Root Cause Analysis (RCA)
Getting to the Reasons for the Problem
Objectives

1. Explain the process of Root Cause Analysis
2. Execute Root Cause Analysis for causation identification and prioritization
3. Select interventions that align with the identified causes
What is Root Cause Analysis (RCA)?

RCA is a structured process to find out what happened, why it happened, and to determine what can be done to prevent it from happening again.
Root Cause Analysis:

- Problems are best solved by investigating and correcting the root causes.
- Aiming performance improvement operations at root causes is more effective than merely addressing the symptoms with arbitrary interventions and solutions.
- Root cause analysis (RCA) transforms an old culture that reacts to problems, into a new culture that solves or manages problems before they escalate.
“The point of a human error investigation is to understand why actions that are now questionable, made sense to people at the time they did it. You have to push on people’s mistakes until they make sense – relentlessly.”

~ Sidney Dekker, Professor of Human Factors and Systems Safety & Director of Research at the Lund University, School of Aviation
“People make errors, which lead to accidents. Accidents lead to deaths. The standard solution is to blame the people involved. If we find out who made the errors and punish them, we solve the problems. Right?”

“Wrong. The problem is seldom the fault of just an individual. It is frequently the fault of the system. Change the people without changing the system and the problems will still continue.”

~ Don Norman, Apple Fellow, Professor of Engineering, Northwestern University
Every system is perfectly designed to get the results it achieves.

We need to ask, "Where did the system fail or succeed?"
Where Do We Begin?

- Don’t work on the interventions or solutions until you’ve determined the causes.
1. What exactly are we going to do?

What changes are we going to make based on our findings?

What were the results?

When and how did we do it?
Prevention & Elimination Starts With Causation

Causations

Interventions
Steps to Determining Causes:

1. Gather clues, evidence and data:
   ~ physical environment; observation SHTTS
   ~ persons’ conditions; observation, interview
   ~ system factors; monitor, assess, evaluate

2. Determine:
   ~ What was different this time?
   ~ Why did this happen?

3. Implement corrective actions to reduce and eliminate the root causes of the problem.
Root Cause Analysis: It is a Layered Evolving Process

Immediate encounter: Scene Assessment & Triage

Investigate: Collect Evidence & Clues

Examine: Gather Reports and Data

Meet: Multidisciplinary Team / Family / Others
RCA: Not Just the Tip of the Iceberg

- We only see the tip of what happened, of what is really there.


- Keep digging until we find the real causes of this particular condition, incident, problem.
RCA: the “5 Whys?”

- Ask “Why” 5 times
- It is used to explore the cause-and-effect relationships underlying a particular problem

Example:

The truck will not start. (the problem)

- Why? - The battery is dead. (first why)
- Why? - The alternator is not functioning. (second why)
- Why? - The alternator belt has broken. (third why)
- Why? - The alternator belt was slipping and not replaced. (fourth why)
- Why? - The owner of the truck did not maintained it according to the recommended service schedule. (fifth why, a root cause.)
If a person knows “what” happened, they have average ability. “The resident fell down.”

If a person knows “how” it happened, they have superior ability. “They tripped over an electrical cord.”

If a person knows “why” it happened, they have exceptional ability. “Maintenance was working in the area and the electrical cord was across the doorway and the resident couldn’t see it.”

~ Marilyn vos Savant
Conditions that can hinder, divert, or prevent successful Root Cause Analysis:

1. Blame Game
2. Tunnel / Silo Vision
The Blame Game

- Blame/shame: Whose fault is this?
- Just find that one person who messed up and we find the cause. NO!
- Moving from *who* did it to → *why* did this happen?

Ask why again, and again, and again, and again.
Tunnel / Silo Vision

- At the time an accident occurs, people usually behave seeing only one way to perform. They don’t see all the other things they could have done or the outcomes from what they would do.

- In reconstructing the event, we view the event from outside of their tunnel / silo vision.

- We look at the event seeing more options that the person could have done.

