ROOT CAUSE ANALYSIS (RCA)
When, Where and How?

Deborah Aders, RN, MS, CIC
Learning Objectives

- To increase your understanding of the theory & application of a root cause analysis (RCA)
- To gain knowledge of the skills required to undertake effective RCAs
- To be able to utilize the tools and techniques demonstrated
Why RCA?

To err is Human
To cover up is unforgivable
To fail to learn is inexcusable

Sir Liam Donaldson

Hope is not a strategy…

Aiden Halligan
To err is human

Managing for Safety Using Just Culture, outcome engineering, Dallas, TX, www.outcome-eng.com, copyright 2005
Introduction to Root Cause Analysis: Understanding the Causes of Events, © 2001-2004 HealthInsight
When Should Root Cause Analysis be Performed?

- Significant or consequential events
- Repetitive human errors during a specific process
- Repetitive equipment failures during a specific process
- Performance is below desired standard
- Any patient safety/harm event
What is A Root Cause Analysis (RCA)
What is a RCA?

• A RCA looks for systems causes that go beyond the individuals who are involved

• It’s a methodology for finding and correcting the most important reasons (root causes) for problems on incidents from a systems perspective

• Events are rarely just the fault of one person doing the wrong thing
What a RCA is NOT

Used to Blame
Any One Person
Or Group
Root Cause Analysis

To be *effective, a RCA should:*

- Engage those involved in the original incident
- Gain the support of those who can make the changes
- Include development of actions aimed at improving processes and systems;
- Ensure there is a plan as to how those improvements will be monitored and evaluated
- Be well documented (including all the activity from the point of identification to the process of evaluation).
Root Cause Analysis

To be *credible*, a *RCA* should:

- Be closely supported by the leadership of the organization
- Involve those closely associated with the process, system and the outcomes
- Be applied consistently and transparently according to organizational policies and procedures
- Incorporate current best practices
Basic elements of RCA investigation

- WHAT happened
  - Unsafe Acts
- HOW it happened
  - Human Behavior
- WHY it happened
  - Contributory Factors

Solution Development & Review of effectiveness (recurrence of PSI)

WHO did it is not the objective
How do I Start a RCA

“To address this mistake we must use root-cause analysis. I’ll begin by saying it’s not my fault.”
RCA Steps

Develop a core team that is invited to every RCA. For each meeting you may invite other participants depending on the type of issue being addressed

- May include care providers who were involved in event
- Subject matter expert
- Physician liaison if appropriate
Before the RCA Meeting

Assign:

• Who leads the meeting
• Who takes minutes
• Who provides patient information during the RCA and what information they are expected to share
• Who researches and shares applicable standards for care
• Who gathers data and evidence
• Who develops a timeline of events
The RCA Meeting

Items to be reviewed in the meeting:

• Reinforce the reason why we are undertaking a RCA
• Reinforce no blame, no finger pointing
• Review and clarify collected data including the circumstances surrounding the event
• Identify all contributing factors
• What was the impact of the problem or event
• Identify all other issues— not unusual to have multiple root causes
Contributing factors

Human causes
• people did something wrong, or did not do something that was needed. Human causes typically lead to physical causes (i.e., no one filled the brake fluid, which lead to the brakes failing)

Physical causes
• tangible, material items failed in some way (i.e., car’s brakes stopped working)

Organizational causes
• a system, process, or policy that people use to make decisions or do their work is faulty (i.e., no one person was responsible for vehicle maintenance, and everyone assumed someone else had filled the brake fluid)
Where to look for contributing factors

Tasks
  • policy procedures, guidelines

Environment and site conditions
  • weather, noise, air

Materials
  • equipment

Personnel
  • training, stress, fatigue, experience

Management
  • supervision, inspections, action plan follow-up
Useful Tools For Determining Root Cause are:

- The “5 Whys”
- Brainstorming
- Flow Charts / Process Mapping
- Cause and Effect Diagram
- Drill Down/Timeline
- Benchmarking (after Root Cause is found)

Some tools are more complex than others
The Five Whys


Real solution is found here
Example of Five Whys for Root Cause Analysis

**Problem** - Flat Tire

- Why? Nails on garage floor
- Why? Box of nails on shelf split open
- Why? Box got wet
- Why? Rain thru hole in garage roof
- Why? Roof shingles are missing
Why?
There is a delay in patients being moved from the emergency unit to the ward.

Why?
Because there are no more beds in the ward.

Why?
Because there are still patients waiting to be discharged.

Why?
Because they are waiting for their medication and discharge documentation.

Why?
Because the orderly has not delivered the prescription to the pharmacy and the patient’s file to the central records office.

Why?
Because they are waiting for the nursing manager to initiate the process.
“5 Whys” Example

• Why do you think the CAUTI occurred?
  ▫ The catheter was left in longer than needed
• Why?
  ▫ An order to remove it was not written
• Why?
  ▫ The nurse and doctor forgot to discuss the need for the catheter during rounds
• Why?
  ▫ Their rounding tool does not address urinary catheters
• Why?
  ▫ The tool was just revised and the urinary catheter daily assessment section was inadvertently deleted
Cause and Effect Diagram
Loading My Computer

MAN/WOMAN

- Cannot Answer Prompt Question
- Brain Fade

METHODS

- Not Following Instructions
- Inserted CD Wrong
- Instructions are Wrong

OTHER

- Power Interruption
- CD Missing
- Not Enough Free Memory
- Inadequate System

MATERIALS

- Bad CD
- Wrong Type CD
- Graphics Card Incompatible

MACHINERY

- Hard Disk Crashed

Cannot Load Software on PC
ED CAUTI Cause and Effect Diagram

**Patient Related Factors**
- Mobility
- Gender
- Co-morbid Conditions
- Urgent nature of ED care
- Availability of catheters with urimeters when needed
- Not always able to identify patients who will need urimeter when Foley inserted

