

Continuous Quality Improvement  
Methodologies and Tools for Solving  
Healthcare Problems

Quality  
Improvement  
Collaborative  
WORKBOOK



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# OVERVIEW

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# Quality Improvement Primer

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An overview of the key Continuous Quality Improvement (CQI) principles and methodology

Guiding Principles for CQI

The DMAIC Framework

The Model for Improvement

## Guiding Principles for Continuous Quality Improvement (CQI)

When questions arise in the details of the CQI work, refer back to these guiding principles to provide clarity of direction.

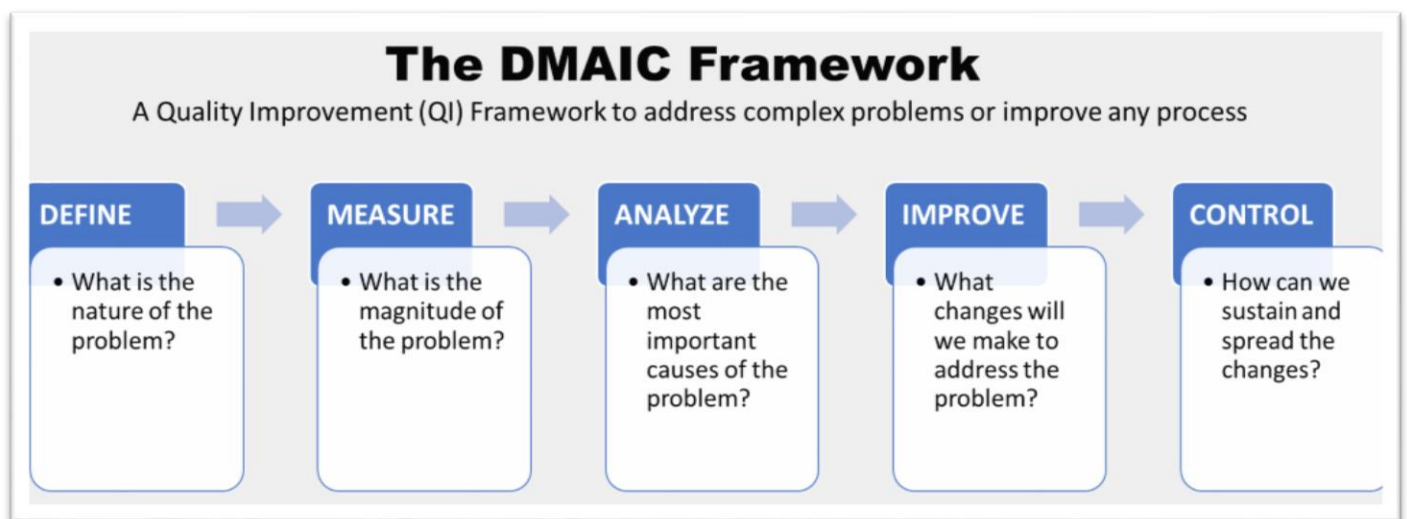
| Guiding Principle                                       | Related Tools   |
|---|---|
| Focus on processes to increase the productivity of work | <ul style="list-style-type: none"> <li>▪ Process Mapping</li> </ul>   |
| Focus on the needs of the users                         | <ul style="list-style-type: none"> <li>▪ Voice of the Customer (VOC)</li> </ul>   |
| Use data to improve services                            | <ul style="list-style-type: none"> <li>▪ Metric Use for Improvement</li> </ul>  |
| Use teams to improve quality                            | <ul style="list-style-type: none"> <li>▪ Team Formation</li> </ul>  |
| Improve communication                                   | <ul style="list-style-type: none"> <li>▪ Stakeholder Analysis</li> <li>▪ Communication Plan</li> <li>▪ Action Plan</li> <li>▪ Meeting Facilitation</li> </ul> |

# THE DMAIC FRAMEWORK

A standardized, evidence-based framework for solving problems or improving any process

Problems are better solved and processes are better improved using a framework that is:

- Consistent, standardized for each complex problem or process requiring improvement
- Scientific evidence-based versus opinion-based
- Data-driven
- Based on exploration and analysis of causative issues
- Result-driven, measurable outcomes
- Focused on sustainable solutions
- Results in taking the project to scale - communication & spread of best practices



| Phase          | What Happens?  |
|----------------|--|
| <b>Define</b>  | <ul style="list-style-type: none"> <li>▪ Create Problem Statement</li> <li>▪ Define Goals &amp; Aim</li> <li>▪ Develop Timeline &amp; Scope</li> </ul> |
| <b>Measure</b> | <ul style="list-style-type: none"> <li>▪ Select Metric</li> <li>▪ Collect Data</li> </ul>  |
| <b>Analyze</b> | <ul style="list-style-type: none"> <li>▪ Identify Root Cause</li> </ul>  |
| <b>Improve</b> | <ul style="list-style-type: none"> <li>▪ Test and Select Changes</li> </ul>  |
| <b>Control</b> | <ul style="list-style-type: none"> <li>▪ Monitor Process</li> <li>▪ Communicate &amp; Share Successes</li> </ul>                                       |

## THE MODEL FOR IMPROVEMENT (MFI)

A simple, yet powerful approach, using formal methods to test changes in the steps of a process, to achieve rapid and significant improvements (IHI, *Model for Improvement*).

The Model for Improvement consists of two components, which follow each other sequentially:

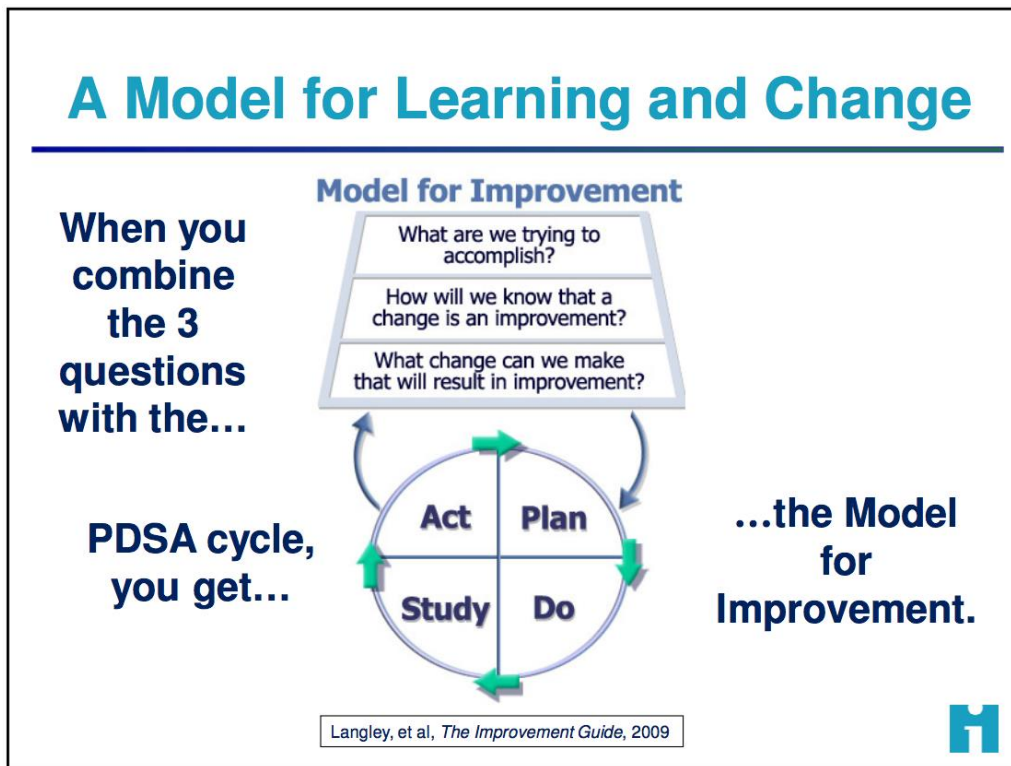
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**Part I**      Answers to *Three Fundamental Questions* leading to the project Goals/Aim, Metric and Change

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**Part II**      The *Plan-Do-Study-Act (PDSA) Cycle*, the iterative scientific method for achieving improvement through testing change, i.e., altering a step in a process and evaluating the impact of that alteration

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## PART I: The Three Fundamental Questions

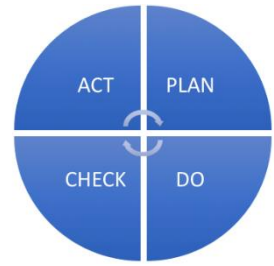
| Three Fundamental Questions:   | Deeper/Probing Questions   | Desired Output   |
|--|--|--|
| <p><b>1. What are you trying to accomplish?</b></p>                            | <ul style="list-style-type: none"> <li>▪ What outcome, in measurable terms, are you hoping to accomplish?</li> <li>▪ Specify how good, for whom, and by when.</li> </ul>                     | <p><b>Goals &amp; Aim Statement</b></p> <p>Overarching, “big-picture” goal initially; then hone to an aim statement with a specific, measurable, time-bound outcome</p>  |
| <p><b>2. How will you know if a change is an improvement?</b></p>              | <ul style="list-style-type: none"> <li>▪ What would be the most useful, meaningful metric to track?</li> <li>▪ What metric provides the best measure of the desired goal?</li> </ul>         | <p><b>Metric</b></p> <p>A metric to complete the aim statement; Define the numerator and denominator for your metric</p>   |
| <p><b>3. What change will you make that will result in an improvement?</b></p> | <ul style="list-style-type: none"> <li>▪ Which changes will lead to the most significant improvement?</li> <li>▪ Which changes will promote reaching the aim? Improve the metric?</li> </ul> | <p><b>Change/Intervention</b></p> <p>Based on insights gained during process mapping, begin small tests of change, ultimately describing, selecting and taking the best intervention to scale.</p> <p>Small tests of change allow rapid testing of various solutions before adopting the best intervention to addresses the root or underlying cause</p> |

### Tips:

- Engage the team and stakeholders in determining the overall goal; i.e., what you want to accomplish.
- Answering question #1 and #2 is an iterative process, with each round gaining additional clarity and specification toward creating an AIM Statement
- When asked, everyone on the team should know the aim statement and elevator speech

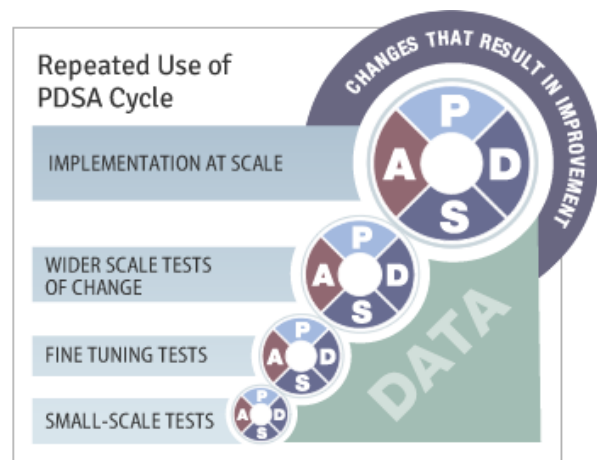
## PART II: The Plan-Do-Study-Act (PDSA) Cycle - Tests of Change Cycles

|   |  |
|---|--|
| <p><b>PLAN</b></p> <ul style="list-style-type: none"> <li>▪ State the objective</li> <li>▪ Make predictions</li> <li>▪ Generate solutions</li> <li>▪ Develop a data collection plan (who, what, where, when)</li> </ul> | <p><b>Tips:</b></p> <ul style="list-style-type: none"> <li>○ PDSA is not 'one and done', it consists of multiple iterative cycles. Think ahead &amp; plan for the multiple cycles of testing over a wide range of conditions, collecting useful data from each test to guide the next one.</li> <li>○ Start small - Focus the initial test on the "one" – one doctor, one nurse, one laboratorian, one shift, one form, one day, etc.</li> <li>○ Start - Don't wait around. Ask, "what change can we test by next Tuesday?"</li> <li>○ Keeping PDSA cycles updated on the Learning Board ensures that all involved know what changes are being tested</li> </ul> |
| <p><b>DO</b></p> <ul style="list-style-type: none"> <li>▪ Run the test on a small scale</li> <li>▪ Document problems &amp; observations</li> <li>▪ Collect and chart the data</li> </ul>                                |  |
| <p><b>STUDY</b></p> <ul style="list-style-type: none"> <li>▪ Analyze the data</li> <li>▪ Compare data to predictions</li> <li>▪ Summarize learnings</li> </ul>  |  |
| <p><b>ACT</b></p> <ul style="list-style-type: none"> <li>▪ Determine what modifications you should make – adapt, adopt, or abandon</li> <li>▪ Standardize the process</li> <li>▪ Select the next cycle</li> </ul>       |  |



### Moving from the small test of change to widespread "big" change using ever widening PDSA Cycles

- **Begin with small tests of change** - focus on the "one". As one PDSA cycle is complete, the next cycle begins.
- **Continue to fine-tune tests** – use lessons learned to "tweak" the test, and with each cycle, the involvement expands to involve another person/s, another shift, etc.
- **Conduct wider scale tests** - involve another group, another unit, another facility, etc.
- **Standardize/Implement** - When the change is proven to work reliably, it then becomes the new way to do work. The change is standardized into a new process and implemented.
- **Move to the Control phase** - where the change is monitored for sustainability and results are shared
- **Implement at scale** – if the change is applicable, it may be spread to other facilities or organizations



**Templates:**

- Worksheet for Testing Change
- Quality Improvement Project Outline

**Associated Frameworks/Tools:**

- DMAIC Framework
- Critical to Quality
- Standard Work
- Learning Board
- Elevator Speech



## Worksheet for Testing Change

### Aim:

*Every goal will require multiple smaller tests of change*

| Describe your first (or next) test of change: | Person responsible | By When | Where |
|---|--------------------|---------|-------|
|   |                    |         |       |

