Quality Improvement in FOCUS

Your Rapid-Cycle Improvement Guide to Achieving Results

PRIMARIS
Healthcare Business Solutions

Rapid-Cycle Improvement Getting Started

Table of Contents

Appendix

MO-08-05-QI October 2008

Origins

Today's society functions at an amazing rate. Results are demanded quickly, including the need to see quality of care improvement. Primaris is helping health care professionals respond to this challenge with cutting-edge quality improvement methods, including the techniques of rapid-cycle quality improvement.

Before making their way to the healthcare setting, industry leaders, such as General Motors, first pioneered rapid change methodologies. For example, General Motors has used a technique called PICOS to achieve change in a rapid manner. These rapid-cycle methodologies are not just about doing things faster, but doing things better.

Traditionally, quality improvement teams tend to spend their time convening meetings, receiving available data and planning future activities, which often include collecting more data from a large number of medical records. This often requires frequent, regular meetings that can span weeks or months. Unfortunately, all this activity and energy too often leads to little change in clinical care processes. As a result, team members often grow disinterested and withdraw from the quality improvement effort. Rapid-cycle methodologies were developed out of the need to see improvement quicker and to reduce wasted activity and efforts.

Where do we start?

We must ask three fundamental questions:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that still result in improvement?

A team must understand the need to set a clear goal. It is vital that all team members understand the goal. All too often, teams can be working together thinking they share a common objective only to discover later that certain assumptions were not shared with the team. Working through these assumptions at the beginning is essential. It is also helpful for keeping the team focused on the goal.

Data measurement is the only way to ensure that changes implemented are actually improvements. Teams should consider the following tips when collecting data.

- Don't wait for formal baseline data. Measure where you are now. This is not the time to have people become defensive over data. It is common for people in this stage to challenge data instead of focusing on quality improvement efforts.
- Remember that the reason your team is working on a project is to improve care, it is not to set up a perfect measurement system.
- Collect useful data, not perfect data. The purpose of the data is to learn not to evaluate. Keep it simple.
- Use small samples. Why measure every case when a few records will give you what you need?
- Train those collecting the data and give them clear instructions.
- Encourage data collectors to share practice patterns that are noted during data abstraction.
- Plot data over time on a run chart.

Origins

What changes can be made that result in improvements?

- Identify and apply specific changes that have been used successfully in other settings, such as in industry, retail or manufacturing. For example, one change developed in industry that is applicable to the medical arena is reduction of cycle times. Many restaurants now provide customers with beepers to signal the readiness of a table. An outpatient department may consider this idea for patients waiting for registration or lab work. This also could be applied to improve operating room turnover time. This can both speed up the change process, and allow teams to implement ideas developed by their own members.
- Encourage small changes. Start with a frame of mind that begins with "what can we change by Wednesday?" Teams can stalemate waiting for the perfect plan or the grand fix-it-all idea. Grand fixes are too often developed by a select few and then given to others to implement. Small changes are more likely to be attempted if they can be easily reversed if they do not work.
- Use multiple cycles of improvement. Teams are usually familiar with Demings' Plan/Do/Study/Act (PDSA) cycle. The PDSA cycle can be used in quick, rapid successions. After a change is implemented, data from a small sample are collected to determine if the change made had the desired effect. Then, the change is adapted, abandoned or adopted, and another change in the process is implemented and tested. Multiple small changes are often more effective than trying to make a major improvement with a single change.
- Have key stakeholders in the process review the proposed change and comment on its feasibility. Consider using multiple versions of the same process change tailored to the needs of different areas in the organization. For example, lab personnel may come to an intensive care unit to pick up specimens; whereas on a general nursing floor, the patient care technician or unit secretary may take the specimen directly to the lab.
- Help stakeholders see themselves as part of the same system working towards the same goal. Change is something that is usually resisted by most. Be a pioneer for change.

Clinical Improvement Cycle

Pros of Small Sample Size

- Teams can test/pilot ideas quickly.
- Teams can test ideas for change side-by-side with existing process.
- Teams can test ideas over a short period of time.

Cons of Large Sample Size

- Teams must collect large numbers of records to test one idea.
- Data from long periods of time may make it difficult for the team to determine cause and effect, i.e., what intervention actually caused the change.
- What was initially a solution at the beginning of the timeframe may no longer be useful at the end.
- Long periods of time are required to test ideas.

Getting Started

The FOCUS-PDSA quality improvement process will strategically guide your efforts to narrow down, collect data and select and organize a team for the problem area chosen. It will also guide you through all the remaining steps of the quality improvement process. The checklist is based upon the FOCUS-PDSA cycles of quality improvement. Each step has corresponding worksheets that will assist you in the above processes.

Cycle	Step	Target Date	Completion Date
F	**FIND A PROCESS TO IMPROVE** **Complete organization self–assessment** Determine if your organization meets clinical standards in provision of care. **Select area that needs improvement** Complete Identifying Improvement worksheet. **Collect data to understand scope of problem and possible reasons for problem** Review 5+ medical records to assess if this is really a problem. Review findings on Identifying Improvement worksheet. If after review, the charts do not reveal a problem, repeat Steps 2 & 3.		
O	**ORGANIZE TO IMPROVE THE PROCESS** **Create a team with appropriate staff for addressing the problem** Refer to Developing Teams worksheet. Involve staff from different areas, ask for volunteers to organize team meetings: • Complete Team Meeting Notes worksheet • Take simple notes at team meetings and record action items • Circulate team meeting notes to team members after each meeting **Determine goal statement for improvement** Complete Goal Setting worksheet. • Goal should be clear and focused • Goal must be realistic • Everyone on the team should know, understand and "buy into" the goal		
C	**CLARIFY CURRENT KNOWLEDGE OF THE PROCESS** **Define current process - identify what you are currently doing** Complete Process Analysis worksheet. • What are the steps to your current practice • Include processes if different for different shifts, departments or areas • If there is no process, identify related processes		

