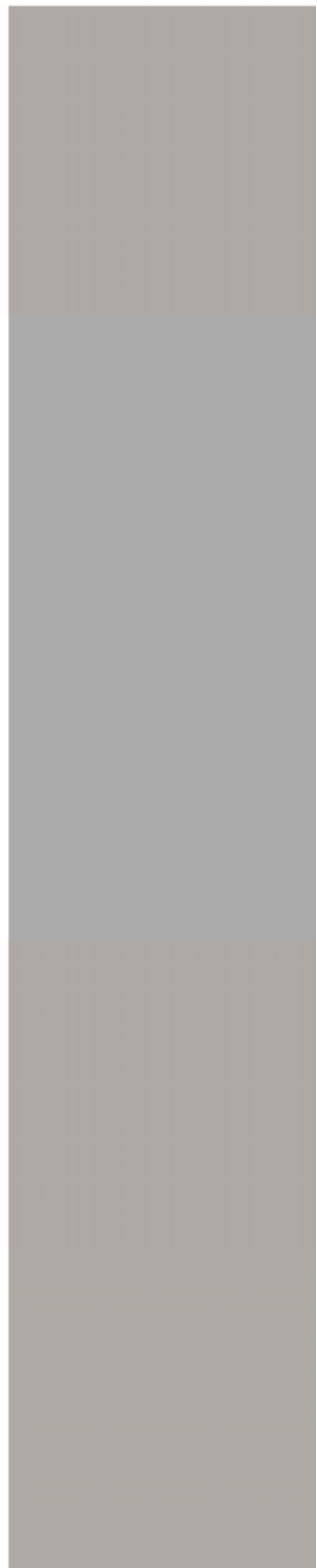




Root Cause Analysis Toolkit

2014 Quality Improvement Subcommittee



CALIFORNIA
ASSOCIATION OF
HEALTH FACILITIES



Root Cause Analysis Toolkit

The CAHF Quality Improvement Sub Committee has assembled this basic introduction to Root Cause Analysis (RCA) to help CAHF members understand this useful technique and use it regularly in their quality improvement activities. RCA is a team sport. At its most basic level, RCA is systematic brainstorming about the critical factors that are driving negative outcomes. To be effective, this brainstorming should always include the staff who are intimately involved in the process under review. We encourage you to use these materials to teach your staff to actively participate in the RCA process and to use a team approach that includes representatives from various disciplines in your centers. No one person has all the answers, but together, an effective team can solve almost anything.

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By Health Services Advisory Group (HSAG)

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Section One

Introduction to Root Cause Analysis – Understanding the Causes of Events
By Health Services Advisory Group (HSAG)

Introduction to Root Cause Analysis:
Understanding the Causes of Events

***Introduction to
Root Cause Analysis:
Understanding the
Causes of Events***

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Information for Health Care Improvement

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Health Services Advisory Group of California,
Inc.

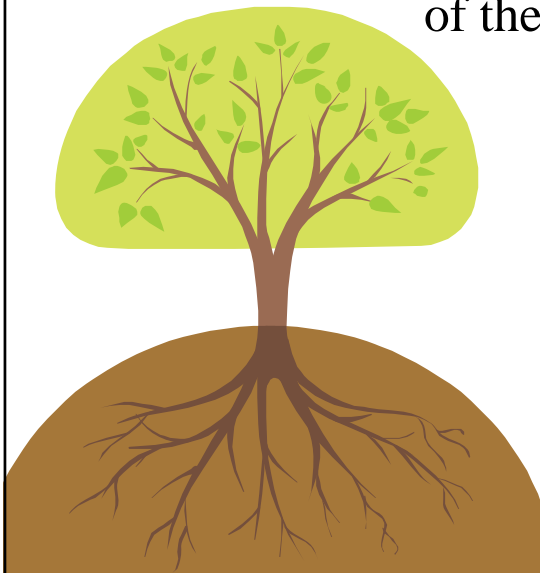
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Objectives

- Discuss how human factors impact causes of events.
- Learn of two root cause analysis (RCA) methodologies to assist with the implementation of the Quality Assurance & Performance Improvement (QAPI) initiative.
- Conduct an actual RCA using the “5-Whys” method.

Root Cause Analysis (RCA)

A way of looking at unexpected events and outcomes to determine **all** of the underlying causes of the events and recommend changes that are likely to improve them.

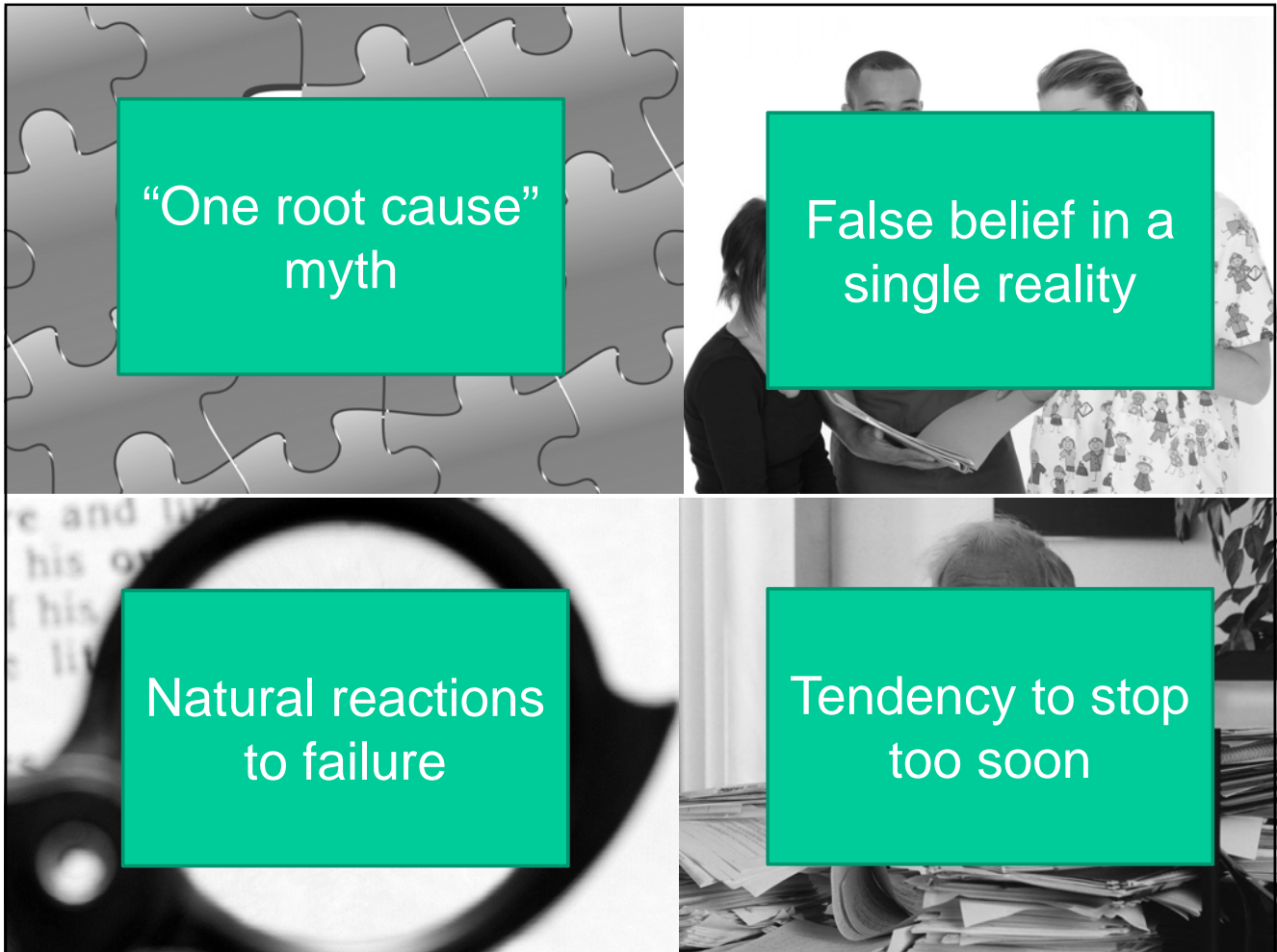


Why is Event Investigation Difficult?

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Introduction to Root Cause Analysis:
Understanding the Causes of Events



Reacting to Failure

Natural reactions to failure are:

- Retrospective—hindsight bias.
- Proximal—focus on the sharp end.
- Counter-factual—lay out what people could have done.
- Judgmental—determine what people should have done, the fundamental attribution error.



