



**Oregon's Guide to
Root Cause Analysis
in Long Term Care***

***Investigating with a
Different Lens***

*This guide is adapted from the VA National Center for Patient Safety Root Cause Analysis Tools and the New South Wales Department of Health Materials.

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Credits

Development of the Root Cause Analysis Guide began in 2008 as a partnership project among four state agencies. Called the Patient Safety Improvement Corps (PSIC), this initial effort was funded by the Agency for Healthcare Research & Quality (AHRQ) and the Veterans' Administration (VA). Other states had PSIC teams as well, but Oregon's was unique in its focus on long-term care. The goals of the Oregon PSIC team were to:

- develop a tool for event investigation in nursing homes based on Root Cause Analysis process and current patient safety concepts;
- promote understanding and use of a common language around patient safety;
- train those involved in event investigation in use of the tool;
- positively impact patient safety in nursing homes.

After developing the tool, the PSIC team vetted it with two nursing homes, Robison Jewish Health Center and Town Center Village Rehab. The original tool, in draft form, was shared at numerous education sessions held by the Oregon Alliance of Senior & Health Services and the Oregon Health Care Association. It was also introduced at the State Agency Provider Forum conference.

In 2009-2010, with grant money from the State of Oregon, the Oregon Patient Safety Commission contracted with key consultants to create this final version. It also facilitated training sessions with state agency staff and providers around the state.

In all this work, we gratefully acknowledge the following:

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Introduction

Everyone working in Oregon's long-term care profession – from providers to state agency staff – has a common interest in improving resident service and quality of care. Most of the time systems and team members work well together, with the result that residents receive good personal services and employees are able to function at high capacity.

In every human system, though, challenges occur and mistakes happen. In a health-care setting, those can have unacceptable consequences, such as adverse events resulting in serious injury or harm to residents. Complex systems, changing medical conditions and work pressures all combine to make the possibility of these events occurring very real. Therefore, everyone must be actively involved in improving systems and safety.

This guide will introduce a tool called **Root Cause Analysis (RCA)**. This tool is strongly supported by Seniors & People with Disabilities and both provider trade associations. It represents a concerted effort to align investigative methods around a common language and methodology.

RCA has been developed and tested nationally in the aviation and nuclear industries, and is increasingly being used with excellent results in health-care settings. Where traditional models of looking at adverse events have focused on holding an individual responsible, RCA will help you look at the systems in place in your facility and examine what made it possible for an adverse event to happen. Because this model invites open communication among team members and stresses problem solving, it has a higher likelihood of preventing both unintentional and intentional wrongdoing by staff members as well as helping you avoid “near misses” that have the potential for negative outcomes.

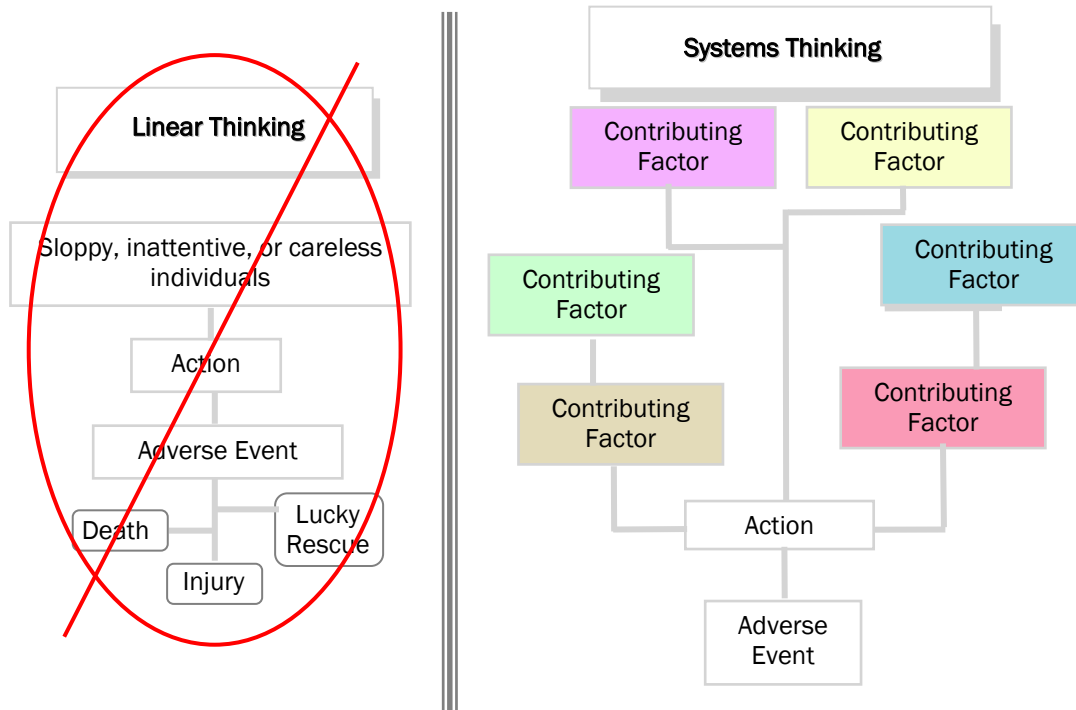
RCA does not replace appropriate personnel action in a case of employee misconduct. It will help you take a wider view. Rather than first noting a person as the reason an adverse event occurred RCA helps you address cases of human error and systems failure. Its goal is to improve your practice to guard against negative outcomes from any of these causes in the future.