Getting Started

Cycle	Step	Target Date	Completion Date
U	**UNDERSTAND SOURCES OF PROCESS VARIATION** **Root-cause analysis**: Complete Root-Cause Analysis worksheet. Identify where and why the problem exists. Don't jump to conclusions. Brainstorm all possible ideas and causes for problem. *To assist in determining root-cause:* • Complete Fishbone Diagram		
S	**SELECT THE PROCESS IMPROVEMENT** **Develop change in process–identify an improvement based on the root-cause analysis**. Complete Process Improvement Plan worksheet. Refer to Improvement Strategies for suggestions. Evaluate alternatives for potential effectiveness and feasibility. Select improvement, change should be small and measurable.		
P	**PLAN** **Develop implementation strategy on small scale**. Complete Implementation Strategy worksheet. Plan how improvement will be implemented.		
D	**DO** **Implement improvement (pilot test)**. Complete Pilot Testing worksheet. Start **small** – one unit, one shift. Make change. Determine start date/evaluation date.		
S	**STUDY** **Evaluate pilot-tested change**. Complete Pilot Test Evaluation worksheet. After change is implemented, review charts and collect data for compliance. Evaluate data. Did change meet goal? Revise process (if necessary) – repeat steps 4-8. *It may be necessary to make change based on data analysis.*Team revises process. Communicate change. Collect data to evaluate improvement. Revise worksheets beginning with goal setting (as needed).		
A	**ACT** **Develop implementation strategy across organization.** Complete Implementation Strategy worksheet to plan organization-wide change if no revision is needed. **Implement improved process across organization** Implement tested change. Educate staff. Make changes and communicate. Make it visible. **Monitor improvement**. Complete Ongoing Monitoring worksheet. Develop plan to review and monitor improvement. Review process and collect data. Make changes as necessary. Recognize and reward team!		

Find a Process to Improve

1. **Select one component to improve:**

2. **Randomly select five (or more) charts to review. Determine a specific question (who, what, when, how) that will be asked when looking at charts:**

3. **Collect data:**

   Data can help you separate what you think is happening from what is really happening.
   Data will establish a baseline so you can measure improvement.
   Data will help you avoid putting solutions in place that will not solve the problem.

Record chart findings here:

Chart #	Yes	No
1		
2		
3		
4		
5		

4. **If data is not readily available from charts, what other sources did you use to collect your data, and what steps did you take to collect this data?**

See Worksheet A: Identifying Areas for Improvement on page 16.

Organize to Improve the Process

Developing a Team

An effective team is key to achieving improvement. Choose team members based on knowledge of, and involvement in processes directly impacting patient care.

- **A Champion** with expertise about the topic, a leader among staff members, provides care to many of the patients involved with the process under improvement; if it is a clinical topic, it is important to have a physician or clinician champion.
- **A Decision-Maker** or senior leader with the authority to promote or enhance the implementation of the improvement.
- **Day-to-Day Leaders**, from all relevant departments, units and/or staff involved in the process, who have expertise or special knowledge about different elements of the core process.

A quality improvement team is small – no more than 10 members. Ideally, it consists of 3-5 members.

What are the roles and responsibilities of team members?

One member should be appointed **Team Leader**. This person "owns" the process examined and has the responsibility and authority to lead the improvement effort. To help maintain a record of the team's work, one member may be assigned the responsibility of **Recorder.*** To ensure the team meets regularly and to help manage time in meetings, every team should appoint someone as **Timekeeper.***
*Role can be rotated among members

How often should the team meet?

Identify time and place for short weekly meetings (no more than 30 minutes). Meetings can be more or less frequent as needed. The team does not have to meet at the same time and place each week. Post meeting schedule in a place accessible to all team members.

How can teams manage barriers?

Ongoing evaluation of the team's accomplishments is important. If a team reaches a barrier, progress is delayed. Overcoming barriers requires all team members to do one or more of the following:

- Acknowledge the problem
- Listen to all viewpoints being discussed
- Agree to disagree
- Take responsibility for reaching solutions
- Focus on resolving the conflict

Organize to Improve the Process (continued)

The following are some tips on how to make a team successful.

Take responsibility for the success of the team

One of the key elements to share in a team is the responsibility for making it a success. Teams often get involved in work that is important to the organization's business success. In order for the team's work to be successful, commitment and dedication are required from each team member. The power of teams lies in having people freely share their ideas and experiences.

Contribute to discussions

Each team member has a unique perspective to offer. Often, the best ideas are left unsaid. This is simply due to the fact that an individual may be afraid of potential criticism or ridicule by other team members. Everyone should be given the chance to be heard. His or her ideas are critical in finding a solution to the team's issues.

Follow through on commitments

Following through on commitments is a top priority. Team members rely on each other to get work completed. Completing assignments on time and attending team meetings help the team progress and maintain momentum.

Actively listen to others

Not only is it important to contribute ideas and suggestions during discussions, but also to listen closely to others. Listening to what other teammates are saying is the heart of teamwork. Listening is also a sign of respect. It encourages teammates to participate and shows that opinions and ideas are valued.

Give useful feedback and accept feedback easily

In addition to listening, provide feedback to teammates. It shows respect and allows the team to work out differences. Accepting feedback is as important as providing feedback. Accepting feedback does not mean that one automatically agrees with the other person. It only means an effort will be made to understand the other person's concerns.

Celebrate the team's success

Celebrating successes is important but often overlooked. By recognizing accomplishments, a message is sent that quality improvement is important and achievable. Success and recognition of success not only provide positive feedback to the team and its members, but also to the organization. Future improvement efforts can only be strengthened by the positive influence of a successful quality improvement initiative.

See Worksheets B: Developing a Team (page 17) and Worksheet C: Team Meeting Notes (page 18).

Organize to Improve the Process (continued)

Goal Setting

A goal is a clear statement of the intended improvement and how it is to be measured. Use your goal statement to stay focused, to establish boundaries for what is and is not included in your team's work and to define success. Post your goal where it is visible at every team meeting.

