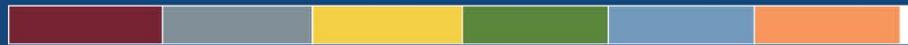**VA** | U.S. Department of Veterans Affairs

Root Cause Analysis Tools

VA National Center for Patient Safety

Root Cause Analysis (RCA) Step-By-Step Guide

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RCA is a process for identifying the basic or contributing causal factors that underlie variations in performance associated with adverse events or close calls. An RCA is a specific type of focused review that is used for all patient safety adverse events or close calls requiring analysis. To avoid confusion, the term RCA is used to denote this type of focused review and the process must adhere to the procedures provided in the Patient Safety Improvement Handbook 1050.01. http://vaww1.va.gov/vhapublications/ViewPublication.asp?pub_ID=2389

Patient Safety reports are confidential under 38 U.S.C. 5705.

The (Q number) listed at several steps of the accompanying flow diagram denote the correlating question/section for data entry in the patient safety information system, nicknamed SPOT.

Step	Notes
Decision to Do an RCA	- Determination of whether or not to conduct an individual RCA is guided by the Safety Assessment Code Matrix (SAC score). - All events receiving an actual or potential SAC score of three receive either an individual RCA or must be included in an Aggregated Review. - A facility may elect to complete an RCA on patient safety events that have a SAC score below the level that requires an RCA. - The RCA report must be completed within 45 days (signed off by the director) of the facility becoming aware that an RCA is required. In the Patient Safety Information System, (nicknamed SPOT) this data entry field is called the "Date Aware."
Immediate Actions as Required	Immediate actions may include, but are not limited to, taking appropriate care of the patient, making the situation safe, preventing immediate recurrence, notifying police or security if appropriate, preserving evidence and relevant information that will aid in fully understanding the situation.
Charter/Appoint Team	- RCAs need to be initiated with a specific charter memorandum (template in SPOT), and the term "Root Cause Analysis" needs to be used in documents to reaffirm they are protected and deemed confidential under 38 U.S.C. 5705 and its implementing regulations. - The charter memorandum is signed by the facility director/designee. - The RCA team is comprised of VA staff. (At times, other individuals within the facility subject to the same restrictions and training applicable to VA employees, e.g., residents, volunteers may participate; however they are responsible to follow the same confidentiality requirements of 38 U.S.C. 5705.) Please contact NCPS for specific clarification related to this issue of non-VA staff on RCA teams. - Teams usually consist of 4-5 people. - Teams should be interdisciplinary in nature with involvement of those knowledgeable about the processes involved in the event. Having team members with different professional backgrounds generally supports creative thinking. - Consider including leadership, clinical and administrative department chiefs on RCA teams to help obtain "buy-in." ***NOTE:** This is not to suggest that the team should consist solely of leaders and individuals with special knowledge of clinical or other processes thought to be associated with the adverse event or close call. Valuable contributions have been made by employees with little background in the clinical or other areas that were thought to be relevant at the outset of the RCA process.* - In the interest of objectivity, exclude individuals directly involved in the adverse event or close call as RCA team members. However, their experience and knowledge of the situation is vital to the RCA process, so they most likely need to be interviewed as part of the RCA process and asked for suggestions about how to prevent the situation from happening again.

Step	Notes
	• If in the course of conducting an RCA it appears that the event under consideration is the result of an Intentionally Unsafe Act (a criminal act; a purposefully unsafe act; an act related to substance abuse by provider and/or staff; or events involving alleged or suspected patient abuse of any kind), the RCA team must refer the event to the facility director for appropriate further consideration as described in subparagraph 4d in the Patient Safety Handbook. In such situations, the RCA team discontinues their efforts, since the facility director has the responsibility for any further fact finding or investigation. • In cases where the facility director serves on the RCA team, final concurrence must come from the Veterans Integrated Service Network (VISN) director, or designee. • Team members need to be available to participate; obtain support from supervisors prior to appointment on the RCA team.
Just in Time Training	• At the first meeting of the team, an orientation of the RCA process needs to be completed so all participants have a common understanding. • Reading through the Triage Questions flipbook and discussing the strength of actions hierarchy is encouraged. • A simulated RCA video created by NCPS and provided to all PSMs may be part of the just in time training. If additional copies are needed, please contact NCPS. • A greeting by a top manager may reinforce the importance of the team's work. • Assign roles for the leader, advisor and recorder. • Decide on meeting dates and times to avoid potential delays. • Review rules of behavior and expectations.
Establish Sequence of Events (Initial Flow Diagram)	• An initial event flow diagram is an outline of the story that progresses chronologically from the first known fact through the final known fact. • This initial flow diagram gives all team members the same understanding of what occurred which helps avoid differing interpretations of the same event. • Stick with the facts. • Establishing the series of events preceding the event is a critical step towards helping discover what caused the event and what to do to prevent it from happening again. • Include only those key events that are crucial to understanding what transpired. • It is not necessary to include the amount of time that elapsed between events, but if the information is available it may provide valuable insights. • The diagram/storyboard can be easily rearranged if "sticky notes" are used. • Use tools and techniques (flip charts, brainstorming, "parking lot" for questions, etc.). • The initial flow diagram should make clear what you know and what you don't know. • Visit the scene of the event, use the equipment, and safely simulate what happened.
Identify Information Gaps	• Using the triage cards, identify questions that need to be answered. • When addressing each event in the flow diagram, ask why each event occurred until there are either no more questions or no more answers. • If the answer results in blaming an individual or group of individuals, ask a "why" question again to get to the systems issue. • Beware of hindsight bias (a.k.a. Monday morning quarterback). Teams often jump to conclusions, thinking they know the cause of the adverse event, a natural tendency. In reality, multiple decision points are encountered and must be dealt with. These environmental factors and decision points must be understood in order to identify the root cause or contributing factors.

