Root Cause Analysis and Action: RCA^2

Betty VanWoert, RN, BSN, CCM, CPHRM
Sr Risk and Patient Consultant – MMIC

Katherine Jones, PT, PhD
President Board of Directors, Nebraska Coalition for Patient Safety

Gail Brondum, LPN, BS
Executive Director, Nebraska Coalition for Patient Safety

NCPS 1

Objectives

1. Define root cause analysis and describe its purpose
2. Review the importance of culture and leadership in supporting RCA and risk mitigation
3. Describe the steps and attributes of an effective root cause analysis and action plan
4. Identify strategies and tools to use in an RCA, including fishbone, cause and effect diagrams, priority/payoff matrix, and strong action plans
5. Interpret and apply RCA concepts in a practice scenario

NCPS 2

INTRODUCTION

1. **Define root cause analysis and describe its purpose**
2. **Review the importance of culture and leadership in supporting RCA and risk mitigation**

Betty VanWoert, RN, BSN, CCM, CPHRM
Sr Risk and Patient Consultant – MMIC

NCPS 3

Root Cause Analysis (RCA)Definition

- Retrospective, structured investigation of adverse events, near misses, sentinel events (Wald & Shojania, 2001)
- Used in industries that seek high reliability such as nuclear power, airlines, the military, and healthcare
- Key Processes in RCA toolbox (Battles et al., 2006; Nicolini et al., 2013)
  - Systematic reporting of events
  - Stratification of risk to determine priority
  - Sequential steps of investigation and action planning
  - Structured organization of data (what happened)
  - Group reflection (sensemaking conversation) by those most knowledgeable about situation and data assigns meaning (why) to develop causal chain and design plan to prevent recurrence

NCPS

4

RCA^2 Purpose: To Understand…

ANALYSIS

- WHAT HAPPENED
- HOW IT HAPPENED

ACTIVE ERROR

- WHY IT HAPPENED
- WHAT USUALLY HAPPENS

LATENT ERROR

ACTION

- WHAT SHOULD HAPPEN
- WHAT CAN BE DONE TO PREVENT IT FROM HAPPENING AGAIN
- HOW WILL WE KNOW WE ARE SAFER?

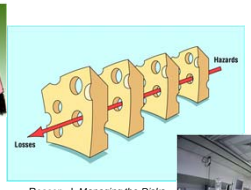
(Reason, 1997)

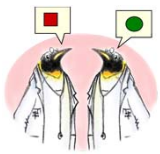
NCPS

5

RCA^2 Purpose: To Identify…

Social and technical vulnerabilities (active and latent errors) in complex systems (Braithwaite et al., 2007)

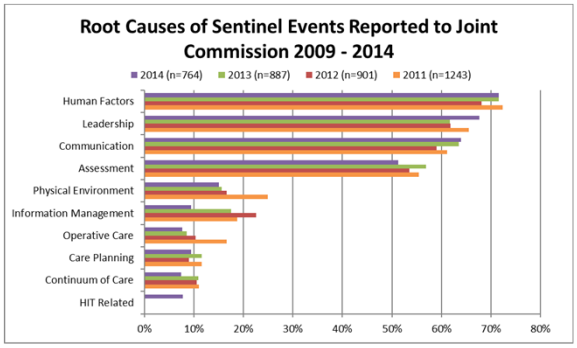




Reason, J. *Managing the Risks of Organizational Accidents.* Hampshire, England: Ashgate Publishing Limited; 1997.

NCPS

6



NCPS

7

Sentinel Event – Definition

Patient Safety Event that reaches a patient and results in any of the following:

- Death
- Permanent harm
- Severe temporary harm
- Or on the enumerated list of events

(The Joint Commission)

(Reportable to The Joint Commission)

OR risk thereof…includes any process variation for which a recurrence would carry a significant chance of serious adverse outcomes (VA National Center for Patient Safety)

Signals need for immediate investigation and response to identify systems problems and continuing threats to patient safety

https://www.jointcommission.org/sentinel_event_policy_and_procedures/
https://www.patientsafety.va.gov/professionals/publications/handbook.asp

NCPS

8

When to Conduct RCA

- Know outcome of event
- Determine risk using Safety Assessment Code (SAC)
  - Assign 1 of 4 severity categories
  - Assign 1 of 4 probability categories
- Score actual and near miss events

VA National Center for Patient Safety. Available at: https://www.patientsafety.va.gov/professionals/publications/matrix.asp

NCPS

9

Severity Categories

- Catastrophic
  - Actual or Potential: 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.
- Major
  - Actual or Potential: Permanent lessening of bodily function (sensory, motor, physiologic or intellectual) not related to the natural course of the patient's illness or underlying condition or any of the following: disfigurement, surgical intervention required, increased length of stay for 3+ patients, increased level of care for 3+ patients.