Write a goal for improvement:

- Your goal should:
  1. Answer the question, "What do you want to accomplish during this project?"
  2. Be measurable/numerical.
  3. **Be short** so that everyone can remember it.

- It should not include how you will achieve your goal.

- Your goal may include a beginning and end date.

- In setting the goal, be sure to involve senior leaders.

- Base your goal on data and/or organizational goals.

See Worksheet D: Goal Setting on page 19.

Clarify Current Knowledge of the Process

Process Mapping

Achieving improvement goals can be accomplished in many ways. Mapping a process allows you to make work visible, show the steps of the process and improve customer satisfaction.

Internally, process mapping can:

- Orient new employees to a process
- Provide a means to organize staff
- Provide a visual means to quickly get "up to speed" on what the team is working on
- Identify improvement opportunities
- Evaluate, establish or strengthen performance measures.

Use a Flowchart

Flowcharts serve as a foundation for process mapping and understanding the basics is key. Creating a flowchart can show each step in a process and identify areas that need improvement. Symbols are used to represent the sequence of steps that make up a process. Using symbols builds intelligence into the chart making it more useful. An effective flowchart clearly defines boundaries and flows from left to right and top to bottom.

Process Mapping Methods

There are three methods involved in process mapping. The first is a self-generated map in which a person draws the map and then asks others to react to it. The second method is to conduct one-on-one interviews. Start by interviewing people involved in the process from start to finish, create the map and then ask for input on the results. Finally, you can use a group interview to map a process by gathering relevant persons together to generate the map. This final method involves a high degree of participation and creates ownership. All three methods involve teamwork but to differing degrees.

Tips:

- Take time to "brainstorm" and listen to every team member.
- What are the beginning and ending steps of the process?
- Ask "what happens next?" for each subsequent step.
- For each step of the process, note who performs this step and the time if applicable.
- Make each step in the process very specific.
- Use one Post-it® note, index card or piece of paper for each step in the process.
- Lay out each step, move steps, add and remove steps until team agrees on final process.
- If the problem is that there is no process to do X, then identify the steps.
- If the process differs within the organization, identify individual process.

Clarify Current Knowledge of the Process (continued)

Other Types of Maps

Relationship maps provide a "high-level" view of the input and output connections among parts of an organization. These maps show the product, workflow and internal/external relationships within an organization. Create a relationship map by identifying major outputs, immediate customers, suppliers, internal relationships and listing major inputs.

Cross-functional process maps illustrate how work gets done and show the steps that make up a process. Use these maps to show the inputs and outputs of each step, the sequence of steps and people, functions or roles that perform each step. Group involvement is key to cross-functional mapping. By completing the maps, a team is able to map each step of a process separated into functions.

How to Analyze a Process

When analyzing the process, start by interpreting the completed maps and collect performance data. Ask questions that should be answered after the process is mapped. Determine additional data that will be required. Identify the tool used (Relationship Maps, Cross-functional Process Maps and/or Flowcharts). Next, explain the portion of the map that was used (inputs, outputs, steps, etc.). Finally, describe the analysis methods that are likely to be most useful for the specific application. Use these methods to determine areas that require improvement within your facility. **See Worksheet E: Process Analysis on page 20**.

Flowcharting Symbols

Below are symbols used in more complete flowcharts.


Boundary (Start/End): Identifies the beginning or end of a process.


Operation: Identifies an activity or task in the process that changes an input. Usually, the name of the activity or task is written inside.


Movement or Transportation: Indicates movement of the output between locations.


Inspection: Identifies that the flow has stopped in order to evaluate the quality of the output or to obtain an approval to proceed.


Delay: Identifies when something must wait or is placed in temporary storage.


Storage: Identifies when an output is in storage waiting for a customer.


Decision: Identifies a decision or branch point in the process. Write the decision inside. Label each path emerging from the decision with the options.


Document: Identifies when the output of an activity is recorded on paper. Write the name of the document inside.


Database: Identifies when the output of an activity is electronically stored (entered into a database). Write the name of the database inside.

Understand Sources of Process Variation

Root-Cause Analysis

In health care, the goal is to make patient care as safe as possible. Health care teams have to be prepared to learn from situations that do not get the desired outcome, end as an adverse event, or result in a close call.

Root cause analysis (RCA) is a method which can assist teams in learning from both adverse events and close calls. RCA is generally employed to uncover latent errors underlying a sentinel event. But, it is not enough to just learn the truth about why things happened the way they did. What really counts is applying what we learn constructively, so we can do things better in the future and ultimately prevent adverse events and close calls from happing again.

The Joint Commission requires RCAs under Standard PI.2.30, and has mandated the use of RCAs in the investigation of sentinel events in accredited hospitals since 1997.

In nursing homes, a root cause analysis would be appropriate whenever a sentinel event occurs. A sentinel event occurs when even one resident has a fecal impaction, dehydration, low-risk pressure ulcer.

Chartering an RCA Team

Once the decision to conduct an RCA has been made, the next step is for the facility director to charter a RCA team. The purpose of chartering the team is to provide an initial framework for the team's activity. It is anticipated that most teams will have four to six members from different areas of the hospital or nursing home. It is important to consider mixing up the RCA Team in order to get a new perspective on each investigation. It is also important to delegate tasks to team members (such as conducting interviews or reviewing a patient chart), and have each member report back their findings to the entire team. It is critical for the appointed team members to be unbiased and not have a vested interest in the outcome of the process.

A sample RCA Team charter memo has been developed by the Patient Safety Improvement Corps: An AHRQ/ VA Partnership. **See Worksheet M: RCA Memorandum on page 29**. In addition, the United States Department of Veteran Affairs has multiple resources related to root-cause analysis on its Web site at: http://www.va.gov/NCPS/CogAids/RCA/index.html.

