed to an unsafe practice, process, or event. It should identify the potential contributing factors of an issue that exist today, not those that could appear in the future. Thus, this analysis should identify underlying causes that drove the issue(s) to occur. It should not describe how the organization will sustain or measure the corrective action in the future.

Elements of a Preventive Analysis

Preventive analysis is a process for identifying the factors that underlie variation in performance. It focuses primarily on systems and processes, not on individual performance, by digging deeper and repeatedly asking "Why?"; then, when answered, "Why?" again, and so on. Uncovering the contributing factors or root causes helps identify changes that could be made in systems and processes that would reduce the risk of such conditions and findings from occurring in the future.

Goals of a Preventive Analysis are:

To have a positive impact in improving patient care, treatment, and services	To focus attention on understanding the factors that contributed to the finding (such as underlying causes, latent conditions and active failures in defense systems, or organizational culture)	To change the organization's culture, systems, and processes to reduce the probability of such a finding in the future

Elements of a Preventive Analysis

1 Explores underlying systems and processes through asking a series of "Why" questions, until it identifies the systemic causal or contributing factors associated with the finding

2 Involves those most familiar with the systems and processes associated with the finding to increase credibility of analysis

3 Focuses on systems and processes, not solely on individual performance

- Digs deeper beyond human error or procedural violations, exploring the conditions as to why a procedure was violated or an error was made

4 Clearly links the root causes or contributing factors to the finding

5 Helps determine potential improvement in processes or systems that would tend to decrease the likelihood of such conditions or findings in the future

The 5 Whys Technique

The 5 Whys is a common iterative inquisitive tool that uses the concept of asking the question "Why" five times to determine the contributing factors of a problem. Each answer becomes the basis for the next question and the answer to the last "Why" becomes a root cause for the problem being analyzed.

Example: O_2 cylinders located in a storage rack labeled as full were in fact empty.

Why?

Empty cylinders were placed on wrong rack of the storage room.

Why?

Lack of signage indicating which racks contain which cylinders (empty/partial vs. full).

Why?

Additional storage racks containing full O_2 cylinders have been placed in the room due to space constraints in the organization.

Why?

Organization is currently under construction which has adjusted normal routine/practice.

Why?

There is a lack of space due to no risk assessment being completed prior to construction to account for this type of issue and associated process(es).

Root Causes: Lack of oversight of risk associated with loss of O_2 cylinder space; lack of appropriate labeling of storage racks, and temporary co-location of empty/partial and full O_2 cylinders which is not usual practice for this organization.