### Plan

| List the tasks needed to set up this test of change | Person responsible | By When | Where |
|---|--------------------|---------|-------|
|   |                    |         |       |

| Predict what will happen when the test is carried out | Measures to determine if prediction succeeds |
|---|--|
|   |  |

**Do** Describe what actually happened when you ran the test

**Study** Describe the measured results and how they compared to the predictions

**Act** Describe what modifications to the plan will be made for the next cycle from what you learned



## Quality Improvement Project Outline

| Team   |   |   |
|--|---|---|
| ROLE   | NAME/S                                    |   |
| Champion/Sponsor/s   | See Team Formation & Stakeholder Analysis |   |
| Team Leader  |   |   |
| QI Expert / Coach  |   |   |
| Data Manager   |   |   |
| Front Line Team Member/s (One from each cadre)   |   |   |
| Other Team Member/s  |   |   |
| Scope of Project   |   |   |
| Includes   | Excludes                                  |   |
| Specify first & last steps of process  |   |   |
| Background/Context/Setting   |   |   |
| <p>For example: Country Information – Statistics, MOH efforts</p> <p>Clinic Information - Size, location, staff – number and cadres, NGOs/partners involved, resources available, previous improvement efforts</p> <p>Patient Information - Number of patients with HIV, number of tests, community needs,</p> |   |   |
| Model for Improvement  |   |   |
| THE THREE QUESTIONS  | DEVELOP                                   | YOUR ANSWERS  |
| What are you trying to accomplish?   | <b>AIM</b>                                | See Model for Improvement – 3 Fundamental Questions |
| How will you know if a change is an improvement?   | <b>METRIC</b>                             |   |
| What change will you make that will result in an improvement?  | <b>CHANGE</b>                             |   |



# Quality Improvement Project Outline

| DMAIC  |  |  |
|--|--|--|
| PHASE  | KEY COMPONENTS                                     | PROJECT DETAILS  |
| <b>Define</b>  | Gap (Problem Statement)                            | (15 words or less)   |
|  | Aim  | Increase/Decrease _____ (metric) from ____ (baseline) to ____ (target) by _____ (date) |
| <b>Measure</b>   | Baseline Measure                                   | Numerator<br>-----<br>Denominator  |
|  | Data Source  |  |
|  | Sample Size:                                       | (need at least 25)   |
| <b>Analyze</b>   | Contributing Factor/s (See <u>Analyze Tools</u> ): | See Analyze Tools  |
| <b>Improve</b>   | Intervention (Change):                             | See Model for Improvement - PDSA   |
|  | Re-measure:  | See Run Chart  |
| <b>Control</b>   | Project Owner:                                     | Specify who & date of project transfer   |
|  | Control Plan:                                      | See Control Plan   |
|  | Communication of Project Outcomes:                 | See Final Report & Storyboard Templates<br>Reported to Whom/Dates                      |
|  | Lessons Learned:                                   |  |
| <b>Accomplishments:</b><br>In one to two sentences, what did your team accomplish? |  |  |

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## Project Management Tools

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Five practical tools to ensure the project stays on track and is completed successfully

Learning Board

Project Folder

Meeting Facilitation

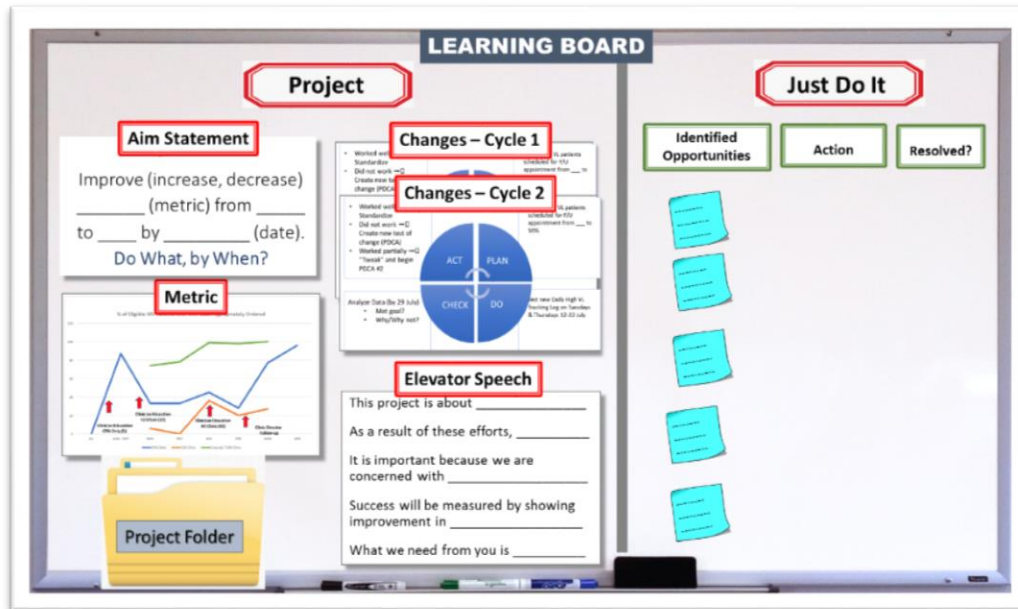
Action Plan

Communication Plan

## Project Management Tool

# Learning Board

A bulletin board that serve as a key communication tool for the project



### WHY

- To make the project visible to all, including aims and metrics over time
- To create understanding and engagement for the project from all the staff
- To encourage staff input – Opportunities for improvement (OFIs), Concerns, Ideas, etc.

### WHEN

Throughout the project

### HOW TO

1. Obtain a dedicated board & mount on wall
2. Divide the board (with color tapes) and label each section according to the above example
3. Populate the sections of the board with the appropriate material and update throughout the project

#### Project Side

- Project Aim Statement
- PDSA Cycles – Each test of change outlined
- Metric – Run Chart
- Project Folder – Repository for project documents
- Elevator Speech – Key messages for the project

#### Just Do It Side

- Opportunities for Improvement (OFI) - Place all sticky notes generated from the process mapping activity in the first column
- Actions - Physically move each sticky note to second column as these items are acted upon.

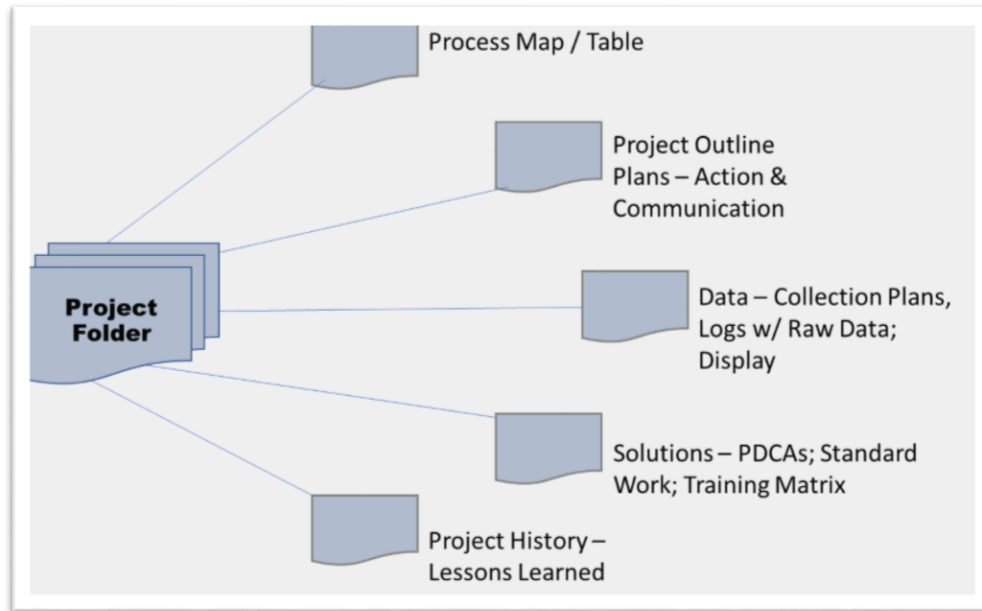


- Resolved - As items are resolved, physically move to third column
  - Spreadsheet - After time for all team to see that the items are resolved, transfer to a spreadsheet that catalogues all completed items. If items are not able to be resolved at the current time, let team know that these items are not feasible at this time and why.
4. Encourage team to continue to generate opportunities for Improvement (OFIs) throughout the project and beyond
  5. During team meetings
    - Project Side - Review & update data, share PDSA cycles, clearly let the team know what is needed from each team member during the tests of change
    - Just Do It Side - Evaluate any new OFIs and update any actions taken and issues resolved

## Project Management Tool

# Project Folder

The central repository of project knowledge



### WHY

- A repository for the complete project documentation – from outline to final results, including all tests of change - in one central location
- To keep raw data for team review and assistance with analysis and display

### WHEN

Throughout the project

### HOW TO

1. Obtain a physical folder
2. Mount on learning board
3. Place all required elements in the folder

## Project Management Tool

# Meeting Facilitation

Meeting facilitation is a process that ensures meetings are conducted efficiently and effectively to achieve project goals

### WHY

Meetings, when used appropriately and effectively,

- Keep the team focused on defined project goals, aims and timelines.
- Serve as a key communication tool for team members to inform each other about the project progress, successes, and challenges.
- Drive project implementation regarding planning & follow-up actions to meet project outcomes

### WHEN

Meetings should be held regularly throughout the project period. Frequency depends on the project phase and timeframe: More frequently (e.g., weekly or bi-weekly) in the early phases of the project or if the overall project timeframe is shorter

### HOW TO

#### *Before the Meeting*

- Determine meeting objectives (problems to be solved; topics to be discussed, brainstormed, or debated; consensus to be reached; team decisions to be made; camaraderie/teamwork to be enforced) by reviewing the following:
    - Project progress in relation to the project aims
    - Ongoing activity – tests of change
    - Data Collection & Display
    - Outstanding Action Items
    - Information needed
    - Challenges & Barriers
    - Next steps, direction of project
    - Items for discussion / Decisions to be made
  - Develop meeting agenda
  - Determine who should attend the meeting:
    - Mandatory for all core team members
    - Invite others as necessary based on specific meeting objectives
  - Create meeting materials (presentations or handouts), if necessary
  - Engage or invite stakeholders as needed
  - Complete logistical details – location, date, time, place, transportation & Invitation
  - Send out the agenda and materials in advance so people come ready to participate
  - Assign a meeting note taker
-

### ***During the Meeting***

- Manage time effectively, adhering to pre-determined times, to assure meeting goals are achieved
  - Beginning - Spend only a short time orienting participants to meeting goals and materials
  - Middle - Spend most of the meeting time on group discussion
  - End – Complete action plan, confirming clear understanding of next steps by all – who is going to do what by when

### ***After the Meeting***

- Send meeting minutes
- Communicate to team members who did not attend the meeting
- Communicate to Stakeholders as directed by Communication Plan
- Make sure next meeting is on all team member's calendar
- Follow-up on action items

#### **TIPS**

- Create a group calendar
  - Determine all the meeting time/dates at the start of the project. People tend to remember the meetings better if they occur at the same time on the same day at a regular frequency. Set meeting dates while the team is together in person such as at the Smart Start session in the beginning of the project.
  - Make sure all meetings dates are populated on team members' calendars.
- Keep the meeting focused - Invite only the people who need to be at the meeting.
- Keep the meeting short - 60 minutes usually, 90 minutes if agenda warrants.
- Keep the meeting action oriented - Make sure next steps/action items include the three "Ws" - What/Who/When. Clearly articulate these action items at the close of each meeting and in the meeting follow-up communications.

#### **Templates:**

Select one or more of the following templates, based on meeting type, objectives, and project needs:

- Meeting Agenda
- Project Update
- Meeting Minutes
- LARC Conference Call Agenda



# MEETING AGENDA

| <b>(Title)</b>            | [Date]                  |                    |          |
|---------------------------|-------------------------|--------------------|----------|
|                           | [Time]                  |                    |          |
|                           | [Location]              |                    |          |
| <b>Meeting called by:</b> | <b>Type of meeting:</b> |                    |          |
| <b>Attendees:</b>         |                         |                    |          |
| <b>Agenda Items</b>       |                         |                    |          |
| Topic                     | Action Item             | Person Responsible | Deadline |
|                           |                         |                    |          |
|                           |                         |                    |          |
|                           |                         |                    |          |
|                           |                         |                    |          |
|                           |                         |                    |          |
|                           |                         |                    |          |
|                           |                         |                    |          |
| <b>Notes:</b>             |                         |                    |          |
| <b>Next Meeting:</b>      |                         |                    |          |



## PROJECT UPDATE

|                           |                                    |                     |  |
|---------------------------|------------------------------------|---------------------|--|
| DATE:                     | PROJECT STATUS REPORT              | AIM:                |  |
| Accomplishments:          | <u>Metrics Summary</u>             |                     |  |
| <u>Current Priorities</u> | <u>Top Challenges &amp; Issues</u> | <u>Action Items</u> |  |
| <u>Next Meeting</u>       | <u>Important Dates</u>             |                     |  |



# MEETING MINUTES

|                          |                           |                       |                           |
|--------------------------|---------------------------|-----------------------|---------------------------|
| <b>[Pick the date]</b>   |                           | <b>[Meeting Time]</b> | <b>[Meeting Location]</b> |
| <b>Meeting called by</b> |                           |                       |                           |
| <b>Type of meeting</b>   |                           |                       |                           |
| <b>Facilitator</b>       |                           |                       |                           |
| <b>Note taker</b>        |                           |                       |                           |
| <b>Timekeeper</b>        |                           |                       |                           |
| <b>Attendees</b>         |                           |                       |                           |
| Agenda Topic]            |                           |                       |                           |
| <b>[Time allotted]</b>   | [Presenter]               |                       |                           |
| <b>Discussion</b>        |                           |                       |                           |
|                          |                           |                       |                           |
| <b>Conclusions</b>       |                           |                       |                           |
|                          |                           |                       |                           |
| <b>Action Items</b>      | <b>Person Responsible</b> | <b>Deadline</b>       |                           |
|                          |                           |                       |                           |
| Agenda Topic]            |                           |                       |                           |
| <b>[Time allotted]</b>   | [Presenter]               |                       |                           |
| <b>Discussion</b>        |                           |                       |                           |
|                          |                           |                       |                           |
| <b>Conclusions</b>       |                           |                       |                           |
|                          |                           |                       |                           |
| <b>Action Items</b>      | <b>Person Responsible</b> | <b>Deadline</b>       |                           |
|                          |                           |                       |                           |
| Agenda Topic]            |                           |                       |                           |
| <b>[Time allotted]</b>   | [Presenter]               |                       |                           |
| <b>Discussion</b>        |                           |                       |                           |
|                          |                           |                       |                           |
| <b>Conclusions</b>       |                           |                       |                           |
|                          |                           |                       |                           |
| <b>Action Items</b>      | <b>Person Responsible</b> | <b>Deadline</b>       |                           |
|                          |                           |                       |                           |
|                          |                           |                       |                           |



## LARC CONFERENCE CALL AGENDA

### Monthly Project Phone Follow-up

|                 |  |
|-----------------|--|
| Date:           |  |
| Time:           |  |
| Site/Country:   |  |
| Call Attendees: |  |
| AIM Statement:  |  |
| Intervention:   |  |

| Agenda                            | Update | Suggested Follow-up Actions |
|-----------------------------------|--------|-----------------------------|
| Current Situation Update          |        |                             |
| Changes Implemented in Last Month |        |                             |
| Data Review                       |        |                             |
| Successes                         |        |                             |
| Challenges                        |        |                             |
| Next Steps                        |        |                             |







## CHANGE MANAGEMENT TOOL

Change management is a process with intentionally planned activities to assist stakeholders in understanding, embracing and implementing change

### WHY

Change is hard, for all stakeholders. Change will not be accomplished without effort. However, change will occur more smoothly if a proven change management process is used early and sustained throughout the project period.