Answering Three Key Questions

One approach used by many health care facilities is to begin the RCA process by focusing on three key questions:

1. What happened?
2. Why did it happen?
3. What are we going to do to prevent it from happening in the future?

The process must avoid looking at human error, fault or blame. The process should start off with a set of facts and drill down, using a cause-and-effect analysis, to discover the cause of the error or near miss.

Understand Sources of Process Variation

Collecting and Analyzing the Data

The step of gathering the facts or the evidence is often overlooked, because it is time consuming. However, you can't draw conclusions unless you have evidence/data to base it on.

During the data collection phase, the goal is to gather the data to answer the above mentioned questions. The team can establish what happened through structured interviews, document review, and/or field observation. These data are used to generate a sequence or timeline of events leading up to and following the event under review. As mentioned above, it is important to delegate tasks to team members and have each member report back their findings to the entire team. When making assignments, be sure to give deadlines to team members so that there are no gaps in information during the analysis phase.

Next, the team should analyze all the data related to the incident. Many teams typically follow a list of potential categories of errors, such as those provided by The Joint Commission's root cause action matrix or James Reason, author of *Managing the Risks of Organizational Accidents*.

The categories of factors influencing clinical practice may include:

- Institutional/regulatory
- Organizational/management
- Work environment
- Team factors
- Staff factors
- Task factors
- Equipment factors
- Patient characteristics.

Each category can be expanded to provide more detail. By reviewing all of the available evidence/data, team members should be able to uncover the physicial, human and latent root causes. The root cause analysis allows you to identify the "root" of the problem; where and why the problem exists. You can then make decisions based on data rather than "hunches" and look for lasting solutions rather than relying on "quick fixes" and "band-aid" approaches.

The Fishbone Diagram **(Worksheet L, page 28)** can be used to create a "cause and effect" diagram. The cause and effect diagram (Fishbone) starts with the problem at the head of the fish. Under each general category of the Fishbone, answer the question, "why?" regarding the problem identified. Once the Fishbone Diagram is done, the various causes are discussed to determine the root of the problem – or the real reasons the problem exists. It is from this discussion that the focus for the improvement plan begins.

The fishbone diagram is only one example of a quality improvement tool to help you assess your process. You may also want to use flow charts or Post-it® notes to "flow" your process and identify gaps in process as indicated in the process analysis worksheet. **See Worksheet E: Process Analysis on page 20**.

Select the Process Improvement

At the conclusion of the RCA, the team needs to summarize their findings and recommendations and communicate them to hospital leaders. The reported information should then be used to develop a process improvement plan. This is the phase is which many RCAs break down.

One area of break down, even when an action plan is developed, is providing follow up to see whether or not the problem that was analyzed has improved. It is important to develop measures, continue to gather data (doesn't have to be extensive to be useful), and track the measures for the desired effects. If the team and/or leadership does not develop and follow a process improvement plan at the conclusion of the process, the RCA will not have an effect on efforts to reduce the number of sentinel events.

Begin your process improvement plan by identifying a manageable change based on the outcome of root-cause analysis and/or current process analysis.

What will we do/change?

1. Identify criteria that will help you evaluate all the solutions and choose the best one to solve the problem, such as:

- Cost
- Potential benefits
- Potential problems
- Ease of implementation

2. Brainstorm all potential solutions before rejecting any ideas. Write all the ideas below and on reverse side of this sheet.

- Can we do this another way?
- Can it be done somewhere else?
- Can it be done another time? When should it be done?
- Can someone else do it? Who should do it?
- Why do we do it the way we do now?

3. Evaluate a few solutions listed. Don't be afraid to combine ideas! Come to a team consensus on the best solution to test. Consensus means that each team member can "live with" the solution.

4. Begin the PDSA cycle. Once the consensus for a process change or improvement is reached (**See Worksheet F, page 21**), the PDSA cycles of process improvement can begin. **See Worksheets G through K on pages 22-26**.

Worksheet A: Identifying Areas for Improvement

1. Define the problem, challenge or opportunity for improvement

- What specifically do you want to "fix" or improve?

Example: Patients aren't being assessed upon admission for pressure ulcer risk.

2. Briefly state the problem, challenge or opportunity for improvement that will be improved through teamwork. What is it that you will fix or improve?

3. What is the evidence to support your problem selection?

Randomly select five (or more) medical records (or other data source, depending on the question) to review. Determine a question that will be asked.

Example: Was the patient assessed upon admission for pressure ulcer risk?

Record findings here:

Case #	Yes	No
1		
2		
3		
4		
5		

Do you have any data? Data will establish a baseline so you can measure improvement

Additional notes:

Worksheet B: Developing a Team

An effective team is key to achieving improvement. Choose team members with complimentary skills committed to a common purpose and hold themselves mutually accountable.

1. Identify members who will work on this project. Teams should be small that will plan, implement and evaluate their work.

Team member	Name (staff position)	Key characteristics	Primary role(s)
Senior Leader		• Enough clout in organizations to implement new approaches to care • Authority to allocate time and resources necessary to achieve team aim(s)	• Sponsors and visibly supports the team • Created the vision of the new system for the organization as a whole • Leads the spread of specific changes throughout the organization or system
Clinical or technical expert .	Physician(s): Nurse(s):	• Expert knowledge of the subject matter • Understands process of care within workspace where changes will occur • Good working relationship with colleagues and frontline leaders • Interest in driving/leading change	• Responsible for coaching and role-modeling the team behavior and skills • Responsible for keeping the executive sponsor updated *Essential to have at least one physician and nurse champion*
Front-line leader		• Understands details of the unit/department • Understands effects of making changes in institution • Able to work effectively with physician/nurse champions	• Is the critical driving force on the team • Assures that changes are tested/measured • Provides oversight for data collection
Other team members	Examples: QI/PI director, risk manager, infection control, etc.	• Knowledge of quality improvement principles • Experienced in process improvement, including performance trending techniques	• Trends performance

2. Identify time and place for short weekly meetings (no more than 30 minutes). Post meeting schedule at same time and place each week. Meetings can be more or less frequent as needed.