NCPS 10

Severity Categories Cont.

- Moderate
  - Actual or Potential: Increased length of stay or increased level of care
- Minor
  - No injury, nor increased length of stay, nor increased level of care
- For actual Adverse Events, assign severity based on patient's condition
- For close calls, assign severity based on reasonable "worst case" systems level scenario

NCPS 11

Probability Categories

- How often is it likely to occur in **your** facility?
- Frequent – Likely to occur immediately/shortly
  - Several times each year
- Occasional – Probably will occur
  - Several times in 1 to 2 years
- Uncommon – Possible to occur
  - May happen sometime in 2 to 5 years
- Remote – Unlikely to occur
  - May happen sometime in 5 to 30 years

NCPS 12

Safety Assessment Code Matrix

	Severity			
Probability	Catastrophic	Major	Moderate	Minor
Frequent	3	3	2	1
Occasional	3	2	1	1
Uncommon	3	2	1	1
Remote	3	2	1	1

3 = Highest Risk; Conduct RCA

2 = Intermediate Risk; Conduct RCA

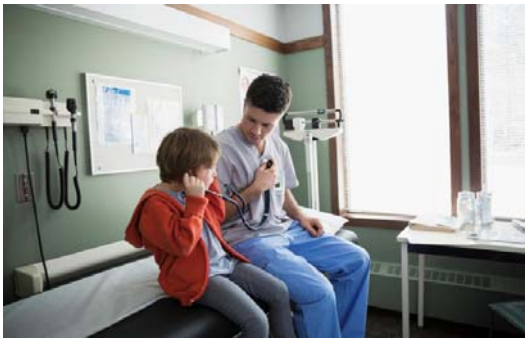
1 = Lowest Risk; Aggregate with similar events depending upon probability

VA National Center for Patient Safety. Available at: https://www.patientsafety.va.gov/professionals/publications/matrix.asp

NCPS

13

14



NCPS

15

Reporting is the Foundation: Sources of Information for RCA

Formal Reporting

- Incident Report
- Near Misses/Close Calls
- Quality Monitoring
- Staff Complaint
- Patient/Family Complaint

Informal Reporting

- Safety Briefings
- Leadership WalkRounds
- Staff
  - Safety Culture Survey
  - Engagement
- Patient/Family Satisfaction Survey

NCPS 16

Event Reporting

NCPS 17

Safety Culture

- Enduring, shared, LEARNED* beliefs and behaviors that reflect an organization's willingness to learn from errors**
- Four beliefs present in a safe, informed culture***
  - Our processes are designed to prevent failure
  - We are committed to detect and learn from error
  - We have a just culture that disciplines based on risk-taking and not outcomes alone
  - People who work in teams make fewer errors

*Schein, E. *Organizational Culture and Leadership*. 4th ed. San Francisco, CA: John Wiley & Sons; 2010.

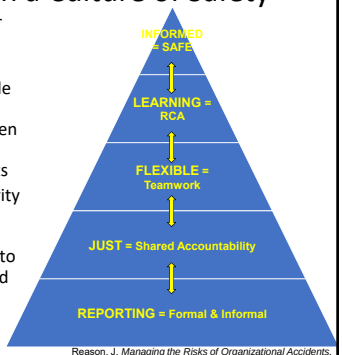
**Wiegmann. A synthesis of safety culture and safety climate research; 2002. http://www.humanfactors.uiuc.edu/Reports&PapersPDFs/TechReport/02-03.pdf

***Institute of Medicine. Patient safety: Achieving a new standard of care. Washington, DC: The National Academies Press; 2004.

NCPS 18

Role of RCA in a Culture of Safety

- Reporting – staff report their errors
- Just – reporting is rewarded; clear line between acceptable & unacceptable behavior; shared accountability between management and staff to address root causes of events
- Flexible (Teamwork)– authority gradients relax when safety information is exchanged; there is psychological safety to speak up about safety related information
- Learning – action is taken based on safety information systems and sensemaking conversations



Reason, J. *Managing the Risks of Organizational Accidents.* Hampshire, England: Ashgate Publishing Limited; 1997.

NCPS

19 19

Sensemaking is Learning

Sensemaking is the active process of assigning meaning to ambiguous data; it can only occur through human reflection.

Sensemaking is always based on existing data. The most fundamental level of data about patient safety is the lived experience of staff, as they struggle to work within an imperfect system.