#### Change Management Principles

People will change if they:

- Understand why it is important
- Know exactly how it will affect them
- Have their concerns heard and addressed
- Are provided timely and effective communication about the change
- Are given specific, prescriptive guidance about what they need to do differently
- Have their efforts recognized

### WHEN

Throughout the life of the project, beginning before the project launches when it is critical to engage all stakeholders

### HOW TO

Change Management requires attention to three components, symbolized by the following terms: The rider, the elephant, and the path\*. The *rider* refers to a person's rational mind, while the *elephant* is a symbol for a person's emotional mind, and the *path* is the environment in which the change occurs.

#### How to Change Things When Change is Hard

| DIRECT the Rider  | MOTIVATE the Elephant   | SHAPE the Path   |
|---|---|--|
| CLARITY   | DESIRE  | EASE   |
| <b>Follow the Bright Spots</b><br>Find what is working well and reproduce                       | <b>Find the Feeling</b><br>Appeal to the emotions                           | <b>Tweak the Environment</b><br>Modify the environment to make the change "easy" |
| <b>Script the Critical Moves</b><br>Give prescriptive direction needed to accomplish the change | <b>Shrink the Change</b><br>Make change stepwise, with achievable steps     | <b>Build Habits</b><br>Help the change to become "automatic"                     |
| <b>Point to the Destination</b><br>Give the "big picture", describe the future state            | <b>Grow Your People</b><br>Invest in your people – education, encouragement | <b>Rally the Herd</b><br>Engage the entire team & all stakeholders               |

\*Adapted from the book, [Switch: How to Change Things When Change Is Hard](#), by Chip and Dan Heath

The Change Management Plan will address the DESIRE component of change. The CLARITY and EASE components of Change Management will be addressed in other tools including Process Mapping – Future State, Lean, and Standard Work.

**Template:**

- Change Management Plan

**Related Tools:**

- Stakeholder Analysis
- Communication Plan

**Resources:**

Switch: How to Change Things When Change Is Hard, by Chip and Dan Heath (Book)

Heath Brothers Website - <http://heathbrothers.com>

- Switch Framework
- Switch for Organizations: The Workbook
- Switch in 16 Minutes (Video)

ADKAR: A Model for Change in Business, Government and Our Community, by Jeffrey M Hiatt (Book)

## Change Management Tool



## Change Management Plan

As a reminder, include the problem statement here:

---

Motivate the Elephant: Find the Feeling = DESIRE

1. The camera crew thought experiment.

As a team, engage in the camera crew thought experiment.

*Imagine that, in making the case for change to your people, you weren't allowed to speak to them directly. Instead, you had a camera crew at your disposal who would film anything you wanted them to film, and you could pick any 10 minutes of footage that they shot. What would be happening in that footage?*

---

2. The pivotal testimonial.

As a team, discuss the following questions:

*Imagine that you can show your colleagues a video of one person talking, and the video has to persuade them that change is necessary. Who is the person? An employee who's seen problems firsthand? A customer who's sick and tired of the status quo? A competitor who is light-years ahead of you on something?*

---

3. Build your own shrine. Can you make the need for change visual?

Given the Switch story of the "glove shrine", as a team, brainstorm about how you could make the need for change VISUAL. Is there a "shrine" that you could build?

---

#### ACTION PLAN:

Based on the above discussions, **what** will you do when you return to your organization to "Find the Feeling" for your stakeholders, team, and persons involved in the process? To engage people's emotional side to change? By **who**? By **when**?

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## TEAM FORMATION TOOLS

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Team formation is a process of forming a functioning team where people work together to achieve a clear and compelling common goal.

### WHY

Issues involving complex, cross-functional processes cannot be successfully and sustainably resolved by one person, manager or leader. Forming a multidisciplinary team allows input, expertise and cooperation from vested stakeholders and persons involved in the process. The shared ownership and commitment of a team with a common purpose, vision, priority and plan results in sustainable solutions.

### WHEN

Forming a team is one of the initial steps in the improvement effort, prior to first on-site training session.

### HOW TO

1. Identify the process that requires improvement
2. Identify the cadres involved in the process, selecting a representative from each cadre
3. Select all team members (see [Team Members: Roles & Responsibilities](#))
4. Secure resources and permissions for team members to participate in the improvement project
5. Invite team members (see [Invitation Letter for Team Members](#))

#### TIPS

- Select team members that possess:
  - A high level of energy and commitment
  - Desire to improve and use resources more efficiently
  - Creativity & Innovation
  - Ability to learn quickly
  - Availability and appropriate supervisorial permission to participate in team meetings
- Form a core team that meets consistently, inviting other members as needs arise
- Consider forming two subsets of the team, one central and one at the site, if the site is distant from the headquarters
- The ideal number of members for a core team is 6-8 persons.

#### Templates:

- Project Outline
- Invitation Letter for Team Members

## Team Formation Tool

### Team Members: Roles & Responsibilities

| Team Member  | Role & Responsibility  | Potential Persons   |
|--|--|---|
| <b><i>Champion/Sponsor</i></b>   | <ul style="list-style-type: none"> <li>• Accountable for/vested interest in project outcome</li> <li>• Helps identify/remove barriers to progress &amp; obtain necessary resources</li> <li>• Ensures activities are linked to organizational strategy</li> <li>• Ensures appropriate people are involved in project</li> <li>• Periodically reviews team progress</li> </ul>                                      | Key Stakeholder<br><br>Leader/Administrator                               |
| <b><i>Team Leader</i></b>  | <ul style="list-style-type: none"> <li>• Guides and manages day-to-day team activities</li> <li>• Keeps team focused on goals</li> <li>• Plans, coordinates &amp; chairs meetings and events; Oversees meeting agenda</li> <li>• Oversees team accountabilities &amp; resources</li> <li>• Provides subject matter knowledge &amp; shares workload</li> <li>• Works closely with the champion and coach</li> </ul> | Manager of front-line team members<br><br>Process Owner                   |
| <b><i>QI Expert/Coach</i></b>  | <ul style="list-style-type: none"> <li>• Consults, advises and provides feedback as needed</li> <li>• Coaches and educates team members</li> <li>• Ensures tools, concepts and techniques applied correctly</li> <li>• Make resource connections as needed</li> <li>• Attends meetings</li> <li>• Communicates expectations</li> <li>• Works closely with the champion and team leader</li> </ul>                  | Person with QI training<br><br>Person with QI experience or expertise     |
| <b><i>Data Manager</i></b>   | <ul style="list-style-type: none"> <li>• Collects &amp; analyzes data</li> <li>• Presents data graphically</li> <li>• Reports data</li> </ul>  | M & E (Monitoring & Evaluation) Person                                    |
| <b><i>Front Line Team Member – Each Cadre</i></b>                              | <ul style="list-style-type: none"> <li>• Have direct first-hand knowledge, i.e., “touch the process”</li> <li>• Committed to team’s purpose / Share in team’s success</li> <li>• Attend the QI training and team meetings</li> <li>• Participate fully in activities – Volunteer/complete action items</li> </ul>  | One member of each cadre who touches the process, i.e., Multidisciplinary |
| <b>Additional Team Members/Roles - Assign as Needed based on Project needs</b> |  |   |
| <b><i>Content/Subject Matter Expert</i></b>                                    | <ul style="list-style-type: none"> <li>• Expert on technical matters or evidence-based practice/s</li> <li>• Contributes as needed; Will not necessarily attend every meeting</li> </ul>   | Expert in needed discipline   |
| <b><i>Project Manager</i></b>  | <ul style="list-style-type: none"> <li>• Keeps project on track for completion</li> <li>• Organizes project/activities</li> <li>• Manages/maintains project management folder/s</li> <li>• Assists team leader in coordinating events/meetings</li> </ul>  | Project Manager<br><br>Partner/NGO  |
| <b><i>Outside Eyes</i></b>   | <ul style="list-style-type: none"> <li>• To see &amp; think about the process/solutions without bias or “knowledge” of the process</li> </ul>  | Person unfamiliar with the process  |

## Team Formation Tool



# Invitation Letter for Team Members (Template)

Greetings,

**What:** Welcome to the Viral Load Scale-up Quality Improvement Collaborative. A quality improvement collaborative is an important activity undertaken to improve patient care as well as our work environments and processes. This project will address and improve one phase of the viral load scale-up process for **(Insert location/s)**.

**Who:** This communication is to inform you that you have been chosen by leadership to be a team member on this project. As a member of this approved multidisciplinary team, you will not only learn about multiple quality improvement methodologies, you will actively implement meaningful process improvements.

**Team Members:** Ideally will possess a high level of individual commitment, a desire to improve and use resources more efficiently, creativity, innovation and an ability to learn quickly.

Active team members are: **List team members**

**When:** The collaborative project will extend over a 6-month period. Attendance at four learning sessions, each occurring over 2-3 days, is expected. Sessions are tentatively set for **April, June and August 2018**.

In addition, a Pre-Training Orientation has been scheduled for **(date, time, and location of pre-orientation)**. All active team members should attend our first introductory meeting. Schedules permitting, our **(Sponsor/Champion)** has/have also been invited to attend. The purpose of this meeting is to provide introductions, review/discuss the charter, discuss future meeting dates, and answer questions about the Quality Improvement Collaborative. Please take a moment to review the attached documents prior to the pre-training orientation meeting on **(date of pre-orientation/training)**.

**Attachments:**

- Agenda
- Charter: outlines project description

**Thank you:** Thank you for your commitment and support. By focusing on quality and safety through process improvement, we can improve the lives of our patients and our work environments.

With appreciation,

**Team lead name**



---

**DEFINE**

**M**

**A**

**I**

**C**

## Stakeholder Analysis

A process for identifying and assessing the importance of key people (individuals and groups) that may significantly influence the success of your project

### WHY

Stakeholders are the people involved in or affected by project activities. Stakeholders may include project sponsor/champion, support staff, customers served by the process, people who work in the process, and suppliers to the process.

- It is critical that stakeholders are informed, engaged, apprised of progress (or lack thereof) and given opportunities to provide input into solutions.
- Without stakeholder involvement, support and active intervention, the project will not succeed.
- The stakeholder analysis is the primary input for the communication and change management strategies.

### WHEN

The initial stakeholder analysis begins well before the project launch when it is most critical to identify and engage all stakeholders. Ongoing stakeholder engagement will continue throughout the life of the project.