Date	Time	Place

Worksheet C: Team Meeting Notes

Date:

Team members present:

Team Goal:

Date	Main points of discussion	Next steps	Person responsible	Deadline

Continue to jot down team meeting notes on other pages. Share updated team meeting notes with all members of the team after each meeting.

Worksheet D: Goal Setting

A goal is a clear statement of the intended improvement and how it is to be measured. Use your goal statement to stay focused, to establish boundaries for what is and is not included in your team's work and to define success. Post your goal where it is visible at every team meeting.

1. What do you want to achieve? (see Identifying Improvement worksheet)?

2. What\who is affected by this issue or problem?

3. What are you trying to accomplish?

4. What is the timeline for this change?

5. Based on the above information, create the goal statement:

6. Team Goal #1

7. Team Goal #2

Test yourself:

1. Is the goal stated clearly? ☐ yes ☐ no
2. Is the goal measureable (*includes a numerical component)*? ☐ yes ☐ no
3. Will it be clear to others when the goal is achieved? ☐ yes ☐ no

Worksheet E: Process Analysis

Team discussion

Evaluate your current process as your define it:

What policies and procedures do we have in place for this process?

What forms do we use?

How does our physical environment support or hinder this process?

What staff is involved in this process?

What part of this process does not work?

Do we duplicate any work unnecessarily?

Are there any delays in the process? Why?

Continue asking questions that are important in learning more about this process.

Worksheet F: Process Improvement Plan

Identify a manageable change based on the outcome of root-cause analysis. What will we do/change to address the root of the problem?

1. **Identify criteria that will help evaluate potential solutions to the problem, such as:**
   - Cost
   - Potential facility/resident/staff benefits
   - How easy it would be to implement

2. **Brainstorm all potential solutions before rejecting any ideas.**

   Use this space for brainstorming:

3. **Evaluate a few solutions listed above. Don't be afraid to combine ideas! Come to a team consensus on the best solution to test.**
   - Consensus means that each team member can "live with" the solution.

4. **Write consensus decision on one process change or improvement to make:**

Worksheet G: Pilot Testing

Pilot testing provides an opportunity to implement change on a small scale, giving you early results to determine if the change is making the improvement that you expected.

1. **What can the team do to make changes happen?**
   - Who will train staff? _____
   - Who will update/revise/remove a form if necessary? _____
   - Who will get feedback from staff? _____
   - Who will monitor changes as necessary? _____
   - Who will the team contact if they need support implementing change? _____
   - Who will audit the outcome of the process change? _____
2. **List changes resulting from staff feedback.**

3. **What happened that was unexpected?**

Worksheet H: Pilot Test Evaluation

Evaluating the pilot test allows your team to organize their observations. Evaluation also included data to check whether the change has made a positive impact on what you're trying to measure.

1. **How could implementation of the change be different?**
   - What were staff reactions to the change?
   - How could the team better implement the change facility-wide?
   - Brainstorm ways to better implement the change based on observations and suggestions:

2. **Has the change (in process, form, etc.) had a positive impact on your goal?**

Goal:

Date reviewed	Chosen measure for evaluation	# of charts reviwed (A)	# of charts with positive results (B)	B out of A (B/A)

Continue data collection on back of sheet, as often as desired, until goal is reached.

Worksheet I: Ongoing Monitoring

Monitoring the implemented change allows your team to evaluate, on an ongoing basis, whether or not the implemented change has made an impact on overall care delivery.

- Decide who on staff will perform tracking related to the facility-wide implementation.
- Decide when this monitoring will be completed (i.e. monthly, bimonthly, quarterly).
- Decide on how this data will be collected and evaluated.

Goal:_____
Ex.: Pressure ulcer risk assessments will be completed on all patients within 24 hours after admission.

Date of organization-wide implementation:_____

How will you know if you have achieved implementation?
Ex.: We will know when 10 out of 10 admissions this month show that a pressure ulcer risk assessment was completed upon admission.

We will know when_____

_____

Record findings:

Date	# of cases reviewed (A)	# of cases with positive results (B)	B out of A (B/A)

Review the following:

1. Based on the data collected, check to see if the process has been implemented 100%. If it has, continue to monitor as long as the team feels necessary.

2. Based on the data collected, check to see if implementation of the new (improved) process has had an impact on the delivery of care. If it has not, you may wish to explore the following questions:

   - Has the process been successful on some shifts or units, and not on others? If so, why?

   - Is further staff education needed? In what areas?

   - Does the process need to be revised for organization-wide implementation? If so, plan a pilot test of some revision to the process. Use these worksheets to plan the pilot test if necessary.

Worksheet J: Implementation Strategy

The implementation strategy identifies how you will accomplish change. Planning the implementation will help coordinate the activity of the team. Implementation strategy includes how the change will be communicated to staff, how it is implemented and how it will be evaluated.

Create your implementation strategy

What is the change?

Why has the team suggested this change (what is the goal)?

Who will be involved in the change? Are there other staff members who may be affected by this change?

When will the change be made (start date)?

When will it be evaluated (evaluation date)?

How will it be evaluated?

- What data will be collected?
- When will it be collected
- How will it be measured?

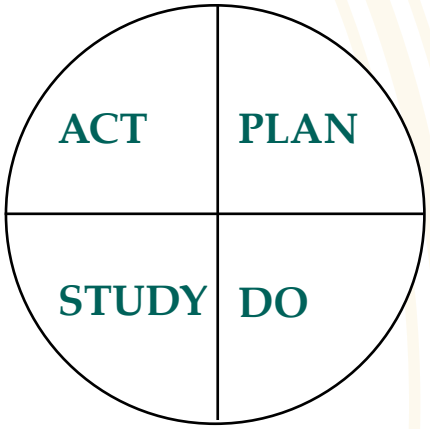
Communication is key! Share the answers to the above questions with the staff who will be involved in making the change. Talk about the change positively. Ask for feedback on how to implement the proposed change.