It is the combination of two processes, (1) tools that enhance the human ability to organize patient safety data and (2) deliberate reflection, that makes it possible for organizations to use events as learning opportunities.

Battle JB, Dixon NM, Borotkanics RJ, et al. Sensemaking of patient safety risks and hazards. HSR. 2006;41:1555-1575.

NCPS

20

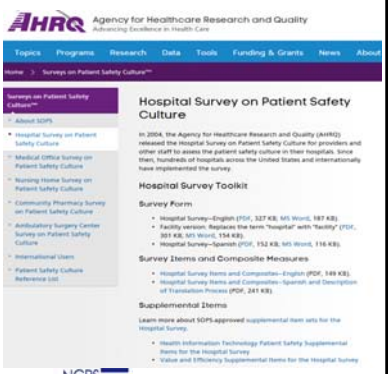
Learning: Intersection between psychological safety & accountability

Edmondson AC. Teaming: How organizations learn, innovate, and compete in the knowledge economy. San Francisco, CA: Josie Bass; 2012, pp. 130.

21

We cannot improve what we do not measure

- NCPS now conducting AHRQ HSOPS
- Members receive 20% discount



NCPS

22

Hospital Survey on Patient Safety Culture 2018 National Comparative Database

Composites and Items Reflective of RCA[2]	Percent Positive	
Organizational Learning	10th %ile	90th %ile
Mistakes have led to positive changes here.		72
After we make changes to improve patient safety, evaluate their effectiveness.		80
Hospital Management Support for Patient Safety		
The actions of hospital management show that patient safety is a top priority.		85
Hospital management seems interested in patient safety only after an adverse event happens.(R)		72
Feedback & Communication about Error		
We are given feedback about changes put into place based on event reports.	49	73

Famolaro et al. Hospital Survey on Patient Safety Culture 2018 User Database Report. (Prepared by Westat, Rockville, MD, under Contract No. HHSA 290201300003C). Rockville, MD: Agency for Healthcare Research and Quality; 2018. AHRQ Publication No. 18-0025-EF.

23

Leadership Support: 4A Framework

Leadership is the single most important factor in culture change

- Awareness…leaders know
  - Extent of risks and hazards in their system
  - Performance gaps in safety culture
  - Tendency is to value the task/report over the learning
- Accountability…leaders hold staff accountable for conducting acceptable, thorough, credible RCAs
  - No "email politicking" about attendance
  - No hierarchical behavior by senior clinicians
  - Ensure all staff are supported to participate

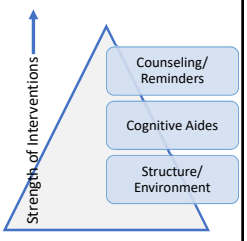
NQF, 2010; Nicolini et al. 2011

NCPS

24

Leadership Support: 4A Framework

- Ability…leaders ensure facilitators have the ability/knowledge to conduct acceptable, thorough, credible RCAs and implement strong action plans
- Action…leaders review action plans to determine hierarchy (strength) of recommended interventions and constraints



Hettinger et al., 2018

NQF, 2010; Nicolini et al. 2011

NCPS

25

---

3. **A. Explain advantages and disadvantages of two different structures to conduct RCA**

   B. Describe the steps and attributes of an effective root cause analysis and action plan

4. **Identify strategies and tools to use in an RCA, including fishbone, cause and effect diagrams, priority/payoff matrix, and strong action plans**

Katherine Jones, PT, PhD

President Board of Directors, Nebraska Coalition for Patient Safety

Gail Brondum, LPN, BS

Executive Director, Nebraska Coalition for Patient Safety

NCPS

26

RCA: Structure Process Outcome

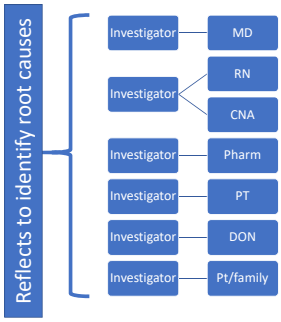
Structure | Process | Outcome

4 – 6 Investigators who are knowledgeable of RCA process and human factors assigned by organization to conduct RCAs	• Individual interviews of staff and patient/family involved in the event • Use multiple tools* to reflect, identify causes	• Thorough, credible acceptable RCA • Decreased system risk
RCA facilitator who is knowledgeable of RCA process and human factors assigned by organization to conduct RCAs	• Facilitates sensemaking conversation among those involved in the event and experts in process/policy/procedure • Use multiple tools* to reflect, identify causes	• Thorough, credible acceptable RCA • Decreased system risk • Front-line staff involved in sensemaking
*Tools include Safety Assessment Code, process maps, fishbone diagram causal diagramming, rules of causation, Action Hierarchy)		

