

Root Cause Analysis & Actions RCA²



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Introduction

Most of us in the healthcare industry are familiar with Root Cause Analysis (RCA), a structured method used to analyze serious adverse events. Furthermore, some of us who are concerned with the quality of health services have probably implemented the RCA methodology at least once. We may use different tools in conducting the RCA such as the Ishikawa fishbone diagram, the why-why technique, or other similar tools. At any rate, when we conduct RCA we try to drill down to the root causes of a serious adverse event trying to identify the system-related factors that contributed to the event rather than the superficial or apparent ones.

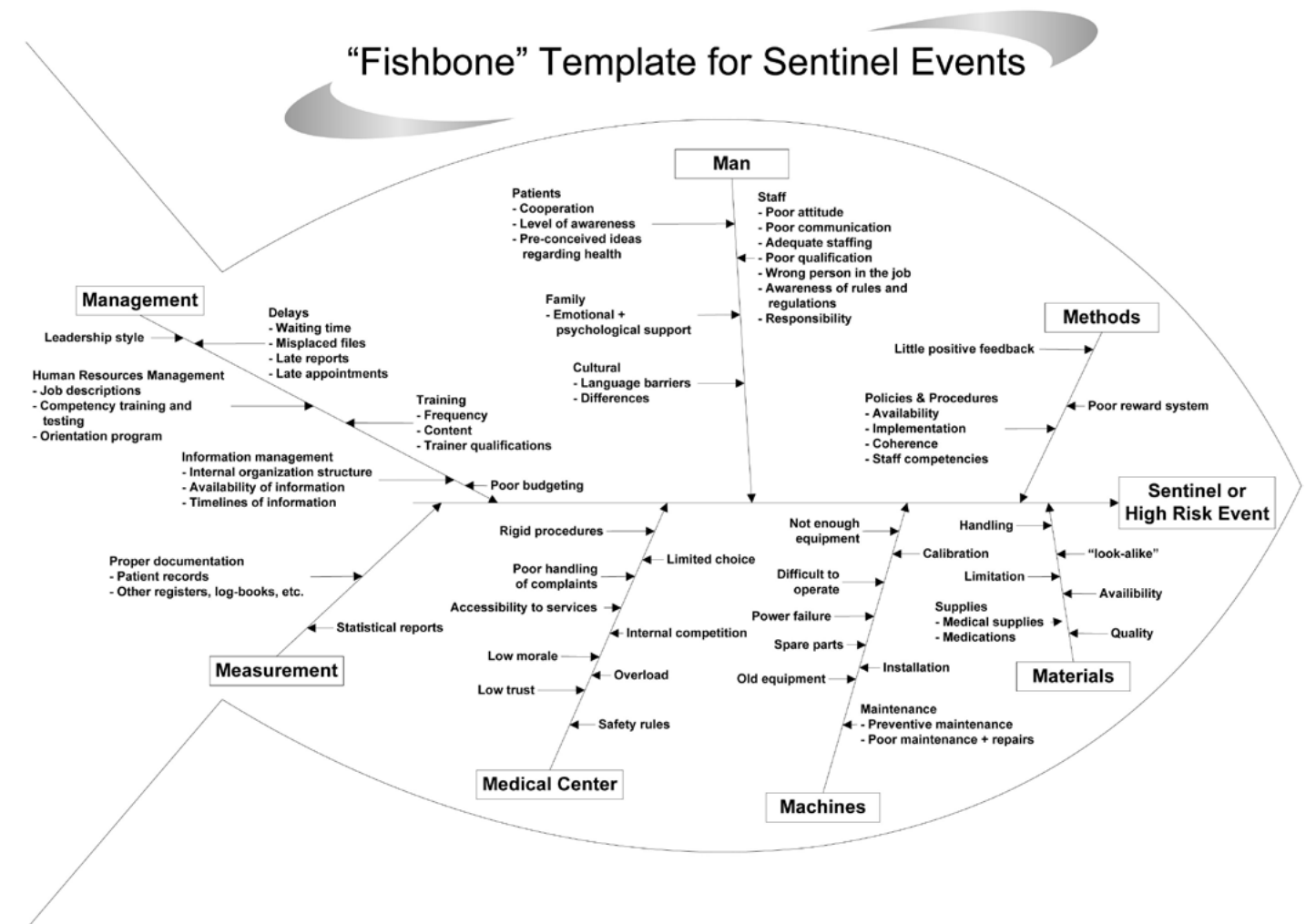
RCA is generally conducted by forming a multidisciplinary team consisting of healthcare staff that is close to the process where the adverse event occurred. The team analyzes the sequence of events to identify how and why the event occurred through a systematic identification and drill down approach. **The ultimate goal of RCA is to prevent future harm by eliminating the latent errors that so often underlie adverse events.**

RCA is Not Enough

For years, when an adverse event occurred, we were engaged in RCA to determine what went wrong with the hope that if we could determine the problem, we could avoid it in the future. However, the “fixing” step received less attention. Upon completion of the RCA, we got

complacent and satisfied and we were left with a high sense of achievement. We spent more time conducting the RCA than on following up the recommended actions. During the RCA meetings, it was common for the team members to slip into finding solutions before completing the drill down process based on their individual perception and experience. Many times we fell into this trap and we thought that the why-why technique alone got us to identify the underlying system-related issues. We did not spend enough time on identifying the appropriate actions and following them up.

