QUALITY IMPROVEMENT PROJECT GUIDE

American Urological Association

CONTENTS

INTRODUCTION

As health care delivery systems and payment models increasingly emphasize a transition from volume-based to value-based care, there has been an increasing focus on quality improvement and patient safety (QIPS) across the healthcare landscape. While resource-intensive health system-level improvement models are often the focus of insurers and hospitals alike, there is also a role for comparatively "simple" interventions carried out at the individual provider or practice level to impact healthcare quality.

The QIPS framework is well suited to develop and refine care interventions ranging from complex multi-system value-based endeavors to smaller projects focused on improving a single process within a single clinic. Consequently, developing a firm understanding of QIPS methods and principles provides even the most resource-constrained practitioner/organization with a powerful toolkit by which to improve care processes and/or outcomes.

The purpose of this document is to provide anyone involved in urologic care delivery (e.g., physicians, nurses, administrators, practice managers) with an introductory understanding of the QIPS methods and principles necessary to carry out quality/process improvement interventions.

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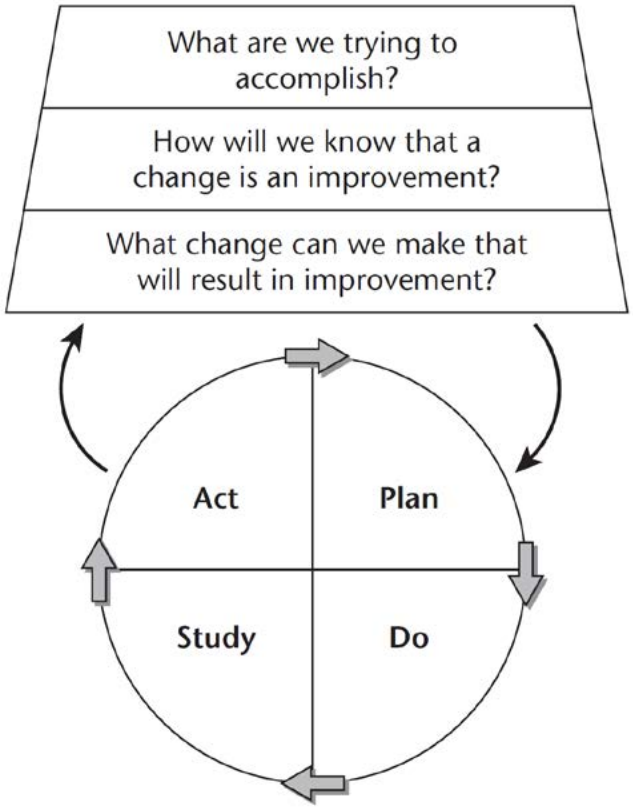
FOUNDATIONAL CONCEPTS

HEALTHCARE QUALITY

While there is no universal definition of healthcare quality, the Institute of Medicine (IOM) defines it as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. In addition, the IOM outlined six domains of healthcare quality in its landmark publication *Crossing the Quality Chasm: A New Health System for the 21st Century.*[1] According to this report, quality healthcare should continually strive to be: safe, timely, effective, efficient, equitable, and patient-centered (STEEEP). In the context of these widely adopted aims of healthcare quality, it is commonly accepted that quality improvement (QI) initiatives should strive to improve on one or several of the STEEEP aims.

FIGURE 1. THE MODEL FOR IMPROVEMENT



Source: The Improvement Guide: A Practical Approach to Enhancing Organizational Performance, 2nd Edition | © 2009, John Wiley and Sons

THE MODEL FOR IMPROVEMENT

The Model for Improvement is a framework to help more formally develop an idea into a structured quality improvement project (Figure 1). The Model for Improvement has two parts:

1. The fundamental questions
    a. What are we trying to accomplish?
    b. How will we know a change is an improvement?
    c. What change can we make resulting in improvement?
2. The Plan-Do-Study-Act (PDSA) cycle

Working to provide discrete answers to the fundamental questions as they relate to a project idea can help provide initial structure for the QI project. Then walking the project through the PDSA cycle can provide a tangible process for making progress toward the goals set out in response to the fundamental questions. The PDSA cycle involves planning how to test and measure a change *(plan)*, implementing the change on a small scale *(do)*, analyzing the results and comparing them to your predictions *(study)*, and making a plan for the next PDSA cycle – adapt and run another test, adopt the change and test it on a larger scale, or abandon the change idea *(act)*.[2] A team will likely go through numerous PDSA cycles before deciding on the final intervention(s) to implement.

For additional information on the PDSA cycle, visit https://www.ihi.org/resources/tools/plan-do-study-act-pdsa-worksheet.

The Model for Improvement will be integrated throughout the document, along with a case study intended to provide tangible examples of how health professionals can approach, design, and ultimately implement care improvement efforts using this framework.

PLAN THE INTERVENTION

An idea for a QI project can arise from various sources, such as patient feedback, event reports, staff feedback, performance metric results, best practices from a journal, and organizational priorities, among others. Regardless of the source of the initial idea, it is important to dedicate time planning an intervention to ensure the greatest probability of success. With the Model for Improvement as a foundational concept, it is important to work in a stepwise manner through the seven steps of planning an intervention:

1. Understand the problem
2. Draft a problem statement
3. Assess stakeholder engagement
4. Assemble a team
5. Draft an aim statement *(What are we trying to accomplish?)*
6. Select measures *(How do we know a change is an improvement?)*
7. Prioritize opportunities for improvement *(What change can we make that will result in improvement?)*

CASE STUDY: The case study presented in this project guide explores the issues of delayed operating room (OR) turnover and its impact on patients and staff. Delayed OR turnover times can cause scheduling disruptions, leading to patient and staff frustration, extended work hours for staff, and increased operational costs. Throughout this project guide, we will use QI tools and strategies to analyze the root cause of the delays and identify interventions to improve OR turnover efficiency.

UNDERSTAND THE PROBLEM

Although a problem may have already been identified, a key element of any QI project is choosing a problem that is within your team's influence. Focusing your team's attention on a bite-sized problem is called "scoping" and allows the project to focus on the best opportunities for improvement. Scoping allows the team to set clear parameters and establish determinants as to what should or should not be included in a project, what resources and skills will be required, and what is a realistic time frame for completion.

CASE STUDY: In the example of OR turnover time, the attention or focus is specific to the ORs used by urology staff, not all ORs in the hospital.

Tools to Get a Better Understanding of a Process

Whether working as an individual or with a small group that has identified a potential problem (e.g., an issue, inefficiency, gap in practice, etc.), it is important to get a comprehensive understanding of the process involved to decide what part(s) of the process would be best to work on. Tools such as process maps, fishbone diagrams, or Pareto charts can be especially helpful in narrowing down what to work on in a complex process and identifying the most impactful parts of the process(es) to improve (which may not be obvious).