- We need to get back in the tunnel with them.
Visualized Tools for RCA

- Diagrammatic tools for categorizing the potential causes of a problem:
  - To identify its root causes
  - To assist in organizing our thoughts, ideas and suggestions into a logical pattern for consideration
  - To assist in prioritizing the highest control/greatest impact → the “lowest hanging fruit,” quick and easy causes → least control

- A number of tools have been developed:
  - One tool has been called “The Fishbone Diagram” or the “Ishikawa Diagram”
  - Another is the 3-step, Internal-External-Operational diagram
Root Cause Analysis
3 Categories

- Problem
  - Internal Causes
    - 1.
    - 2.
    - 3.
  - External Causes
    - 1.
    - 2.
    - 3.
  - Operational Causes
    - 1.
    - 2.
    - 3.
Causation Relationships

- For ease of study, causations are separated into three categories:
  - Internal
  - External
  - Operational

- However, causations are often inter-related and dual categorized

Diagram:
- Problem/Adverse Event
  - External
  - Internal
  - Operational

Empira
Let’s apply root cause analysis to some universal situations:

- A well known, tragic event; Titanic sinking
- An all too common event; car accident
- A personal event; fall in the home
Root Cause Analysis

3 Categories

- Problem
  - Internal Causes
    - 1.
    - 2.
    - 3.
  - External Causes
    - 1.
    - 2.
    - 3.
  - Operational Causes
    - 1.
    - 2.
    - 3.
Prioritize Causes:

- Begin with:
  - The highest control, greatest impact on the causes
  - The “lowest hanging fruit,” easiest & quickest to change
  - Most difficult to impact or change, least control
Root Cause Analysis

List Causes

Problem

Internal Causes
- 1. Poor vision even w/ eye glasses
- 2. Bored, unoccupied
- 3. Likes to tidy up/clean
- 4. Poor core balance

External Causes
- 1. Bright floral carpet
- 2. Lack of stimulation
- 3. Nothing more interesting to see

Operational Causes
- 1. Newly installed corporate carpet
- 2. Lack of engaging activities
- 3. Direct care giver assignment
Root Cause Analysis
Prioritize Causes

Problem

Internal Causes
1. Bored, unoccupied
2. Likes to tidy up/clean
3. Poor core balance
4. Poor vision even w/ eye glasses

External Causes
1. Nothing more interesting to see
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Operational Causes
1. Direct care giver assignment
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Interventions versus Solutions
Are They the Same?

- Solution is to solve, eliminate or cure
- Intervention is to manage, reduce or treat
In order to be effective, interventions and solutions must match the identified causes of the illness, disease, adverse event or problem.
Implement Interventions & Solutions

- What will you do to prevent this problem from happening again?
- Do the interventions and/or solutions match the causes of the problem, event, illness?
- How will it be implemented? Who will be responsible for what?
- How will the interventions effect other operations or people in your nursing home?
- What are risks to implementing the solutions?
- Move from weak to strong interventions.
Match the Solutions and Interventions to the Identified Causes

➢ Use an Interdisciplinary Team to Brainstorm:
  ➢ All ideas are welcomed
  ➢ Be careful of “standards”
  ➢ No judgment, no intimidation
  ➢ Build on each other’s ideas
  ➢ Avoid “group think”
History of Fall Prevention

Resident is identified as a risk for falls.

Interventions
History of Ineffective Interventions:

- Focusing attention on interventions and solutions and not on the causes
- Implementing as many interventions as possible – and hoping one of them will work
- Staggering interventions
- Not matching the interventions to the causes
History of Fall Prevention Using Interventions

- Nurse
- Interventions

- Falls
  - Tilt cushion
  - Gripper socks
  - Alarms
  - Floor Mats
  - Near Nurses’ Station
  - Low beds
  - Restraints
Fall Prevention
Using Root Causes Analyses

Interventions based on RCA
“I did then what I knew then, when I knew better, I did better.”