Worksheet K: PDSA Cycle

Measurable Goal:

Team:

Cycle:
Date:
Purpose of Cycle:



PLAN

The change, predictions and data collection:

The change:

What is the change we are testing?

Who are we testing the change on?

When and where are we testing?

What other tasks are needed to set-up this test of change?

How will we know whether a change is an improvement?

Predictions:

What do we expect to happen?

Data collection:

What data do we need to collect to determine if we achieve prediction?

Who will collect the data?

When will the data be collected?

Where will data be collected?

Worksheet K: PDSA Cycle (continued)

DO
Carry out the change/test, collect data and begin analysis

What was actually tested?

What happened?

Observations:

Problems?

STUDY
Complete analysis of data, summarize what was learned, compare data to predictions.

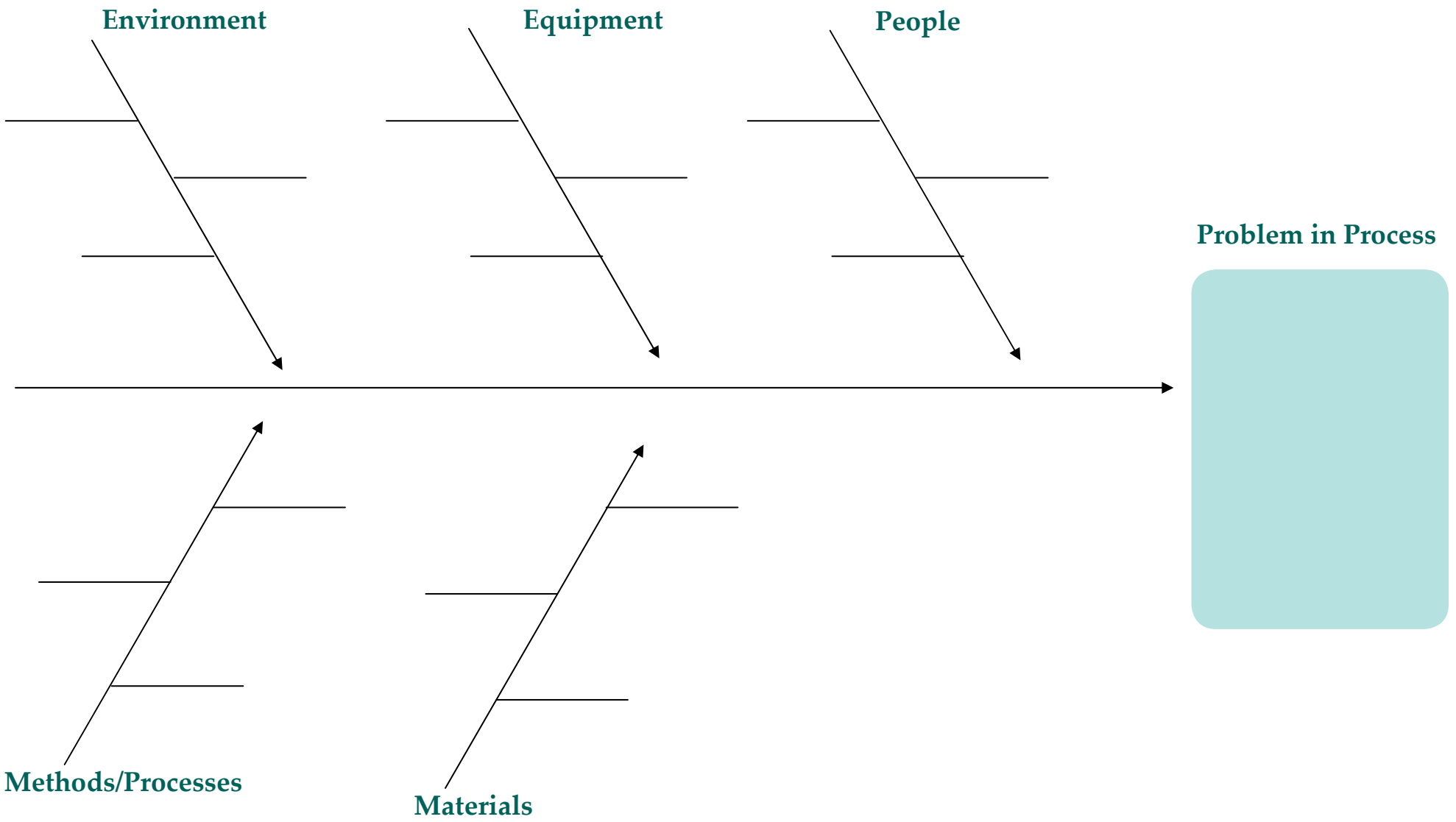
ACT
Are we ready to implement the change?

What changes should we make before the next test cycle?

What will the next test cycle be?

Complete PDSA cycle as many times as needed.

Worksheet L: Fishbone Diagram



Worksheet M: RCA Memorandum

Date:

From: Director

Subj: RCA Team Charter Memo

To:

1. This memo confirms that a RCA team will be convened to determine the root cause and contributing factors for the adverse event(s), close call(s) or aggregated review briefly described below:

Date event occurred ___/___/___ Date Facility was Aware of Event ___/___/___
This RCA is for (check one): Individual Case _____ Aggregated Review _____

2. As part of the RCA process, the team will be responsible for developing a final report and recommendations based on their expert analysis. All RCAs are quality assurance, focused review processes and the team's products (e.g., interviews, preliminary and final reports, etc.) are considered confidential, privileged and protected under 38 USC 5705.

Note: If in the course of conducting the RCA it appears the event(s) or close call(s) under consideration were the result of an intentional unsafe act or acts, the team will contact the facility director so that other administrative review processes may occur instead. At that point, the RCA team will discontinue their work, and the information they have already developed will remain protected as a focused review (38 USC 5705)

3. RCA participants are listed below. The respective service chiefs/designees have already been notified of this important commitment and are in full support.