PROCESS MAPS

Process maps are among the most commonly used tools to visualize workflows within a process and identify steps that lead to delays and/or other issues. A process map is a flowchart indicating each step of a process (Figure 2) and possible actions that may result from each. A process map can be simple (manually drawn on a whiteboard) or complex (using software such as Microsoft Visio or draw.io). Colors, symbols, or numbers can be added to the process map to indicate where there are potential delays, hazards, or other problems associated with a step in the process. Once a current state map is created, it is often useful to also create an ideal state map of how the new process could work if there were no limitations, such as fiscal or staffing limitations. Next, a future state map is constructed using the ideal state map with the limitations within which the team has to work.

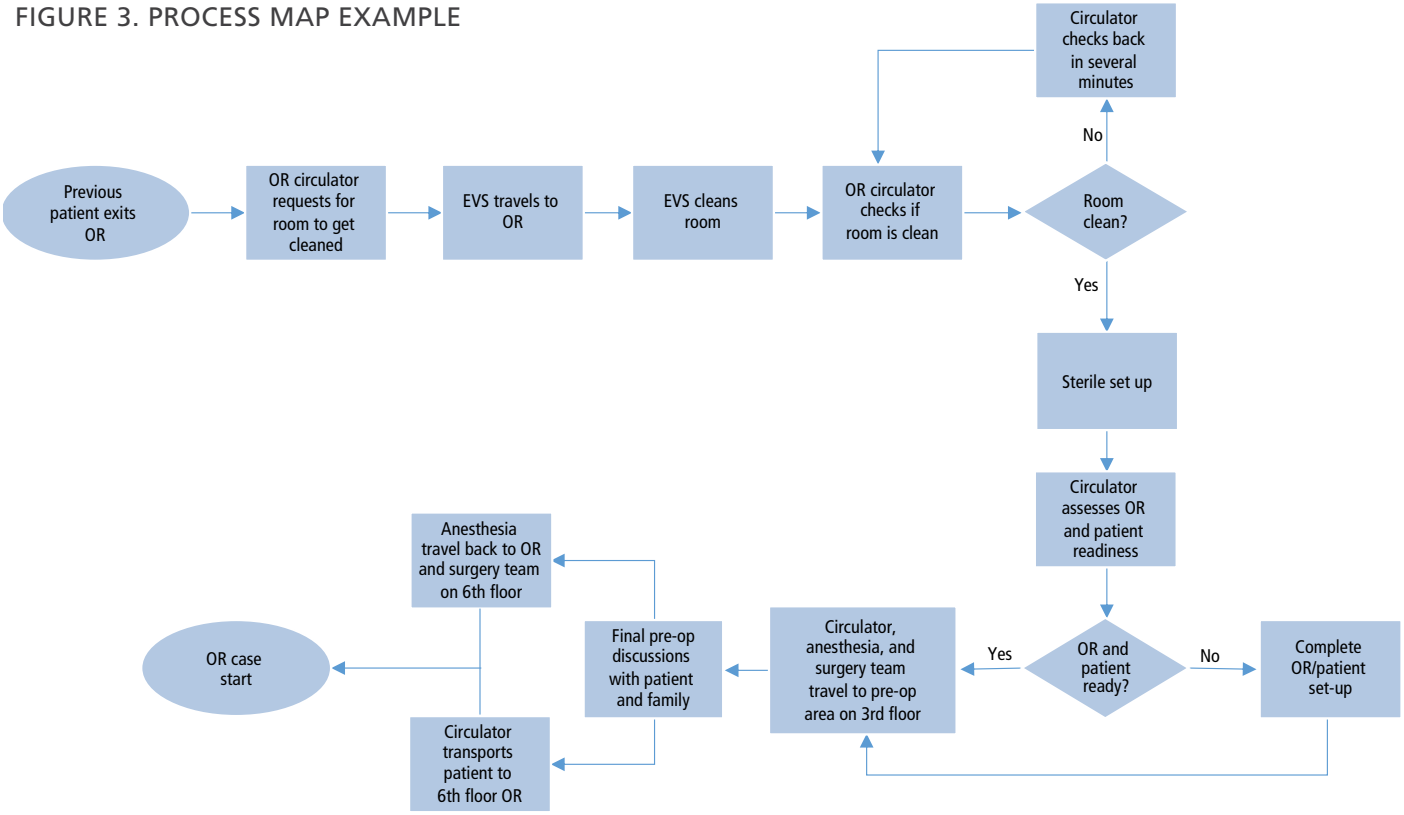
FIGURE 2. BASIC PROCESS MAP SYMBOLS

	Indicates the flow between steps
	Represents the start/ end points of the process
	Represents a process step
	Indicates a decision point

CASE STUDY: The process map illustrates the workflow of the current state of the OR turnover process, detailing each step involved from the completion of the previous surgical procedure to the start of the next OR case (Figure 3). It visually represents the current state of the process and serves as a foundation to identify areas in which to enhance efficiency.

For additional information on process maps, visit https://www.ihi.org/resources/tools/flowchart.