Studies have shown that the RCA initiatives have produced inconsistent results and successes. Actions recommended by RCA teams were often not fully implemented and even if implemented, not adequately evaluated for effectiveness. RCA alone had inconsistent success partly because it lacked the emphasis on acting on the findings. Without the action implementation and measurement, the cycle of performance improvement was incomplete and patient safety was still in jeopardy.



Today, we may wonder why the same or similar adverse events analyzed by the RCA continue to recur in our hospitals. Recent reports indicate that currently the activities that constitute an RCA are not standardized or well defined, and can result in the identification of ineffective corrective actions. Some of the underlying reasons for lack of effectiveness of RCAs in improving patient safety include the lack of standardized and explicit processes and techniques to:

- Identify hazards and vulnerabilities that impact patient safety and then prioritize them to determine if action is required
- Identify systems-based corrective actions
- Ensure the timely execution of an RCA and formulation of effective sustainable improvements and corrective actions
- Ensure follow-through to implement recommendations
- Measure whether corrective actions were successful
- Leadership at all levels ensure that corrective actions are

implemented to improve patient safety (1)

What's New?

To prevent the same or similar adverse events from happening again requires proper action. So the National Patient Safety Foundation (NPSF) recently released guidelines to help healthcare organizations improve their methods of investigating medical errors, adverse events, and near misses. NPSF examined best practices around RCAs and developed a set of guidelines titled “RCA²: Improving Root Cause Analyses and Actions to Prevent Harm”. The guidelines are designed to emphasize not just the need to investigate how harm came about, but to also implement changes so that it doesn’t happen again.

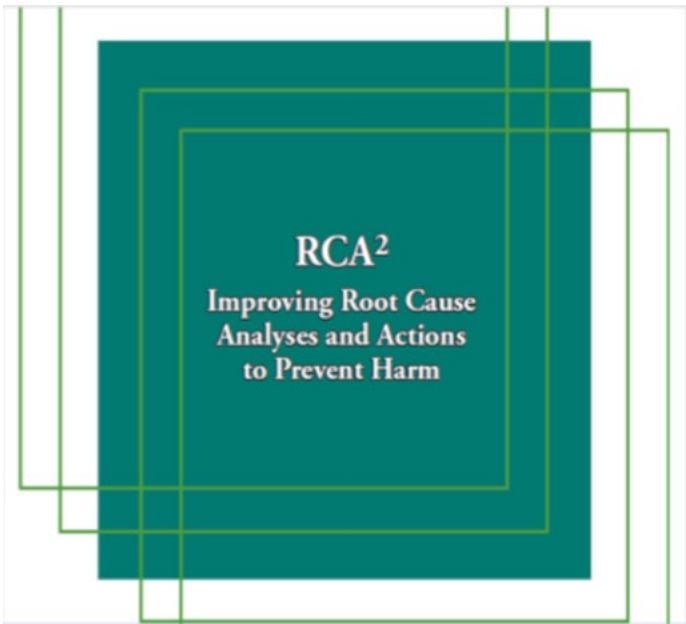
NPSF renamed the process as RCA (RCA squared or RCAA) with the second A meaning action, because unless real actions are taken to improve healthcare processes, the RCA effort remains incomplete and falls

short of reducing or preventing serious adverse events. The main goal of these guidelines is to help RCA teams identify and implement sustainable, system-based actions to improve the safety of care.

The *RCA² guidelines on Improving Root Cause Analyses and Actions to Prevent Harm* have been endorsed by numerous healthcare organizations and are being widely distributed to hospitals, health systems and other settings. This document describes that methodologies and techniques involved in performing an RCA can lead to credible and effective outcomes by analyzing the events, hazards, and vulnerabilities to accomplish the real objective, which is to understand what happened, why it happened, and then take positive action to prevent it from happening again. The NPSF guidelines on RCA² bring into focus an important element that was missing from too many RCAs and that is the implementation of strong actions and measurement of the effectiveness of these actions (2).

What is RCA²?

The purpose of RCA is to identify system vulnerabilities and prepare robust action plans so that they can be eliminated or mitigated. RCA2 employs a risk-based approach to prioritize the possible system failures even if



they have not resulted in patient harm yet. So the main focus is on the underlying systems-level causes that were manifested in personnel-related performance issues so they can be mitigated or eliminated before harm occurs. During the RCA, the Safety Assessment Codes (SACs) Matrix is used to prioritize the severity categories of patient adverse events (3):

Severity Category	Manifestation of Harm in Patients
Catastrophic	Death or major permanent loss of function (sensory, motor, physiologic, or intellectual) not related to the natural course of the patient’s illness or underlying condition (i.e., acts of commission or omission). This includes outcomes that are a direct result of injuries sustained in a fall; or associated with an unauthorized departure from an around-the-clock treatment setting; or the result of an assault or other crime. Any of the adverse events defined by the Joint Commission as reviewable “Sentinel Events” should also be considered in this category.
Major	Permanent lessening of bodily functioning (sensory, motor, physiologic, or intellectual) not related to the natural course of the patient’s illness or underlying conditions (i.e., acts of commission or omission) or any of the following: a. Disfigurement b. Surgical intervention required c. Increased length of stay for three or more patients d. Increased level of care for three or more patients.
Moderate	Increased level of care for three or more patients Increased length of stay or increased level of care for one or two patients.
Minor	No injury, nor increased length of stay nor increased level of care.

