Root Cause Analysis and Quality Improvement

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Comagine Health

Comagine Health is a national, nonprofit health care consulting firm.

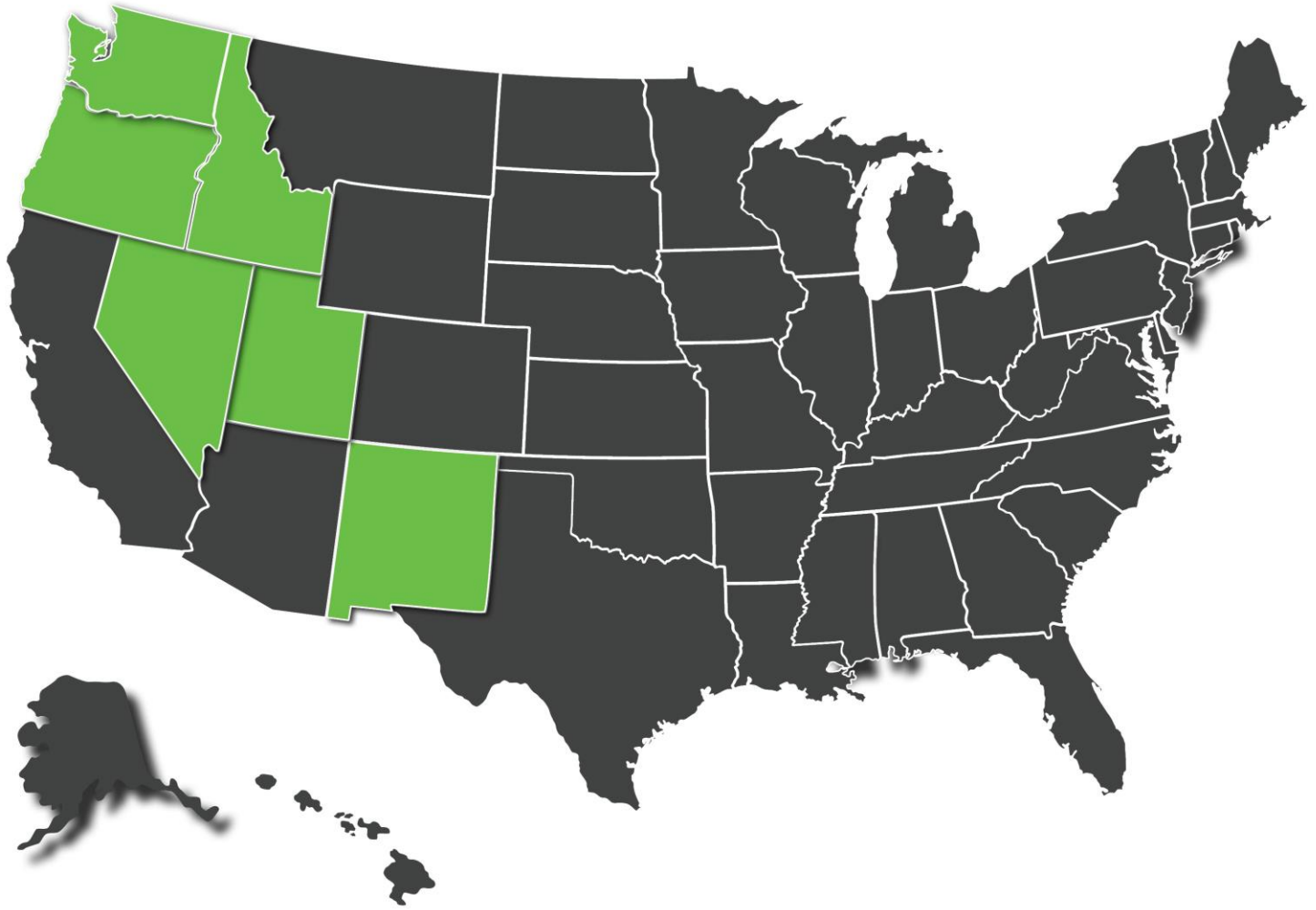
We work collaboratively with patients, providers, payers and other stakeholders to reimagine, redesign and implement sustainable improvements in the health care system.

As a trusted, neutral party, we work in our communities to address key, complex health and health care delivery problems. In all our engagements and initiatives, we draw upon our expertise in quality improvement, care management, health information technology, analytics and research.

We invite our partners and communities to work with us to improve health and redesign the health care delivery system.

Our Six-State QIN-QIO Region

- Idaho
- Nevada
- New Mexico
- Oregon
- Utah
- Washington



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Our Work as the QIN-QIO

- Comagine Health is the Medicare Quality Innovation Network-Quality Improvement Organization (QIN-QIO) for Idaho, New Mexico, Nevada, Oregon, Utah and Washington.
- We receive federal funding from the Centers for Medicare and Medicaid Services (CMS) to carry out health care quality improvement activities surrounding, in part, diabetes, hypertension, immunizations, readmission rates and behavioral health.
- Under the 12th Statement of Work, Comagine Health provides targeted assistance to nursing homes, hospitals, outpatient practices and various health care partners, particularly those that serve vulnerable populations and others living in rural and underserved communities. Through this body of work, CMS is focusing on results, protecting taxpayer dollars, and most importantly, ensuring the safety and quality of care delivered to every beneficiary.