FIGURE 3. PROCESS MAP EXAMPLE



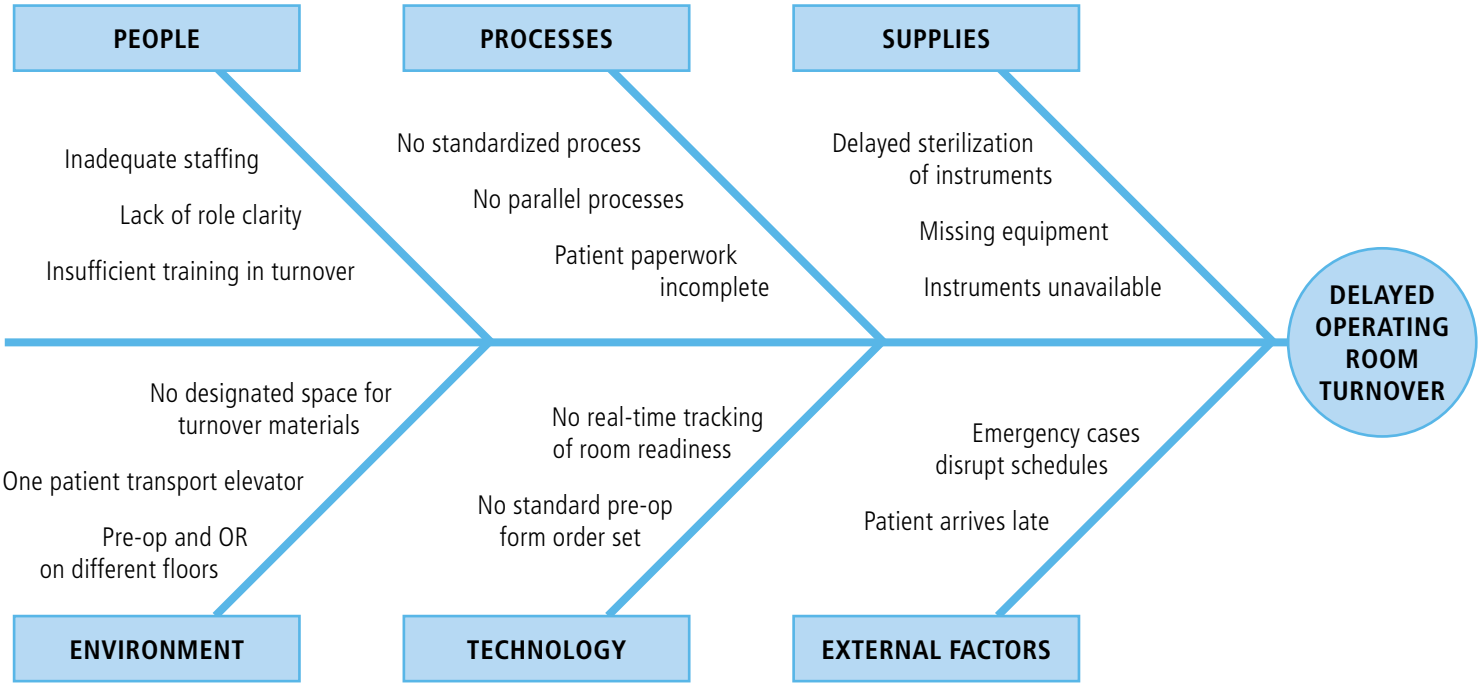
ISHIKAWA "FISHBONE" DIAGRAM

"Fishbone" or "cause-and-effect" diagrams can be used to quickly visualize the causes and effects of a problem. A fishbone diagram can be especially useful for brainstorming the optimal parts of the process to be targeted for improvement. The problem is displayed at the "head" of the fishbone diagram. Potential overarching causes of a problem are categorized into sections, such as environmental, policy, people, etc., and the detailed possible contributing causes are listed on the smaller "bones" of the categories.

CASE STUDY: In the case of delayed OR turnover (effect), the potential contributors (causes) are categorized into people, processes, supplies, environment, technology, and external factors. All possible causes of delayed turnover are then listed under the appropriate category (Figure 4).

For additional information on fishbone diagrams, visit https://www.ihi.org/resources/tools/cause-and-effect-diagram.

FIGURE 4. FISHBONE DIAGRAM EXAMPLE



PARETO CHART

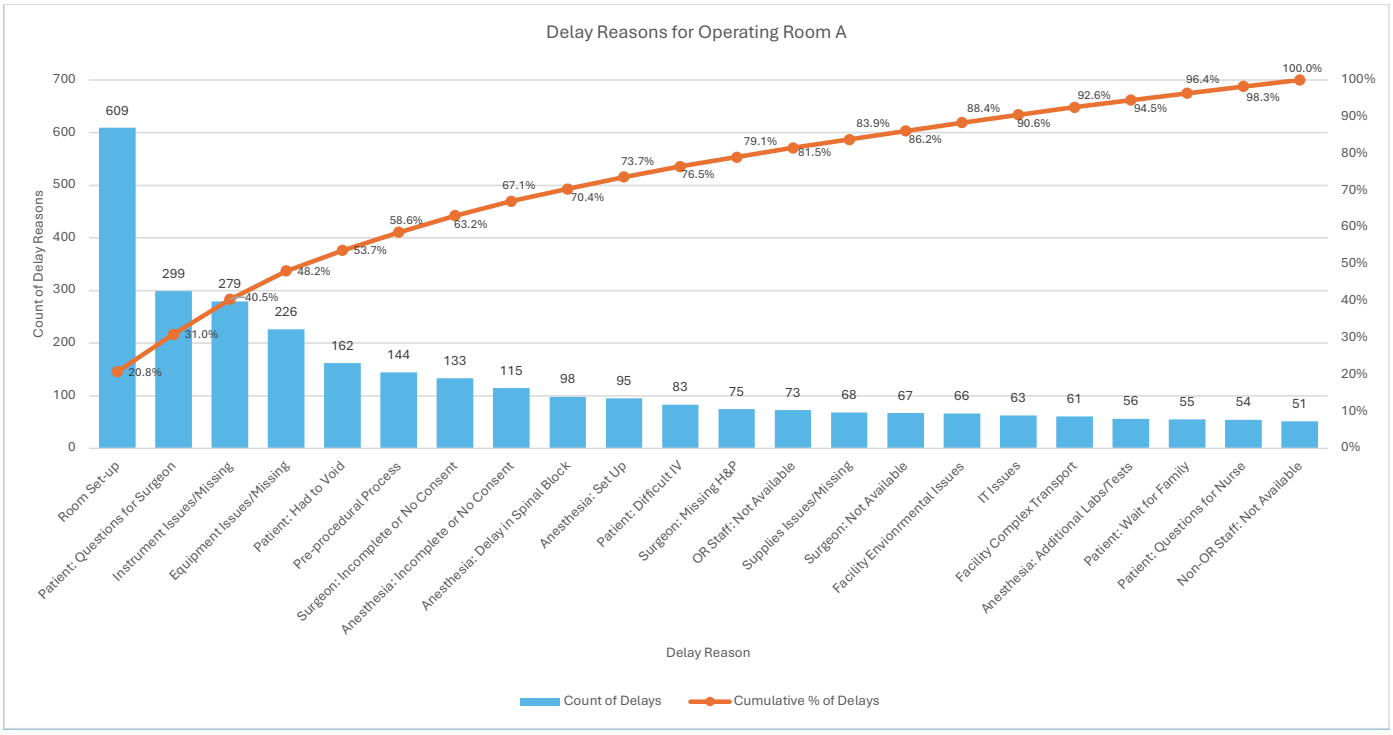
After gaining a solid understanding of the overall process(es) of interest, there can be so many issues in the process that it can be overwhelming to know where to start. Pareto charts and action priority matrix charts can be very helpful in identifying what may be the highest impact issues to address.