Investigator Structure

- Advantages
  - Overcome hierarchical/ intimidating behavior in group setting
- Disadvantages
  - More time
  - More people need expertise in RCA
  - More reliant on supplemental info
  - Less likely to change staff perceptions of org. learning
  - Command and control

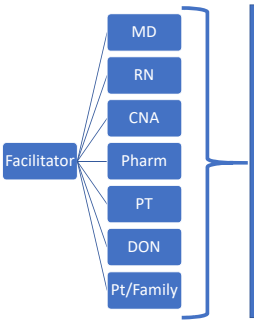
(Nicolini et al., 2011)



NCPS

28

Facilitator Structure



- Advantages
  - Less time
  - Fewer people need expertise in RCA
  - May change participant perceptions of organizational learning
  - Bottom up, democratic
  - Less reliant on supplemental info
- Disadvantages
  - Must be skilled facilitator to manage the group sensemaking

(Nicolini et al., 2011)

NCPS

29

Thorough RCA[2]

- Focuses on systems and processes; not individual performance
- Identifies system-level causal factors associated with each step in sequence leading to the event (Why? X5)
- Determines human and other factors most directly associated with the event and the processes and systems related to its occurrence
- Determines where redesign might reduce risk
- Identifies risk points and their potential contributions to the event in question
- Determines potential improvement in processes or systems that would tend to decrease the likelihood of such events in the future

TJC Sentinel Event Policies and Procedures. Retrieved October 22, 2018 https://www.jointcommission.org/sentinel_event_policy_and_procedures/

NCPS

30

Credible RCA^2

- Includes participation/support from a process owner/leader…typically a senior leader or designee
- Includes individuals most closely involved in processes and systems under review
- Includes patients, family, or patient representatives when appropriate to ensure thorough understanding of facts
- Is internally consistent (does not contradict itself or leave obvious questions unanswered)
- Includes consideration of any relevant literature
- Recommended actions are approved or disapproved by senior leadership; if disapproved, constraints are shared and addressed as possible

TJC Sentinel Event Policies and Procedures. Retrieved October 22, 2018 https://www.jointcommission.org/sentinel_event_policy_and_procedures/

NCPS

31

Acceptable RCA^2

- Implements actions to control/eliminate systems hazards and vulnerabilities
- Implements actions that are likely to reduce the risk or prevent the event from recurring and if that is not possible reduce the severity or consequences if it should recur
- Uses a tool to identify stronger actions that provide effective and sustained system improvement (e.g. Action Hierarchy Tool developed by VA NCPS)
- Action plan identifies what, who, when, how evaluated, how sustained

TJC Sentinel Event Policies and Procedures. Retrieved October 22, 2018 https://www.jointcommission.org/sentinel_event_policy_and_procedures/

NCPS

32

Steps in Root Cause Analysis

Regardless of structure, sequential steps are the same:

1. Gather the facts using a timeline
2. Understand what happened (and compare to what could have/should have happened)
3. Identify root causes using causal statements, fishbone and/or causal diagramming tool
4. Determine system improvements to minimize risk of repeating the event
5. Implement thorough, credible, acceptable action plan considering strength of potential actions

(Amo, 1998; Nicolini et al., 2011)

NCPS

33

Step One:
Do you need to invoke attorney-client privilege?

Facilitator or Investigators gather the facts

Facilitator/Investigator

- Criteria
  - NOT directly involved in event
  - No preconceived idea of causal factors
  - Knowledgeable of RCA purpose, process
  - Credibility within organization
  - Skills in quality improvement and implementation
- Facilitation Skills (Nicolini et al., 2011)
  - Sets agenda, manages time, stays on task
  - Manages hierarchical and dominating behaviors
    - Non-verbal hand on shoulder
    - Verbal: request break
  - Acknowledges and validates emotions
  - Avoids focus on "when" at expense of "why"
  - Doesn't value "done report" over learning and action planning

Gather the Facts: Individual Interviews

- Individual interviews to develop timeline
  - May create trust with those involved in the event
  - May defuse gossip, speculation, and blame if done as soon as possible after the event
  - May increase gossip, speculation, and blame if confidentiality is not maintained and if too much time elapses until causal factors determined