Stopping Too Soon

- Lack training in event investigation
 - We don't ask enough questions
 - Shallow understanding of the causes of events
- Lack resources and commitment to conduct thorough investigations



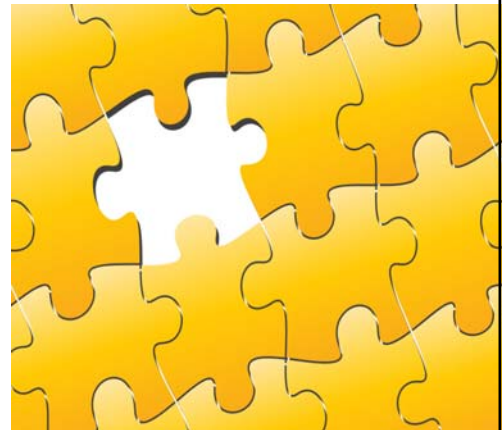
False Belief in Single Reality

- People perceive events differently.
- Common sense is an illusion.
 - Unique senses
 - Unique knowledge
 - Unique conclusions



The “One Root Cause” Myth

- There are multiple causes to accidents.
- Root Cause Analysis is not about finding the *one* root cause.
- It is necessary to consider process failures and human factors (errors).



New View of Human Error

- Human error is not the cause of events, it is a symptom of deeper troubles in the system.
- Human error is not the conclusion of an investigation, it is the beginning.
- Events are the result of multiple causes.

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Understanding the Causes of Events

Magnitude of the Problem



U.S. Marine Corps photograph by Cpl.M.M. Bravo

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Aviation and Healthcare Parallels

- Stressful working environment
- Need for highly-functioning teams
- Accurate and precise communication
- High costs associated with failure
- Mistakes may cause death

High Profile Accidents

The Tenerife collision took place on March 27, 1977, at 17:06:56, when two Boeing 747 airliners collided at Los Rodeos on the island of Tenerife, Canary Islands, Spain, killing 583 people. The accident had the highest number of fatalities (excluding ground fatalities) of any single accident in aviation history.

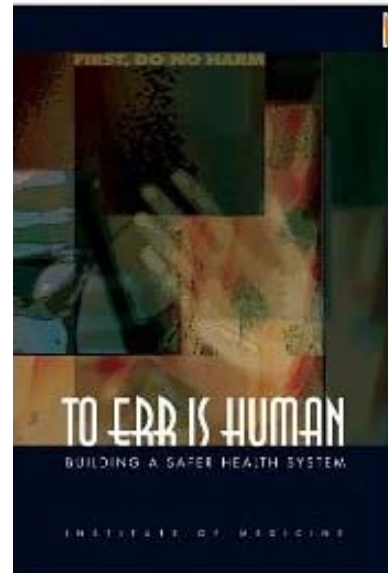
The aircrafts involved were Pan American World Airways Flight 1736, under the command of Captain Victor Grubbs, and KLM Royal Dutch Airlines Flight 4805, under the command of Captain Jacob Veldhuyzen van Zanten. KLM 4805, taking off on the only runway of the airport, crashed into the Pan Am aircraft which was taxiing in the opposite direction on the same runway.

Accident Findings

- No subordinate authority to stop the captain
- Crew members were hesitant to tell the captain something he did not want to hear
- Terminology was not consistent
- Multiple conversations at the same time made it difficult to hear

The Institute of Medicine (IoM) Report

- *To Err is Human*
 - “At least 44,000 Americans die each year as a result of medical errors ... results of the New York Study suggest that number may be as high as 98,000.”



IoM's Proposed Solution

Healthcare organizations should:

- Define leadership responsibility.
- Identify and learn from errors.
- Set performance standards.
- Implement safety systems.

To Err is Human: Building a Safer Health System
Institute of Medicine

Physician Reactions

Then:

“So what if the IoM report has the effect of exaggerating the magnitude of error in the public’s mind? So what if it appears condescending?”

First Do No Harm—To Err is Human
Effective Clinical Practice, Nov/Dec 2000

Now:

“If the error was apparent, 81 percent would disclose it; 50 percent said they would reveal less obvious mistakes. Overall, 56 percent of doctors chose responses that mentioned the event but not the error; 42 percent said they would fully disclose that the problem was the result of a mistake.”

The Washington Post
When a Doc Will Tell
Sept. 12, 2006; Page HE03

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“ ...providers are fundamentally good people and once **we measure and recognize that we are not as good as we would like to be**, our inherent professionalism will motivate us to change. Many outside observers of medicine are skeptical about that. They think that something more is needed to kick-start providers and hospitals into improvement—transparency, pay-for-performance, something more.”

Dr. Robert Wachter interviewing Dr. Atul Gawande
AHRQ Podcast

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Barriers That Impact Safety

- Unclear organizational values
- Fear of punishment
- Lack of systematic analysis of mistakes
- Complexity of the work
- Inadequate teamwork

Nursing Economics May-June 2006
Vol.24/No.3 Pg. 143

Successful Characteristics

- Safe, non-punitive environment
- Simple to use
- Timely and valuable
- Inexpensive
- Incentives for voluntary reporting
- Culture of openness
- Sustained leadership support

Leape, 2002

Lessons to be Learned

- Reward incident reporting.
- Focus on identifying system issues.
- Promote open communication.
 - Feedback
 - Education
- Involve everyone.
 - Nonjudgmental analysis



Near Miss

“A situation in which an event or omission or a sequence of events or omissions arising during clinical care fails to develop further, whether or not as the result of compensating actions, thus preventing injury to the patient.”



Cochrane Collaboration
Interventions to Increase Clinical Incident
Reporting in Health Care, 2008

Benefits of Near Misses

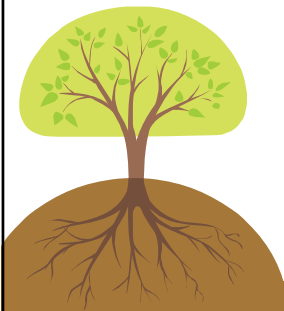
- Greater frequency of reporting
- Decreased barriers to data collection
- Limited liability
- System improvements are identified

Strategies for Near Misses

- Don't wait for a near miss to become a direct hit.
- Be proactive with a solution.
- Avoid blame behaviors.
- Share, share, share.

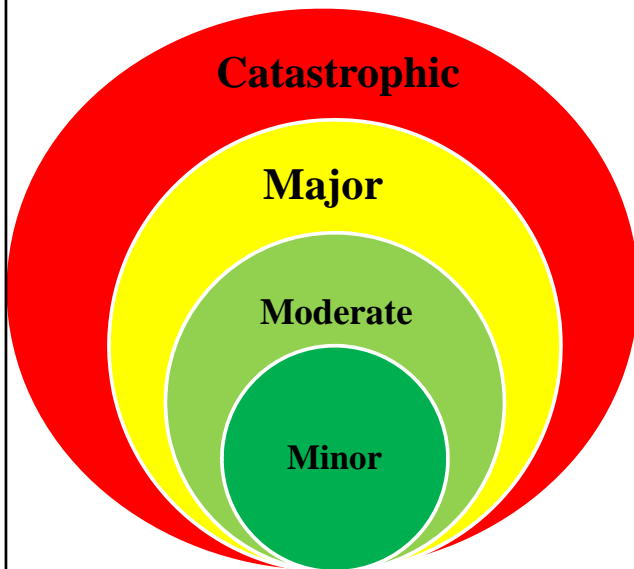
Root Causes

- A root cause is typically a finding related to a process or system that has potential for redesign to reduce risk.
- Active failures are rarely root causes.
- Latent conditions over which we have control are often root causes.

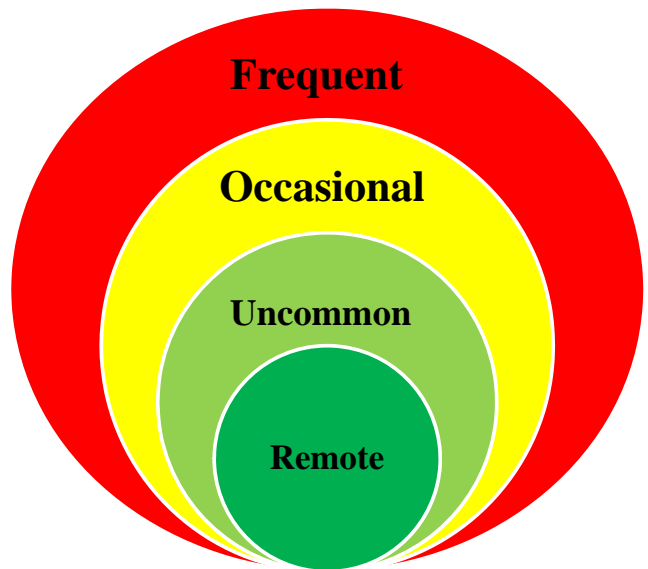


Analysis for Root Cause

SEVERITY



FREQUENCY



Analysis Should Include

- How did the incident happen?
- What factors contributed to the incident, and at what level?
- Were safety barriers surpassed?
- Were strategies for intervention identified prior to the event?