### HOW TO

Complete the [Stakeholder Analysis Table](#) Template:

| Template Columns                         | How to  |
|--|---|
| Name                                     | As a team, brainstorm & Identify those who: <ul style="list-style-type: none"> <li>▪ Have authority over or are donors of the process; i.e. Clinic in-charge (Administrators), Partners, MOH, CDC</li> <li>▪ Involved in, or touch, the process; i.e. Clinic staff - nurses, doctors, Couriers, laboratorians, Expert clients, etc.</li> <li>▪ Customers of the process; i.e. patients (clients), laboratory, community, partners</li> <li>▪ Suppliers of the process; i.e. Other clinics, partners, laboratory, community</li> </ul> |
| Level of support                         | Identify current status of each stakeholder; Use to define an approach strategy   |
| Key Interests/Issues                     | Make sure to understand the interests and issues of the stakeholders who are part of the process - How can they contribute to the solution?   |
| Assessment of Impact                     | Based on the stakeholder's level of authority over the process and their involvement, how will he/she/they affect the project   |
| Action Items/<br>Strategies to Influence | Who, What & When is needed to assure that actions are completed   |

|               |  |
|---------------|--|
| Communication | <ul style="list-style-type: none"> <li>▪ How: Personal visits and/or phone conversations preferred over email</li> <li>▪ What: Early on, share overview of the project, seek support &amp; input and answer questions; Ongoing, apprise of the team's challenges, support needed, progress &amp; solutions</li> <li>▪ Output: Based on level of involvement and expressed needs, determine what, when and how often communication will occur with each of the stakeholders<br/>→ Communication Plan</li> </ul> |
|---------------|--|

ALTERNATIVELY – Complete the Stakeholder Grid Template:

| Steps / Axis   | How To  |
|--|---|
| Identify Stakeholders / Name                                   | As above  |
| Power/Influence  | Classify Stakeholder into low or high on this axis  |
| Interest/Involvement in Process                                | Classify Stakeholder into low or high on this axis; Place Stakeholder into appropriate quadrant within the grid                           |
| Based on Quadrant, Identify method of dealing with Stakeholder | Complete Communication Plan and Action Plan, based on the quadrant – proceeding with either monitoring, satisfying, engaging or informing |

#### TIPS

- Know your stakeholders, their power/influence over and interest/ involvement in the process and their desires
- Communicate with stakeholders, based on their desires and the teams' needs
- Involve stakeholders in solutions

#### Template:

- Stakeholder Analysis Table
- Stakeholder Analysis Grid (Alternative Tool)

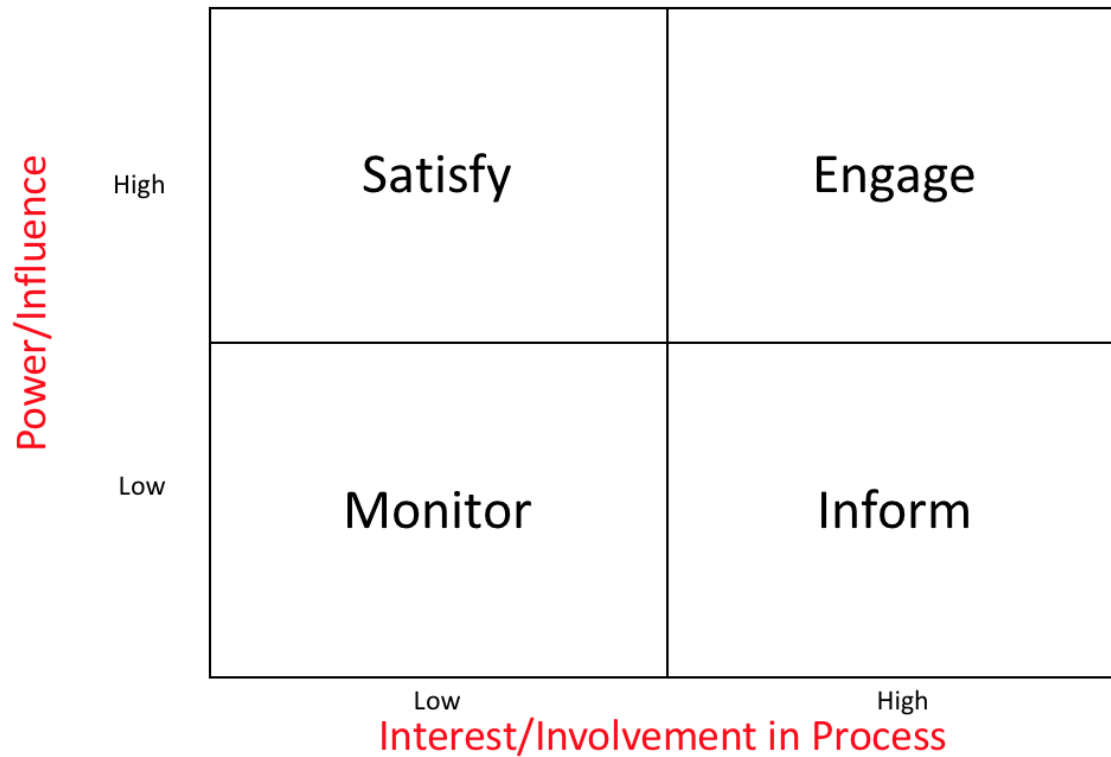


## Stakeholder Analysis

| Name | Level of Support   |    |   |    |   | Key Interests / Issues | Assessment of Impact (H, M or L)   | Action Items / Strategy to Influence | Key Communication Points |
|------|--|----|---|----|---|------------------------|--|--------------------------------------|--------------------------|
|      | R  | SK | N | SP | E |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      |  |    |   |    |   |                        |  |                                      |                          |
|      | <b>R = Resistant, SK = Skeptical,<br/>                     N = Neutral, SP = Supportive,<br/>                     E = Enthusiastic</b> |    |   |    |   |                        | <b>H = High<br/>                     M = Moderate<br/>                     L = Low</b> |                                      |                          |

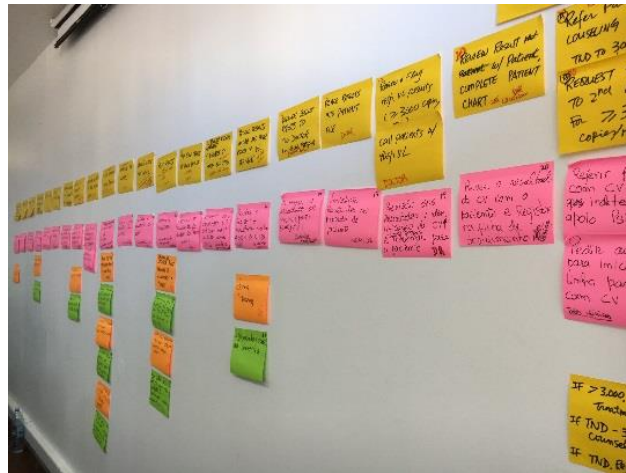


## Stakeholder Analysis Grid



# Process Mapping

A visual documentation (picture) of the sequence of steps in any process



## WHY

To improve a process, you must first see and understand the process.

- See - The process map is visual. Visual information is a more efficient way of communication.
- Understand
  - Help everyone to see the entire process and their place in the process
  - Clearly define the current process or variation in the process; Understand what is actually happening
  - Identify wasteful steps and inefficiencies
- Improve
  - Improving the process by eliminating the wasteful steps and/or reordering the steps for maximum efficiency
  - A visual picture of the future (improved) state PM can be created & communicated
  - The improved PM can be used as a tool to orient new staff & train according to new standard work

## WHEN

Throughout the DMAIC process:

- Define - to capture current state
- Measure & ANALYZE - to understand the waste, bottlenecks & inefficiencies identified
- Improve & Control - to capture & communicate the future (Improved) state

**HOW TO****1. Prepare for Process Mapping**

(Also see “QI Collaborative Pre-Workshop Planning and Preparation” Tool)

- Establish & engage the key stakeholders
- Define the process to be studied
- Identify all the cadres who will be involved in (i.e. touch) the process. Invite one representative from each cadre to participate in the process mapping sessions.
- Prepare Materials – Flip Chart paper, markers, self-stick notes
- Complete logistical details – location, date, time, place, transportation & Invitation
- Assign a scribe who will transcribe the paper-based process map into an electronic format

**2. Draft Process Map & Table – Current State (in a Conference Room)**

- Develop a first draft of the process map using self-stick notes/flipchart paper
  - Begin by obtaining the high-level steps in the process
  - Allow all cadres an opportunity to share their perspectives on the process
- Complete draft process table by identifying:
  - What happens at each step
  - Who performs the activities
  - Time for each step (approximate range)
  - Documents/Forms for each step
  - Identify “Opportunities for Improvement” (OFIs)

**3. Go & See**

- Observe the care process to validate the process map
  - Walk to observe each step of the process
  - Speak to the person who performs the process step
  - Ask the person:
    - ✓ “What happens here?”
    - ✓ “Who is responsible?”
    - ✓ “Approximately, how long does it take?”
    - ✓ “What forms are needed?”
  - Record your findings in the Process Table
  - Look/Listen & Record all OFIs
  - Move to the next step in the process
- Each team member will record the process steps (process table) and any OFIs (self-stick notes)

**4. Update Process Map & Table – Current State (in a Conference Room)**

- Using the collected information, validate or update the draft process map (flip chart & self-stick notes) as needed
- Using the collected information, validate or update as needed the draft process table

- 
- Create an electronic version of the Process Map/Table – Current State (e.g., PowerPoint or Visio)
  - Circulate to team members to assure accuracy and a clear representation of the current process

#### **5. Place Opportunities for Improvement (OFIs) Self-Stick Notes on a Flip Chart (in a Conference Room)**

- Collect OFIs on Flip Chart in preparation for next steps: Brainstorming → Affinity Diagram → Prioritization of OFIs using the Impact/Effort Grid

#### **6. The Improved Process – The Future State Map**

- After the new process is established, prepare & distribute the Process Map - Future State to highlight the outcomes of the improvement process to the team & stakeholders
  - Post the Future State Map on Learning Board to show/train staff in the new process, i.e., the new way to work
  -
- 

#### **TIPS**

- Capturing the Current State – Use pose-it notes on flipchart paper to facilitate discussion and modification until an accurate “picture” of the current process is captured. If you need to send the process map to someone, take a picture of the flipchart and email it.
- Capturing the Future State – At the end of the project, document the improved process with a future state map., a required deliverable for the project.

#### **Templates:**

- Process Table

#### **Associated Tools:**

- QI Collaborative Pre-Workshop Planning and Preparation
- Brainstorming / Affinity Diagram
- Impact Effort Grid
- Standard Work

#### **Resources:**

<http://www.ihl.org/resources/Pages/Tools/Quality-Improvement-Essentials-Toolkit.aspx>





## Project Outline

A planning document that specifies the key components of the project, including: roles & responsibilities, project scope, DMAIC outline and monitoring criteria for sustainability

### WHY

- Proper planning is the first step towards project success. If you fail to plan, you plan to fail.
- A good project outline helps keep the project focused on defined goal/aim and timelines.

### WHEN

- The project outline is created in the initiation and planning phases of the project.
- It is then referred to throughout the project, as it is a living document that is routinely referenced and updated.

### HOW TO

#### Complete QI Project Outline

Instructions embedded into document template (gray print)

#### Template:

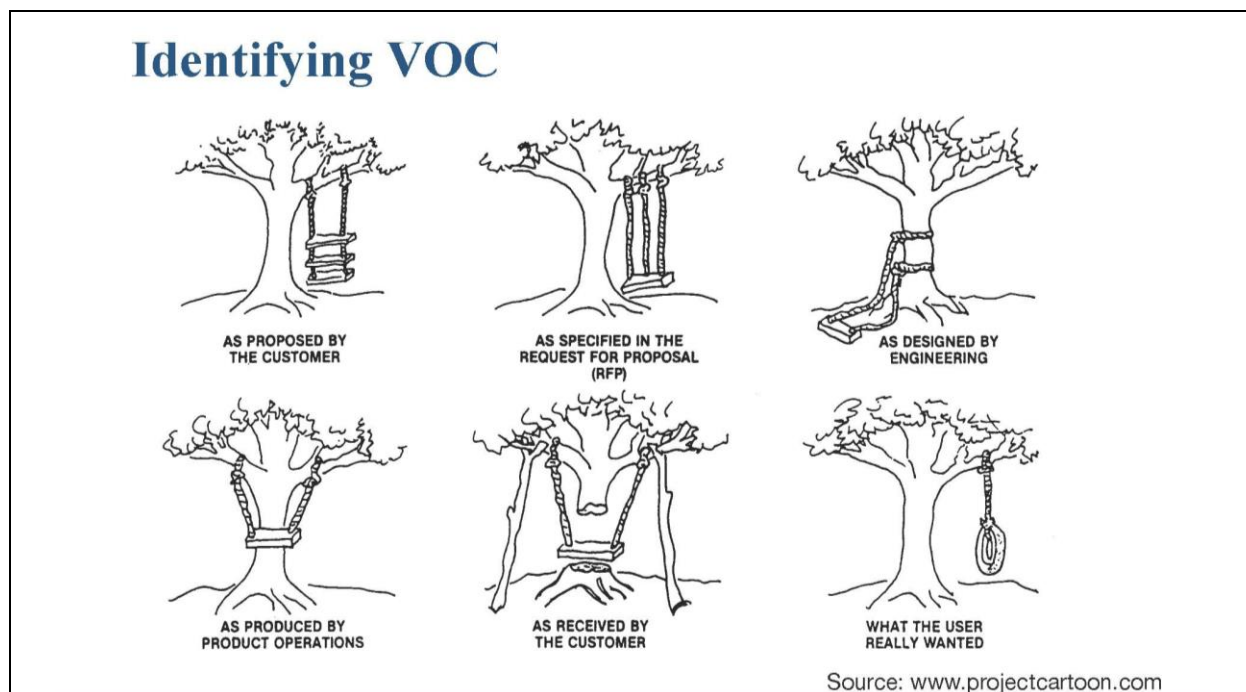
Quality Improvement Project Outline (See Overview → Quality Improvement Primer → The Model for Improvement / Quality Improvement Project Outline)

## Voice of the Customer (VOC)

An in-depth process, using both qualitative and quantitative research, to *systematically* listen to the customers, use the information to take action, and monitor performance over time

### WHY

Quality must be defined for each product or service based on what the customer wants. Understanding their wants, needs and aversions is crucial as they are the key inputs for the new process or product, and will lead to improved customer experience, reduction in re-work and service recovery, and increased staff engagement.



### WHEN

Voice of the Customer (VOC) studies are conducted at the start of any new product, process, or service design initiative (Define/Measure) to clarify and prioritize customer needs. VOC may also be used in the Improve Phase to test changes and seek feedback on potential solutions.