Objectives

After this session, you will be able to

1. Describe root cause analysis (RCA) and Plan-Do-Study-Act (PDSA) to your colleagues.
2. Apply RCA results to developing an aim statement.
3. Develop an action plan to begin testing changes that will address the deeper causes.

Root Cause Analysis (RCA)

RCA seeks to identify the primary cause(s) of the problem, so that you can

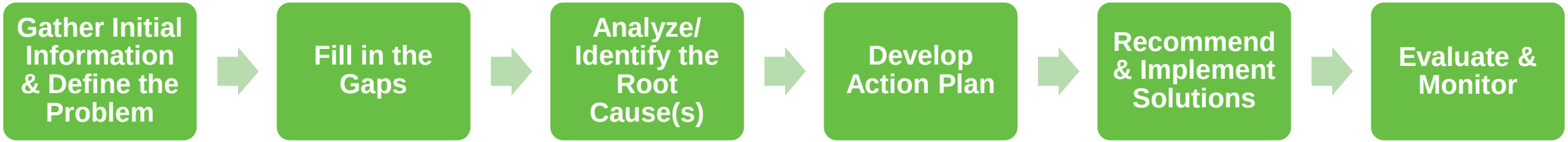
1. Determine what happened.
2. Determine why it happened.
3. Figure out what to do to reduce the likelihood that it will happen again.

Tip: If you landed on the cause being a human action, re-evaluate using this tool: Decision Tree and Intervention Selection Tool.

RCA: A Process the Team Should Know

- Builds critical thinking and a safety culture.
  - Staff know when to report, how to report and who to report to.
  - Understand the escalation of concerns.
- Often used for events, especially when harm occurs.
  - Address resident and/or family needs.
  - Address staff needs.
  - Identify any immediate mitigation to prevent recurrence.
- Should begin within 24 hours of an event.
- Can also be used to investigate patterns seen in data or for prevention (near misses or close calls).

The RCA Process: 6 Steps



Gather Information and Define the Problem

- Sources for information.
  - Incident reports
  - Complaints (residents, families or staff)
  - Interviews
  - Survey results
  - Collected data (e.g., infections, harm, quality measures, etc.)
  - Others?
- Document the gap or potential gap as your problem statement and why it needs to be addressed.

Problem Statements

- Purpose
  - To clearly define the problem.
  - To clearly and concisely communicate the problem to others.
  - To keep you on track as you solve the problem (avoid scope creep).

Five Components

- **WHAT** – What process has the defect or improvement opportunity?
- **WHERE** – Where is the defect observed (geographically or in the process)?
- **WHEN** – When was the defect first observed? What is the history? Is there a pattern?
- **HOW MUCH** – How many defects are there? What is the trend?
- **HOW DO I KNOW** – What is the standard that we fail to meet?

Problem Statements

- A problem statement has the form:
  - “WHAT is wrong
    - WHERE it happened
      - TO WHAT EXTENT and
        - I KNOW THAT BECAUSE”
- A problem statement:
  - Does not include the causes of the deficiency.
  - Does not include actions or solutions.
  - Is clear, concise and specific.

What is Wrong and Where Does it Happen?

- A good problem statement will clearly define WHAT is wrong.
  - “Customers are not satisfied with my ordering service…”
  - “Equipment availability is poor….”
  - “Document turn around time is insufficient…”

- A good problem statement will clearly define WHERE the problem occurs.
  - “Customers in the Southwest Region are not satisfied with my ordering service.”
  - “Equipment availability for ITS is poor.”
  - “Document turn around time is insufficient for Billing.”

When Was This Seen?

- A good problem statement will clearly explain WHEN the problem occurred.
  - “Customers in the Southwest Region are not satisfied with my ordering service. Starting in March…”
  - “Equipment availability for ITS is poor. Since the consolidation of services…”
  - “Document turn around time is insufficient in Billing after the introduction of Next Gen…”

How Widespread is the Problem?

- A good problem statement will clearly explain the EXTENT of the problem.
  - "Customers in the Southwest Region are not satisfied with my ordering service. Starting in March, *complaints have increased 10%..."*
  - *"*Equipment availability for ITS is poor. Since the consolidation of services, delays caused by lack of availability have *increased by 30%..."*
  - "Document turn around time is insufficient in Billing after the introduction of Next Gen. *Turn around time has increased by four days…"*

What is the Standard?