Where traditional methods.....

RCA...

expected staff to perform flawlessly 24/7 and blamed individuals when they didn't	encourages the development of systems that are designed to compensate for human limitations and looks to system fixes when an error occurs
expected staff to adapt their practice to available equipment and regular procedures	stresses the development of equipment and procedures that are designed for safety
relied on a chain of command in a facility to investigate errors and impose corrections	relies on teamwork among all staff to analyze problems and to propose and implement solutions
punished errors	stresses learning from errors

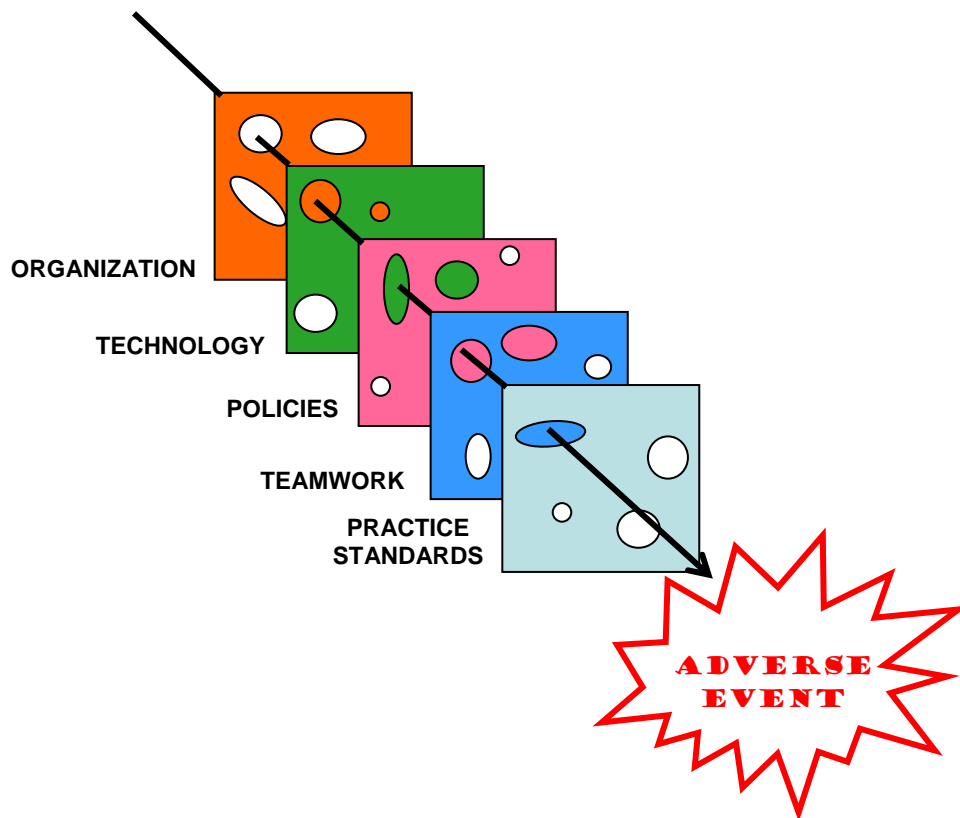
RCA also recognizes that adverse events usually result from a number of factors that are all part of the normal process of providing care and services. They are rarely a single error made by one person.