RCA Advisor: The advisor's role is to initiate the RCA process, provide an introduction/overview for the team and provide consultation to the team according to the advisor's assessment of the process

Name _____ Title _____ Phone _____

Has the RCA advisor had formal training? (check one): ☐ yes ☐ no
(If 'no', the RCA advisor must be provided with training)

Team Leader: The team leader's role is to skillfully lead the team thro ugh the RCA process and ensure that the best possible product is developed in a timely manner. The team leader is also responsible for estimating time and resources spent on this process.

Name _____ Title _____ Phone _____

Has the team leader had formal RCA training? (check one) ☐ yes ☐ no

Worksheet M: RCA Memorandum (continued)

Team Members (name/title/phone/training needed): The team member's role is to rigorously conduct the RCA as full and active participants in the process.

Name	Title	Phone	Training? Yes/No

(Team members, who have not had training, must receive training)

4. List of disciplines and/or services involved in this adverse event(s) or close call(s):

5. List of potential internal (i.e., facility) and external experts of consultants

6. List of space and equipment currently available to the RCA team (e.g., room number, flip charts, laptop computer, etc.)

7. The RCA team's final report is due to the risk manager on: ___/___/___.

8. The team may add additional members and go beyond the preliminary listing of disciplines/services and experts/consultants, as needed. If additional team members are added, more space or equipment is required, or report due dates require an extension the team leader is requested to contact _____.

   Thank you for improving patient safety!

Insert Director's Signature Block

Worksheet N: Overcoming Barriers to Change

Enlist senior leadership to facilitate change and achieve breakthrough improvement. Senior leadership commitment does not need to be time consuming; however, it should be strong and effective. Below are simple yet significant things senior leaders can do to create and maintain a culture of improvement.

Establish goals that move beyond the comfort zone. Frequently monitor the progress to expedite improvement. Maintain contact with the improvement effort. Attend team meetings, even if only for a few minutes. Visit the site of the change to monitor progress and ask how you as an executive can be more helpful. Make the improvement effort a high priority on the organization's agenda. Assure that the team has the resources it needs. Celebrate the team's successes either publicly or personally. Keep sight of how the improvement efforts are connected to the system as a whole.

In the charts on the following pages, the problem (Dx, on the left) and solution (Rx, on the right) are grouped according to the steps an organization must go through to reduce delays and waiting times.

Setting Goals

Dx	Rx
Goal is not a stretch.	Enlist the senior leader's help. The leader has the authority to take the status quo off the table and encourage the staff to move beyond "safe" goals.
Goal gets diluted over time; numerical targets are downgraded.	Resist the temptation to weaken goals. Identify barriers to progress and seek solutions instead of redefining the goal.
Initial goal statement is unclear, doesn't point to what action is necessary; no numerical targets are set.	Set numerical targets, and outline an approach and timeline for achieving them. If you can't see clearly how to plan changes or how to measure progress toward the aim, try redrafting it to make it more actionable.
Goals are multiple or lack unity.	Clarify goals. As long as the goals aren't conflicting, agree that the team will have a dual focus; work toward unifying goals as the project develops. If conflicting goals exist, enlist the aid of the senior leader.
Goal becomes unclear as work progresses.	Constantly focus on goals by repeating or renewing them at the beginning of each meeting.
Goal relates only to part of a system of care, but is not connected to the overall system.	Starting with parts of a system is okay, but be ready to expand the scope of the project once initial goals are achieved.

Establishing Measures

Dx	Rx
Lack of clarity about how to define and measure the primary outcome measure (e.g., delay in start of surgery cases, waiting time in physician's office).	Use the goal as a reference for defining the outcome measure. Goals should specify clear objectives that reflect the change in the system. One approach is to define what you would like the results to show at the end of the project, and derive appropriate measures.
Confusion about the difference between outcome measures and process measures.	• Use outcome measures that tell whether the changes being made are leading to improvement, that is, helping to achieve the goal (e.g., holding time in ED). • Use process measures that tell whether a specific process change is having the intended effect (e.g., percentage of telemetry patients not meeting criteria for telemetry utilization).

Worksheet N: Overcoming Barriers to Change (continued)

Dx	Rx
Too many measures.	• Make sure that measures match goals; evaluate whether you really need each measure to help guide changes. • Collect only enough data to support the "Study" phase of PDSA cycles.
Delays due to waiting for the information services department to provide data.	Use sampling instead of waiting for information services to crunch numbers. You can compare the results from sampling with those for all patients at a later time.
Limited access or no access to information services or to a computer system.	Use the resources available to you. Updating the organization's computer system is not a feasible endeavor for a short-term project; a great deal of change and improvement can occur using available resources and just enough data.
Lack of general interest in the data you are collecting.	• Check on the clarity and commitment to the goal. • Present data simply (use graphs rather than tables). • Don't collect too much data. • Check whether the data help with PDSA cycles; if not, you are probably collecting the wrong data.
Resistance on the part of the staff to help collect or analyze data.	• Make sure everyone has bought into the project goals. • Make sure staff understands that data will be used for learning and improvement, not for judgment. • Revisit the goals and plan for testing changes; check whether you are collecting too much data, unnecessary data or both. • Make it easy for staff to collect data by integrating it into their daily routine.
Spending a majority of your time and energy on data (either collecting it or discussing it at meetings).	• Emphasize using data in a test, with the focus on how data can guide the next PDSA cycle. • Force an answer to the question, "What action could these data lead to?" • Mandate a minimum data set and stick with it for a month. • Use only available data. • Suggest trying a PDSA cycle using existing data.
Resistance to small-scale data collection on the grounds of lack of "scientific" validity.	• Differentiate between the level of data sophistication needed for research and that needed for improvement: randomized clinical trials are needed to establish standards of practice, but not to test best methods for putting standards into practice. • Sampling can be used to test changes on a small scale; once improvements are agreed upon, additional data can be collected to verify results. • Sampling is based on scientific principles and can satisfy many concerns about validity.