- A good problem statement will clearly explain HOW I KNOW there is a problem.
  - “Customers in the Southwest Region are not satisfied with my ordering service. Starting in March, complaints have increased 10% at a time when complaint rates from other regions have remained unchanged.”
  - “Equipment availability for ITS is poor. Since the consolidation of services, delays caused by lack of availability have increased by 30% when the onboarding of staff has increased only 5%.”
  - “Document turn around time is insufficient in Billing after the introduction of Next Gen. Turn around time has increased by four days when the goal of the project was to reduce turn around time to 24 hours.”

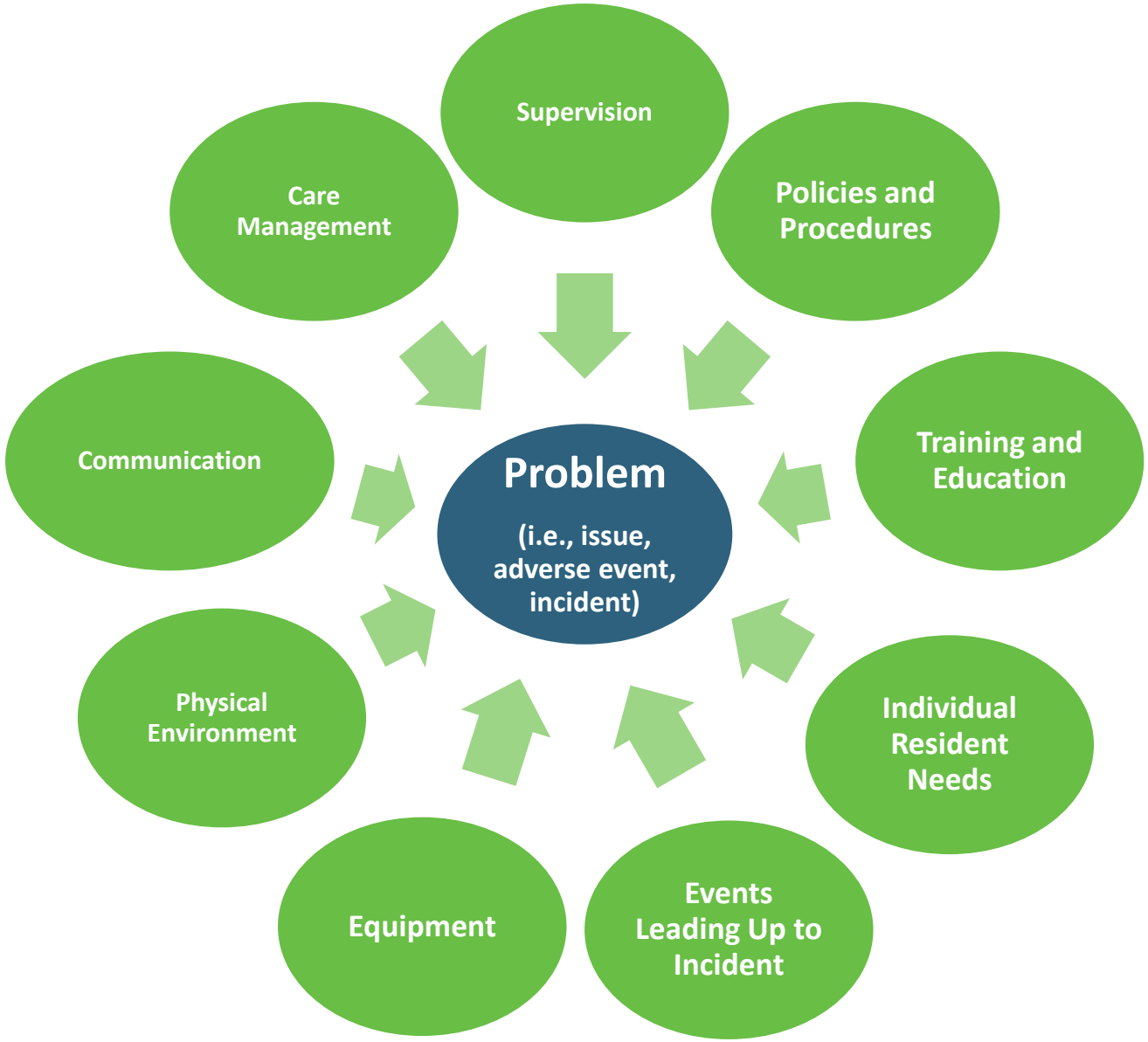
Write Your Problem Statement

- Make sure you include all five components.
- Make it clear.
- Make it concise.
- Communicate it to others.