A Pareto chart is based off the "Pareto Principle" that 80% of problems are often the result of only 20% of causes.[3] It catalogues the factors that contribute to a problem, along with the magnitude (or frequency) of each factor. The y-axis on the left shows the frequency of each contributing factor and the y-axis on the right shows the cumulative impact of each factor. Contributing factors are listed in decreasing order from greatest impact to lowest. A Pareto chart allows quick visualization of the most impactful factors. This can be used to prioritize your team's efforts or track improvement over time.

CASE STUDY: The team is looking at the reasons for delayed OR turnover time over two weeks (Figure 5). As identified in the Pareto chart, the top three reasons for OR delays over the two weeks were: 1) OR was not set up in time, 2) the patient had additional questions that needed to be addressed prior to starting the surgery, and 3) the required instruments were not available or set up properly.

For additional information on Pareto charts, visit https://www.ihi.org/resources/tools/pareto-chart.

FIGURE 5. PARETO CHART EXAMPLE



DRAFT A PROBLEM STATEMENT

A problem statement outlines the issue or problem the QI project is seeking to address. A problem statement should be 1-2 sentences. The questions below (Figure 6) can be used to help formulate the problem statement:[4]

FIGURE 6. PROBLEM STATEMENT TABLE

Questions	Example Responses
What is the problem?	OR turnover is slow
Who does it affect?	Patients and staff
How does this problem make you feel?	Tired
When is it a problem?	Daily
Why should I care?	Patients and staff are frustrated
How does it affect the patient or customer?	Makes them run behind in their day

CASE STUDY: The problem statement using the example above would be: "The OR schedule runs behind daily, causing OR start times to be delayed and staff to stay after their workday is scheduled to end."

ASSESS STAKEHOLDER ENGAGEMENT

One of the keys to a successful QI project is engaging the appropriate stakeholders in the process. Stakeholders are anyone with an interest in the QI project, involved in the targeted process, or who can have an impact on the project's success or failure. It is critical to get buy-in for the project from all stakeholder groups, including front-line staff and leadership, early in the planning process. It is important to understand that the value proposition for the improvement activity may be different for the various stakeholder groups. For example, staff may care the most about time savings and leadership may prioritize cost savings.

There are four key steps in the stakeholder identification and engagement process:[5]

1. **Identify:** Consider who the project will impact, who will be doing the work, whose work will be impacted by the project, who will oversee the project, who will resist the change, who has an interest in the outcome of the project, etc.
2. **Categorize:** Organize the stakeholders into groups (e.g., physicians, patients, hospital/clinic leadership, nurses, patient care technicians, etc.) and note the relationship between the stakeholder groups.
3. **Analyze:** Review the categories of stakeholders and determine to what extent each group should be involved in the intervention. It is not practical to engage every stakeholder group to the same level. Focus on engaging the most with those stakeholders who will have the most impact on the project's success.
4. **Engage:** Outline the minimum commitment required from each stakeholder. It is helpful to consider the underlying aims or goals of each stakeholder and to highlight their motivations to garner engagement.

Take note of potential *team members* while conducting the stakeholder identification and engagement process.

ASSEMBLE A TEAM

Most successful QI interventions require a group of individuals with different skills, perspectives, and roles proximate to the given problem, as opposed to one individual working alone to effect change. A team should be assembled based on the purpose of the improvement initiative and the system and processes that relate to the purpose of the initiative.

Team members should represent more than one stakeholder group and ideally comprise a mix of disciplines to capture all components of a process. In addition, the team should involve individuals in each part of the process, especially those who are most likely to benefit from the improvement and/or implement the work. The Institute for Healthcare Improvement (IHI) suggests involving the following individuals: a project sponsor (e.g., service line leader in the OR), the day-to-day process owner or team leader, someone with experience in improvement science, someone with technical or clinical experience, someone with knowledge of the system or process, and someone who can represent the point of view of the patient.[6]

CASE STUDY: For instance, if one is evaluating OR turnover time, the team should include surgeons, anesthesia staff, OR nurses and techs, environmental services/housekeeping leaders, instrument/supply team members, pre-operative area staff, etc.

The size of a team should be practical. A good rule of thumb is the "two pizza rule": everyone on the team should be able to sit around a table, and two pizzas should be enough to feed the group during a meeting (i.e., 5-8 people).[7] Beyond the dedicated team, other "ex-officio" experts (e.g., consultants, leadership) may be invited to attend team meetings from time to time to support the team and offer expert advice.

The most effective teams can identify a common goal (e.g., for the OR turnover example, starting on time more often) and develop an appropriate consensus on which interventions to test and how the intervention will be measured. In addition, a team must be able to interact and communicate well with leadership and decision-makers to ensure any projects fall within the vision of that clinic, department, or organization.

DRAFT AN AIM STATEMENT

The aim statement answers the first question in the Model for Improvement, **"What are we trying to accomplish?"** Some practices may use the Six Domains of Healthcare Quality[8] (STEEP) to help develop their project aims. The aim statement should follow the SMART acronym:

- S: *Specific* (clearly definable)
- M: *Measurable*
- A: *Achievable*
- R: *Relevant* to the problem and/or intervention
- T: Measurable in a *timely* fashion over a fixed time period

CASE STUDY: In the context of OR turnover time, a SMART aim statement would be: "Improve the timeliness of urology OR turnover by increasing the number of OR cases starting on time by 25% within the next 6 months", rather than "Improve the OR turnover time." The latter statement lacks a measurable amount of improvement and does not state the time period during which the aim will be achieved.

The identified stakeholders, especially those who will most benefit from the improvement, should co-develop the aim statement.

For an aim statement worksheet, visit https://www.ihi.org/resources/tools/aim-statement-worksheet.

SELECT MEASURES

The second question in the Model for Improvement asks, **"How do we know a change is an improvement?"** Measurement is key to assessing project outcomes and requires consideration before the intervention begins. *What* you choose to measure and *how* you will measure (and collect) the data are critical questions. Two important questions to begin with are: (1) What is the definition of "success" for this project? and (2) How will we know that the change is an improvement? This will drive long-term *outcome* measures, but it is often necessary to track shorter-term *process* measures as well. Measures can be a count of items, a rate, a percentage, or a ratio.

Successful projects often require a mix of different types of measures:

- **Outcome measures** - assess impact on patient health; link back to the aim statement

  CASE STUDY: (e.g., OR turnover time)

- **Process measures** - assess if the parts of the system are performing as anticipated

  CASE STUDY: (e.g., time between critical room set up and patient arrival; time from patient exiting OR to next patient entering OR; time from patient exiting OR to housekeeping arrival)

- **Balancing measures** - ensure improvement in one measure does not result in detriment to another area

  CASE STUDY: (e.g., safety events; infection rates; turnover time in other ORs)

- **Structural measures** - assess accessibility, availability, and quality of resources

  CASE STUDY: (e.g., number of environmental services staff available to clean ORs).