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Understanding the Causes of Events

Successive Layers of Defense

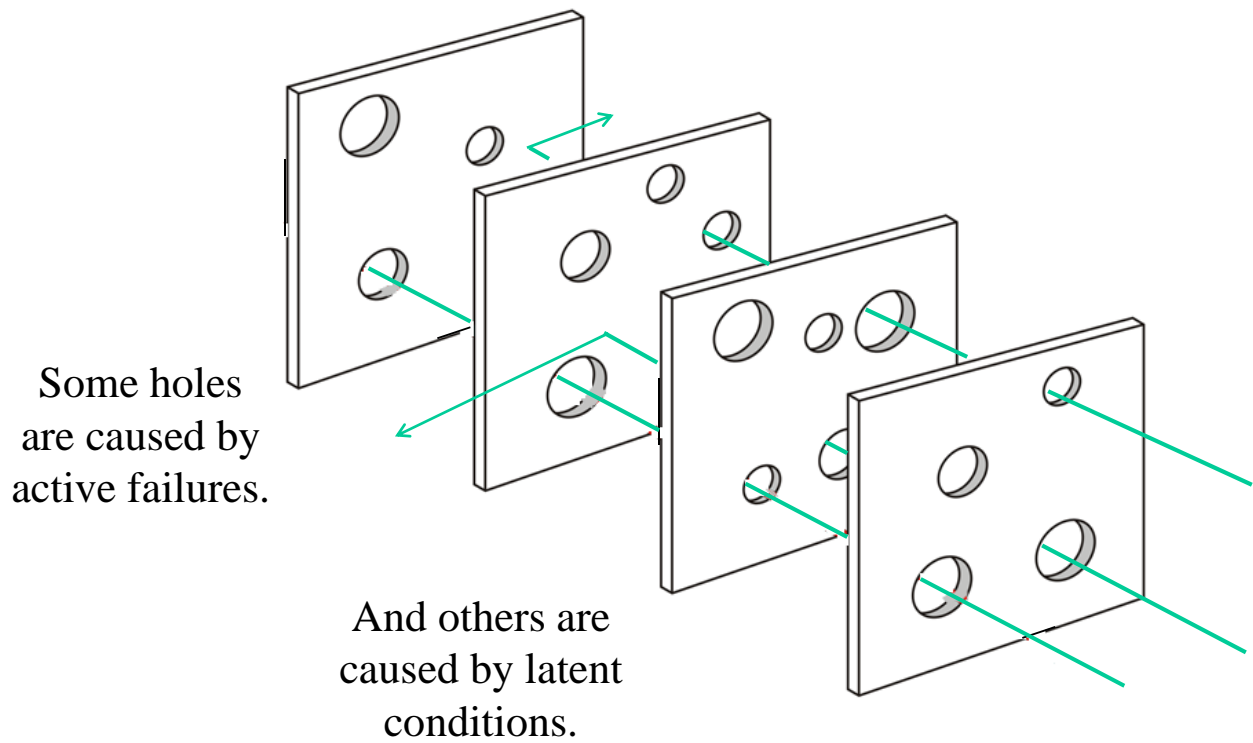


Image adapted from Wikimedia creative commons. Author: Davidmack.

Creating the Holes

Active failures:

- Errors and violations (unsafe acts) committed at the “sharp end” of the system
- Have direct and immediate impact on safety, with potentially harmful effects.

Latent conditions:

- Present in all systems for long periods of time
- Increase likelihood of active failures.

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Understanding the Causes of Events

“Latent conditions are present in all systems. They are an inevitable part of organizational life.”

—James Reason

Managing the Risks of Organizational Accidents

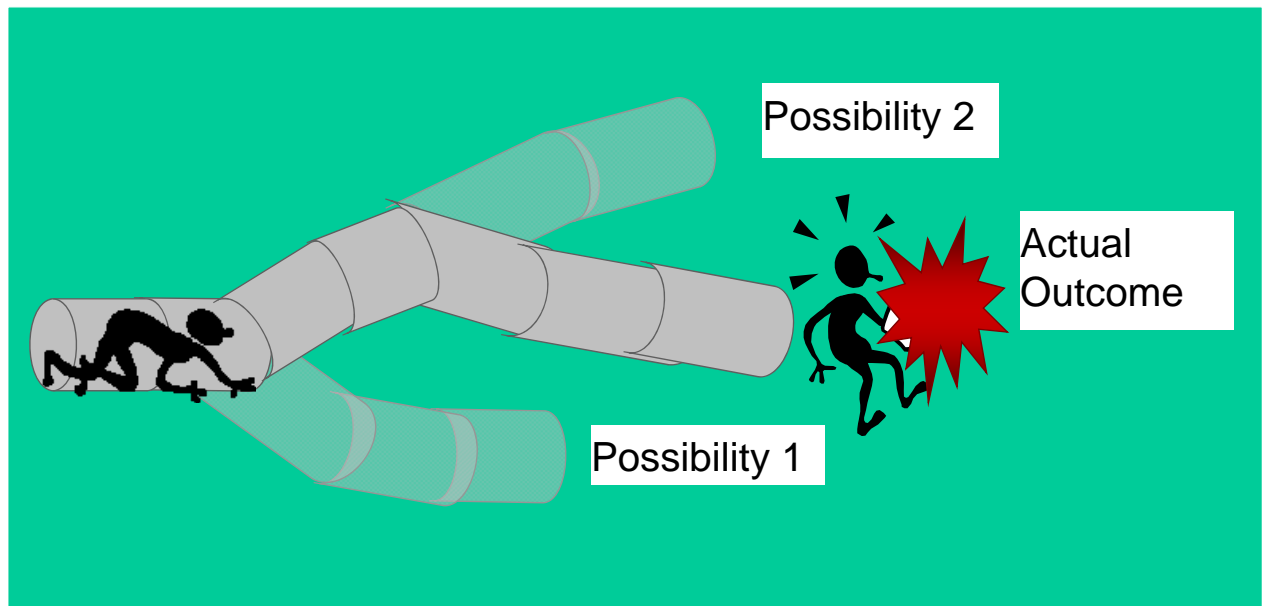
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Understanding the Causes of Events

“The point of a human error investigation is to understand why actions and assessments that are now controversial made sense to people at the time. You have to push on people’s mistakes until they make sense—relentlessly.”

—Sidney Dekker

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Getting Inside the Tunnel



Screen Beans® <http://www.bitbetter.com/>

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Outside the Tunnel

- Outcome determines culpability.
- “Look at this! It should have been so clear!”
- We judge people for what they did.



Inside the Tunnel

- Quality of decisions are not determined by outcome.
- Realize evidence does not arrive as revelations.
- Refrain from judging people for errors.

Lessons from the Tunnel

- We have not fully understood an event if we do not see the actors' actions as *reasonable*.
- The point of a human error investigation is to understand why people did what they did, not to judge them for what they did not do.

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Understanding the Causes of Events

QAPI RCA Examples



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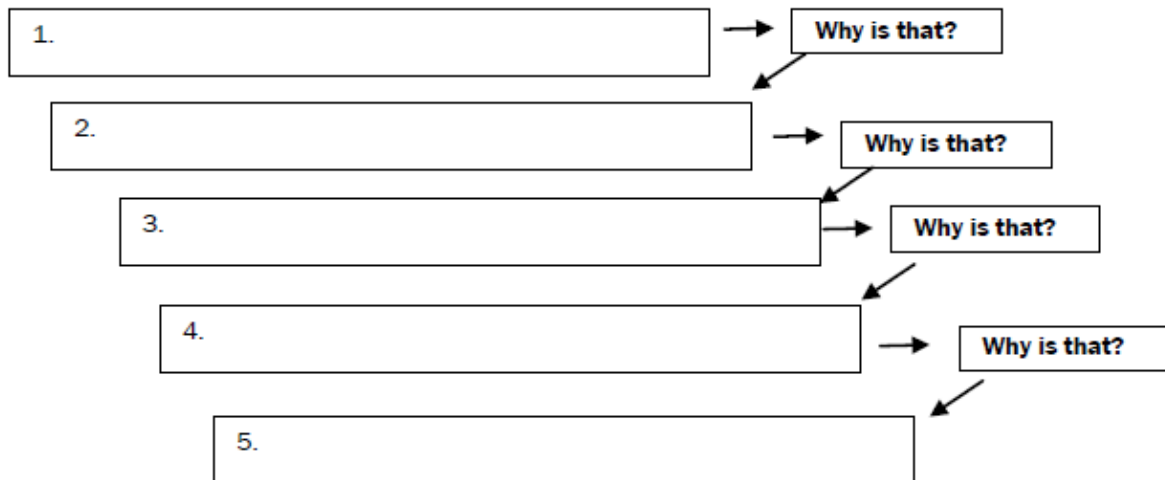
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Five Whys Method

The problem: _____.