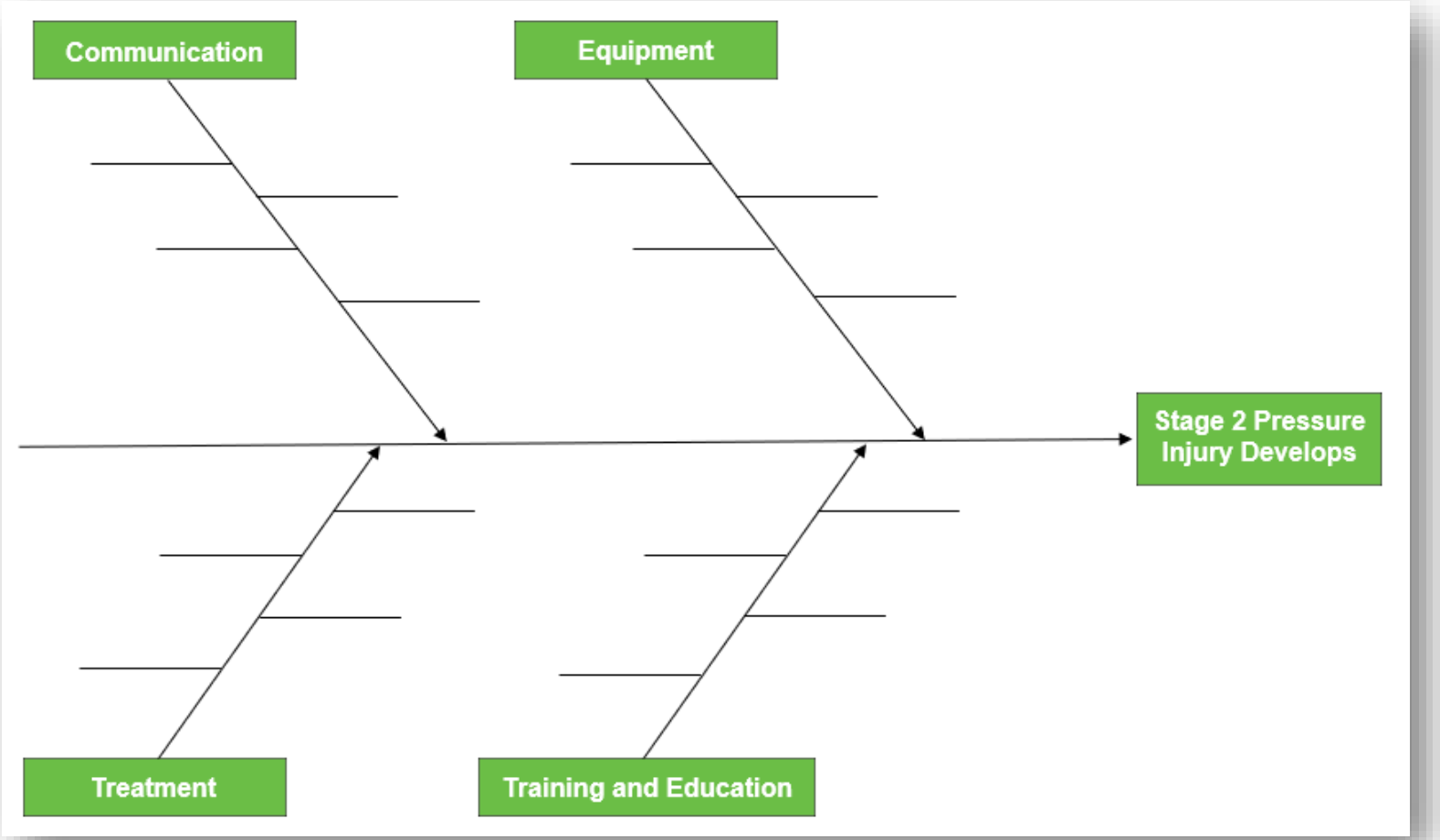
Example Problem Statements

- Chart reviews conducted for March 2024 demonstrated missed opportunities to document early stages of pressure injury on the assessment at admission from a hospital.
- Unit 2 has an increasing number of stage 4 pressure injuries starting in the third quarter of 2023.
- Lack of process for learning the root cause of increased pressure injuries rate among the short-stay residents at facility #56.
- A thorough assessment of the wound staging is not completed prior to speaking with the provider.

Fill in the Gaps and Investigate to Identify Contributing Factors



Fishbone Diagram



Breakout Activity

- Break into small groups of four-to-five people.
- Using the Fishbone Diagram handout provided, identify contributing factors in each category that could lead to the development of a stage 2 pressure injury.
- Be prepared to share responses with the larger group.
- You have 10 minutes.