Step	Notes
Specify Information Required/Who is Responsible to Get It and Timeline for Acquiring	• List the services, departments and information needed by the RCA team, including policies, procedures, reports, regulations, medical records, and committee minutes, etc. • Define the interviews with personnel needed. • Identify who is responsible to obtain the information. • Identify the timeline required to obtain the information.
Use Triage Questions and Interview Tools to Frame Questions	• The triage cards provide teams a way to determine what questions need answering and help prevent questions being missed. • Revisit the triage cards as needed.
Conduct Fact Finding: Interviews, Chart Reviews and Literature Reviews	• When fact finding: o Visit the site of the event and simulate the event. (Do not have a second accident!) o Interview a broad range of individuals for a thorough investigation of the systems. o Focus primarily on systems and processes rather than individual performance. • When interviewing, remember: o Interview one person at a time. o Inform them RCA information is protected and deemed confidential under 38 U.S.C. 5705. o Encourage the interviewee to tell their story without questions or interruption. o Encourage the interviewee to confine their comments to what they observed, avoid hearsay and avoid comments not in their personal knowledge or experience. o Have a single member of the team ask pre-selected questions. o Open the discussion for all team members only after all the predetermined questions have been asked. o Avoid questions that have "yes" or "no" answers. o Be courteous, considerate and open minded, avoid embarrassing any interviewee, adjust your style to match the needs of the interviewee, treat interviewees with overt diplomacy, and help timid interviewees. o Stay on the topic; don't get distracted by "hearsay." o Remember you are looking for truth about systems issues, not individuals and the primary goals are to find what happened and why it happened. o Conclude the interview by thanking each individual and inviting them to contact a team member with additional information if necessary. • Conduct fact finding and chart reviews as needed. • Define and record documents, books, websites or other materials used during the research related to this event.
Synthesize Information Acquired and Review Using "Triage Questions" and Other Resources	• The analysis digs deep by asking "what" and "why" until all aspects of the process are reviewed and the contributing factors are considered. • If questions are unanswered, the team repeats the last three process steps again until the team believes they have a clear understanding of the event and all questions have been answered.
Final Version of Sequence of Events (Final Flow Diagram)	• The final flow diagram represents what was learned through the investigation. • Last, ask for the significance or relevance of each event (the "so what?" question), and capture answers under the event. This may help the team identify potential root causes/ contributing factors.
Identify Root Causes/Contributing Factors (RC/CF)	• Root causes/contributing factors define the team's findings about what must be fixed. • Root causes/contributing factors guide everything else that follows. • RC/CF identifies changes that could be made in systems and processes that would reduce the risk of the adverse event or close call recurring. • The analysis identifies system vulnerabilities or risks.

Step	Notes

	• There is rarely only one underlying cause.
	• RC/CF statements should not blame or single out an individual.
	• To help adhere to these characteristics, the following five guidelines need to be considered when developing root cause statements:
	  1. Root cause statements need to include the cause and effect.
	  2. Negative descriptions about people are not to be used in root cause statements.
	  3. Each human error has a preceding cause.
	  4. Violations of procedure are not root causes, but must have a preceding cause.
	  5. Failure to act is only a root cause when there is a pre-existing duty to act.

Identify Corrective Actions That Were Instituted Due to a Similar Event in the Past	• Review prior RCAs to determine what corrective actions were implemented for similar events in the past. • Review and evaluate actions taken to address previous adverse events/close calls.