### HOW TO

1. Listen to Customers - Gather information about the customers and their experience with the current process/product or alternatives.
  - Select the most appropriate tool. Consider:
    - Focus Groups
    - Interviews (face-to-face or phone)
    - Observation at point of use
    - Survey/Questionnaire (paper-based or electronic)

|  |  |
|--|--|
|  | <div style="border: 1px solid black; background-color: #e0e0e0; padding: 10px;"> <p><b>Tips:</b></p> <ul style="list-style-type: none"> <li>▪ Once a VOC tool is selected and designed, conduct a small pilot before creating the final tool <ul style="list-style-type: none"> <li>○ Assure that the questions are clear and unambiguous</li> <li>○ Assure the tool is collecting the needed information</li> </ul> </li> <li>▪ Always match/design the VOC questions to measure the effectiveness of the interventions</li> </ul> </div> |
|  | <p><b>2.</b> Analyze/prioritize the Information – Organize the collected information, i.e., the needs statements, satisfaction, concerns or opinions, then allow the customers to prioritize these issues</p>  |
|  | <p><b>3.</b> Take Action - Design tests of change to address customer issues / concerns (See Model For Improvement – PDSA)</p>   |
|  | <p><b>4.</b> Monitor over Time – Assess the effectiveness of the tests of change by repeating the query (using the same tool) after the changes (interventions)</p>  |

**Template:**

- Voice of Customer Survey



## Voice of Customer Survey

On a scale of 1 to 5, with 1 being least satisfied and 5 being most satisfied, how satisfied are you with the following aspects of the current \_\_\_\_\_ process (Mark an X in the number column that indicates your response):

| ASPECTS  | 1 | 2 | 3 | 4 | 5 |
|----------|---|---|---|---|---|
| Aspect 1 |   |   |   |   |   |
| Aspect 2 |   |   |   |   |   |
| Aspect 3 |   |   |   |   |   |
| Aspect 4 |   |   |   |   |   |
| Aspect 5 |   |   |   |   |   |
| Aspect 6 |   |   |   |   |   |
| Aspect 7 |   |   |   |   |   |

**For any 1 or 5 response, please share specific comments or examples to support your scoring:**

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**What is working well:**

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**What needs Improving:**

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**Please share any ideas for improvement or additional comments:**

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## Critical to Quality (CTQ)

A tool to translate unspecified, vague or undefined goals into specific, measurable, actionable metrics

### WHY

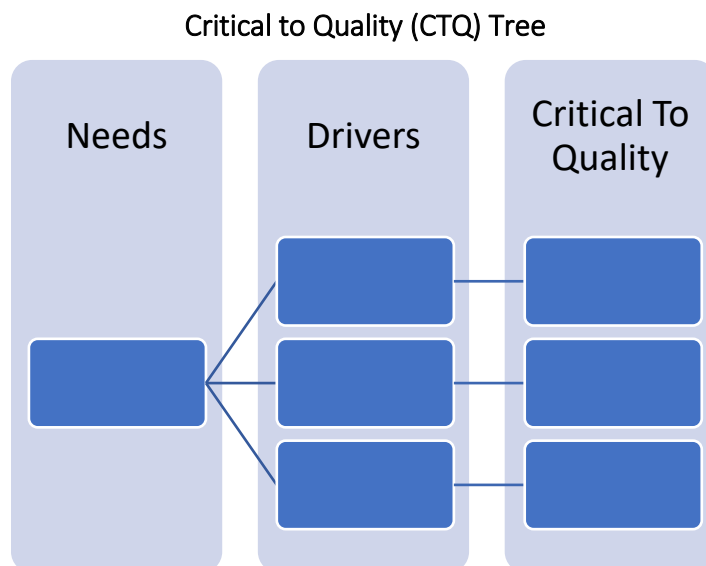
Quality must be defined for each product or service based on what the customer wants through measurable, critical-to-quality characteristics. Project needs must be refined from general to specific; from hard-to-measure to easier-to-measure; and from personal perspective to measurable proof.

### WHEN

Initial phases (Define/Measure) of process improvement

### HOW TO

Move across the CTQ Tree from left to right, asking questions with increasing specificity:



- **Needs** - Begin with the high-level, broad goals, the desired outcomes, what you want to accomplish (e.g., quality, safety, health, efficiency)
- **Drivers** – Ask, what are the drivers (components responsible for creating or delivering that high-level goal)? (e.g., accurate, reliable, timely lab results)
- **Critical To Quality** - Ask how the drivers can be placed in quantifiable, measurable terms (e.g., percentage of all viral load laboratory results that are completed within the 7-day target turnaround time)

### Template:

- Critical to Quality Tree

## Elevator Speech

A succinct project summary suitable to present during a short encounter (such as an elevator ride) that encompasses the core messages about the project

### WHY

- For the project team, the elevator speech:
  - Defines the “Why” of the project
  - Builds consensus around the core vision and outcomes of the project
  - Engages the entire team
  - Clarifies the “ask” - what support/assistance is needed and from whom
- For the stakeholders, the elevator speech:
  - Communicates and shares the core information about the project
  - Clarifies what specific support or action items are being requested

### WHEN

Created at the initial on-site session, after the aim statement is crafted

### HOW TO

Complete the Elevator Speech template as a team, gaining consensus around the key elements of the project

### Template:

Elevator Speech



### Elevator Speech Template

|  |
|--|
| This project is about _____<br>_____                                       |
| As a result of these efforts, _____<br>_____                               |
| It's important because we are concerned about _____<br>_____               |
| Success will be measured by showing improvement in _____<br>_____          |
| What we need from you (specify intended recipient _____)<br>_____<br>_____ |

---

**D**  
**MEASURE**  
**A**  
**I**  
**C**



## Using Metrics for Improvement

How will we know a change is an improvement? Proper measurement provides an objective gauge of the project success (or failure)

### WHY

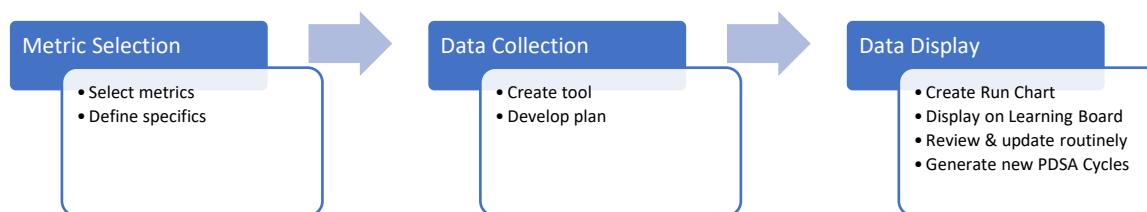
- Evidence-based - Metrics (or measures) focus on objective evidence rather than feelings or opinions.
  - To quantify the magnitude of the problem
  - To assure that a change is actually an improvement - tracking progress over time.
- Outcome-oriented - Metrics focus on the outcome articulated in the project aim statement. As the saying goes, “What gets measured, gets fixed.”
- Visual - Metrics, when presented graphically, tell a powerful story. Visible data, displayed and tracked over time, is key to attracting and sustaining the engagement of the team and stakeholders in the improvement work.

### WHEN

Throughout the DMAIC process

- Define/Measure - to understand the magnitude of the problem
- Analyze - to assist in assessing the root cause
- Improve - to test & select the solution
- Control - to insure sustainability by monitoring the metric over time

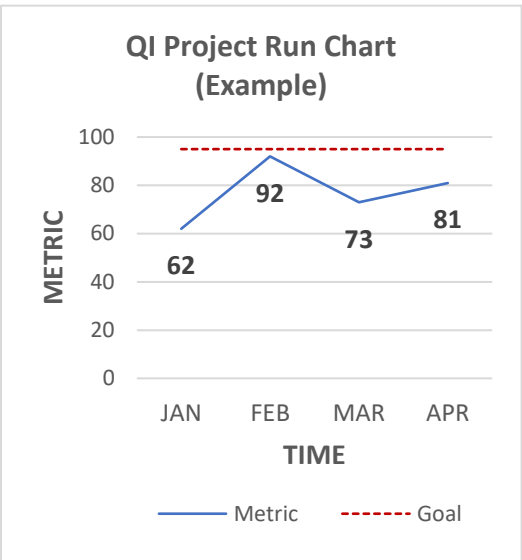
### HOW TO



| METRIC SELECTION |  |
|------------------|--|
| <b>1.</b>        | <p>Select the most appropriate metrics</p> <ul style="list-style-type: none"> <li>▪ Refer to the fundamental questions in The Model for Improvement</li> <li>▪ Brainstorm with the team to get the best ideas</li> <li>▪ See <a href="#">Metric Primer</a> below</li> </ul>  |
| <b>2.</b>        | <p>Clearly define the specifics for each selected metric. For example:</p> <ul style="list-style-type: none"> <li>▪ If measuring errors (or the lack thereof), specify the meaning of “error free.”</li> <li>▪ If measuring whether or not the requirements are met, clarify if all of the requirements have to be met, or only a percentage of the requirements?</li> </ul> |

| METRIC PRIMER  |   |
|--|---|
| Types of measures  | What can you measure?   |
| <p>Improvement relies on measuring the following aspects of the process:</p> <ul style="list-style-type: none"> <li>▪ <b>Inputs</b> – What is needed to execute the process &amp; deliver the outputs?</li> <li>▪ <b>Process</b> – Steps within the process</li> <li>▪ <b>Outcome</b> – Big picture, high-level goals; What does this process do or produce?</li> <li>▪ <b>Balancing or Counterbalance</b> – Side effects or unintended consequences in upstream or downstream steps or processes</li> </ul> | <p>Consider the following (not an exhaustive list):</p> <ul style="list-style-type: none"> <li>▪ Time – hours, minutes, days, months, length of stay, turn-around time, wait time, etc.</li> <li>▪ Errors or defects</li> <li>▪ Number of events, people, etc.</li> <li>▪ Satisfaction</li> <li>▪ Efficiency</li> <li>▪ Productivity</li> <li>▪ Cost</li> <li>▪ Value</li> <li>▪ Throughput / Flow</li> <li>▪ Access</li> </ul>   |
| What makes an ideal metric?  | Key components of a metric  |
| <p>The best metrics have the following characteristics:</p> <ul style="list-style-type: none"> <li>▪ Direct linkage to the desired outcome or process (or a closely linked proxy)</li> <li>▪ Powerful enough to demonstrate the effects of the change</li> <li>▪ Meaningful to the project and stakeholders</li> <li>▪ Realistic to collect</li> </ul>   | <p>A metric must have:</p> <ul style="list-style-type: none"> <li>▪ <b>A numerator</b> – The proportion of the study population that met the set requirements. <i>Example: # of patients with viral load testing ordered</i></li> <li>▪ <b>A denominator</b> – The entire study population, or all subjects reviewed in a selected sample. <i>Example: # of patients eligible for viral load testing according to country algorithm</i></li> </ul>  |
| DATA COLLECTION  |   |
| 1.   | <p>Create a data collection log (see <a href="#">Data Collection Log Example</a>)</p> <p>Make sure you include all data needed to calculate the metrics. Consider the following:</p> <ul style="list-style-type: none"> <li>▪ The numerator (data to assure that the subjects meet the requirements of the study) and the denominator (data to assure all the eligible population is accounted for): <ul style="list-style-type: none"> <li>○ If evidence is required for an eligibility determination, consider a descriptive subheading or including an additional column in the log to verify the presence of that evidence</li> <li>○ If the eligibility determination requires several steps, consider including a column in the log for each step required</li> </ul> </li> <li>▪ Any <i>demographic data</i> deemed important, such as sex, age, pregnancy status</li> </ul> |

|              |   |
|--------------|---|
|              | <ul style="list-style-type: none"> <li>▪ Any <i>medical record or national identification numbers</i> needed to trace back to the patients in the future</li> <li>▪ Any <i>site identification or site-specific data</i> (e.g., a specific specialty clinic within the site)</li> </ul>   |
| 2.           | <p><b>Collect Baseline Data</b></p> <p>Using the data collection log, at the initiation of the project, collect baseline data to understand the magnitude of the issue</p> <ul style="list-style-type: none"> <li>▪ Collected before any changes are made in the current process</li> <li>▪ Data Source – Specify source of data <ul style="list-style-type: none"> <li>○ Depending on the process, data may be collected retrospectively (i.e., chart review) or prospectively</li> <li>○ Potentially may be abstracted from data already being collected</li> </ul> </li> <li>▪ At least 25 data points are needed</li> </ul> |
|              | <div style="background-color: #e0e0e0; padding: 10px;"> <p><b>Tips:</b></p> <ul style="list-style-type: none"> <li>▪ Include definitions on the log so staff who may not be members of the team will be able to easily interpret and use the log</li> <li>▪ Use small tests of change - Create a paper-based log first. Test the log through multiple iterations before finalizing or transferring to an electronic format.</li> <li>▪ Make sure you have all the information needed to calculate the study metric</li> </ul> </div>  |
| 3.           | <p>Create a data collection plan (see the <a href="#">Data Collection Plan</a> template)</p> <p>[Instructions for creating Plan included in the template in gray print]</p>   |
| DATA DISPLAY |   |
| 1.           | <p>Create a run chart to track the metrics over time</p>  |
|              | <ul style="list-style-type: none"> <li>▪ A run chart is a graphical representation of change over time</li> <li>▪ It is one of the best ways to display Quality Improvement (QI) data</li> </ul>  |

|    |   |  |
|----|---|--|
|    | <p>Steps to create a run chart:</p> <ul style="list-style-type: none"> <li>▪ Title the chart and label the axes <ul style="list-style-type: none"> <li>○ Place the selected metric on the vertical or y-axis</li> <li>○ Place time on the horizontal or x-axis</li> </ul> </li> <li>▪ Plot your metric over time</li> <li>▪ Include a goal line (frequently shown in red ink), indicating the team's goal for the selected metric</li> <li>▪ Annotate the run chart, marking the tests of change along the timeline (See examples in PowerPoint presentation)</li> <li>▪ Keep the data up-to-date, posting weekly or as frequently as possible</li> </ul> <p>You may also use the Excel <a href="#">Run Chart Template</a> to create run charts automatically</p> |  |
| 2. | Display the data on the project learning board (See <a href="#">Project Management Tools – Learning Board</a> )   |  |
| 3. | Review and update the data regularly (daily, weekly or monthly) with the staff & the QI team (See <a href="#">Project Management Tools - Meeting Facilitation</a> templates) <ul style="list-style-type: none"> <li>▪ When reviewing the data, assess the trend and determine what additional “tests of change” need to be conducted to continue a desired trend or reverse an undesired trend. (See Model for Improvement – PDSA)</li> <li>▪ Obtain input from the front-line workers. What is working well? What is not working well?</li> </ul>  |  |