Debrief on Fishbone Diagram Activity

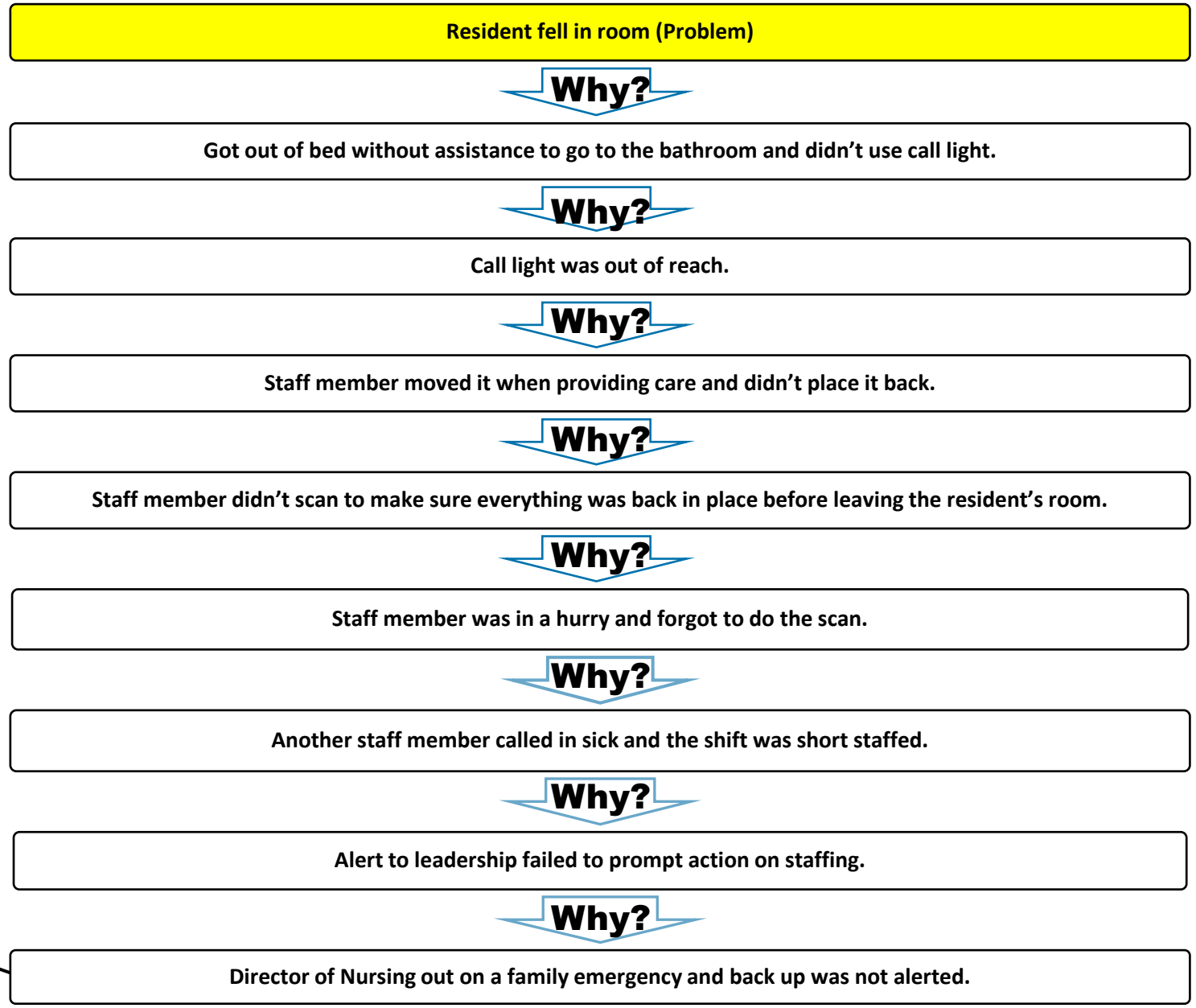
- In what ways did the fishbone diagram tool promote brainstorming about contributing factors?
- What contributing factors did your group identify under each category?
- Given all the identified contributing factors, how would you determine which factor should be pursued as a root cause?
- How might this type of activity be used in your center?

Getting to the Root Cause

THE 5-WHYs

- A question-asking method used to uncover the underlying causes of an event.
- Ask "Why?" questions until all logical causes (and/or root causes) can be identified.
- Uncovering the root cause leads to an action plan that is more likely to prevent the event from happening again.

5-Whys Example



What is the Action Plan?