  Structural measures are not typically used to evaluate the impact of the change, but they may be helpful to collect, depending on the project.

In addition to collecting quantitative data, qualitative data should be collected to gain a better understanding of obstacles to change, why improvement may not be occurring, and how the change is impacting patients and/or clinicians.

When selecting the measures, it is important to consider the following questions for the data plan:

- What data need to be collected?
- How will data be collected?
- How often will data be collected?
- Who will collect the data?
- Who will analyze the data?
- How often will the data be analyzed?
- How will the data be shared with team members and/or stakeholders?

For additional information on QI project measures, visit https://www.ihi.org/resources/tools/quality-improvement-project-measures-worksheet.

PRIORITIZE OPPORTUNITIES FOR IMPROVEMENT

The third question in the Model for Improvement asks, **"What change can we make that will result in improvement?"**

To generate ideas for change, consider reviewing published research and best practices, gathering input from staff involved in the process, and incorporating feedback from patients and their families.

An idea for change might focus on eliminating waste, minimizing variation, streamlining workflows, improving the work environment, improving patient/caregiver and staff experiences, or reducing errors, among others.

The driver diagram and impact-effort matrix are helpful tools to help prioritize potential ideas for change.

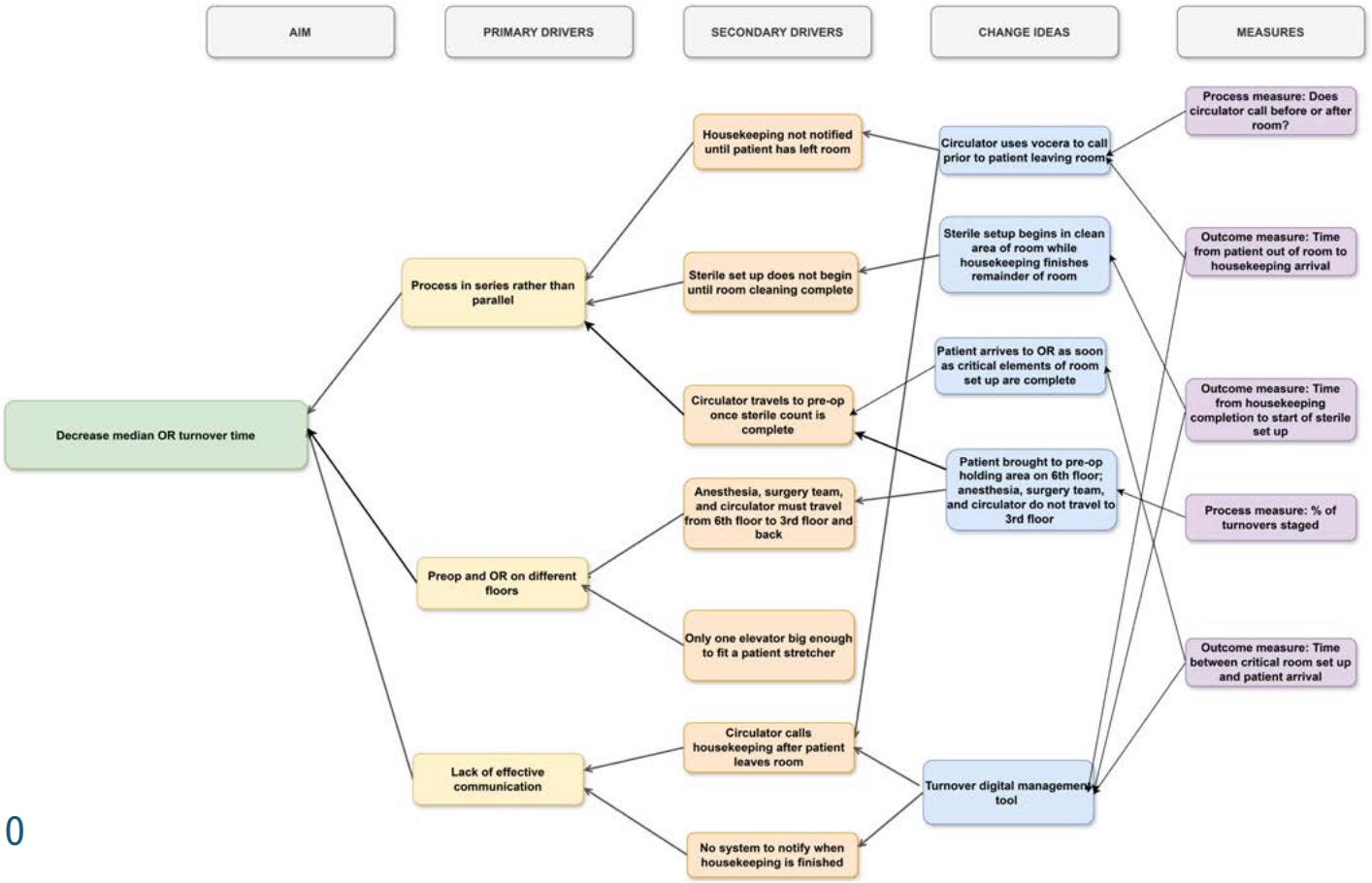
DRIVER ("TREE") DIAGRAM

A driver diagram can be used to identify and prioritize the major factors ("drivers") to influence an outcome or goal. It can be used as a visual communication tool for the team and stakeholders. When developing a driver diagram, begin by identifying primary or "key" drivers of the outcome and then identifying the "secondary" drivers (i.e., elements that influence or result in the primary drivers). The areas of focus on the driver diagram should come from recognized issues in the process map or fishbone diagram. Once the drivers are identified, the team can identify "change ideas," which are specific ideas that might influence the secondary drivers and can be tested. The driver diagram should link specific drivers to measurable outcomes identified in the previous step.

CASE STUDY: Using the example of delayed OR turnover time, the primary drivers identified are: 1) the OR and patient prep processes are occurring in a series rather than in parallel, 2) the pre-op area and the OR are on different floors of the hospital, and 3) there is a lack of effective communication between the circulator and housekeeping (Figure 7). Using secondary drivers, several potential change ideas can be identified.

For additional information about driver diagrams and for a blank driver diagram tool, visit https://www.ihi.org/resources/tools/driver-diagram.