As a result, RCA helps you look at the safeguards in your systems or process of care to determine how and why an adverse event happened, and helps you plan to improve those systems to decrease the chances of a similar event happening again.

Every facility has a number of processes in place to protect residents. Because of this, most of the time, most of the residents are safe. Sometimes, however, the systems fail.

The picture below shows the “Swiss Cheese” view of resident safety. The slices of cheese represent a number of different types of protective measures (training, equipment, policies, etc.) that help keep residents from harm. Unfortunately, none of these protections is perfect. Therefore, just as the holes in a stack of Swiss cheese slices occasionally line up, so do the imperfections in your protective measures and safety systems. The purpose of RCA event investigation is to identify which imperfections had a role in the adverse event, and then strengthen the protections so that future providers and residents will not be caught in the same set of circumstances.



For instance, an error can result when one person is handing out medications, but that event happens within the context of a larger system of protective systems. Those might include: using blister packs; having the nurse or CMA wear a special vest to alert others not to distract her during med pass; and using independent verification of newly ordered or dangerous medications by a second person. If an error takes place, simply focusing on the nurse or CMA is not sufficient: even if she was mistaken, the system is meant to stop the mistake before it happens. Once an error occurs, you should look at how the holes in your Swiss cheese lined up to allow the error then strengthen your system to address that identified failure.

Going beyond the individual and moving past the tendency to assign blame takes practice. It requires deliberately examining the system factors that contributed to the event and searching for those that might provide better protection. These contributing factors fall into several different categories and can be applied to all types of events. (see Appendix for contributing factors)

Here is an example of the difference between the traditional and RCA approaches. As you will see, the RCA process involves

- Determining what happened
- Identifying what factors contributed to the event
- Developing an action plan to reduce the likelihood of a similar event

A Case Example - Fall from a Hoyer-type Lift:

OLD Approach

DESCRIPTION: A resident fell out of a Hoyer-type lift while being moved from bed to chair and suffered minor bruising and scratches. The CNA admitted she was a fault because she didn't follow policy and get help with the transfer.



CONTRIBUTING FACTORS:

- non-compliance with policy

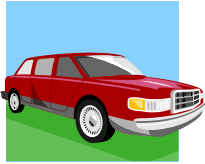
ACTION PLAN:

1. Counsel employee and reinforce policy for two-person transfers
2. Hold staff in-service regarding lifts policies.

A Case Example - Fall from a Hoyer-type Lift:

NEW Approach

(note the difference in the event description)



DESCRIPTION: A resident, being transferred from bed to chair, fell out of a Hoyer-type lift used many times in the past without problem. This time the tight space required moving the lift around the bed. During this process, the resident's feet became entangled in the equipment. This unbalanced the lift and the resident fell, receiving minor bruising and scratches, which were treated on-site. The equipment used was one of two available in the facility, and the other one was being used. Both were older models requiring two people to operate them. Prior to attempting the transfer, the CNA noticed everyone was busy helping other residents and she was running behind in her duties. She remembered that the policy was to get a second person to help, but she had used this lift by herself several times in the past without incident.

CONTRIBUTING FACTORS:

- Equipment: was dated and required two people for operation when staffing did not always support that need (
- Training: CNA did not know plan for proceeding when help was not immediately available
- Staffing: CNA noticed other staff was busy and she was running behind
- Culture: a floor culture of "doing my own work" rather than asking for help was well known to CNAs but not addressed by management
- Leadership: lack of management oversight allowed repeated single person transfers using the lift
- Environment: arrangement of furniture in resident's room created unsafe environment for proper use of lift

ACTION PLAN:

1. Include planned assistance with transfers in work assignments (short term)
2. Review expectations for proper transfers with floor staff and residents
3. Review staffing plan and work assignments, make changes if necessary.
4. Charge nurse follow-up to assure effectiveness of changed work assignments (short term)
5. Explore new lifts that have improved stability and enable one-person transfers, recommend replacement; and determine if size appropriate with current resident room design (intermediate term)
6. Work on developing/sustaining team culture (Long-term)

Root Cause Analysis Steps

The steps in investigation using the RCA approach are similar to the way events are investigated now. However, there are two differences. First, the RCA approach to the investigation includes a system-level view, looking specifically for work process, culture, equipment, and other organization-related contributing factors. Second, it offers some tools to assist in getting to the “roots” of the event.