Developing and Testing Changes

Dx	Rx
No one can identify any change concepts that seem to apply to the project.	Change concepts are often useful for generating ideas for specific process changes. Sometimes, however, process changes can be identified first. Other sources of ideas for changes include brainstorming with the team, asking front-line staff and patients how they perceive the problem and talking with other departments that may have similar process issues.

Worksheet N: Overcoming Barriers to Change (continued)

Dx	Rx
"We've tried to change things before, but nothing's worked."	• Try to identify why previous efforts have failed: separate out whether the idea was flawed or the attempt to implement it ran into barriers. • Emphasize that teams often learn more from failed tests than successes. • Remember that you will be testing small changes first, so you will be able to identify and adjust problems as they come up.
Disagreement in the team about which changes to make first.	• Remember that you will be testing ideas for change, so you can learn quickly about which approaches seem to work. • Plan to test several ideas at once. • Use multivoting or other group tools to make a quick decision about where to start; revisit the decision after initial testing is complete.
"We're ready to identify changes we would like to make, but we are afraid resources are not available to us."	• Share plans with your senior leaders and get initial feedback; be specific about skills and/or resources needed. • Test on a small scale to see if plans work before making a formal request for resources. • Use small-scale data collection to minimize additional resources needed. • Consider redefining the scope of the project if resources are an impediment; set initial goals for one department or one unit.

Team Composition and Functioning

Dx	Rx
Changes may involve additional work for front-line individuals.	• Ask senior management to provide additional resources for these individuals. • Make work a normal part of their day. • Try to redesign changes that make everyday work easier rather than more difficult (e.g., consolidate different reporting forms). • Identify opportunities to eliminate wasted efforts and unnecessary work. • Make sure front-line staff are involved in designing changes.
Learning from PDSA cycles is often delayed for several weeks while waiting for tests to be completed.	Avoid large PDSA cycles, which are often difficult to complete absorb time and energy. Cycles should be short but significant; test a big idea in a short time frame so that you can identify ways to improve or change the idea.
PDSA cycles are not connected to the goal.	• In reflecting on what was learned from the test ("Study" phase of the PDSA cycle), make sure it helps to achieve your goal. • Plot outcome measures related to the goal over time.
PDSA cycles are not linked.	Connect the "Study" phase of one cycle to "Plan" phase of the next one. Schedule specific times for reflecting on what was learned in carrying out cycles.

Worksheet N: Overcoming Barriers to Change (continued)

Dx	Rx
Team meetings are unfocused and unproductive.	• Revisit the basics: goals, measures, changes. • Structure meetings around the PDSA cycles being tested. • Visit other teams to see how their meetings work. • Take advantage of the organization's resources for facilitators or training in team building. • Consider changing the team membership if problems persist. • Do a PDSA cycle that focuses on improving team functioning.
Meetings are too long.	• Establish team rules regarding agenda setting, timekeeping, roles and responsibilities. • Make sure each meeting has a clear focus and objectives. • Use PDSA cycles to test ways to shorten meetings. • Use brief huddles between meetings to keep in touch and report on progress. • Scale down the project based on time constraints.
The team does not meet regularly.	• Investigate whether the issue is time or the lack of focus. • If time is the issue, discuss resource availability with the senior leader; have other staff cover during meetings; have meetings before or after a shift. • If lack of focus is the issue, revisit goals and plan for testing changes. • Schedule the next meeting at the beginning of each meeting. • Use brief team huddles between meetings.
The team agrees on what is to be done but does not follow through.	• Check the composition of the team; it should include systems, day-to-day and technical leadership. A missing component can hamper implementation. • Clarify the specific responsibilities of individuals and the time frames for completion. • Investigate if the staff just don't have time to complete responsibilities; discuss with the team and the senior leader.

Organizational Change Issues

Dx	Rx
Interdepartmental barriers to change.	• Bring staff from other departments into the project; have staff from one department visit the other. • Put patient care goals up front. • Seek assistance of the senior leader.
Resistance to change.	• Work with those who will work with you. • Communicate goals and progress throughout the project. • Building relationships is the key to winning over others; involving others in small tests of change can slowly help to redefine roles and relationships.

Worksheet N: Overcoming Barriers to Change (continued)

Physician resistance to change.	• Identify one physician champion and work with that person. Use his/her improvement to convince others. • Identify a nurse champion and include nurses that work with the physicians in your projects. The nurses can then work to help you influence those resistant physicians. Building nurses into the process can help with involving physicians.
Dx	**Rx**
Concerns about legal aspects of change.	• Perform small tests of change based on good knowledge and experience. • If it doesn't look or feel right, do not proceed with the test. Allow the implementer(s) of the actual change to stop the test if they deem it unwise to proceed (i.e., nursing personnel or respiratory therapy should feel free to not institute a protocol with which they feel uncomfortable). These situations should be viewed as additional learning opportunities.
Potential cost savings for your project seem small.	Costs add up. Calculate the potential cost of savings throughout the organization over the course of a year.
No explicit approval for dedication of resources (time and/or people).	Propose that the team be a "skunkworks" to test the proposed improvements and identify specific resources needed.
No visibility for the project in the organization.	Write articles for the organization newsletter; use storyboards or posters to display progress.
Presence of other organizational changes such as mergers, downsizing or reorganization.	• Align the project with organizational goals. • Stress staff involvement in changes, in contrast to top down decisions. • Focus on patient care as the ultimate goal. • Emphasize connections among cost, productivity, patient care and patient and staff satisfaction.
"That won't work here."	• Build tension for change. • Start small. • Create opportunities for participation in change. • Recruit resisters to suggest alternatives. • Identify and publicize prior successful changes. • Build momentum ("the theory of small wins"). • Communicate intentions and progress.
"We already have a change model."	The Model for Improvement is not meant to replace change models that organizations may be using but rather to accelerate improvement. The model creates tension to test areas on a small scale rather than waiting until a solution is fully developed before action is taken.