Why does this occur?

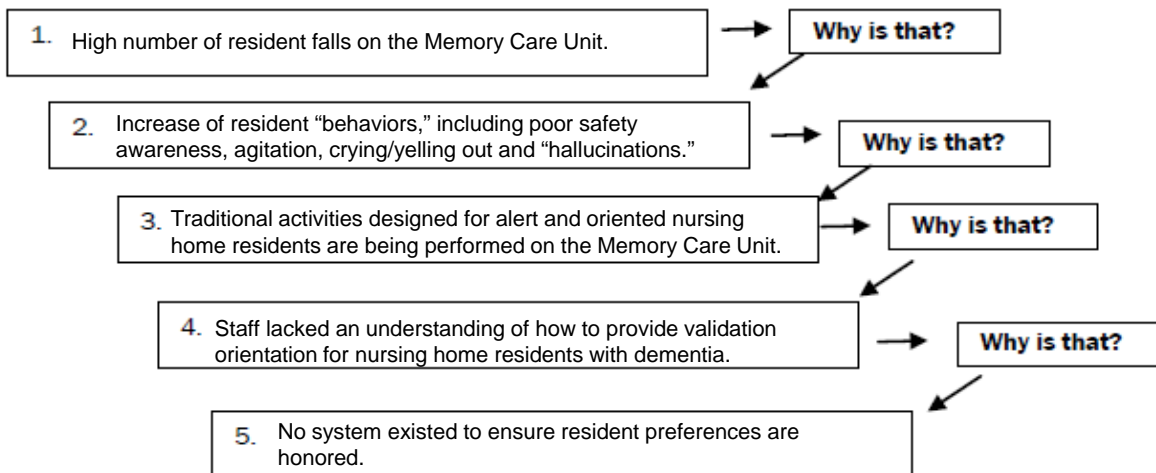


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5 Whys Method (cont'd)

The problem: Green Acres has a 35.4 percent long-stay antipsychotic quality-measure rate, compared to the state average of 20.0 percent.

Why does this occur?

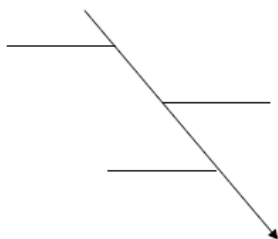


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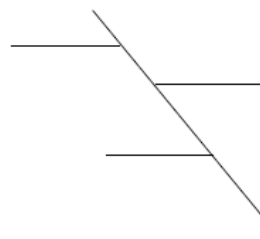
Cause-and-Effect (Fishbone) Diagram

Goal: _____

Category: _____



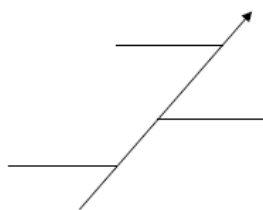
Category: _____



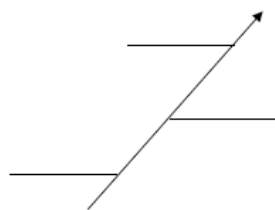
Problem:



Category: _____



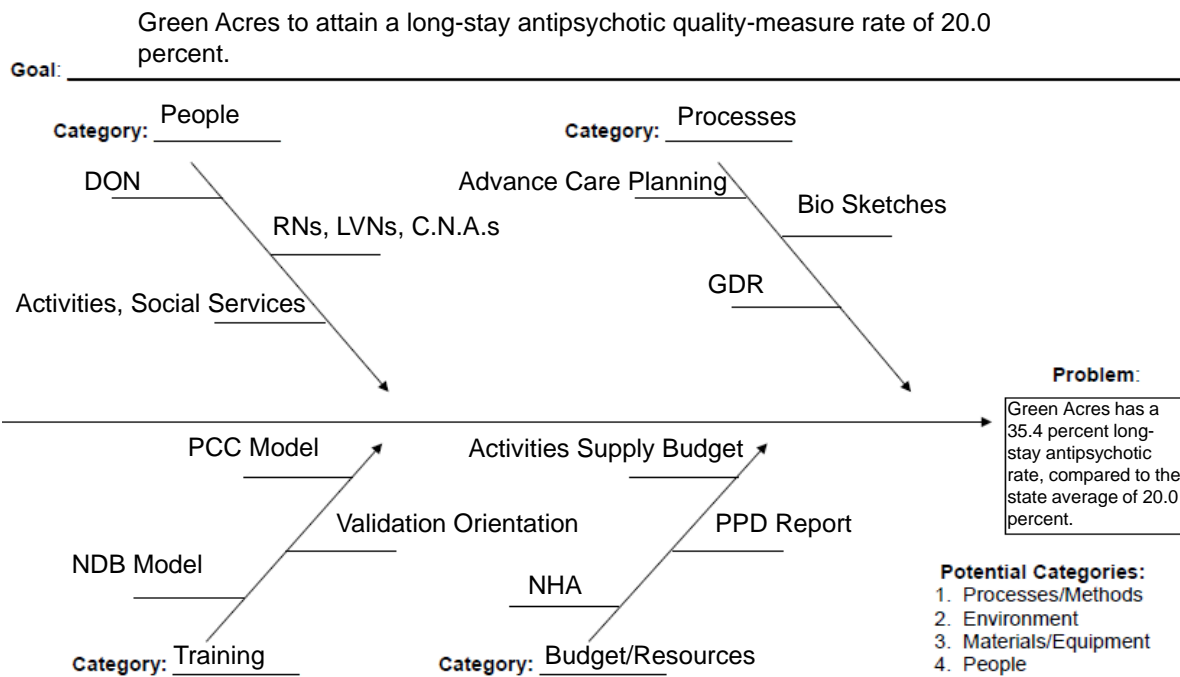
Category: _____



- Potential Categories:**
1. Processes/Methods
 2. Environment
 3. Materials/Equipment
 4. People

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Cause-and-Effect (Fishbone) Diagram (cont'd)

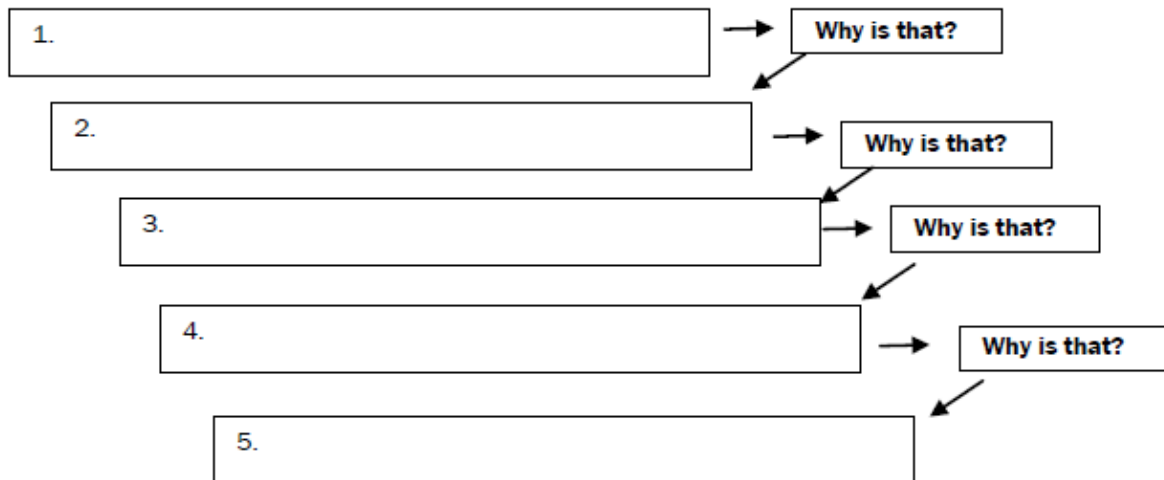


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Understanding the Causes of Events

Five Whys Method Group Exercise

The problem: _____.

Why does this occur?



Summary

- Adopt a new view of human error.
- Events are the result of many causes.
- Active failures and latent conditions create holes in our system's defenses.
- Root causes are causes with potential for redesign to reduce risk.
- Active failures are rarely root causes, latent conditions are often root causes.
- Getting inside the tunnel will help us understand why events occur.

Summary *(cont'd)*

...and get ready for QAPI by starting to use the “5-Whys” and fishbone diagram models when conducting RCA!