It is important to remember that RCA is not for:

- personnel action; deciding fault and administrative consequence; punitive action
- use as an HR function
- personnel investigation
- determining relative responsibility or culpability

The steps in Oregon’s Root Cause Analysis process are:

1. Gather & Document Initial Information
2. Fill in the Gaps
3. Analysis
4. Action Plan Development
5. Evaluation of Results

The rest of this guide will walk you through each of these steps and provide helpful hints to assure an effective investigation. The guide includes an appendix with descriptions of the tools available to assist in event investigation and definitions common to RCA and Continuous Quality Improvement (CQI).

Getting Ready

Although the RCA process builds upon your current investigation approach it is important to recognize that it is also different. Take time to get ready to make the most of the RCA process by:

- making sure that you clearly understand the facts surrounding the issue, complaint, concern or allegation at hand
- suspending any judgments about how or why it may have happened until you have gathered the facts; start with a "clean slate" attitude
- inquiring with those that might have information (think outside of the box; it can help to make a simple list of what you hope to learn from each of these sources)
- gathering documentation that may be relevant and noting any personal observations (of equipment, general conditions, etc.) that will contribute to your understanding
- setting aside a time and place to talk with people privately; be clear about what you want to say and how you want to approach them (this might include addressing any fears they may have about talking to you, what may happen as a result, what you will do with the information, etc.)
- making sure that you have available anything that will help you do successful interviews

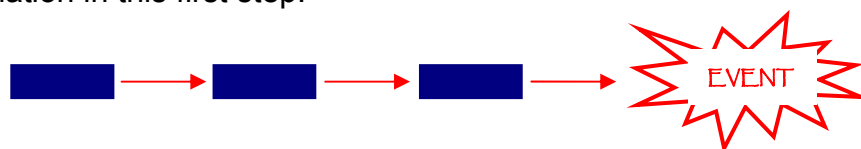


Step 1: Gather & Document Initial Information

In this first step the goal is to obtain an understanding of the actions and sequences leading up to the event. This information is the basis for the more in-depth part of the investigation to identify root causes. The timeline for this step is usually within 24 hours to avoid the impact of emotions and time on memory. Consider the severity of the event when determining the timeline (some events may require this step to be complete ASAP). This step should be complete by Day 1 of the investigation.

Process

- i. Ask staff directly involved with the event to describe their understanding of what happened and why (include activities the resident was engaged in).
- ii. Talk with the other people most directly involved:
 - Last to see the resident before the event
 - Individuals first on the scene
 - Witnesses to the event
 - Resident and any visitors
- iii. Use open-ended questions; allow people to tell their story as fully as possible (who, what, when, where, why, how).
- iv. What factors does each of them think contributed to the event?
- v. Where there are gaps, ask specific questions. Use phrases such as “Tell me a little more about...”
- vi. Take notes.
- vii. Draw a diagram of the scene; ask those involved to draw a diagram of the scene at the time the resident was found.
- viii. List or sketch out an initial sequence of activities leading to the event based on the information in this first step.



- ix. Report results per protocol.



Critical Components:

- ◆ Immediate data gathering; get the facts first
- ◆ Focus on what happened, not “who did it”
- ◆ Open-minded attitude



Watch for:

- ◆ Emotions of grief and fear altering perceptions from interviews
- ◆ Rote responses assigning blame or denying responsibility
- ◆ Making assumptions about the cause



Resources: (see Appendix)

- ◆ Interviewing Tips
- ◆ Creating a Safe Table



Step 2: Fill in the Gaps

In this step of the investigation the focus is on identifying and filling in gaps. Sometimes what you learn regarding activities and circumstances surrounding the event obtained during Step 1 will lead you to need additional information. This should be completed during Days 2-4 of the investigation (within 72 hours).

Process

- i. Share the event at the next Stand Up meeting:
 - Identify any gaps in information about the event (e.g. times and actions of those involved) and/or any other possible missing information.
 - List contributing factors (Use contributing factors list)

- ii. Where there are gaps, assign someone to get necessary information from:
 - Nursing staff
 - Supervisors/Managers
 - Non-nursing staff & other organizational personnel
 - Physicians, other health care professionals (e.g. PT, OT, Speech, etc.)
 - Plan of Care
 - Documentation (e.g. activity record, MAR, progress notes, incident & trend reports)
 - Re-interviewing some staff from Step 1 may be necessary