Gather the Facts: Supporting Materials

- Patient medical record – specifically the H&P on admission
- Physician orders (time and date)
- Nursing entries (time and date)
- Labs, Imaging
- Progress notes (PT, OT, RT)
- Medication administration (times/dates)
- Process map/flowchart, policies, and procedures related to intended processes
- RCA/Sentinel Event Policy & Procedure

NCPS

37

The Timeline Summarizes the Facts

- Develop a "story" specific to the patient's episode of care; a detailed timeline of what happened, when specific to the event
- Make copies of timeline for sensemaking conversation
- Summarize timeline on flip chart

NCPS

38

Who Should Participate

- The "ideal" Sensemaking Conversation
  - Interdisciplinary
  - All staff directly involved in the event
  - Front-line staff who can champion change
  - Experts most knowledgeable about the process
  - Physician champion
  - Senior leader who can ensure resources to develop implement action plan

Everyone is equal

39

NCPS

Step Two:
Understand What Happened using Group Debriefing by Skilled Facilitator

Step Two: Understand What Happened

- Review Ground Rules
  - Review purpose of RCA…change the system to minimize risk to patients
  - Everyone is a professional, all are equal
  - Use the "parking lot" to validate concerns but stay on task (avoid jumping to solutions)
  - Direct questioning is intended for learning
  - What is said in the room about who said or did what stays in the room …

What leaves the room…

- The proposed system changes are what you should focus on when you leave the room

Step Two: Understand What Happened

- Group Debriefing about the timeline
  - Review each particular event of the process by asking the questions…"Is this the usual way we do it?" and "If not why…why…why?"
  - Goal: shared mental model of event
  - As questions are answered and discussion proceeds, participants record one idea about system and human factors related to the error per post-it

NCPS

43

Step Three: Identify Root Causes

NCPS

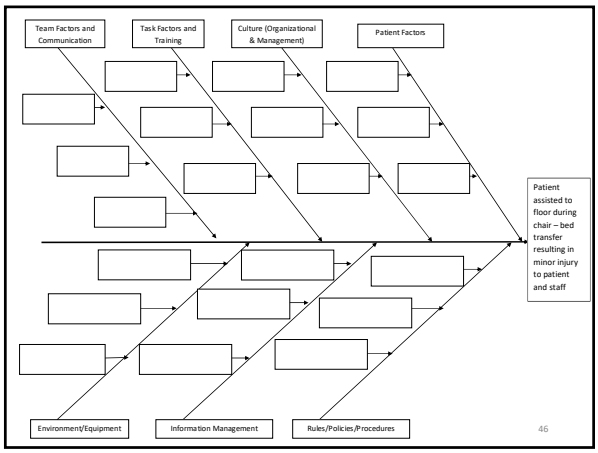
44

Step Three: Identify Root Causes

- Categorize post-its into categories of causal factors
  - Human factors – communication/teamwork
  - Human factors – training
  - Human factors – fatigue/staffing
  - Environment/Equipment
  - Rules/Policies/Procedures
  - Information management
  - Culture
- Create causal statements for each category
- Cause and effect diagrams can be helpful

NCPS

45



Five Rules for Causal Statements

1. Clearly show cause and effect relationship
2. Use specific and accurate descriptions
3. Identify the system cause of the error
4. Identify preceding cause of policy or procedure violation
5. Acknowledge: failure to act is only causal when there is a preceding duty to act based on known policy/procedure

NCPS

47

Fill in the blanks…

The lack of_____
resulted in_____,
which increased the likelihood
that_____.

If it doesn't fit…use the parking lot.

NCPS

48

Causal Statement: Policy/Procedure

Error: There is a mess in the microwave

The lack of an agreed upon goal to keep the microwave clean…

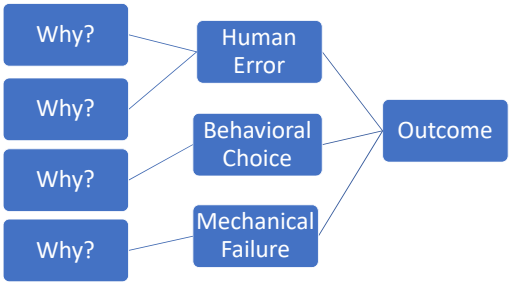
resulted in the absence of a paper towel over the left over pizza,

which increased the likelihood that it would explode and leave a mess in the microwave.