#### Templates:

- Quality Improvement Project Outline
- Data Collection Log Example
- Data Collection Plan
- Run Chart Template (Excel)

#### Resources:

IHI QI Essentials Toolkit:

Run Chart & Control Chart

Data Collection: Key Planning Questions

Microsoft Excel Workbook: Insert → Chart → Line Chart



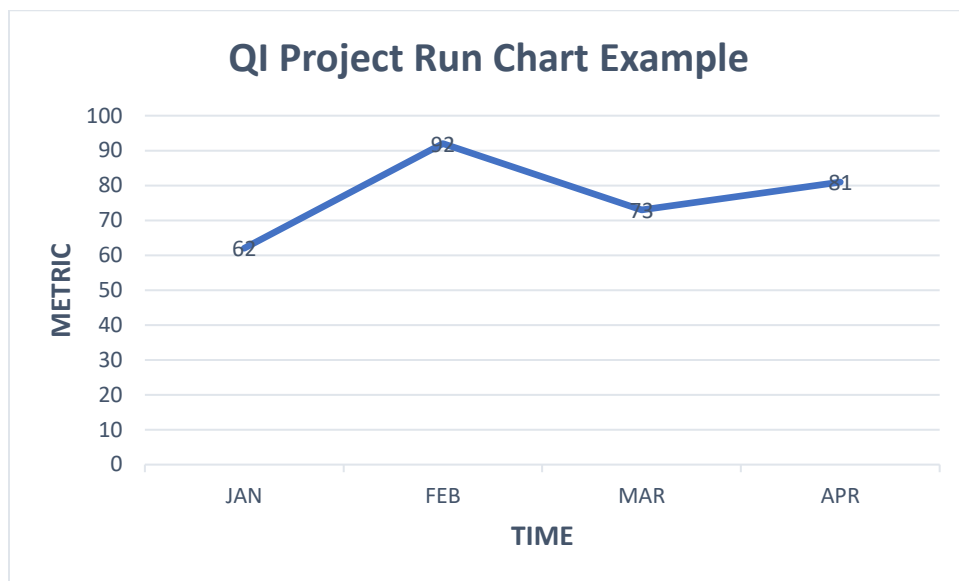


## Data Collection Plan

|  |  |
|--|--|
| <b>Who</b>                                       | <ul style="list-style-type: none"> <li>▪ Who is responsible for the collection, display and analysis of the data?</li> <li>▪ If a series of data needs to be collected by different cadres, map the process of data collection from beginning to end</li> </ul>  |
| <b>How Often</b>                                 | <ul style="list-style-type: none"> <li>▪ Specify data collection frequency - hourly, daily, weekly or monthly</li> <li>▪ Determine the collection cutoffs for the time frame selected.</li> <li>▪ Consider the project metric and what makes sense in the collection cycle. When must the data be submitted for each cycle?</li> </ul> |
| <b>What</b>                                      | <ul style="list-style-type: none"> <li>▪ Specify what is included or excluded</li> <li>▪ Determine the data source and sample size</li> <li>▪ Draw the data collection log showing what data will be captured</li> </ul>   |
| <b>Where</b>                                     | Specify a location – e.g., a clinic, unit or department  |
| <b>How</b>                                       | Given the log, will data be collected at time of seeing the patient or actual event (real-time) or collected retrospectively through chart or record review?   |
| <b>Training</b>                                  | Who will be responsible for training the staff about the data collection? Specify how, when and where.   |
| <b>Sustainability<br/>– See Control<br/>Plan</b> | <p>Early in the project, determine who will own the process and the metric at project completion.</p> <p>How will the metric be monitored when the project is complete? (See Control Plan)</p>   |



### Data Display - Run Chart Template (Excel)



---

**D**  
**M**  
**ANALYZE**  
**I**  
**C**



# 5 Whys

A tool to assist in ascertaining the underlying or root cause of a problem

## WHY

Understanding and addressing the root instead of a superficial cause is preferable because:

- Addressing a superficial cause will likely result in the issue resurfacing repeatedly
- Eliminating the root cause will likely result in a lasting solution

## WHEN

- In the analyze phase, before attempting to resolve the issue
- When there is a need to resolve simple to moderately difficult problems

## HOW TO

1. Begin with the problem statement.
2. Ask Why is this problem occurring? Cause 1, the most proximate to the problem, may also be obtained by studying the Cause & Effect Diagram or one of the tall bars on the Pareto Chart.
3. Ask, Why does this outcome occur? The answer, Cause 2, forms the basis for the next question and the activity continues on in similar fashion.
4. Continue to ask Why iteratively (multiple times in succession) until you have arrived at a potential root cause

### TIPS

- Use this simple tool first whenever a process or system is not working properly, before moving to a more in-depth analysis such as root cause analysis (RCA) or Failure Modes Effects Analysis (FMEA)
- The root cause may be reached in 3 Whys or 7 Whys, there is nothing scientific or magic about the number 5
- Search deeper for system issues instead of blaming a person
- Stop when the team has reached a root cause that they will be able to act upon
- Do not fall into the trap of always identifying the last Why as “Lack of People/Staff” or “Lack of Resources”

## Resources:

- The 5 Whys Problem Solving Method Video - [www.mindtools.com](http://www.mindtools.com)

## Template:

- 5 Whys



# 5 WHYS

|                   |  |
|-------------------|--|
| PROBLEM STATEMENT |  |
| WHY               |  |
| WHY               |  |
| WHY               |  |
| WHY               |  |
| WHY               |  |

## Cause & Effect Diagram (Fishbone)

A tool to brainstorm/identify possible *causes* of a problem and to sort the ideas into useful categories.

### WHY

- A visual way to look at and organize critical thinking about potential causes
- To identify that there may be multiple causes to one effect or problem

### WHEN

- In the analyze phase, before attempting to resolve the issue
- When a more structured approach is needed to assess contributing causes for a problem of greater complexity

### HOW TO

1. Engage the team in brainstorming about potential causes of the problem.
2. Using the template, write the problem statement (effect) at the mouth of the “fish”.
3. Agree on the categories that are appropriate for the particular problem. The 6 standard manufacturing categories include the 6 “M”s, but may be modified as noted in the parentheses for health care:
  - Man (People)
  - Machines (Equipment)
  - Methods (Policies/Procedures)
  - Mother Nature (Environment)
  - Material (Supplies)
  - Measurement (Process)
4. Brainstorm about all the possible causes, creating branches from the appropriate major category/ies
5. Sub-branches from the causes may be created, if needed, to probe for the underlying or root cause/s

#### TIPS

- Keep focused on causes of the problem, not symptoms
- The Fishbone can be combined with the 5 Whys tool, continuing to explore root causes

### Resources:

[How to Use the Fishbone Tool for Root Cause Analysis](https://www.cms.gov/medicare/provider-enrollment-and-certification/qapi/downloads/fishbonerevised.pdf)

<https://www.cms.gov/medicare/provider-enrollment-and-certification/qapi/downloads/fishbonerevised.pdf>

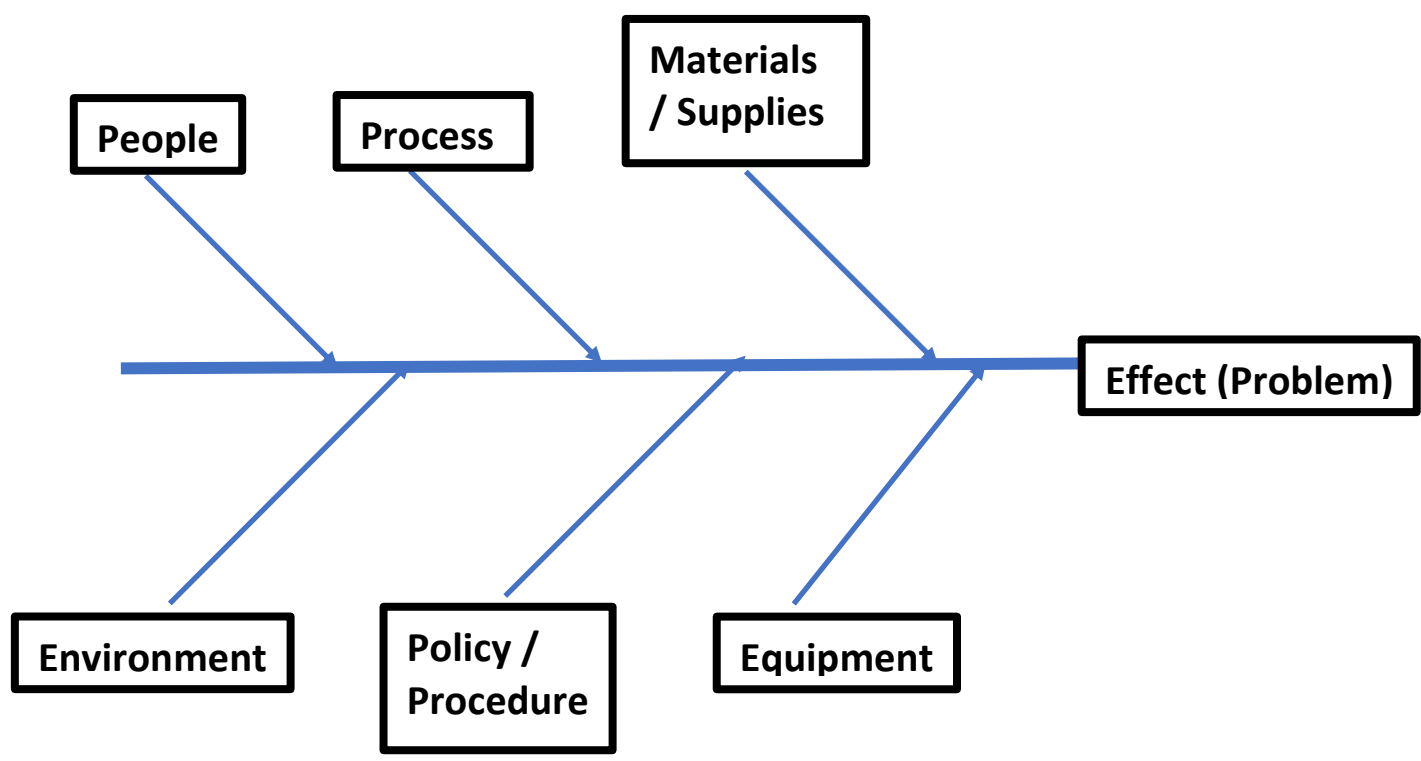
IHI Videos: [Cause & Effect Diagram](#) and [The Science of Improvement on a Whiteboard](#)

### Template:

- Fishbone



# Cause & Effect Diagram (Fishbone)



## Pareto Diagram

A combined bar & line graph used to determine the frequency and/or significance of problems or causes of problems

### WHY

Identifying the major contributing causes of the problem allows the improvement focus to be on those causes that will yield the biggest gains, if addressed

### WHEN

Analyzing data, especially when there are many different causes to a problem, in order to focus on addressing the most significant causes

### HOW TO

1. Determine the categories into which the data will be divided – can be errors or defects or causes of errors or defects
2. If data must be collected, create a Data Collection Plan
3. Create a Pareto Diagram
  - a. Tabulate the Scores → Populate the template table:
    - i. Sort data into pre-determined categories; Sub-total each category
    - ii. Tabulate the total number of causes or errors
    - iii. Rank/order the categories from most to least
    - iv. Calculate the percentage of each category and the cumulative percentages
  - b. Create the diagram/graph:
    - i. Complete the bar graph portion of the Pareto Chart
      1. The left vertical axis – Order the frequency of each category starting with the tallest bar (most frequent) on the left and proceeding to the shortest bar (least frequent) on the right. If there are several smaller categories, combine them all into an “Other” category
    - ii. Then complete the line portion of the Pareto chart
      1. The right vertical axis (Scaled from 0-100%) – Using the percentages, create the line to represent the cumulative percentage of all the causes as it tracks across the graph from left to right (reaching 100% at the right axis)
4. Interpret a Pareto Diagram - Resulting graph will visually demonstrate the most significant causes; A Pareto effect will be seen when the few significant causes are responsible for approximately 80% of the problem (80/20 Rule)
5. Acting on a Pareto Diagram - Addressing these few most significant causes will likely solve the problem

#### TIPS

The tabulations can be calculated and charted using the Template Table or the chart can easily be created in Excel.