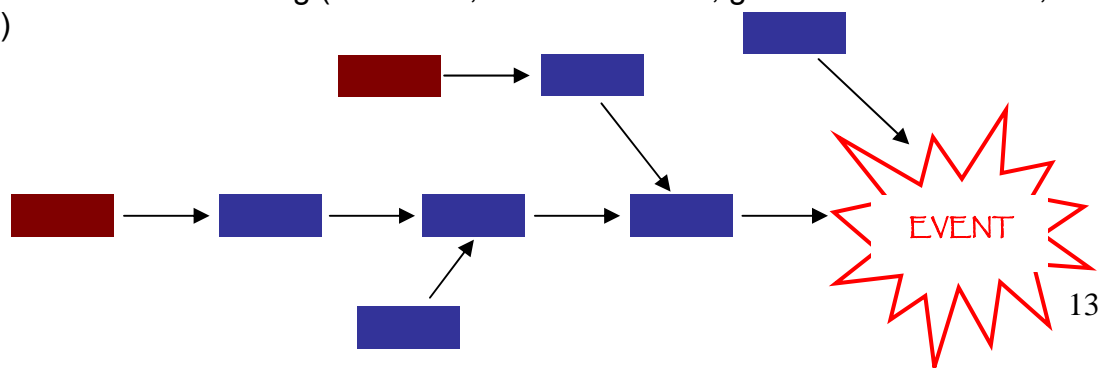
- iii. Visit site of incident and perform walk through of what happened if possible.

- iv. Look at any equipment involved in the incident.

- v. Review diagram/drawing of the scene from Step 1; modify if necessary

- vi. Sketch or list out the sequence of activities leading to the event based on the best understanding from all of the information gathered (see graphic below).

- vii. Plan for the RCA meeting (set a time, invite attendees, gather documentation, etc.)





Critical Components:

- ◆ Talk with obvious and not so obvious people who may have differing views
- ◆ Keep focus on what happened and how it happened
- ◆ Complete this step while motivation is high and memories are fresh



Watch Out for:

- ◆ Leaving gaps in information
- ◆ Rote responses assigning blame or denying responsibility
- ◆ Making assumptions about the cause



Resources: (see Appendix)

- ◆ Contributing Factors List
- ◆ Event Sequence Worksheet



Step 3: Analysis

In this step of the investigation, the focus is on tying together different pieces of information and arriving at the basic or root causes of the adverse event. It is a very important step because it determines the corrective actions. If the basic or root causes of the event are not identified, the event could happen again.

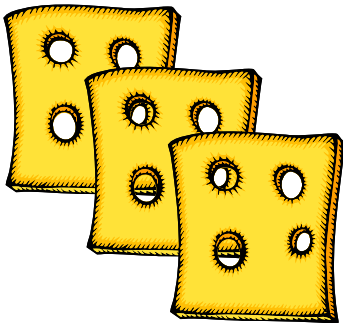


Process:

- i. Gather all information obtained on the event.
- ii. Review the information and sequence with the involved people, including members of the inter-disciplinary team, and together identify possible reasons for the event.
 - Use contributing factors list to be sure that all possible aspects are reviewed
- iii. For each of the possible reasons you discover, see if you can uncover an underlying cause. Ask **why** it happened and try to ask **why** 5 times, or until you cannot ask it anymore. See the box below for an example of how this “wise” technique allows deeper discovery of root causes than is possible using the first identified cause.

Example 5-Whys Analysis

<p>Event – Resident fell <i>Possible cause:</i> she tripped over a chair next to the bed</p> <p>WHY? She didn't see the chair</p> <p>WHY? There was no night light.</p> <p>WHY? Was not part of care plan</p> <p>WHY? Resident assessed as not at risk for falling</p>	<p><i>Plan:</i> remove obstacles next to bed</p> <p><i>Additional Plans:</i> Include nightlight for all residents</p> <p><i>Plan to address root cause:</i> Review fall risk assessment and consider updating if needed</p>
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iv. From the information gathered and the root causes identified, look at the protections or safety systems for this event. Consider each of the following types: physical, human, administrative.

Ask:

- What protections/safety systems were in place?
 - What protections/safety systems were ineffective?
 - What protections/safety systems should be in place to prevent recurrence?
- v. Document your conclusions or findings about causes of the event.
- vi. Use statements that lead to strong action plans – those that are likely to keep similar events from occurring in the future. Identify causes with their effects/results.