FIGURE 7: DRIVER DIAGRAM EXAMPLE



IMPACT-EFFORT MATRIX

An impact-effort matrix is often useful in prioritizing problems (Figure 8). By compiling a short list of problems that are within your team's influence, this matrix allows the team to focus on interventions that are most likely to yield "quick wins" and potentially enhance stakeholder engagement by identifying "where might you make the most impact?" with respect to the project aim(s). The x-axis is the effort (or difficulty) involved in implementing that idea and the y-axis is the impact of implementing that idea. Ideas will thus be sorted into four categories:

1. Quick wins (high impact, low effort) – "low hanging fruit"
2. Major projects (high impact, high effort) – requires more strategy and planning
3. Fill in jobs (low impact, low effort) – consider if there are no good alternatives
4. Rethink (low impact, high effort) – unclear that the idea will be worth implementing

CASE STUDY: Using the change ideas identified in the driver diagram above, the team used the impact-effort matrix to help prioritize change ideas by categorizing them based on their potential impact and level of effort required for implementation. This exercise allowed the team to determine the change ideas with a potential high impact with low level of effort ("quick wins") (Figure 9). After this exercise, the team decided to focus on the change idea to have the circulator nurse call housekeeping prior to the patient leaving the OR.

FIGURE 8. IMPACT-EFFORT MATRIX

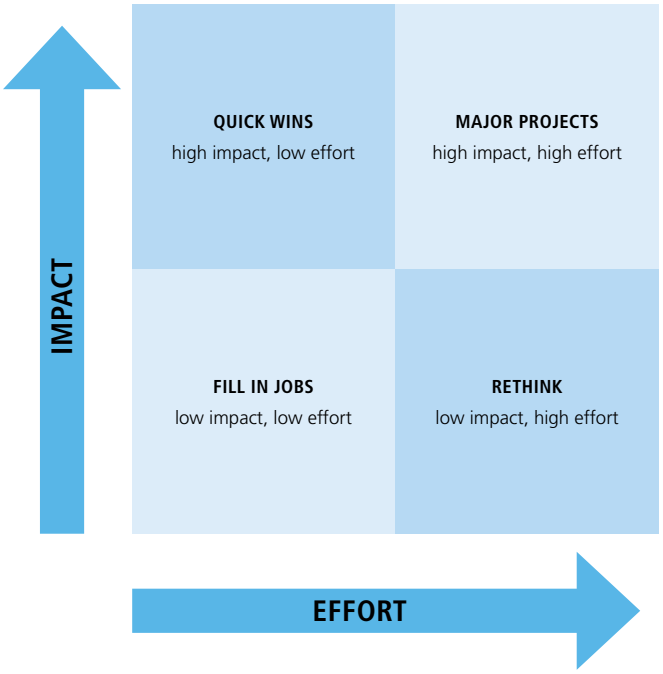
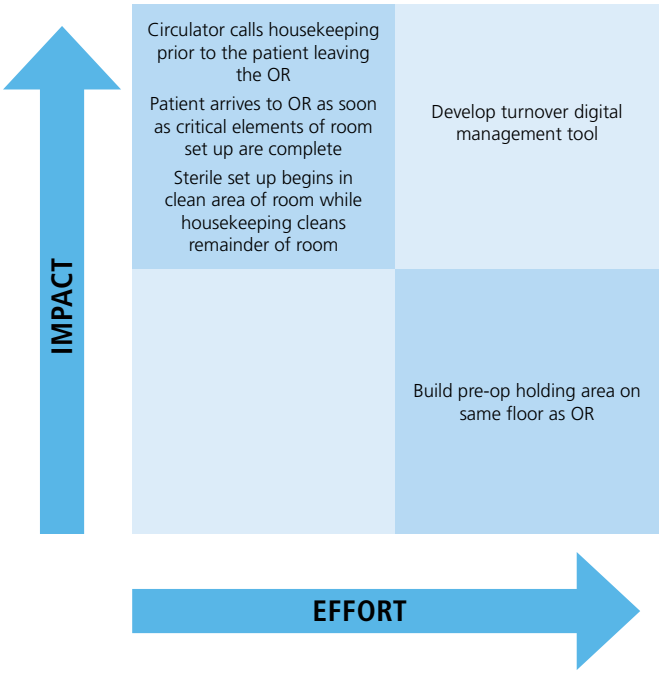


FIGURE 9. IMPACT-EFFORT MATRIX EXAMPLE



DO THE INTERVENTION

Once the planning process has been completed, those charged with implementing the intervention should begin. This involves "hardwiring" the change into the standard workflow of the environment (e.g., unit, clinic, hospital). The implementation phase requires the use of PDSA cycles – teams will find it helpful to test the change on a small scale ("small tests of change") to ensure the change is effective in the local environment. If the change results in improvement, teams should then expand gradually to a larger scale. The steps of implementing the intervention include:

1. Finalizing a plan for the intervention
2. Carrying out the intervention
3. Collecting data
4. Auditing the intervention

FINALIZE A PLAN FOR THE INTERVENTION

Before implementing the agreed-upon intervention(s), the QI team should develop a formal implementation plan to carry out the intervention. At minimum, the plan should:

- Describe the intervention and predict what will happen
- Identify the tasks that are necessary to implement the change
- Specify who is responsible for carrying out the tasks
- Document when and where the intervention will occur
- Explain the measurement plan
- Determine the meeting schedule to assess the intervention
- Determine how long to run the test of change. The length of time should be in accordance with the size of the intervention.

CARRY OUT THE INTERVENTION

Refer to the formal plan developed in the "Plan" section. The individuals assigned to each task of the intervention will carry out the change for the specified duration.

It is important to note that implementing the intervention may influence multiple interconnected processes. A successful implementation may require staff training, changes to electronic health record (EHR) documentation flows, changes to policies, changes in staff members and/or staff responsibilities, etc. It is important to understand these impacts to ensure that the intervention is successful in the environment. In addition, it is imperative to communicate the details of the intervention to the staff and other individuals impacted by the change *before* the intervention is implemented, to allow for questions and to assess staff preparedness. Neglecting this step can lead to staff resistance and an unsuccessful intervention.

COLLECT THE DATA

Ensure the data are being consistently collected as outlined in the "Plan" section.

AUDIT THE INTERVENTION

Teams should monitor that the intervention is happening as planned. It is particularly helpful for team members to conduct a "Gemba walk" (i.e., visit the setting of the intervention) to observe changes, ensure the process is happening, as planned, and engage with individuals involved in or impacted by the change to collect feedback.