NCPS

49

Clarifying root causes with a cause and effect diagram

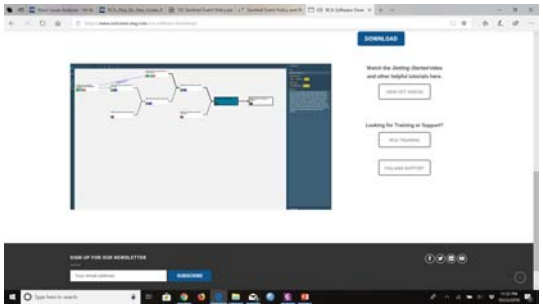


NCPS

Preceding Behavior

51

Causal Diagramming Tool



https://www.outcome-eng.com/rca-software-download/

NCPS

52

Step Four:
Determine System Improvements

NCPS

53

Step Four: Determine System Improvements

- Relate causal statements to current process, policies/procedures
- Prioritize causes/contributing factors
  - Handout of ReCAST Tool
- Prioritize interventions
  - Priority/Payoff Matrix
  - Handout of ReCAST Tool*…save for another day

*Pham et al. ReCASTing the RCA: An improved model for performing root cause analysis. American Journal of Medical Quality. 2010;25:186-191.

NCPS

54

Hierarchy of Interventions

STRONG	Example
Institutional (large facility-wide investment)	Implementing unit-based pharmacists
IT Structure (change in software/interface)	Usability evaluation, forcing functions (e.g. to prevent wt-based dosing errors in CPOE)
Architectural/ Environmental (change in physical environment)	Signage, relocating equipment (e.g. gait belt on hook next to bed)
Standardize Equipment	Surgical instrument trays, IV pumps
Leadership Involvement	Clinical champions assigned to relevant interventions
Simplify processes	Revise criteria for admission to Observation unit

Commonwealth of Massachusetts, 2012; Hibbert et al., 2018; Hettinger et al., 2013 [55]

Hierarchy of Interventions

Moderate	Example
Policy/Procedure change or implementation	Patients at high risk for falls not to be left alone while toileting
Audit/Feedback	Appropriate fall risk interventions in place according to policy
Redundancy	Have an additional person assist
Enhanced documentation/ forms	Making hourly rounding and measures easier to document.
Checklists/Cognitive Aids	Fall Risk Signage with picture of required assist device (i.e., walker)
Standardize communication tools	Shift report form with specific space for fall risk and interventions
Training with practice and competency assessment	Falls skills fair. Personnel file documentation of skills competence

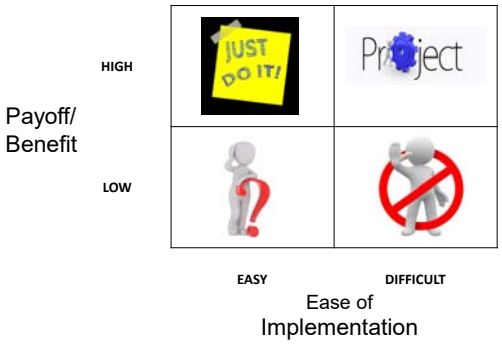
Commonwealth of Massachusetts, 2012; Hibbert et al., 2018; Hettinger et al., 2013 [56]

Hierarchy of Interventions

Weak	Example
Counseling / Discipline	Discussion with individual employee and note in personnel file
Discussions in meetings	General mention in monthly staff meeting (*daily safety huddle reminders might be more helpful)
Notifications (email, communication book)	Notice to “do better.” Decreased opportunity for it to be personalized or have questions answered.
Warnings	Punitive discussion and file note
Double-checks	Double checks of medication dosage prior to administration
Training without practice or competency assessment	Float staff expected to “see one, do one”

Commonwealth of Massachusetts, 2012; Hibbert et al., 2018; Hettinger et al., 2013 [57]

Priority Payoff Matrix



Adapted from GE Medical Systems

58

Step Four: Determine System Improvements

- Consult the literature, evidence-based guidelines, best practices
- Consult similar hospitals…benchmark
- Desired improvements must be within the organization's control
- Address the system sources of error WITHOUT adding complexity
- Be internally consistent…

NCPS

59

Step Five:
The Action Plan
RCA^2
Root Cause Analysis and **ACTION**

NCPS

60

Step Five: Create an Action Plan

- Confirm WHAT needs to be done and HOW to implement
  - Pilot change to refine and test effectiveness before launching system-wide
- Determine WHERE to implement
  - All areas where applicable; not just where event occurred
- Determine WHO will be accountable
- Determine WHEN to implement

NCPS 61

Step Five: The Action Plan

- Determine HOW to measure effectiveness of actions… how will we know we are safer?
  - Structure (equipment, training)
  - Process…what we do with structures (secret shopper for observation)
  - Outcomes…counts, rates
- Decide WHEN to measure
  - Weekly, monthly, quarterly, annually?