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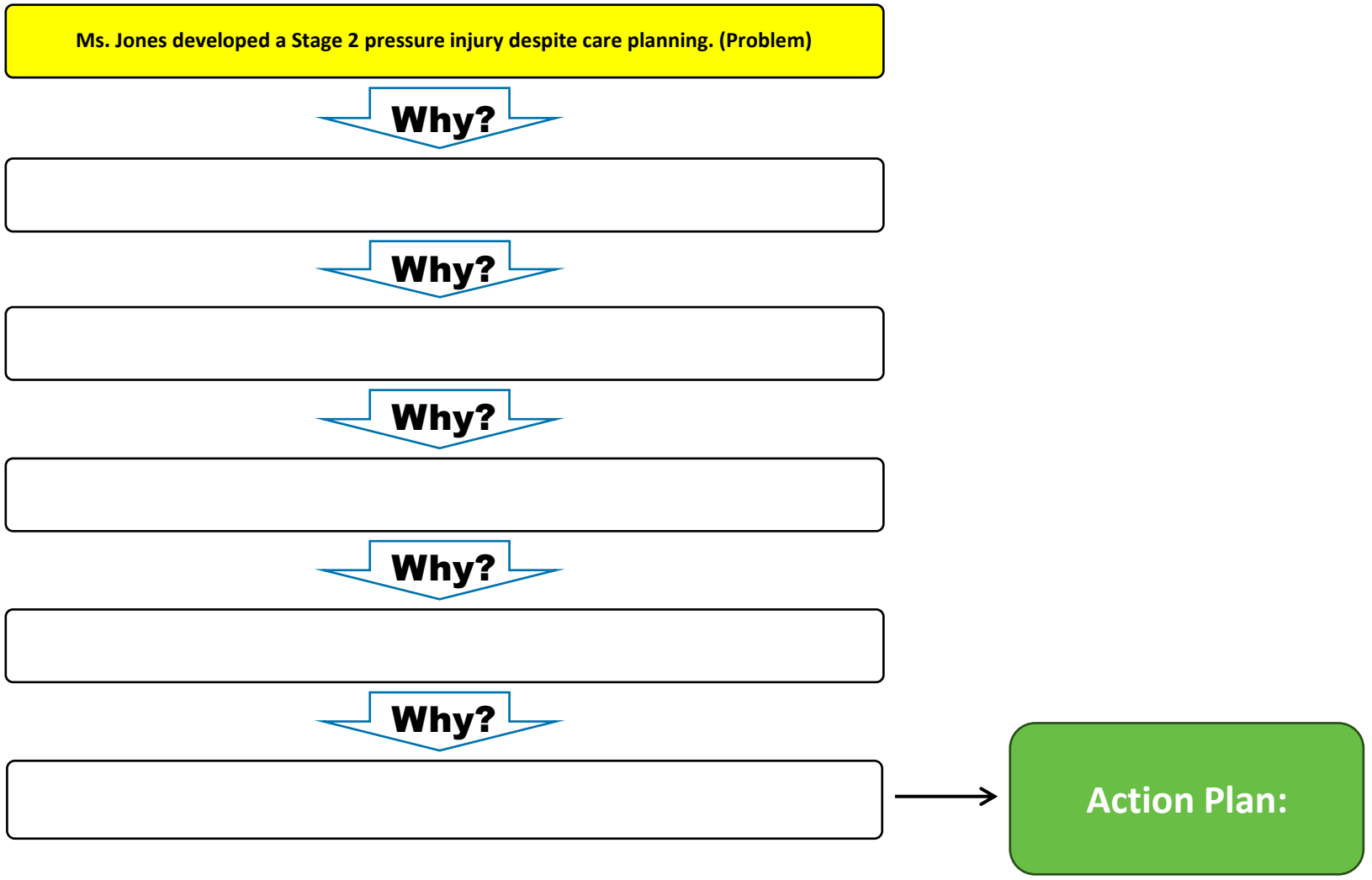
5-Whys Exercise



Develop Action Plan

- An essential step for a structured approach to improvement work.
- Supports a culture of continuous improvement as plans are developed, implemented and evaluated for success.
- Several steps involved, including:
  - Developing an aim statement based on the identified problem and root cause.
  - Defining measurable objectives.
  - Identifying and developing intervention strategies.
  - Assigning responsibilities and timelines.
  - Monitoring progress and making adjustments.

Aim Statements

- Answer the question, “What are we trying to accomplish?” by providing an explicit description of the desired outcome.
- Describe the measurable goal for improvement (e.g., how much will you improve).
- Define the time frame for improvement (the date by which you will achieve the level of improvement).
- Identify what will be done, where and by whom.

Example Aim Statements

- Our care team will reduce stage 2 pressure injuries for long stay residents in our memory care unit from 6.5% to less than 4.5% by December 31, 2024.
- By May 2025, our care team will decrease the prevalence of stage 2 pressure injuries for long-stay residents on Garden Terrace from the current 17% to below 5%.
- Our care team will reduce the facility-acquired stage 2 pressure injury rate for long-stay residents to less than 3% over the next year (July 1, 2024-June 30, 2025).