Analysis Tools

Fishbone Diagram

Also referred to as an Ishikawa diagram or Cause-and-Effect diagram, the Fishbone Diagram provides a visual framework to identify contributing factors that contribute to a patient safety issue. With this tool, the problem is placed at the "head" of the diagram and the major categories that represent the causes of the problem are written as the branches. The potential contributing factors are then listed next to the appropriate category branch.
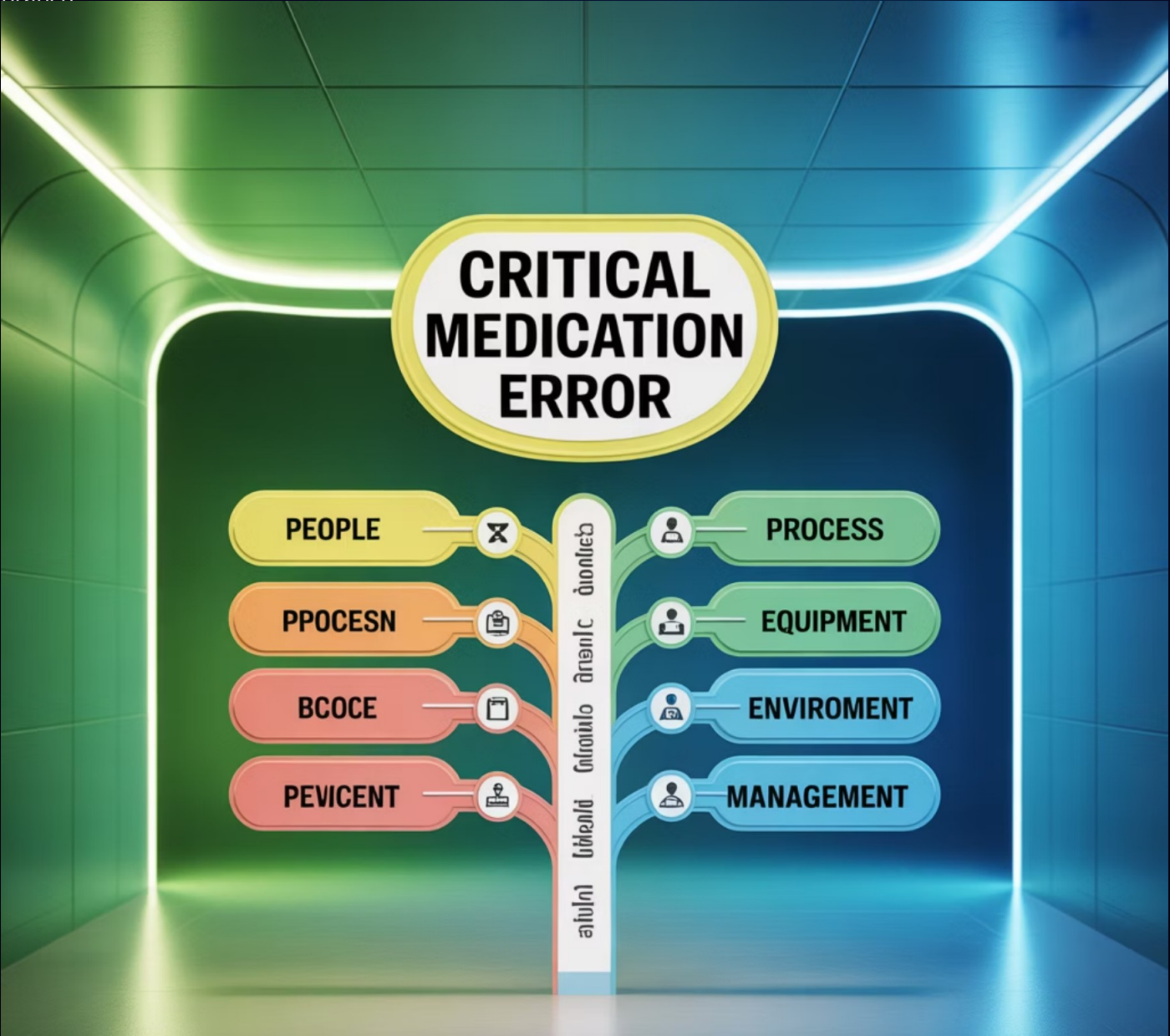
Additional Tools

There are several tools that can be used to identify the contributing factors of a problem. In addition to the 5 Whys and the Fishbone Diagram described above, the below tools are also commonly used.

Cause and Effect Matrix

C&E Matrix

Failure Mode Effects Analysis

FMEA

Root Cause Analysis

RCA

Pareto Chart

Process Mapping

Weak versus Strong Preventive Analysis

Example: A weak preventive analysis might focus solely on human performance. If that is the case, it will be less effective in understanding how systems/processes can be improved to prevent future risk. The analysis should go deeper.

Organizational Factors

- Does the organization have a contingency plan for staff turnover?
- Why was there staff turnover?
- Does this reflect an opportunity to improve organizational culture?

Process Factors

- What was the orientation process?
- What information was available?
- Was the information regarding licensure up-to-date?
- Is there a system process for monitoring licensure and compliance?

Environmental Factors

- Were there interruptions or distractions to workflow?
- Were staff under-resourced or task saturated?
- Were there any limitations in accessing documentation resources?

Such considerations help reveal more sustainable solutions beyond human behavior/performance.

Preventive Analysis Key Questions

What went wrong?

Why did this happen?

What process failed?

What is the underlying reason why this went wrong?