NCPS 62

Action Plan

What	Who	When	Follow-up	Measure
Action Item	Name/Title	Date started/ implemented	When/how we will check	How will we measure effectiveness?
Standardize equipment and process for sponge counts	George Jetson, Surgery Director	January 1, 2019	February 1, 2019 July 1, 2019 January 1, 2020	• STRUCTURE: % of procedure rooms with standardized equipment • STRUCTURE: % of staff trained with practice and passed competency • PROCESS: % staff compliance with new process on audit • OUTCOME: # of retained sponges

NCPS 63

Communicate

- Purpose: Close the loop with front-line so they know, "Mistakes have led to positive changes here."
- Target Audience: Who needs to know system changes?
  - FRONT LINE, PATIENT/FAMILY
  - Quality/safety committee, med staff, those involved in RCA, Board…
- Sender: Who will communicate system changes?
- Mode: How will communication occur?
  - Email, communication book, shift change, mandatory meeting, Traffic light board
- Example: traffic light board to track improvements and progress.
- Report event and RCA results to NCPS

NCPS 64

Traffic Light Report

- Green: project complete
- Yellow: in progress
- Red: on hold or can't be done – list reasons why

Action Item	Progress
Sponge accounting systems in place	Blue backed sponge holders in every procedure room 12/15/18
Action Item	**Progress**
Staff training on standardized sponge accounting process	Training with practice and competency completed for 5 of 10 teams 12/15/18
Action Item	**Impediment**
OR Rules Sign in every procedure room	No room on wall for signs – re-evaluating plan on 1/1/2019

NCPS 65

5. Interpret and apply RCA concepts in a practice scenario

Katherine Jones, PT, PhD

President Board of Directors, Nebraska Coalition for Patient Safety

Gail Brondum, LPN, BS

Executive Director, Nebraska Coalition for Patient Safety

NCPS 66

Scenario Agenda

- Assign roles
  - Primary day nurse
  - CNA
  - DON
  - Night nurse
  - Fall risk reduction team leader
  - Director of PT
- Split observers into 7 groups to monitor conversation for specific root cause categories
- Facilitate mock sensemaking conversation
  1. Review timeline
  2. Understand what happened
  3. Identify root causes:
     - ✓ categorize notes from observers and mock participants
     - ✓ Develop causal statements
  4. Create WWW

RCA or NOT?

- Is our fall event a "close call"?
- What are the reasonable worst case outcomes for
  - Patients who are not transferred using gait belts?
  - Staff who do not use gait belts to transfer patients?

Fill in the blanks…

Error: An assisted fall resulted in harm to patient and staff.

The lack of_____ resulted in_____, which increased the likelihood that an assisted fall would result in harm to the patient and staff.

If it doesn't fit…use the parking lot.

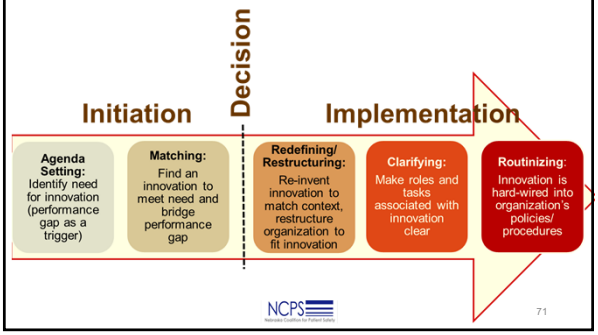
Strategies for Success

- Establish open, learning environment; sensemaking conversation among equals
  - Symbolic—Place name badges in a bowl
- Initial RCA on near miss to gain confidence
  - High Volume, High Risk Nonharmful events and Near Misses…consider Aggregate RCA
- Sr. Leader may kick off to show support; leave and re-engage during action planning
- Verify that you have reduced risk (Survey of staff perceptions included in ReCASTing RCA)

NCPS 70

Strategies for Success

- Manage the action plan as an organizational change



NCPS 71

Strategies for Success: Just Culture

- Use Just Culture principles
- Reckless behavior, stop RCA and refer to human resources
- Those involved in discipline DO NOT facilitate RCA
- Team is truly interprofessional
- Train multiple people to facilitate RCA
- Consider external facilitator for sensitive events

NCPS 72

Barriers to Effective RCA^2

- Limited fact finding (garbage in – garbage out)
- End prematurely (convenient root cause found, which matches pre-conceived biases)
- Actions not causally linked to root causes
- Limited use of evidence to support action plan
- NOT recognizing that each action may be an innovation that must be implemented in stages
- Organization seeks top-down command and control vs. bottom-up sensemaking
  - Focus on report completion; not learning and communicating
  - Reports sit on desks awaiting perfect consensus