Poor Wording:	The nurse didn't follow the policy requiring the 5 rights of medication administration.	The only possible action is to tell the nurse to follow policy and punish if she doesn't.
Better Wording:	An interruption while getting the medication caused RN to miss checking for the correct dosage.	Possible actions include preventing interruptions.

vii. Compare conclusions/findings statements against the **Common Sense Test**.

Ask:

- Have you described the cause using specific and objective words? Avoid negative and vague words (e.g.: poorly, inadequately, improperly, carelessness, etc.)
- If you eliminate this cause/contributing factor, will the problem really go away?
- If you are tempted to cite 'human error' as the cause of the problem ('she made a mistake'), can you find a reason for that mistake (interruptions, lighting, etc.)?
- If a procedure was violated, can you find a reason why (distractions, workarounds or shortcuts, knowledge of procedure, etc)?



Critical Components:

- ◆ Focus on finding the most fundamental reasons (root causes) for the event.
- ◆ Conclusions or findings statements that link the causes to the effect or result



Watch Out for:

- ◆ Easy answers that don't address the fundamental causes.
- ◆ Stopping at the first or second answer to the question, "why?"
- ◆ Omitting findings because "we can't do anything about that" – see action plan section below for handling these.



Step 4: Action Plan Development

The purpose of this step of the investigation is the development of action plans explicitly linked to the findings of the investigation that will prevent occurrence of the event in the future. The strongest, most effective actions re-design processes, devices, software, and workspaces rather than trying to change individual memory or vigilance.

Process:

- i. For each of the conclusions or findings, identify preventive and, if applicable, corrective actions. Your action plan should answer the question: *“What will keep this from happening again?”*
- ii. Develop plans that can be put in place in the immediate, short, and longer term.
- iii. Use the S.M.A.R.T.S. system for action plan development. Write plans that are:
 - **Specific** (identify who, what, where, when, how, why)
 - **Measurable** (set criteria for tracking progress toward completion)
 - **Attainable** (there is a reasonable chance of success)
 - **Realistic** (willing and able to work on it)
 - **Timely** (set time frame and end date)
 - **Supported** (determine resources to support your action plan, i.e.: organization commitment, outside resources such as books, articles, courses, other LTC experts)
- iv. If a finding calls for an action or “fix” that is not immediately possible, such as remodeling all resident rooms, keep it as a long-term goal. Include other more short-term action plans (e.g. adding night lights) to implement in the meantime.
- v. Determine, if possible, the cost-benefit of your recommendations.
- vi. Document the plan.
- vii. Implement action plans.



Critical Components:

- ◆ Focus on the most fundamental reasons (root causes) for the event.
- ◆ Develop physical and natural protections/safety systems as much as possible.
- ◆ Develop preventive actions that keep a different person from the same or similar adverse event.



Watch Out for:

- ◆ Setting policies that rely on individuals trying harder or paying more attention.
- ◆ Changing people.



Resources: (see Appendix)

- ◆ Types of Action Plans
- ◆ S.M.A.R.T.S. Action Planning



Step 5: Evaluation of Results

The purpose of this step of the investigation is to make sure that the action plans work. Some action plans will be implemented. Others may not be implemented. The latter should be quickly identified, revised and tried again.

This is also referred to as the **Plan-Do-Study-Act** cycle. PDSA includes:

- Plan your action
- Do it (for a specified period of time)
- Study it (monitor for a specified period of time for effectiveness)
- Act (implement the action plan or start the P-D-S-A cycle again)

Process:

- i. Check in with person assigned to each action plan about halfway through the time given to see if any adjustments or changes are needed.
- ii. Repeat check-in and follow-up until plan is in place.
- iii. Carry out measurements for the criteria set up for each action plan.
- iv. Consider how many other residents may be impacted.
- v. Comprehensively review system issues and update as needed.
- vi. Have team members provide feedback to staff on progress.
- vii. Celebrate success and set plan for maintaining
OR
Revise plan and start with process step (i) until changes achieved.
- viii. Review at monthly QI meeting.
- ix. Track and trend the data (use line graphs, control charts, etc.)



Critical Components:

- ◆ Track the implementation
- ◆ Measure how each plan is doing
- ◆ Celebrate Success
- ◆ Plan for maintaining the changes



Watch Out for:

- ◆ Slippage over time as people return to their old routine
- ◆ Not providing feedback to staff on progress
- ◆ Tiring of the measurement



Resources: (see Appendix)

- ◆ Implementation Worksheet