Introduction to Root Cause Analysis:
Understanding the Causes of Events



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We convene providers, practitioners, and patients to build and share knowledge, spread best practices, and achieve rapid, wide-scale improvements in patient care; increases in population health; and decreases in healthcare costs for all Americans.

www.hsag.com

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Section Two

Tools

Directions: Brainstorming, Affinity Grouping, and Multi-voting are approaches for generating, categorizing, and choosing among ideas from a group of people. Using these techniques encourages every person within the group to contribute, instead of just one or two. They spark creativity in group members as they listen to the ideas of others and generate a substantial list of ideas, rather than just the few things that first come to mind. Finally, the techniques allow a group of people to choose among ideas or options thoughtfully.

The following descriptions of Brainstorming, Affinity Grouping and Multi-voting are intended to be used by QAPI teams when ideas are needed and decisions need to be made.

Brainstorming

Brainstorming is an idea-generation tool designed to produce a large number of ideas through the interaction of a group of people.

1. The session leader should clearly state the purpose of the brainstorming session and lay out the ground rules, as they are discussed below.
2. Participants call out one idea at a time, either going around the group of people in turn, which structures participation from everyone, or at random, which may favor greater creativity. Another option is to begin the brainstorming session by going in turn and after a few rounds open it up to all to call out ideas as they occur.
3. Refrain from discussing, complimenting, criticizing, or evaluating ideas as they are presented. Consider every idea to be a good one. Aim for many ideas in a short amount of time. The quantity of ideas is what matters; evaluation of the ideas and their relative merit comes later. This tool is designed to get as many ideas generated in a short period of time as possible. Discussing ideas may lead to premature judgment and slow down the process.
4. Record all ideas on a flip chart, or on self-adhesive notes so that all group members can see them.
5. Build on and expand the ideas of other group members. Encourage creative thinking.
6. When generating ideas in turn, let participants pass if an idea does not come to mind quickly or if the participant does not have something to share at that time.
7. Keep going when the ideas slowdown, reach for less obvious ideas to create as long a list as possible. Do not cut off the flow of ideas.
8. After all ideas are listed, clarify each one and eliminate exact duplicates.
9. Resist the temptation to “lump” or group ideas. Combining similar ideas will come later (see Affinity Grouping).

Examples of topics when brainstorming might be helpful in nursing homes:

- Identifying ways to involve direct care staff in QAPI
- Identifying ways to address the identified root cause of a problem that has occurred or is occurring
- Identifying ways to be more welcoming to new staff or to new residents
- Identifying ways to promote more a more restful night's sleep for residents
- Identifying ways that residents and families could be involved in QAPI

Affinity Grouping

Affinity Grouping is a brainstorming method in which participants organize their ideas and identify common themes.

1. Write ideas on individual cards or adhesive notes (see directions for Brainstorming).
2. Randomly place cards on a table or place notes on flip chart paper taped to the wall.
3. Without talking, each person looks for two cards or notes that seem to be related and places these together, off to one side. Others can add additional cards or notes to a group as it forms or reform existing groups. Set aside any cards or notes that become controversial.
4. Continue until all items have been grouped (or set aside). There should be fewer than 10 groupings.
5. Now discuss the groupings as a team. Generate short, descriptive sentences that describe each group and use these as title cards or notes. Avoid one- or two-word titles.
6. Items can be moved from one group to another if a consensus emerges during the discussion.
7. Consider additional brainstorming to capture new ideas using the group titles to stimulate thinking.

Multi-voting

Multi-voting is a structured series of votes by a team, in order to narrow down a broad set of options to a few.

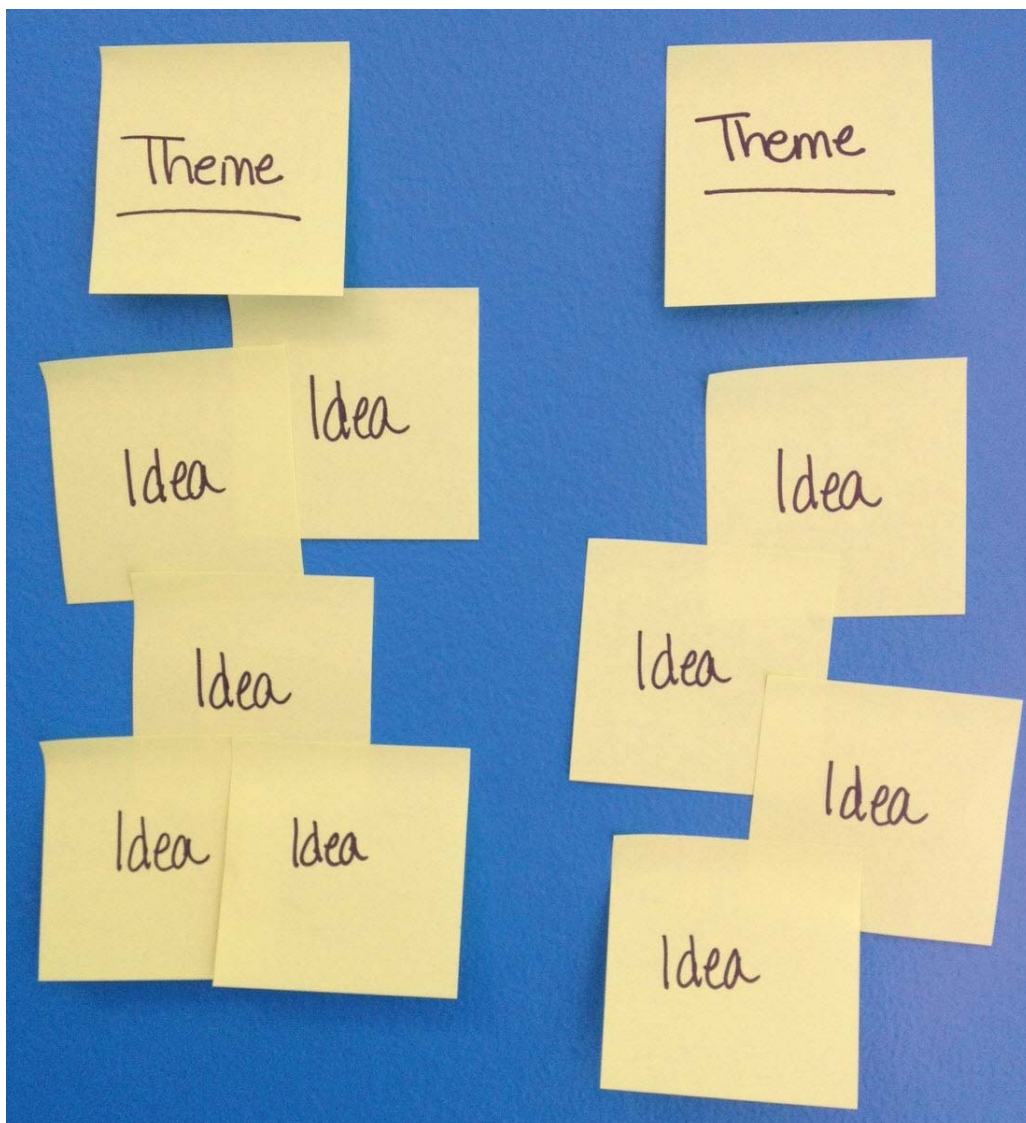
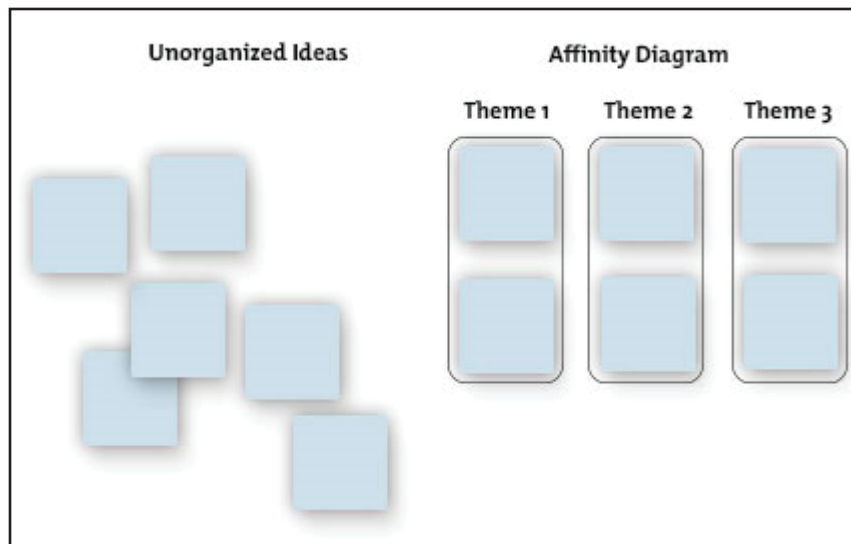
1. Generate a list of items (see directions for Brainstorming).
2. Combine similar items into groups that everyone agrees on (see directions for Affinity Grouping).
3. Number each item.