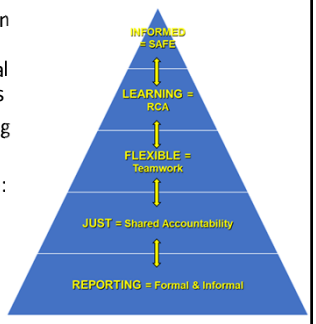
(Hibbert et al., 2018; Nicolini et al., 2011)

NCPS

73

Summary RCA^2

- Sensemaking conversation to identify and remove sources of social/technical errors in complex systems
- Key process in establishing a learning culture
- Focus of leaders' who are:
  - **AWARE** of RCA role in culture
  - Ensure staff have **ABILITY** to complete analysis and **ACTION**
  - Hold staff **ACCOUNTABLE**

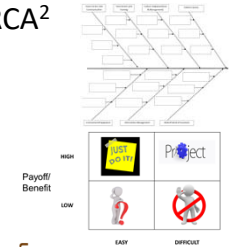


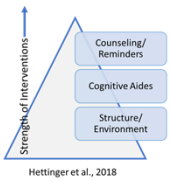
NCPS

74

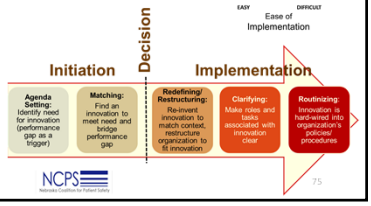
Summary RCA^2

- Five-step process completed by a team of investigators or a facilitator-led sensemaking conversation
- Five-step process supported by multiple tools
- Success requires strong actions implemented in stages as organizational innovations





Hettinger et al., 2018



NCPS

75

"Progress would stem not from conducting bigger and better RCAs, but rather from repositioning RCA investigations as opportunities to trigger local and organisational learning."—
Nicolini et al., 2011, p.224.

References

Amo MF. Root cause analysis. A tool for understanding why accidents occur. *Balance*. 1998;2:12-5.

Battles JB et al. Sensemaking of Patient Safety Risks and Hazards. HSR. 2006; 41 (Part II):1555-1575.

Braithwaite J et al., Towards safer, better healthcare: harnessing the natural properties of complex sociotechnical systems. Qual Saf Health Care 2009;18:37–41.

Commonwealth of Massachusetts Board of Registration in Medicine Quality and Patient Safety Division. Assessing The Strength of Health Care Facility Improvement Actions. http://www.mass.gov/eohhs/docs/borim/physicians/pca-notifications/assessing-strength.pdf

Hettinger AZ et al. An Evidenced-Based Toolkit for the Development of Effective and Sustainable Root Cause Analysis System Safety Solutions. J Healthc Risk Manag. 2013;33:11–20.

Hibbert PD et al. Are root cause analyses recommendations effective and sustainable? An observational study. International Journal for Quality in Health Care. 2018;30:124–131.

National Quality Forum (NQF). Safe Practices for Better Healthcare—2010 Update: A Consensus Report. Washington, DC: NQF; 2010.

Nicolini D et al., Policy and practice in the use of root cause analysis to investigate clinical adverse events: Mind the gap. Social Science & Medicine. 2011;73:217-225.

Outcome Engenuity. Causal Diagramming Tool—RCA Software. Accessed Oct. 23, 2018. https://www.outcome-eng.com/rca-software-download/

References

Reason, J. Managing the Risks of Organizational Accidents. Hampshire, England: Ashgate Publishing Limited; 1997.

The Joint Commission. Sentinel Event Policy. Accessed Oct. 23, 2018. https://www.jointcommission.org/sentinel_event_policy_and_procedures/

The Joint Commission. Framework for Root Cause Analysis and Corrective Actions. Accessed Oct. 23, 2018. https://www.jointcommission.org/framework_for_conducting_a_root_cause_analysis_and_action_plan/

VA National Center for Patient Safety. Root Cause Analysis (RCA) Step-by-Step Guide. Accessed Oct. 23, 2018. https://www.patientsafety.va.gov/docs/RCA_Step_By_Step_Guide_REV7_1_16_FINAL.pdf

VHA National Patient Safety Improvement Handbook. Accessed Oct. 23, 2018. https://www.patientsafety.va.gov/professionals/publications/handbook.asp

Wald H & Shojania KG. Root cause analysis. Evidence Report/Technology Assessment No. 43. In D.G. Shojania, et al. (Eds), Making health care safer: A critical analysis of patient safety practices. AHRQ Publications.