Recommend and Implement Solutions

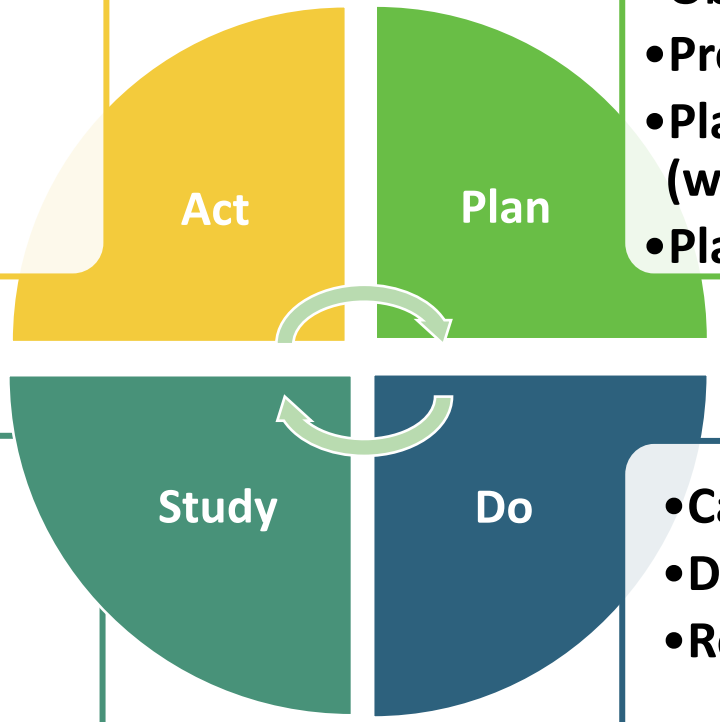
- Identified the problem.
  - Conducted a root-cause analysis (RCA).
  - Developed the problem statement.
  - Identified the aim statement.

- Assign team members and roles.

The PDSA Cycle

- What changes are to be made?
- Next cycle?

- Objective
- Predictions
- Plan to carry out the cycle (who, what, where, when).
- Plan for data collection.

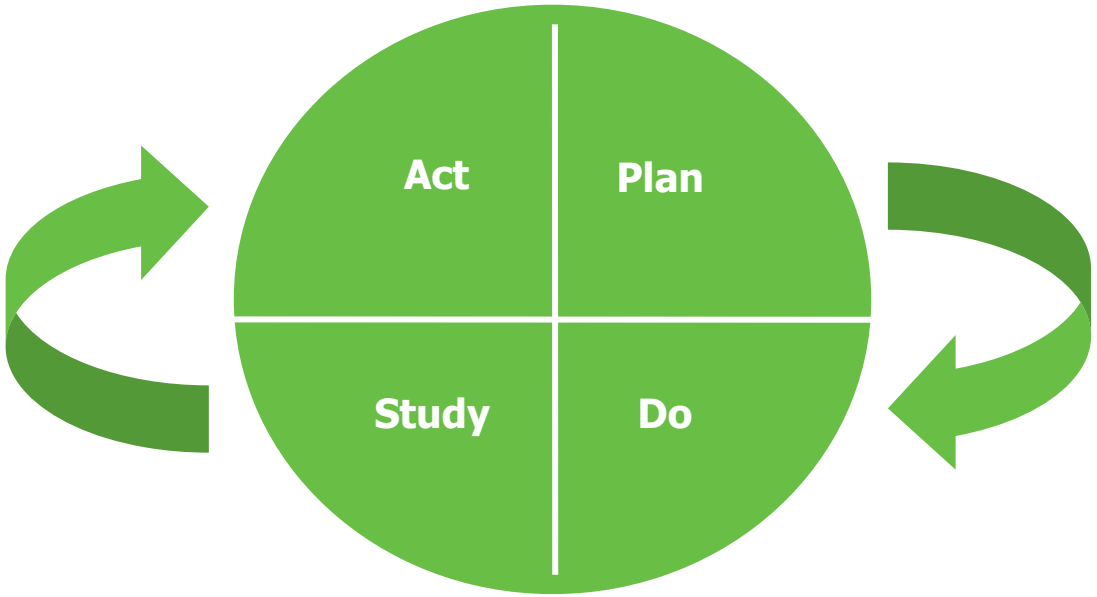


- Analyze data.
- Compare results to predictions.
- Summarize what was learned.

- Carry out the plan.
- Document observations.
- Record data.

The Model for Improvement

1. What are we trying to accomplish?
2. How do we know that a change is an improvement?
3. What changes can we make that result in an improvement?



The Model for Improvement – Plan

Step 1. Plan - Plan the test or observation, including a plan for collecting data.

- State the objective of the test.
- Make predictions about what will happen and why.
- Develop a plan to test the change (Who? What? When? Where? What data need to be collected?).
  - Determine what systems and which persons will be affected.

Setting aims that are time-specific and measurable; it should also define the specific population of patients or other system that will be affected.

Establishing measures using quantitative measures to determine if a specific change leads to an improvement

Selecting changes ideas for change may come from those who work in the system or from the experience of others who have successfully improved.

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Types of Measures:
How Will We Know a Change is an Improvement?

- **Outcomes Measure**
  Measures how the system impacts the person.
- **Process Measure**
  Measures how well the “system” is performing.
- **Balancing Measure**
  Measures how changes designed to improve one part of the system may affect other parts of that system.

Outcome Measures
(Measures how the system impacts the person)

- Number of resident falls.
- Percent of residents receiving an antibiotic for a urinary tract infection (UTI) that meet the McGreer criteria for a UTI.
- Percent of residents with a new skin pressure injury stage 2 or worse.