4. Each person chooses one-third of the items. This voting can be done in a number of ways: a) each person submits their votes privately to the person who will tally the votes, b) each person shares their votes publicly with the group and with the person who will tally the votes, or c) each person marks their choices from the list of items that are displayed on wall charts with an "X" or colored dot – this displays the results instantly.
5. Tally votes.
6. Eliminate items with few votes. The table below will help you determine how to eliminate items:

Group size (number of people)	Eliminate items with less than "x" votes
4 to 5	2
6 to 10	3
10 to 15	4
15 or more	5

If a decision is clear, stop here. Otherwise, repeat the multi-voting process with remaining items, as necessary.

AFFINITY DIAGRAM



Overview: Root cause analysis is a structured team process that assists in identifying underlying factors or causes of an adverse event or near-miss. Understanding the contributing factors or causes of a system failure can help develop actions that sustain the correction.

A cause and effect diagram, often called a “fishbone” diagram, can help in brainstorming to identify possible causes of a problem and in sorting ideas into useful categories. A fishbone diagram is a visual way to look at cause and effect. It is a more structured approach than some other tools available for brainstorming causes of a problem (e.g., the Five Whys tool). The problem or effect is displayed at the head or mouth of the fish. Possible contributing causes are listed on the smaller “bones” under various cause categories. A fishbone diagram can be helpful in identifying possible causes for a problem that might not otherwise be considered by directing the team to look at the categories and think of alternative causes. Include team members who have personal knowledge of the processes and systems involved in the problem or event to be investigated.

Directions:

The team using the fishbone diagram tool should carry out the steps listed below.

- Agree on the problem statement (also referred to as the effect). This is written at the mouth of the “fish.” Be as clear and specific as you can about the problem. Beware of defining the problem in terms of a solution (e.g., we need more of something).
- Agree on the major categories of causes of the problem (written as branches from the main arrow). Major categories often include: equipment or supply factors, environmental factors, rules/policy/procedure factors, and people/staff factors.
- Brainstorm all the possible causes of the problem. Ask “Why does this happen?” As each idea is given, the facilitator writes the causal factor as a branch from the appropriate category (places it on the fishbone diagram). Causes can be written in several places if they relate to several categories.
- Again asks “Why does this happen?” about each cause. Write sub-causes branching off the cause branches.
- Continues to ask “Why?” and generate deeper levels of causes and continue organizing them under related causes or categories. This will help you to identify and then address root causes to prevent future problems.

Tips:

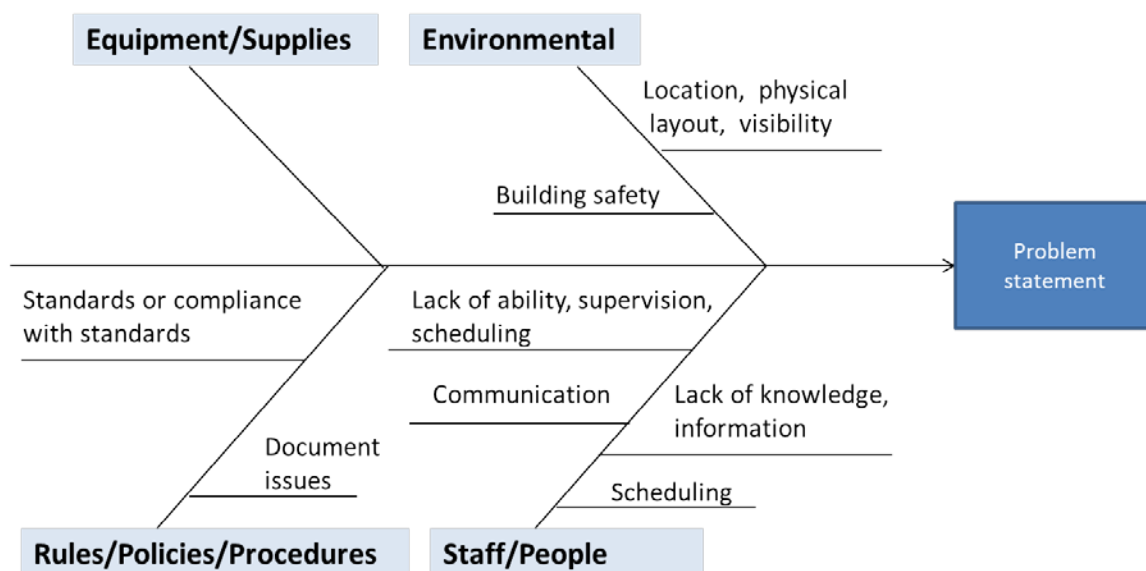
- Use the fishbone diagram tool to keep the team focused on the causes of the problem, rather than the symptoms.
- Consider drawing your fish on a flip chart or large dry erase board.
- Make sure to leave enough space between the major categories on the diagram so that you can add minor detailed causes later.
- When you are brainstorming causes, consider having team members write each cause on sticky notes, going around the group asking each person for one cause. Continue going through the rounds, getting more causes, until all ideas are exhausted.

Disclaimer: Use of this tool is not mandated by CMS, nor does its completion ensure regulatory compliance.

- Encourage each person to participate in the brainstorming activity and to voice their own opinions.
- Note that the “five-whys” technique is often used in conjunction with the fishbone diagram – keep asking why until you get to the root cause.
- To help identify the root causes from all the ideas generated, consider a multi-voting technique such as having each team member identify the top three root causes. Ask each team member to place three tally marks or colored sticky dots on the fishbone next to what they believe are the root causes that could potentially be addressed.

Examples:

Here is an example of the start of a fishbone diagram that shows sample categories to consider, along with some sample causes.

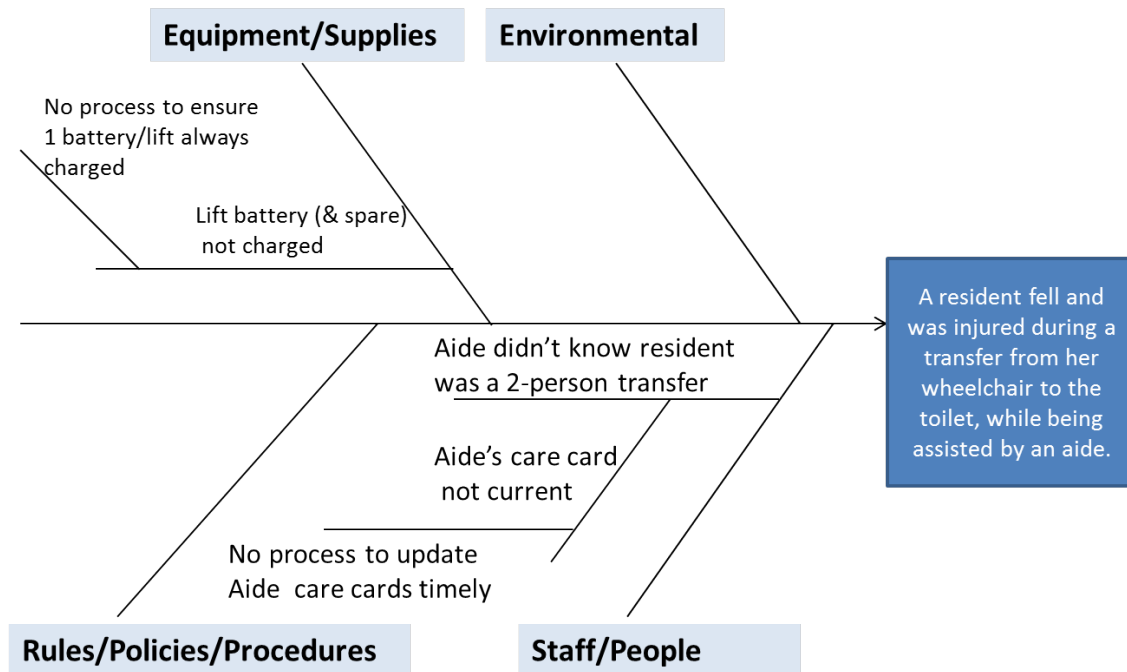


Here is an example of a completed fishbone diagram, showing information entered for each of the four categories agreed upon by this team. Note, as each category is explored, teams may not always identify problems in each of the categories.