According to the new RCA² guidelines, the mechanics of forming the RCA team and the timing have not been considerably changed from what we are used to. The

recommended team size may be limited to 4 - 6 members including some front line staff who are close to the event process and someone who is familiar with the RCA²

process and a capable team leader. When a major or catastrophic adverse event takes place, the immediate actions may include taking care of the patient, disclosure and making the situation safe. These immediate actions may be performed in parallel to the initiation of the RCA process preferably within 72 hours. Several meetings will be required to complete the RCA process and the team members will have to gather information prior to and between meetings to complete interviews and review of documents and best practices. It is critical that the hospital provide adequate resources for the RCA process. The analytical steps and tools used during the RCA² include:

- Describe the event using a chronological flow diagram or timeline
- Visit the location of the event to obtain firsthand knowledge about the workplace and staff interactions
- Evaluate equipment or products that were involved
- Identify team-generated questions that need to be answered
- Identify individuals to be interviewed (staff, patients, or family members) and conduct the interviews
- Identify pertinent hospital documents to be reviewed

- (e.g., policies, procedures, medical records, maintenance records)
- Review pertinent external documents or recommended practices (e.g., peer reviewed publications, manufacturers’ literature, equipment manuals, and publications by professional organizations)
- Consider calling appropriate expertise to understand the adverse event. This may require interactions with internal and external sources of expertise (e.g., manufacturers, vendors, professional organizations, and regulatory agencies)
- Provide feedback to the involved staff and patients, and to the organization as a whole.

Actions - The most important step in the RCA² process is the identification and implementation of actions to eliminate or control system hazards or vulnerabilities that have been identified. Therefore, review teams should strive to identify actions that prevent the adverse event from recurring or at least reduce the likelihood, severity, or consequences if it recurs. The RCA² guidelines lists a set of action categories (4):

Action Category	Types of Actions
Stronger Actions	• Architectural/physical plant changes • New devices with usability testing • Engineering control • Simplify process / remove unnecessary steps in a process • Standardize on equipment • Tangible involvement by leadership such as participate in unit patient safety evaluations and interact with staff; support the RCA² process; procure needed equipment; ensure staffing and workload are balanced
Intermediate Actions	• Solve staff redundancies • Increase staffing/decrease workload • Software enhancements or modifications • Eliminate/reduce distractions • Education using simulation-based training, with periodic refresher sessions and observations • Checklist/cognitive aids • Eliminate look and sound-alike medications • Standardized communication tools • Enhanced documentation/communication
Weaker Actions	• Double checks • Staff counseling • New policies and procedures • Staff competency training

RCA² teams should be able to identify a combined set of actions to ensure sustained patient safety improvements. Corrective actions must be implemented and their

effectiveness measured by assigning an individual who is responsible to monitor their completion within a target date. This individual must have the authority and skill to



guide the team and implement the proposed actions. Each action identified by the review team requires at least one measure (which may be either a process or an outcome measure).

The actions resulting from the RCA should be implemented and measured to determine their effectiveness in preventing harm. Actions directed towards processes and practices, not the individual, are considered strong action plans.

After implementation of the identified actions, it is essential to provide feedback to the concerned stakeholders in order to create a culture of safety by reporting the achieved improvements to the rest of hospital staff. Finally, the RCA² process cannot be successfully implemented and have lasting positive change without active and tangible leadership support with involvement at all levels, including board involvement (5).

What Do We Learn from RCA²?

The recent release of the guidelines titled “RCA²: Improving Root Cause Analyses and Actions to Prevent Harm” by the National Patient Safety Foundation came at a time when we were starting to become complacent about the use of RCA and its techniques. RCA has become a cliché used by many healthcare professionals without really seeing the full benefit. In other words, the technique has been abused by us to the extent that we were conducting RCAs more in a more superficial manner. The fact that we conducted many RCAs for similar adverse events indicated that our RCA reports either did not yield radical solutions or were not comprehensive enough to deal with the problems and

have long-lasting solutions. In other words, the second “A Action” was missing.

The RCA guidelines came out as an awakening call to us. We need to educate ourselves on its principles and start conducting more credible RCA² with tangible action plans. The suggested components of a successful RCA² program include:

- The use of an explicit risk-based prioritization system for categorizing events
- Selection of the correct personnel to serve on the team
- Providing the team with the resources and time to complete the review
- Identification of at least one strong or intermediate strength action in each review, and
- Measuring the actions to assess if they were effective in mitigating the risk.

References

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