---

D

M

A

**I MPROVE**

C

# Brainstorming

A technique to generate ideas, input and insights from the team

## WHY

- Gather greatest variety and diversity of ideas and insights into the problem or solutions
- Stimulates creative thinking
- Allows consideration of input from all the team
- Allows collection of ideas over a short period of time

## WHEN

- Post Process Mapping - to gather Opportunities for Improvement (OFIs) that the team identified as they walked the process
- With the Cause & Effect Diagram - to explore potential causes
- In the Improve phase - to generate potential solutions

## HOW TO

1. Gather all team members or activity participants & describe the goal of the session
2. Provide all participants with multiple self-stick notes
3. Ask participants to provide their input via the self-stick notes, one OFI or solution per note
4. Sharing the ideas (multiple options for sharing):
  - a. Have participants place notes on flipchart, board or wall
  - b. Have each participant read one idea at a time, going around the circle
  - c. Place the notes on the Cause & Effect Diagram
  - d. Capture any new ideas that are stimulated as the ideas are shared
5. Defer discussion until all ideas are shared
6. Proceed to the Affinity Diagram activity

### TIPS

- Encourage all to participate with at least one idea/note per person
- Encourage as many ideas/notes as possible
- When working on solutions, encourage unfettered thinking that may be “outside the box”, innovative, big, impossible, or audacious ideas
- Do not criticize or dismiss any idea

### Associated Tools:

- Cause & Effect Diagram
- Affinity Diagram



## Affinity Diagram

A technique to organize the ideas, input and insights generated by the team during brainstorming

### WHY

- To group the ideas in categories or themes to facilitate organization of the brainstorming session
- To evaluate how many people identified a particular opportunity, idea or solution – to assign a degree of consensus or numerical “vote” to each option

### WHEN

In any phase when information needs to be collated and organized around themes

### HOW TO

1. One or two people (preferably the facilitator and/or team lead) to begin reading and organizing the self-stick notes
2. Group similar notes together on the flipchart, board or wall – forming affinity groups
3. Clarify any ideas not clear from the reading of the note
4. Ask the team to assist in the titling of the affinity groups
5. Count & note the number of notes in each group
6. Ask the participants about their reaction to the resultant ideas generated
  - Any surprises in the responses?
  - Agreement with the most mentioned ideas?
  - What actions will be generated?
7. This activity can provide inputs toward creating:
  - Action Plan
  - Impact Effort Grid

#### TIPS

For ease or organization, use a different color self-stick note to title the affinity groups so ideas and corresponding numbers of notes (votes) can be seen by the team

### Associated Tools:

- Action Plan
- Impact Effort Grid

## Impact-Effort Grid

A tool to rank order potential solutions according to degree of impact and amount of effort

### DELIVERABLE

- Impact Effort Grid
- Action Plan for Just Do It, 1<sup>st</sup> & 2<sup>nd</sup>

### WHY

- Allows input from the team, especially those who know the process first-hand, on the potential solutions
- Provides an organized process to elicit thoughtful discussion and consensus on the potential impact of a solution and the degree of effort required to create that impact
- Allows prioritization of potential solutions

### WHEN

- Prioritizing solutions, early as part of the two-day Smart Start On-Site Session
- In the Improve phase, as additional solutions are generated following analysis of causes

### HOW TO

1. Create/post the 4-quadrant grid with labels on the flipchart, board or wall for all to see
2. Working one at a time, address each of the groups of the problems and/or solutions generated from the brainstorming/affinity diagram sessions
3. For each group, ask:
  - “What would be the impact of this solution on the problem? HIGH (Major Improvement) or LOW (Minor Improvement)”
  - Hold the self-stick note over the accompanying half of the grid
  - Then ask, “How much effort would it require to accomplish this solution? EASY to do or HARD/Difficult to do)”
4. Facilitate a discussion of each solution, asking probing questions about the grid placement
5. Place notes in the appropriate quadrant of the grid
6. See grid diagram template for prioritization
  - Just Do It - Create short-term (1 week to 1 month) action plans for this quadrant
  - Just Do 2nd, if impactful – Create short to medium-term (1 week to 3 months) action plans if the team deems the solution impactful
  - Do 3<sup>rd</sup>, detailed planning and work – This is the quadrant from which projects (3 to 9 months) will be selected. Prioritize the first project that the team wishes to address
  - Maybe someday – Create list for potential long-term (9 months to a year or more) activities, place in Parking Lot, or discard

#### TIPS

Capture the completed Impact-Effort Grid in a photo for ease of transfer to an electronic format

**Associated Tools:**

- Action Plan

**Template:**

- Impact Effort Grid

# IMPACT / EFFORT GRID

|               |                          |   |   |
|---------------|--------------------------|---|---|
| <b>IMPACT</b> | <b>Major Improvement</b> | <b>A. Just Do It</b>                                  | <b>C. Do 3<sup>rd</sup>,<br/>detailed<br/>planning and<br/>work</b> |
|               | <b>Minor Improvement</b> | <b>B. Just Do<br/>2<sup>nd</sup> if<br/>impactful</b> | <b>D. Maybe<br/>some day</b>  |
|               |                          | <b>Easy to Do</b>                                     | <b>Difficult to Do</b>  |
|               |                          | <b>EFFORT</b>   |   |

## LEAN TOOLS

Lean is an improvement methodology focused on delivering value to the customer and eliminating waste.

### WHY

With limited resources in healthcare, it is inefficient and costly to expend energy, time and money on things that do not add value for the customer (i.e., waste)

| Type of Waste            | Example   |
|--------------------------|---|
| Misutilization of Skills | Not taking advantage of people's skills or capabilities; Not listening to or acting upon people's improvement ideas                                     |
| Reprioritization         | Phone calls, emails, trouble shooting, Texts or IM pop-ups  |
| Transport                | Moving people, products and information; Going to get signatures; Moving patient records  |
| Inventory                | Storing parts, pieces, documentation ahead of requirements; Pharmacy stock, lab stock, office supplies  |
| Motion                   | Bending, turning, reaching, lifting; Searching for patients, charts, medications or files; Moving patients for testing                                  |
| Waiting                  | For parts, information, instructions, equipment; Waiting for discharge, approvals   |
| Over Production          | Making more than is immediately required; Making extra copies;  |
| Over Processing          | Multiple bed moves; Extra paperwork, excessive reviews/analysis, creating reports no one uses or reads, using out-of-date forms                         |
| Defects                  | Rework, scrap, incorrect documentation; Medication errors, improper diagnosis, patient complaints, data entry error, pricing error, mislabeled specimen |

### Guiding Principles for LEAN

|                          |   |
|--------------------------|---|
| <b>Eliminate waste</b>   | To eliminate waste, you must first see the waste                                    |
| <b>Increase Value</b>    | Value is defined in terms of the customer. For what is the customer willing to pay? |
| <b>Respect Expertise</b> | The front-line workers know best how to solve front-line problems                   |
| <b>Go and See</b>        | The improvement team must go to the work and see the actual condition               |

**HOW TO:**

1. **See the Waste** - Identify waste using the following tools:
  - Process Mapping – Current State (see Process Mapping)
  - Waste Walk
  - 5S
  - Spaghetti Diagram/Physical Layout
2. **Eliminate the Waste** - Once waste is identified, use the following tools to eliminate:
  - Process Mapping – Future State (see Process Mapping)
  - Waste Walk → Action Plan
  - 5S
  - Spaghetti Diagram/Physical Layout
  - Visual Management
  - Standard Work
  - PDSA

These tools are explained in the following pages:

- Waste Walk
- 5S
- Visual Management
- Spaghetti Diagram / Physical Layout

## Lean Tool

# Waste Walk

A planned visit to where work is being performed to observe what is happening and specifically to look for waste - to make waste visible again

### WHEN

After identifying problems during the process mapping, conduct a Waste Walk to validate observations and gather front-line staff ideas about the problems and potential solutions

### HOW TO

1. Gather team and explain what, why, and how to of Waste Walk
  - Provide copy of the process map table with the identified problems
  - Provide a Waste Walk Template
2. Walk the entire process with the team. Assign pairs at each work area to observe the process for 30-45 minutes, and record observations on the Waste Walk Template
3. Talk to front-line staff, share process map with identified problems. Ask for validation of identified problems and elicit any potential solutions
4. When team comes back together, discuss observations
5. Collate identified wastes
  - Compare with identified problems (or OFI) from the Current State Process Map or Table
  - Update Project Action Plan with any new wastes/problems/OFIs identified and assign action items
6. Follow up Action Plan routinely to assure that identified waste is eliminated

### Template:

- Waste Walk



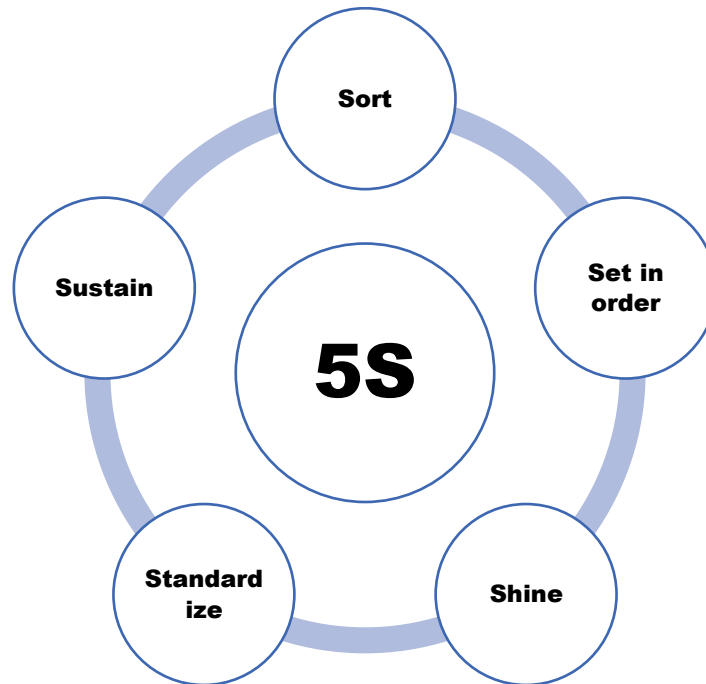
### Waste Walk

| Type of Waste            | Observation | Possible Solutions - from People Doing the Work |
|--------------------------|-------------|---|
| Misutilization of Skills |             |   |
| Reprioritization         |             |   |
| Transport                |             |   |
| Inventory                |             |   |
| Motion                   |             |   |
| Waiting                  |             |   |
| Over Production          |             |   |
| Over Processing          |             |   |
| Defects                  |             |   |

## Lean Tool

**5S**

A workplace organization method that uses a list of 5 words, each beginning with S, to prescribe how to organize a work space

**WHY**

5S improves the efficiency and effectiveness of the work, eliminating clutter and disorganization

**WHEN**

In the beginning of any improvement effort, as 5S provides an immediate visual change to the workplace, inspiring staff in the promise of the entire improvement effort

**HOW TO**

1. Choose a target area for the 5S exercise
2. Engage a cross-functional team, including staff from the targeted work area; Insure that upper management is involved
3. Plan for a staging area, a physical area near the target area, in which to place items that need further categorization
4. Document the "BEFORE" state using the 5S Audit Sheet and photographs
5. Organize and complete the 5S Exercise of the area according to the steps below
6. Record the "AFTER" state using the 5S Audit Sheet and photographs

|                     |  |
|---------------------|--|
| <b>Sort</b>         | <p><b>Identify &amp; eliminate what is not needed</b></p> <ol style="list-style-type: none"> <li>1. Remove items from the area that have not been used recently (in the last three months)</li> <li>2. Red tag the unused items</li> <li>3. Place them in the staging area</li> <li>4. Have manager or team lead determine disposition: Either back to area, dispose of, or donate</li> </ol>  |
| <b>Set in Order</b> | <p><b>A place for everything and everything in its place</b></p> <ol style="list-style-type: none"> <li>1. Identify everything in the area</li> <li>2. Define &amp; label or mark off a place for each item</li> <li>3. Create a standard (a photo, chart, or label) to identify where items go and to make it readily visible if something is missing</li> <li>4. Make workflow smooth and easy</li> <li>5. Place frequently used items close to their place of use, relegating less used items further away</li> </ol> |
| <b>Shine</b>        | <p><b>Keep the work area clean and uncluttered.</b></p> <ul style="list-style-type: none"> <li>▪ “Spring-Cleaning” of all items in area</li> <li>▪ Create 5S Cleaning Plan</li> </ul>  |
| <b>Standardize</b>  | <p><b>Develop standards and stick to them.</b></p> <ul style="list-style-type: none"> <li>▪ Put procedures in place to make sure the first 3 Ss are consistently and reliably implemented</li> <li>▪ Build the work structure to incorporates routine “maintenance” of the first 3 Ss into daily work activities</li> <li>▪ Create visual controls – charts, color coding, photos, marked off areas, etc. – to assure that everything stays as it should be</li> </ul>   |
| <b>Sustain</b>      | <p><b>Sustain all gains.</b></p> <ul style="list-style-type: none"> <li>▪ Conduct 5S Training</li> <li>▪ Encourage self-discipline &amp; accountability</li> <li>▪ Regularly conduct 5S Audits</li> </ul>  |

**Templates:**

- 5S Audit Sheet
- Learning Session PPT Template for Reporting 5S Exercise



Area: \_\_\_\_\_

### 5S Level of Excellence Audit Sheet

Date: \_\_\_\_\_

| Level | Sort  | Identify & eliminate what is not needed |
|-------|---|---|
| 1     | Necessary and unnecessary items are mixed together in the work area   |   |
| 2     | Necessary and unnecessary items are separated (boxes, supplies, equipment)  |   |
| 3     | All unnecessary items have been removed from the work area (no broken items)  |   |
| 4     | Documented method to maintain work area free of unnecessary items.  |   |
| 5     | Unnecessary items are immediately visible and triggers a planned response with root cause analysis and corrective action demonstrated over at least 3 months. |   |

| Level of Excellence |   |   |   |   |
|---------------------|---|---|---|---|
| 1                   | 2 | 3 | 4 | 5 |
|                     |   |   |   |   |

| Comments |
|----------|
|          |

| Level | Set in Order   | A place for everything and everything in its place |
|-------|--|--|
| 1     | Equipment room shows no sign of organization. Items are randomly located.  |  |
| 2     | Designated location established for all items as needed.   |  |
| 3     | Visual Controls are in place so that items that are missing or out of place are immediately noticed ( Task Board, color, outlines, labels, numbers, etc). Visuals make items' "home" location obvious. |  |
| 4     | Documented method of visual sweep to identify items out of place or exceeding quantity limits.   |  |
| 5     | Items are either in use or in their designated location at all times, demonstrated over 3 months or more.  |  |

| Level of Excellence |   |   |   |   |
|---------------------|---|---|---|---|
| 1                   | 2 | 3 | 4 | 5 |
|                     |   |   |   |   |

| Comments |
|----------|
|          |

| Level | Shine   | An effective, organized environment |
|-------|---|-------------------------------------|
| 1     | Supplies and equipment are dirty and/or disorganized.   |                                     |
| 2     | Equipment room is cleaned on a regularly scheduled basis.   |                                     |
| 3     | Visual Controls are in place. Room is cleaned daily. Procedures are in place to communicate improvement ideas and maintenance needs.                |                                     |
| 4     | Equipment and supplies are obviously clean. Can see evidence that Improvement Ideas and Maintenance tasks are followed up on in a timely manner.    |                                     |
| 5     | Abnormal is immediately visible and triggers a planned response with root cause analysis and corrective action, demonstrated over 3 months or more. |                                     |