Facts gathered during preliminary investigation:

- Time of fall: change of shift from days to evenings
- Location of fall: resident’s bathroom
- Witnesses: resident and aide
- Background: the plan of care stipulated that the resident was to be transferred with two staff members, or with one staff member using a sit-to-stand lift.
- Information from interviews: the resident was anxious and needing to use the bathroom urgently. The aide was helping the resident transfer from her wheelchair to the toilet, without using a lift, and the resident fell, sustaining an injury. The aide stated she did not use the lift because the battery was being recharged, and there was no extra battery available. The aide stated she understood that the resident could be transferred with assist of one.
-

With this information, the team proceeded to use the fishbone diagram to better understand the causes of the event.



The value of using the fishbone diagram is to dig deeper, to go beyond the initial incident report, to better understand what in the organization's systems and processes are causing the problem, so they can be addressed.

In this example, the root causes of the fall are:

- There is no process in place to ensure that every lift in the building always has a working battery. (One battery for the lift on this unit is no longer working, and the other battery was being recharged.)
- There is no process in place to ensure timely communication of new care information to the aides. (New transfer information had not yet been conveyed to the aide. The aide's "care card" still indicated transfer with assist of one for this resident.)

The root causes of the event are the underlying process and system problems that allowed the contributing factors to culminate in a harmful event. As this example illustrates, there can be more than one root cause. Once you have identified root causes and contributing factors, you will then need to address each root cause and contributing factor as appropriate. For additional guidance on following up on your fishbone diagram findings, see the [Guidance for Performing RCA with Performance Improvement Projects tool](#).

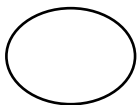
Overview: Performance Improvement Project (PIP) teams frequently must study an existing or new process in order to better understand each step and identify where improvements can be made. A flowchart is a tool that allows you to break any process down into individual events or activities and shows the logical relationships between them. Flowcharting is often used by PIP teams when conducting root cause analysis (RCA) and/or failure mode effects analysis (FMEA) (See [Guidance for Performing RCA with PIPs](#), and/or [Guidance for Performing FMEA with PIPs](#)).

A flowchart:

- Facilitates the team's common understanding of the steps in a process
- Highlights decision points and decision outcomes
- Helps a team understand whether a process occurs in one or multiple ways
- Promotes system-thinking about how the work is made up of interacting steps
- Provides visualization of complexity, rework, and problem areas; this insight can suggest where simplification, elimination of unnecessary steps, and standardization may be possible
- Enables comparison of the way the process actually occurs with the planned or ideal flow

How do you develop a flowchart?

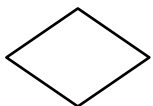
Flowcharts are diagrams that use shapes to show the types and flow of steps in a process. The shapes represent different types of steps or actions.



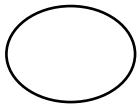
= beginning and end of a process



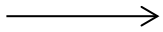
= a task or activity performed in the process



= a decision point (yes/no)



= beginning and end of a process



= direction or flow of the process

To draw the flow chart, brainstorm the steps in the process, and list them in the order they occur. Ask questions such as "What really happens next in the process?" and "Does a decision need to be made before the next step?"

Work through your whole process, showing actions and decisions in the order they occur, linking these together using arrows to show the flow of the process. Decisions are represented as diamonds and reflect a condition that impacts the process (e.g., if yes, then...; if no, then...). At each decision diamond, draw an arrow for each decision outcome. Typically there are two decision outcomes such as, yes/no or true/false. Continue charting the process as it would be performed as a result of the decision.

If you find that your process occurs in multiple ways; i.e., different people or units do things differently, you may want to flow chart the process in each of the different ways it occurs. This can help you to understand what, when, and why variation is occurring, and informs any process improvement changes you plan.

Finally, review your flowchart. Work through each step asking your team if you have correctly represented the sequence of actions and decisions involved in the process. And then (if you're looking to improve the process) look at the steps identified and think about whether work is duplicated, whether other steps should be involved, where gaps or breakdowns occur, where you can make improvements in your process.

Tips:

- When developing a flowchart, include people with personal knowledge of the process being discussed.
- Many teams find it easy to flowchart on large poster size sheets, using sticky notes for process steps, or on white boards. This allows you to move steps around and add steps as you define the process.

Overview: Root cause analysis is a structured team process that assists in identifying underlying factors or causes of an event, such as an adverse event or near –miss. Understanding the contributing factors or causes of a system failure can help develop actions that sustain corrections.

The Five Whys is a simple problem-solving technique that helps to get to the root of a problem quickly. The Five Whys strategy involves looking at any problem and drilling down by asking: "Why?" or "What caused this problem?" While you want clear and concise answers, you want to avoid answers that are too simple and overlook important details. Typically, the answer to the first "why" should prompt another "why" and the answer to the second "why" will prompt another and so on; hence the name Five Whys. This technique can help you to quickly determine the root cause of a problem. It's simple, and easy to learn and apply.

Directions: The team conducting this root cause analysis does the following:

- Develops the problem statement. (See Step 1 of Guidance for RCA for additional information on problem statements.) Be clear and specific.
- The team facilitator asks why the problem happened and records the team response. To determine if the response is the root cause of the problem, the facilitator asks the team to consider “If the most recent response were corrected, is it likely the problem would recur?” If the answer is yes, it is likely this is a contributing factor, not a root cause.
- If the answer provided is a contributing factor to the problem, the team keeps asking “Why?” until there is agreement from the team that the root cause has been identified.
- It often takes three to five whys, but it can take more than five! So keep going until the team agrees the root cause has been identified.

Tips:

- Include people with personal knowledge of the processes and systems involved in the problem being discussed.
- Note that the Five Whys technique may not always help you to identify the root cause. Another technique you might consider is the fishbone diagram. The fishbone diagram forces you to think broadly across various categories that could be causing or contributing to the problem (See How to Use the Fishbone Tool for Root Cause Analysis tool).

Problem statement	One sentence description of event or problem
Why? →	
Why? →	
Why? →	
Why? →	
Why? →	
Root Cause(s)	<ol style="list-style-type: none"> 1. 2. 3. <p>To validate root causes, ask the following: If you removed this root cause, would this event or problem have been prevented?</p>

Example:

Here is an everyday example of using the Five Whys to determine a root cause:

Problem statement – your car gets a flat tire on your way to work.

1. Why did you get a flat tire?
 - You ran over nails in your garage
2. Why were there nails on the garage floor?
 - The box of nails on the shelf was wet; the box fell apart and nails fell from the box onto the floor.*
3. Why was the box of nails wet?
 - There was a leak in the roof and it rained hard last night. (Root cause=leak in the roof)

*IF YOU STOPPED HERE AND “SOLVED” THE PROBLEM BY SWEEPING UP THE NAILS, YOU WOULD HAVE MISSED THE ROOT CAUSE OF THE PROBLEM.

Section Three

Case Studies

A CASE OF MISSING LAUNDRY

At Focused Health and Happiness Care Center, the resident and family satisfaction survey results consistently identified missing laundry as an area that triggered low satisfaction scores for the last 3 years. The administrator had the DSD in service all laundry and direct care staff on the importance of handling resident's personal clothing in a careful manner while following the procedures of inventory, labeling, sorting and returning personal clothing items to their rightful owners. This training was done each year for two years after receiving the satisfaction report. Despite these annual in-services, the residents are still losing clothing on regular basis. In July FHHCC went through their annual survey, and during the Resident Council interview, the surveyors heard from 3 residents that losing personal laundry is a chronic problem in this facility. A review of the minutes of the Resident Council revealed that every few months, at least one resident had complained about a lost item of clothing, and although the administrator and SSD assured the residents that this would be addressed, it still was happening. The facility received a deficiency for failure to resolve resident's grievances. The administrator and the leadership team discussed this problem and decided that a lack of knowledge on the part of the staff was not the issue. They decided that they needed to do some brainstorming with the direct care, supervisory and laundry staff to try to get to the root cause of their missing laundry problem.

RCA-Missing Clothing/Customer Service

Problem Statement: Residents and families having complaints of lost clothing.

Initial 'WHY' led to:

- Resident Rummaging
- Staff Throwing Away
- Staff Turnover
- Donation Process Non-Existent
- Poor Completion of Inventory Log
- No System for Family Doing Laundry
- Unlabeled Clothing

The team then chose a couple topics to take to the next 'why'.

- Staff Throwing Away
- Unlabeled Clothing

Second 'WHY'-Staff Throwing Away

- Heavily Soiled-no bags available in/near rooms
- Torn/Worn
- Resident Put in Trash

Actions: Look for availability/cost/ease of use of bag holders for resident rooms. Inform staff that the facility is not responsible to worn clothes. Purchase 2 hampers for shower rooms for worn clothes and train staff on use.