~ Maya Angelou
Root Cause Analysis
Prioritized Causes & Match Interventions & Solutions

- **Problem**
  - **Internal Causes = Inter/Solu**
    - 1. Bored, unoccupied
    - 2. Likes to tidy up/clean
    - 3. Poor core balance
    - 4. Poor vision even w/ eye glasses
  - **External Causes = Inter/Solu**
    - 1. Nothing more interesting to see
    - 2. Lack of stimulation
    - 3. Bright floral carpet
  - **Operational Causes = Inter/Solu**
    - 1. Direct care giver assignment
    - 2. Lack of engaging activities
    - 3. Newly installed corporate carpet
Problem

M.R. falls frequently

Goal
Reduce and eliminate the causation of M.R.’s falls by ___

Category: Internal/Intrinsic
- Bored, unoccupied
- Likes to tidy up
- Poor core balance
- Poor vision w glasses

Category: External/Extrinsic
- Nothing interesting to see
- Lack of stimulation
- Bright floral carpet

Category: Operational/Systemic
- Direct care giver assignment
- Lack of engaging activities
- Newly installed corp carpet
<table>
<thead>
<tr>
<th>Root Cause</th>
<th>Solution or Intervention</th>
</tr>
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<tbody>
<tr>
<td>1. Bored, unoccupied</td>
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</tr>
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Summary

Identify the Root Causes

Select interventions and/or solutions that match the causes

Improve the outcomes
**Why are we very concerned about falls?**

Falls are a major health risk for our elderly population. One out of every three older Americans falls every year. Only 1/2 of all elderly people can live alone or independently after sustaining injuries from a fall. Falls are a significant source of fractures and soft tissue injury. Falls are the most common cause of severe injury in older adults.

**Who is at the highest risk for falling?**

Falls are most likely to occur in elderly persons who have:

~ Recently fallen
~ Difficulty balancing, walking or standing up straight
~ Difficulty getting in and out of a chair, car, bed or on and off of a toilet
~ Dizziness
~ Pain
~ Weak bones & muscles
~ Multiple medications
~ Vision and/or hearing loss
~ Memory loss or confusion

Our goal is to provide a safe and healthy environment.

Our staff has been trained to reduce the risk of falling for you and your family member.

We are working to identify the causative factors of falls.

The information contained within this brochure is not intended to replace seeking medical attention.

This educational information is provided to you by Empira in association with your Assisted Living, Independent Living or Skilled Nursing Facility.

**Family & Friends:**

**Fall Prevention**

**How You Can Help!**

I look forward to meeting with you to discuss Fall Safety.

Name _____________________

Here’s how you can contact me:

Phone ____________________

E-mail ____________________
Fall Management Program:

A fall can happen to anyone at anytime. Illness, surgery, weakness, tests, medication, medical equipment, noise and new surroundings can all contribute to a fall at any age.

We need your help!

Here's what you can do:

• If your loved one fell or has a history of falling prior to admission, let us know.

• If your loved one falls when out of the facility with you, please tell us.

• Learn how to properly transfer and move a resident, we will show you how to do this safely.

• Have them wear non-skid, low heeled, fully enclosed shoes.

• Instruct and help them to stand up slowly from a lying or sitting position to prevent dizziness.

• Encourage them to walk often, using their cane or walker, even inside of an apartment, home or in their room.

• Tell us when you are leaving after your visit, so we can make sure safety measures are in place.

• Talk with their nurse or doctor if they experience any of these side effects from medications: dizziness, unable to balance, or a change in their ability to walk.

Here's what we will also do:

1. We will work with you and your loved one to identify their risks for falling.

2. We will conduct a post fall investigation and assessment to identify the possible causes of their fall.

3. Physical, Occupational and Recreational Therapies will provide programs and services to help keep them strong, oriented and active.

4. We will talk with their doctor and pharmacist to determine if any medications, medical actions, or treatments need to be changed or taken.

5. We will take action by putting interventions into place to reduce the likelihood of future falls from occurring.

6. We will provide equipment and safety devices to reduce their risks for falling.
“Effects of an Intervention to Increase Bed Alarm Use to Prevent Falls in Hospitalized Patients: A Cluster Randomized Trial.” Ronald Shoor, MD, et al., Annals of Internal Medicine, Vol. 157, No 10, pp. 692-299, November 2012 “... alarms had no statistically or clinically significant effect on fall-related events or physical restraint use.”


“Interventions for Preventing Falls in Older People in Care Facilities and Hospitals” I. D., Cameron, et al., Cochrane Database of Systematic Reviews, Rev. 2012 Dec 12;12:CD005465. doi: 10.1002/14651858.CD005465.pub3.