Develop Action Plan	• The action plan is comprised of:
	  ○ Root cause/contributing factor statement
	  ○ Action
	  ○ Outcome measure
	  ○ Responsible person
	  ○ Management concurrence or non-concur
	• Include all actions recommended by the RCA team; those defined as weaker, intermediate or stronger.
	• If at all possible, select some intermediate or stronger actions (according to the action hierarchy) as they may lead to elimination of the vulnerability.
	• When defining who will be responsible to implement the action, review the action plan with them so they are not blindsided by the team's action plan.
	• Actions and outcome measures should specifically address the RC/CF.
	• Share the actions with a "cold" reader to see if they make sense.
	• Each action must have at least one outcome measure. Outcome measures:
	  ○ Tell you if the action has made the situation better or not.
	  ○ Are specific and quantifiable and use numerators, denominators and thresholds.
	  ○ Offer timelines and due dates; state how many things you're going to check, how often you're going check, and the deadline date.
	  ○ Define where the measurement results will be reported.

Provide Feedback to Reporter	• Staff who submit close call and adverse event reports that result in an RCA must receive feedback on the actions being taken as a result of their report. The feedback is to be of a timely nature and come from the PSM, or other appropriately designated party. Prompt feedback to those reporting adverse events helps establish trust in the system and demonstrate the commitment on the part of the organization to the importance of reporting. Reporters are to be made acutely aware that their effort of reporting was not just a paperwork drill. • It is appropriate and desirable for the team leader or advisor to discuss the team's recommendations and ask the reporter for any additional suggestions about how to eliminate or correct root cause/contributing factors during this conversation. • This does not mean that the reporter will read or be provided with a copy of the RCA or that individual specific findings will be discussed with them because that would breach the confidential/protected nature of the RCA process. • This step is unnecessary if the reporter is unknown. • *Feedback must only be given to individuals who remain on staff when the information from the RCA is available.*

Step	Notes
Identify What was Learned and Who Needs to Know	• Present the findings and recommendations of the RCA Team. • Define what was learned, who needs to know and how they will be made aware of the information.
Create Action Plan for Director to Concur/Non-Concur	• The root causes/contributing factors, associated actions and outcome measures are documented for reviewing the RCA with the director and/or leadership team. • In the event that top management does not concur with a proposed action developed by the RCA team, an alternative action to address the root cause/contributing factor needs to be developed and documented.
Iterate and Record as Necessary	• Finalize the written RCA document • Assure all reports are free of identifiers prior to submission to NCPS. • ("De-identifying an RCA-what it means, and what it doesn't." Located on the NCPS website: http://vaww.ncps.med.va.gov/Tools/RCAToolbox/index.html • The RCA report is retained by the facility even after the results have been entered into the Patient Safety Information System (nicknamed SPOT) so that the report can be made available for future review and learning as appropriate. • For detailed and relevant information on recordkeeping see VHA Records Control Schedule (RCS) 10-1 (RCS 10-1).
Determine Approximate Cost of RCA	• The purpose of this item is to get a ballpark idea of the financial expense associated with conducting this particular RCA. • Include calculations of person-hours directly spent on the RCA. • Include consultation costs and other costs associated with this RCA. • (This is not intended to reflect the cost of the recommended fixes.)
Final RCA and Action Plan Sign-Off	• The completed RCA is signed by the RCA advisor, all RCA team members and the facility director/designee. • The date the facility director signs-off on the RCA is the date the RCA is complete. (In the Patient Safety Information System, (nicknamed SPOT) this data entry field is called the "Director Sign-Off Date.")
RCA Advisor Conducts Follow-Up	• Reporting back on the effectiveness of RCA actions is required. (This is completed in the Patient Safety Information System, (nicknamed SPOT).)

Root Cause Analysis (RCA) Team Process

Decision to do RCA
(based on SAC, etc.)

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Immediate Actions as Required (Q8)

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Charter/Appoint Team (Q9)

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Just In Time Training for Team

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Establish Sequence of Events (Q10)
(First Draft)

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Identify Information Gaps (Q10)

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Specify Information Required/Who is Responsible to Get It/ Timeline for Acquiring (Q11)

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Use 'Triage Questions' and RC /Contributing Factor Interview Tools to Frame Questions

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Conduct Fact Finding: Interviews, Chart Reviews, & Literature Reviews (Q12, Q13)

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Synthesize Information Acquired and Review Using 'Triage Questions' and Other Resources

← As Needed → (to Specify Information Required)

↑

Final Version of Sequence of Events (Q14)

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Identify Root Cause/ Contributing Factors (Q15)

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Identify Corrective Actions That Were Instituted Due to a Similar Event in the Past (Q16)

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Develop Action Plan (First Draft)

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Provide Feedback to Reporter (Q17)

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Identify What was Learned & Who Needs to Know (Q18)

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Create Action Plan for Director Concur/ Non-concur (Q19A)

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Iterate and Record as Necessary (Q19B)

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Determine Approximate Cost of RCA (Q20)

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Final RCA and Action Plan Sign-Off (Q22)

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RCA Advisor Conducts Follow-up

Key

⬭	= Analysis
▭	= Activity
⬜	= Document

The "Q" followed by a number refers to the correlating tab/question in the Patient Safety Reporting System.