| Level of Excellence |   |   |   |   |
|---------------------|---|---|---|---|
| 1                   | 2 | 3 | 4 | 5 |
|                     |   |   |   |   |

| Comments |
|----------|
|          |

| Level | Standardize   | Develop standards and stick to them |
|-------|---|-------------------------------------|
| 1     | No attempt is being made to document or improve current processes.  |                                     |
| 2     | Current process is known, but not documented.   |                                     |
| 3     | Current state is documented as Standard Work performed the same by all employees.   |                                     |
| 4     | Future state is documented. Implementation plan is actively worked. Area metrics are linked to company metrics and are clearly displayed. |                                     |
| 5     | Improvements are based on data and tracked for actual results, demonstrated over 3 months or more.  |                                     |

| Level of Excellence |   |   |   |   |
|---------------------|---|---|---|---|
| 1                   | 2 | 3 | 4 | 5 |
|                     |   |   |   |   |

| Comments |
|----------|
|          |

| Level | Sustain  | 5S is a way of life |
|-------|--|---------------------|
| 1     | Minimal attention is spent on 5S.  |                     |
| 2     | 5S is a scheduled event.   |                     |
| 3     | 5S practices are evaluated on a regular basis.   |                     |
| 4     | Documented methods have been put into place to ensure adherence to 5S. Current/historical 5S levels are posted.  |                     |
| 5     | Employees continually seek improvement opportunities, and the significant level of engagement is visible to outsiders. Exceptional 5S levels in other categories have been sustained for 3 months or more. |                     |

| Level of Excellence |   |   |   |   |
|---------------------|---|---|---|---|
| 1                   | 2 | 3 | 4 | 5 |
|                     |   |   |   |   |

| Comments |
|----------|
|          |

AREA FOCAL'S NAME: \_\_\_\_\_

TOTAL 5S LEVEL: \_\_\_\_\_

## Lean Tool

## Visual Management

A variety of simple methods to make the work and processes easily visible;  
May be part of a 5S Exercise

### WHY

- To improve the effectiveness of communication and reaction.
- To convey messages quicker and invite more interest than written information.

### WHEN

Use this tool when organizing the following areas:

- Work Areas
- Work Processes
- Storage of equipment or supplies
- Records/Files/Procedures
- Way-finding

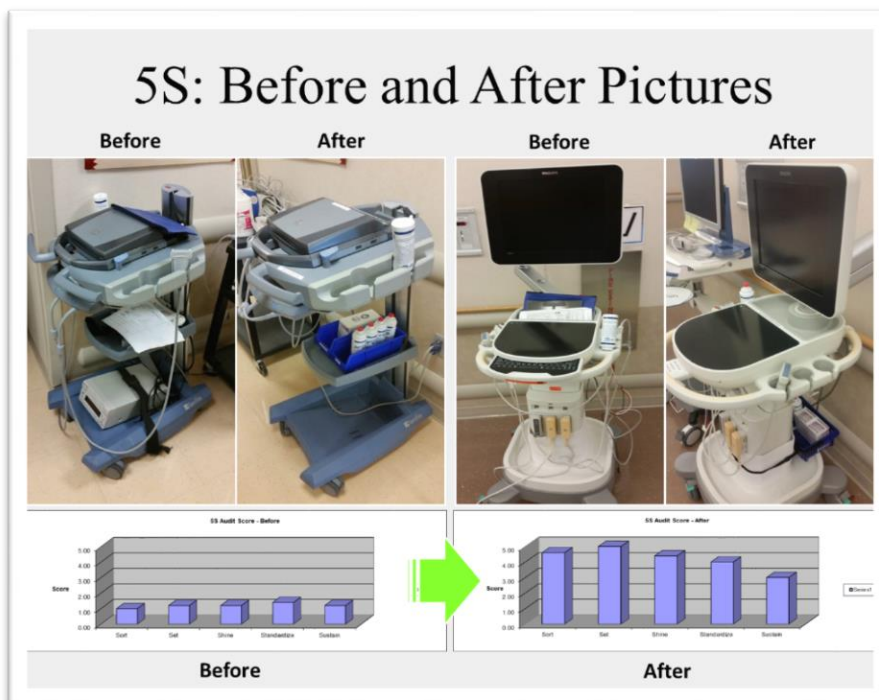
### HOW TO

Visual management may be accomplished by the following methods:

- Color coding
- Tape marking of areas / Signage
- Diagrams / Charts / Graphs / Standard Operating Procedures
- Photographs

### Template:

Learning Session PowerPoint Template for Reporting Visual Management (Photograph)



## Lean Tool

## Spaghetti Diagram/Physical Layout

An observational activity resulting in a representation or drawing of the floorplan of a room and the paths taken by staff performing the steps in the process

### WHY

This tool reveals the relationship between the process and the structure (physical layout), detecting transport and motion wastes

### HOW TO

1. Create floor plan of selected work area on flip chart
2. Ask an observer to trace the path of staff in the work area using a marker
3. Analyze, as a team, the spaghetti diagram
4. Discusses, as a team, how to eliminate the excess transport and motion by
  - Streamlining the process – combining, removing or altering the steps
  - Redesigning the physical layout – to match the new process
5. Create future state process maps, standard work and floor plan to codify the new processes

#### TIPS

- Use cross-training to assist in the new layout, thereby providing staff who can perform various roles, flexing as needed to maintain flow and thus accommodating the needs of the customer
- Consider creating pull systems where one workstation will “pull” new work from the previous workstation whenever feasible, instead of having work “pushed” to the next workstation when not ready
- Focus on continuous flow, moving uni-directionally from first to last step in the process
- Remain flexible when redesigning floor plans, as updates may need to be made over time
- Establish before and after metrics (measurements) to show the improvements

#### Associated Activities:

- Simulation – Before/After
- Standard Work

# Standard Work

A key output of the DMAIC process – Documented current best practice for performing a task or process

## DELIVERABLE

- Process Map – Future State
- Standard Work Instructions

## WHY

- For consistent reliable repeatable outcomes, consistent reliable repeatable processes are required
- For change management – Staff need clarity about the expected new way to work

## WHEN

Following multiple tests of change, a new best practice is selected, documented and implemented (with training)

## HOW TO

1. Once the new way to work is selected through PDSA / Multiple small tests of change, then the process must be documented
2. Select from the following documentation formats:
  - Simple or hierarchical steps
  - Graphic procedures – Photos/Videos
  - Flow chart
  - Process Map – Before/After or Current/Future
3. Training – hands-on with return competency demonstration
4. Auditing – ongoing auditing of the process steps and the outcomes
5. Remember, the process is subject to ongoing improvement

### TIPS

- Do not begin to create standard work instructions until the process has been tested and validated through the DMAIC process.
- When developing standard work instructions, have a person unfamiliar with the process test the instructions to be sure they are clear and unambiguous
- Keep standard work instructions available at the place where the work is performed
- Create graphical standard work instructions if at all possible

## Associated Tools:

- Process Map – Future State

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CONTROL**

# Control Plan

Documentation of elements required to transition and maintain the new improved process

## DELIVERABLE

Control Plan

## WHY

- To officially transition the project from the project team to the process owner
- To “maintain the gains” by outlining the critical elements required to sustain the project results and outcomes
- Establishes ongoing monitoring parameters
- To establish accountability – who is responsible
- Describes what to do - a reaction plan - if the process begins to fail

## WHEN

- The official documentation is presented at project closure; however, planning for transition back to the process owner and sustainability begins at the project outset

## HOW TO

Complete the project closure document using the embedded directions (gray print)

### TIPS

- At the project outset, establish who will be the project owner, how the project will be monitored on an ongoing basis and who will be ultimately accountable for the results
- Throughout the process, continue to engage/emphasize to the process owner, team, and stakeholders the concept of long-term sustainability
- At each step of the DMAIC process, think about how to “build in” sustainability

## Associated Tools:

Standard Work

## Template:

Control Plan



## Control Plan

|  |
|--|
| <p><b>Project Title</b></p>  |
| <p><b>Project Owner</b><br/>Specify a name &amp; a position</p>  |
| <p><b>Critical Elements for Quality</b><br/><u>Process Step</u>: Is there a critical step that is required for the desired outcome? Is there a vulnerable step that may revert to the “old way” over time?<br/><u>Output</u>: What is critical to the desired outcome or vulnerable in the output?</p>   |
| <p><b>Monitoring over Time</b><br/><u>Metric</u> – Define the metric<br/><u>Acceptable Range</u> – Define Upper and Lower limits (Action Levels)<br/><u>How measured</u> – Data Collection Plan</p>  |
| <p><b>Control or Reaction Plan</b><br/>If the metric goes out of range, what will be done? What is the first step?</p>   |
| <p><b>Accountability</b><br/><u>Who is responsible for measuring</u> – Specify a person &amp; a position<br/><u>Where is the measure reported</u> – Specify a committee or standing meeting<br/><u>To whom is it reported</u> – Specify a person &amp; a position, i.e. Clinic Chief Nurse/Sister-in-Charge<br/><u>Who is ultimately responsible</u> – Specify a person &amp; a position, i.e. Ministry of Health Department Chief</p> |
| <p><b>Related Documentation</b> (Provide documents or links to documents)<br/>Process Map - Future/Improved State<br/>Standard Work Instructions<br/>Data – Run Chart</p>  |

# Result Communication

Various avenues to share the project results and lessons learned

## DELIVERABLES

- Progress Report – For each Learning Session (PowerPoint Presentation)
- Final Report to the Collaborative (PowerPoint Presentation)
- Storyboard

## WHY

- To showcase the improvement efforts of the team
- To synthesize and summarize lessons learned
- To show donors and stakeholders the results of their investment
- To spread and scale-up – begin by sharing with others who may be potentially interested in implementing the same changes
- To publish academically – to share with the larger scientific community

## WHEN

- At each collaborative learning session - Progress Report
- At project closure

## HOW TO

1. Complete the PowerPoint Template for each learning session and the Final Report
2. Complete the Storyboard

### TIPS

- This is a great opportunity for the team to synthesize their learnings and feel a sense of pride and accomplishment
- Emphasize to team that they now have the skills to make process improvement a continuous ongoing activity
- Each team member has two jobs – the job they are assigned and the improvement of that process

## Templates

- Learning Session Report Out (PowerPoint) – One for each session
- Final Report (PowerPoint)
- Storyboard (PowerPoint)



## Take Aways

From the LARC Improvement Collaborative

| Lessons Learned from Location A |          |          |
|---------------------------------|----------|----------|
|                                 |          |          |
| Best Practices to add:          |          |          |
| Practice                        | By Whom? | By When? |
|                                 |          |          |
|                                 |          |          |
|                                 |          |          |

| Lessons Learned from Location B |          |          |
|---------------------------------|----------|----------|
|                                 |          |          |
| Best Practices to add:          |          |          |
| Practice                        | By Whom? | By When? |
|                                 |          |          |
|                                 |          |          |
|                                 |          |          |

| Lessons Learned from Location C |          |          |
|---------------------------------|----------|----------|
|                                 |          |          |
| Best Practices to add:          |          |          |
| Practice                        | By Whom? | By When? |
|                                 |          |          |
|                                 |          |          |
|                                 |          |          |

# Write an Abstract

A succinct, single-paragraph summary of the key points of the project

## DELIVERABLES

- Abstract

## WHY

- To publish academically – to share with the larger scientific community

## WHEN

- At project closure

## HOW TO

1. Write a Title
2. Using 250 words or less, summarize the key points of the project in one paragraph
3. Include the following components:
  - Background – setting or context
  - Local Problem – refer to problem statement
  - Methods – How did you address the problem? Aim statement, DMAIC, PDSA
  - Interventions – Changes, what you did to resolve the problem
  - Results – Increased or decreased by how much?
  - Conclusions – What you learned, what worked

### TIPS

- The title should be like a newspaper headline – Give the most important outcome, the “news-worthy” headline in the title
- For the abstract, begin by writing 1-2 sentences summarizing each component of the project, aiming for accuracy
- Edit & re-edit the sentences - Crafting / “word-smithing” each sentence, using the most accurate, succinct, impactful words
- Work with a colleague who will read the abstract critically, using “red-ink” to edit and provide comments that will improve the writing
- Writing, like improvement, is iterative – Continue to improve & refine the abstract through editing

## Reference:

Revised Standards for Quality Improvement Reporting Excellence SQUIRE 2.0  
<http://squire-statement.org>

# Convince the Minister

Refining & revising the elevator speech to engage key stakeholders

## DELIVERABLES

- Revised Elevator Speech

## WHY

- Project Advocacy - To secure action on the project, the impactful and important information about the project must be conveyed to key stakeholders

## WHEN

- At the beginning of the project - to gain stakeholder buy-in and support for the time & resources for the project
- Throughout the project, as barriers arise and/or needs change
- At the completion of the project, when the project needs to be sustained and spread

## HOW TO

1. Use the elevator speech previously created
2. Edit the speech specifically for the key stakeholder
3. Strategically consider the “What we need from you” response

### TIPS

- Carefully consider the stakeholder analysis and the information collected about the interests of the stakeholders
- Consider which key stakeholder will best be approached about which issues, barriers, or concerns
- Don't always ask immediately for money, consider other opportunities for meaningful engagement

## Template:

Elevator Speech



### Elevator Speech Template

This project is about \_\_\_\_\_

\_\_\_\_\_

As a result of these efforts, \_\_\_\_\_

\_\_\_\_\_

It's important because we are concerned about \_\_\_\_\_

\_\_\_\_\_

Success will be measured by showing improvement in \_\_\_\_\_

\_\_\_\_\_

What we need from you (specify intended recipient \_\_\_\_\_)

\_\_\_\_\_

\_\_\_\_\_