STUDY THE INTERVENTION

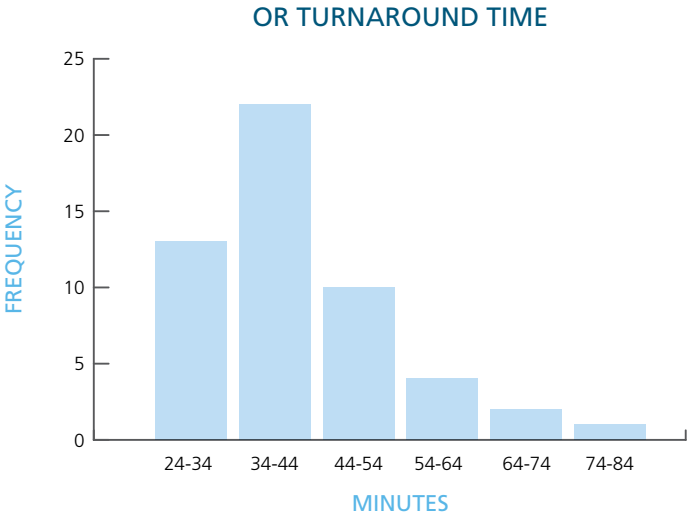
Once you have started to implement the intervention and collect data, the data should be assessed periodically. Typical analysis intervals include daily, weekly, monthly, or quarterly, depending on the project scope and team. Unlike traditional research, which relies on static tables with sometimes complex statistical analysis, QI analytics lean toward nimble, dynamic charts that show the impact of process changes over time. While many tools can be used to assess project activity, progress, impact, and sustainability, three of the most useful include the histogram, the scatter diagram, and the run chart.

HISTOGRAM/FREQUENCY PLOT

A histogram is a type of bar chart that effectively shows variation within a process that may not be obvious by looking at a traditional data table or calculating a mean/median. When there is substantial variation in a process, reducing that variation is a critical component of the improvement effort.

CASE STUDY: The QI project team tracked OR turnaround time over a two-week period and determined that the turnover time most frequently fell into the 34-44 minute range (Figure 10).

FIGURE 10. HISTOGRAM EXAMPLE



For additional information on histograms, visit https://www.ihi.org/resources/tools/histogram.

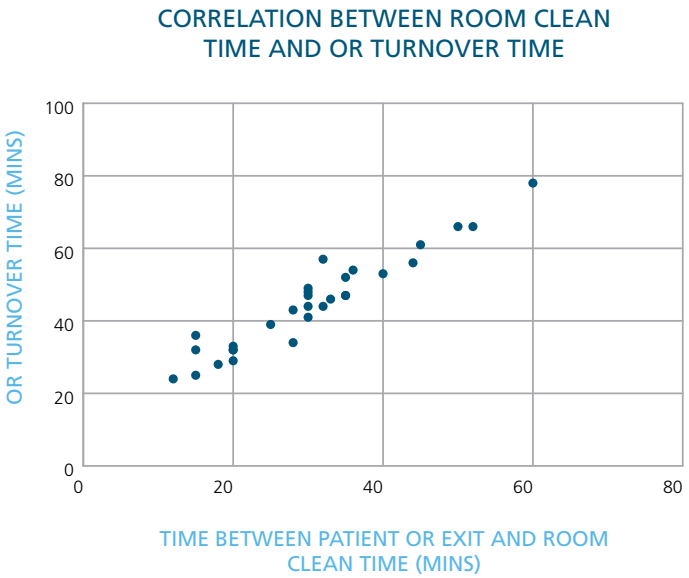
SCATTER DIAGRAM

Scatter diagrams are a simple way to show the relationship between two variables. Plot one variable on the x-axis and a second variable on the y-axis. A positive correlation is indicated when both values increase/decrease together. A negative correlation is displayed when one value decreases when the other increases. It is important to remember that while scatter diagrams can show correlation (i.e., the strength of association), they cannot prove causation.

CASE STUDY: The team collected data on the OR turnover time and the time between the patient exiting the OR and housekeeping completing the room clean. The team determined that there is a positive correlation between the two variables (Figure 11).

For additional information on scatter diagrams, visit https://www.ihi.org/resources/tools/scatter-diagram.

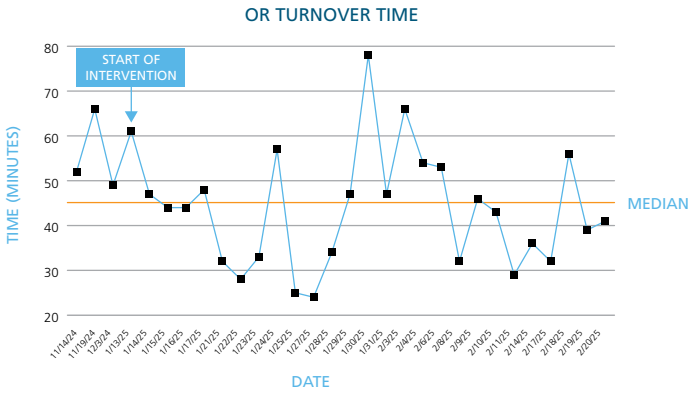
FIGURE 11. SCATTER DIAGRAM EXAMPLE



RUN CHART

Run charts provide a simple but effective method to visualize data over time and show the impact of process changes. Using run charts to understand the magnitude of change requires far fewer data points compared to traditional statistical analysis (e.g., p-value calculations). Typically, run charts require 5+ pre-intervention data points and 5+ post-intervention data points. The value of interest is plotted on the y-axis (e.g., biopsies via transperineal approach) and time is plotted on the x-axis (days, weeks, months, quarters, etc.) (Figure 12). After plotting the data, draw lines to connect the data points. Run charts can be even more informative if lines show the median (either overall or pre- and post-intervention separately) and the "goal" line (assuming the chart contains at least 10 points). Be sure to annotate the chart to indicate when process changes occurred or when an external event may have impacted the process. The QI Macros add-in for Microsoft Excel can do this charting work in an automated fashion.