Process Measures

(Measures how well the "system" is performing)

- Percent of residents at high-risk for sepsis with the stoplight poster on their bedside bulletin board.
- Percent of residents with demographics section of face sheet completed.
- Percent of male residents requiring a catheter due to sacral wounds with condom catheter in place.

Balance Measures

(Measures how changes designed to improve one part of the system may affect other parts of that system)

- Percent of male residents with wound infections related to leaking condom catheters.

- CNA overtime hours with implementation of resident checks every 30 minutes.

- Retention rate of staff who successfully complete a certified medical interpreter course.

The Model for Improvement – Do

Step 2. Do: Try out the test on a ***small*** scale.

- Carry out the test.
- Document problems and unexpected observations.
- Begin analysis of the data.

Testing change: The Plan-Do-Study-Act (PDSA) cycle is shorthand for testing a change in the real work setting — by planning it, trying it, observing the results, and acting on what is learned. This is the scientific method adapted for action-oriented learning.

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The Model for Improvement – Study

Step 3. Study the test: Set aside time to analyze the data and study the results.

- Complete the analysis of the data.
- Compare the data to your predictions.
- Summarize and reflect on what was learned.

Implementing changes: After testing a change on a small scale, learning from each test, and refining the change through several PDSA cycles, the team may implement the change on a broader scale — for example, for an entire pilot population or on an entire unit.

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The Model for Improvement – Act

Step 4. Act based on the results: Refine the change, based on what was learned from the test.

- Determine what modifications should be made *(Adapt, Adopt, Discard).*
- Prepare a plan for the next test.

Selecting changes: Ideas for change may come from those who work in the system or from the experience of others who have successfully improved.

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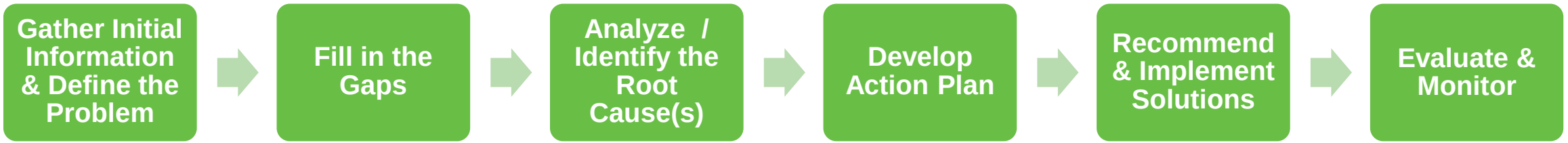
Evaluation and Monitoring

- Implement the change system-wide.
- Continue to measure for success.
- Continue to monitor and report in the QAPI Committee.

The RCA Process: 6 Steps



Summary of Key Points

- Ensure the entire team understands the organization's commitment to completing the RCA, the value of the process and the team's role.
- A well-developed problem statement is critical to maintain focus and scope of the work.
- Take time to identify potential contributing factors before the deeper investigation into the root cause. This provides the opportunity to prioritize focus for the RCA.
- A good quality improvement framework will answer three questions:
  1. What are we trying to accomplish?
  2. How do we know that a change is an improvement?
  3. What changes can we make that result in an improvement?

What are you going to do by next Tuesday?

Questions? Please Contact Us!

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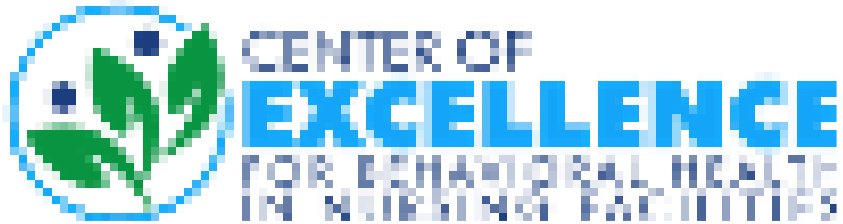
Resources and References

- Decision Tree and Intervention Selection Tool
- Root Cause Analysis with 5 Whys Technique (With Examples) (reliability.com)
- Root Cause Analysis Tool
- Plan-Do-Study-Act (PDSA) Essentials and Worksheet
- How to Improve | IHI - Institute for Healthcare Improvement

Center of Excellence for Behavioral Health in Nursing Facilities

The Center of Excellence focuses on increasing the knowledge, competency and confidence of nursing facility staff to care for residents with behavioral health conditions.

- Provides mental health and substance use trainings, customized technical assistance and resources at no cost.
- Services are available to all Centers for Medicare & Medicaid Services (CMS) certified nursing facilities throughout United States.
- Established by the Substance Abuse and Mental Health Services Administration (SAMHSA) in collaboration with the Centers for Medicare and Medicaid Services.



For assistance, submit a request at
nursinghomebehavioralhealth.org

Contact us:
National Call Center: **1-844-314-1433**

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