Second 'WHY'-Unlabeled Clothing

- No One to Label
- Little Time to Label
- Family Hang Clothes Without Informing Staff
- Marker Labels Fade
- Marker Labels Illegible

Actions: Contact label press company to cost/effectiveness of a label system to purchase. Train staff that clothes must be marked with name and not room numbers. Discussed process for labeling to occur for new residents and current with new clothes delivery.

5-Whys

Problem statement: Residents and families having complaints of lost clothing. Specifically, staff throwing away resident clothing.

One sentence description of event or problem

Why? Resident clothing worn, torn, or stained.

Why? No designated area or location for handling worn, torn, or stained clothing.

Why? Family does not get notified that resident clothing is too worn, torn, or stained.

Why? No defined process for handling worn, torn, or stained clothing.

Why? Lack of facility staff recognition of the need to handle resident clothing which is worn, torn, or stained.

Root Cause(s)

1. Lack of a defined process for handling worn, torn, or stained clothing.
2. Lack of inventory control and protocol for tracking worn, torn, or stained clothing.
3. Lack of family involvement in the process.

To validate root causes, ask the following: If you removed this root cause, would this event or problem have been prevented?

Next Step:

What if the results of your change show no improvement? The disposal of “worn, torn or stained may not be the root cause. Make the “Why” you are working on measureable. All goals for improvement need measurement. Having your team use the QAPI Goal Setting Worksheet provides the framework for your Performance Improvement. QAPI at a Glance provides instruction. Setting a goal for improvement and making the goal measureable and attainable will assist you in succeeding.

Strategies for Reducing Falls in Long-Term Care

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Abstract: Preventing falls in nursing homes presents an ongoing challenge to the entire interdisciplinary care team. An essential first step is conducting a thorough falls risk assessment on the first day of admission and then implementing strategies to mitigate any identified risks. Despite best efforts on this front, some falls will continue to occur. These events necessitate a comprehensive root cause analysis that looks beyond the most obvious reasons for falls. Such reviews are essential in developing sustainable and efficacious fall prevention programs and in promoting a culture of safety. In this article, the authors provide two case scenarios that demonstrate why individual risks need to be carefully explored. They also review some common fall risk factors and interventions that can be used to reduce those risks.

Key words: Falls, falls prevention, fractures, root cause analysis, wheelchair use.

Harold's Case

Upon admission to our LTC facility, Harold was identified to have multiple risk factors for falls. Harold's primary diagnosis was Parkinson's disease, and he initially required assistance walking to and from the dining room for meals. Walking eventually became more difficult for him, so staff members started transporting him to and from the dining room by wheelchair. The loss of independence seemed to upset him, and one day he attempted to rise from his wheelchair in an effort to walk, which resulted in a fall.

Using root cause analysis, the antigravity team started with the following main question: "Why did Harold fall?" The answer seemed simple: "He tried to get up." Staff members often stop at the first question and answer and determine that they will try to prevent falls by keeping the patient seated with the use of alarms, call light reminders, or even restraints. Proceeding beyond the first question and answer, however, and involving the interdisciplinary team in the root cause analysis reveals there is much more behind Harold's fall:

"Why did he try to get up?"	Social worker: "He's upset about not being able to walk anymore."
"Why can't he walk anymore?"	Nurse: "He's weaker and seems to be getting stiff."
"Why is he weaker?"	Dietician: "He had a weight loss of 10% over the last month."
"Why is he stiff?"	Nurse: "He is due to see the neurologist soon to assess the changes in his Parkinson's symptoms."
"Is a medication adjustment needed?"	Physical therapist: "It may not be a medication issue. Immobility can cause stiffness and muscle weakening."
"Why is he losing weight?"	Dietician: "His meal intake has been less than 50% for several weeks."
"Why is he eating less?"	Nursing assistant: "He has a sore in his mouth and he won't wear his dentures."

Based on this dialogue, we determined that Harold's mouth sore made it difficult for him to eat, which in turn caused him to lose weight and become weak. This compounded his increasing stiffness and emotional upset about his loss of independence, which put him at increased risk for falls. By having a deeper understanding of the factors predisposing Harold to falls, the following care interventions were made to prevent Harold from falling again:

- Conduct comprehensive oral assessment and treat his oral impairment.
- Modify his diet to improve his nutritional status.
- Schedule a neurologic consultation to assess and treat advancements of his Parkinson's disease symptoms.
- Schedule a physical therapy consultation to provide muscle strengthening and improve balance.

Ruth's Case

Ruth was a tall, lanky woman who had been a professional tennis player in her younger years. She was interested in everyone and everything until she developed dementia as she aged and became nonverbal and wheelchair-bound, leading to her LTC admission. Her caregivers became extremely frustrated in their attempts to keep her safe in her wheelchair, as she would repeatedly slide forward asymmetrically into the sacral sitting position, pushing her right leg forward until she was on the front edge of the chair. Ruth would often attempt to rise from her chair when she was unsupervised, which resulted in her falling to the floor.

Rather than seeking the answer as to why Ruth was moving away from the back of her wheelchair and therefore pushing her right hip into extension, the interdisciplinary team focused on how to keep her in her chair and prevent her from falling. Staff members resorted first to using a lap buddy, a cushion that is placed into the wheelchair and across the lap of the individual to prevent him or her from trying to stand unassisted while providing upper body support and posture assistance. After she figured out how to remove the lap buddy, the team tried using an antithrust cushion and pelvic seat belt with the clasp in the back of her chair, as recommended by the occupational therapist. Despite these interventions, she continued her attempts to slide forward, causing her to slip off the wheelchair seat to the floor.

The interdisciplinary team had exhausted all of the easy answers as to the cause of Ruth's behavior. When they reexamined their basic assumptions, reviewed her medical history, and spoke with her family, they learned that Ruth had incurred multiple injuries to her right hip during her active career as a tennis player and that these injuries were treated with steroid injections. Subsequent radiographs and magnetic resonance imaging scans revealed an avascular necrotic femoral head as the cause of her right hip pain with weight bearing in a flexed position in the wheelchair. Unfortunately, the caregivers' initial solutions to her sliding had strapped her further into a position of pain, which she was unable to communicate verbally. The family opted against a total hip replacement due to her advanced dementia, and the problem was addressed by using a specialty cushion to offload the pressure under her hip, a recliner chair to decrease the hip flexion angle while sitting, and appropriate pain medication.

What Harold's and Ruth's Cases Teach Us

Although root cause analysis of falls is now common practice in LTC facilities, it is often done superficially due to time constraints, but as Harold's and Ruth's cases demonstrate, detailed root cause analysis is essential in properly identifying the cause of falls and in improving quality of life for the resident. In Harold's case, a variety of health problems worked collectively to lead to his fall, whereas in Ruth's case, the reason behind her fall was buried in her medical history. In addition, in Ruth's case, the staff sought ways to keep her in her wheelchair, rather than determining why she was trying to get out of it in the first place. The team interpreted Ruth's body language of sliding to the front of the chair as a dementia-related behavioral problem instead of a symptom of pain, and their initial interventions led her to experience even more pain. As these cases show, post-fall huddles with an honest discussion of the circumstances surrounding the fall with the entire interdisciplinary care team and even the resident's family members is critical, as each of these individuals may have important information that may help shed light on the actual cause(s) behind the fall.

Documenting these discussions and tracking falls data enable trends to be identified that will contribute valuable information as to when, where, and how each fall occurred. In addition, the interventions initiated to address fall risk factors must be monitored to determine their impact on the safety culture of the facility and the individual resident's safety and then modified until effective sustainable programs are in place. The use of quality improvement tools, such as the Plan-Do-Study-Act (PDSA) cycle, can assist facilities with this task.⁹ The PDSA tests a change by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the results (Study), and determining what modifications should be made (Act). A comprehensive discussion of how to apply the PDSA in fall prevention programs is beyond the scope of this article, but what follows is a review of several factors that can contribute to falls among LTC residents and ways that these risks can be mitigated.

Section Four

Resources

ROOT CAUSE ANALYSIS TOOLKIT

RESOURCES

- Centers for Medicare & Medicaid Services (CMS) – Quality Assurance & Performance Improvement (QAPI) Webpage
<http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/nhqapi.html>
- Minnesota Department of Health: Root Cause Analysis Toolkit Page
<http://www.health.state.mn.us/patientsafety/toolkit>
- Oregon Patient Safety Commission: Root Cause Analysis Materials for Long-Term Care
<http://oregonpatientsafety.org/healthcare-professionals/nursing-homes/root-cause-analysis-materials-for-long-term-care-facilities/283/>
- QAPI: Guidance for Performing Root Cause Analysis with Performance Improvement Projects
<http://download.cahf.org/document.aspx?dt=member&dn=/quality/GuidanceforRCA.pdf>
- Mind Tools: Root Cause Analysis Template
www.mindtools.com/rs/RCA