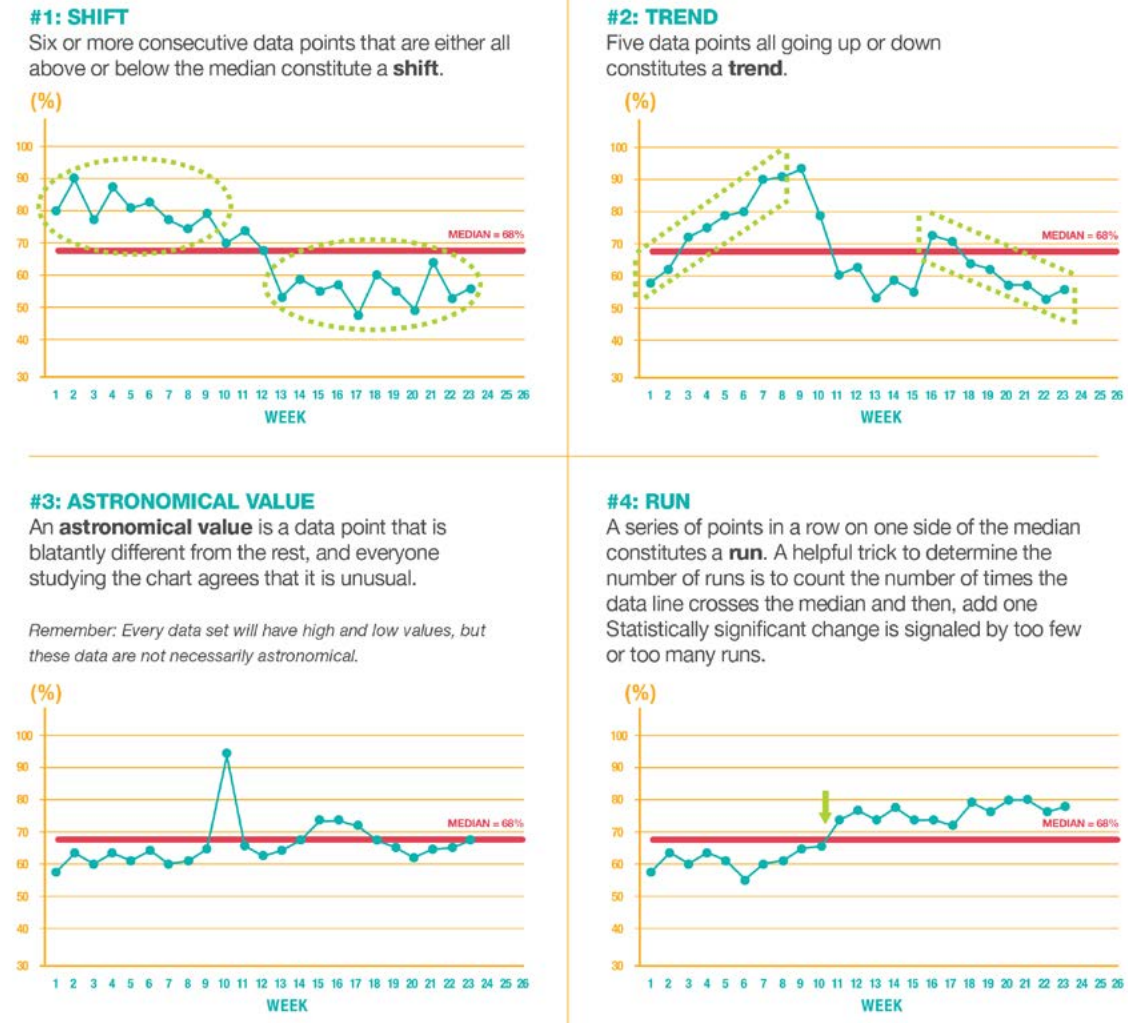
FIGURE 12: RUN CHART EXAMPLE



It is normal for data in run charts to vary over time and look like a sawtooth rather than a straight line. Four major run chart "rules" or interpretations can allow for quick identification of when a process is improving (or degrading) as a result of the intervention(s). The patterns illustrated below (Figure 13) can be critically helpful for further process improvement, providing positive feedback to teams, or reporting to stakeholders.

For additional information on run charts, visit https://www.ihi.org/resources/tools/run-chart-tool.

FIGURE 13. RUN CHART RULES



Source: Excellence through Quality Improvement Project (E-QIP) | https://e-qip.ca/resources/run-chart-guide-and-template/

ACT ON THE RESULTS OF THE INTERVENTION

After studying the results of the intervention(s), the QI team should move onto the "Act" portion of the PDSA cycle and decide how to proceed based on the findings. Specifically, determine whether to adopt, adapt, or abandon the intervention (this is known as "the three A's").

- **Adopt** – Change was successful.
  - Make it part of the way you work and/or consider expansion into other areas.

CASE STUDY: The practice of calling housekeeping prior to the previous patient exiting the OR was shown to reduce delays and improve OR turnover time. This change became a routine part of the OR workflow. The team is sharing their work with other OR areas to help them improve their OR turnover time as well.

- **Adapt** – Change went well but requires some adjustment.
  - Modify the change and test again (i.e., repeat the PDSA cycle).
  - This is the most common result of early testing.
- **Abandon** – Change did not go well and/or did not result in the desired improvement and should be abandoned.
  - Consider another idea to test or change the approach, then repeat the PDSA cycle.

SUSTAIN THE INTERVENTION

If an intervention reaches the end of its initial period of significant effort and is deemed successful, the team should meet to discuss how to sustain it. To sustain the intervention, the QI team should account for ongoing resource needs, including maintenance and replacement costs, as well as people. The team should develop a sustainability plan such that the revised process is audited on a scheduled basis (less frequent than auditing during the intervention phase), to ensure it doesn't drift back to pre-intervention state.

Below are some questions that can assist in considering the sustainability of the change as well as building a sustainability plan:

- Is the process hardwired into the system? In other words, does the action force the person to get it right? Does it remove the chance to select the wrong option?
- How much will the change affect the average person's work?
- How many people will the change impact?
- How durable is the effect? Consideration of this should aid in determining how long to continue monitoring data to see if things are still working.
- Should the work be expanded or "spread" to other areas, patient populations, etc.? If so, systems adopting the change will need guidance on how to adapt the change to their environment.
- What is the communication strategy back to stakeholders to share the results of the work and next steps?

SUSTAINABILITY CHALLENGES

If a previously successful intervention is proving difficult to sustain, use QI activities and tools to diagnose the problem(s).

- **Go to the Gemba:** This means going to the place where the work is happening to observe the process and ask questions.[9, 10]
- **Consider a one-to-one versus group interview:** Ask "what didn't work well? Why didn't we succeed? Is there anything that did work well?" This will inform what can be done differently in the next PDSA cycle.
- **Refer to the process map:** Uncover problematic steps and/or unnecessary complexity.
- **Review potential causes of the problem:** Both fishbone diagrams and Pareto charts can be employed to show potential causes of the problem.

For a sustainability planning worksheet, visit https://www.ihi.org/resources/tools/sustainability-planning-worksheet.

ADDITIONAL RESOURCES

- IHI Improvement Project Roadmap
- IHI Project Planning Form
- IHI Quality Improvement Essentials Toolkit
- IHI Quality Improvement Project Change Concepts Worksheet
- IHI Quality Improvement Project Charter
- IHI Quality Improvement Project Management
- IHI Quality Improvement Team Member Matrix Worksheet
- IHI Quality Improvement Team Member Work Styles Inventory Worksheet
- IHI Seven Spreadly Sins

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