**Caregiver Related Factors**
- Insertion technique; competence, time factors in ED
- Lack of awareness of the Impact of a CAUTI
- Improper Placement of Bag
- Unnecessary use not according to CDC indications
- Always insert Foley's for certain patients/diagnoses
- Don't always consider need for urimeter after pt leaves ED

**Hospital Environment**
- Patients on stretchers, fall risk when taking to rest room
- Few restrooms in ED
- Easier to manage ED patient with Foley
- Need for I&O in ED
- Contamination of spigot when emptying drainage bag
- Inconsistent use of securingment devices
- ICU SIR data
- ICU device utilization data

**Equipment/Material**
- ED Process/Methods
- Measurement

**Hospital Acquired CAUTI**
Actions and Outcomes

Obstacles that can derail the RCA team’s work

- Lack of information about exactly why things happened
- Too broad or too narrow a focus
- Frequently recurring events
- Events happen again before corrective action implemented

Ways to work through obstacles

- Collecting additional information through interviews with a broad range of staff, patients, and families
- Simulating the event
- Focusing on the situation at hand
- Focusing on what can be done to prevent a similar situation rather than becoming “hypnotized” by the event
- Researching what has been done in similar situations
Key principles of solution creation

Making it Easy To Do the Right Thing
Evaluate Solutions For:

- Effectiveness
- Ease of Implementation
- Will the solution prevent the event from happening again
- Potential Negative Effects – you don’t want your solution to cause other problems

Evaluate Solutions before you implement them
Risky Solutions to watch out for

• Applying solutions with no due date assigned
• Non acting solutions – they require more information before being implemented. These are action items, not solutions
• Solutions that begin with “re”
  ▫ example: re-train, re-write
• Overdependence on procedures - developing a new procedure should not be the first line of defense
RCA and accountability

Does looking at serious events from a systems perspective mean that there is no staff accountability?
Just culture

• A just culture recognizes that individuals should not be held accountable for system failings over which they have no control.

• A just culture does not tolerate intentional reckless behavior that places a patient in unjustifiable risk.
The behaviors we can expect

- Human error: inadvertent action; inadvertently doing other than what should have been done; a slip, lapse, mistake
- At-risk behavior: behavior that increases risk where risk is not recognized, or is mistakenly believed to be justified
- Reckless behavior: behavioral choice to consciously disregard a substantial and unjustifiable risk
DIGITAL CAMERA FOR SALE TO HELP PAY MEDICAL BILLS
How should we respond?

Human Error

Product of our current system design

Manage through changes in:

• Processes
• Procedures
• Training
• Design
• Environment

At-Risk Behavior

Unintentional Risk-Taking

Manage through:

• Removing incentives for at-risk behaviors
• Creating incentives for healthy behaviors
• Increasing situational awareness

Reckless Behavior

Intentional Risk-Taking

Manage through:

• Remedial action
• Disciplinary action

Managing for Safety Using Just Culture, Outcome Engineering, Dallas, TX, [www.outcome-eng.com](http://www.outcome-eng.com), copyright 2005
Remember:

Serious events are rarely the result of active failures
- Latent conditions that exist over time can lead to the alignment of holes in the barriers

Everything we do is tied to a process
- When serious events stem from a process deviation, we need to work to understand what led to process deviation before we can determine how to protect against a reoccurrence
Action Plan

• You may identify several root causes
• Suggestions for improvement should be discussed for each one
• By the end of the meeting a list of action items should be developed, with identified “champions” and a time line for completion
• Some items may need to be addressed by a smaller working group.
• Ensure Leadership at all levels ensure that corrective actions are implemented. or hospital administrators
RCA 2 Approach

- Those involved in the event are interviewed separately
- Team does not include any individuals involved
- Members include RCA facilitator, subject matter expert, leadership member, front line staff working in same area/process; other members familiar with systems and system-based mindsets
RCA2 Process

- Event
- Risk Prioritization
- What happened? Fact finding/flow diagram
- Development of casual statements
- Identification of solutions/corrective actions
- Implementation
- Measurement
- Feedback
Implement and Monitor

• Implement the recommended actions
  ▫ This can be done in phases/steps
• Ensure effectiveness by observing the solutions
  ▫ This provides actual viewing of the process
• Monitor for improvement and support of the actions taken
  ▫ Did the solution make a difference
Support and Follow-Up

- A high level of energy usually occurs after a successful RCA

- Staff are motivated to make identified changes
  - Provide resources to support them
  - Collect data to determine if the changes are effective
  - Share data with RCA participants
  - Celebrate successes!
Benefits of RCA

A successful RCA program:
• Increases collaboration and sharing of information
• Allocates resources to meaningful root causes
• Encourages accountability and follow-up on all levels
• Identifies solutions to share with other areas of your facility/system
• Promotes a culture of safety
Summary

• Placing blame on an individual when human error or poor system design is at the root will not prevent reoccurrence of a similar event

• Human errors are an inadvertent action—not an intentional reckless action

• To truly understand why things happened as they did, we need to keep pushing until we understand why the actions made sense at the time
“No matter how well equipment is designed, no matter how sensible regulations are, no matter how much humans can excel in their performance, they can never be better than the system that bounds them.”

Captain Daniel Maurino, Human Factors Coordinator
International Civil Aviation Organization
Thank you