

## Chapter 18

# Applying Principles and Practice of Quality Improvement for Better Care of the Underserved

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### Objectives

- Define quality improvement (QI).
- Define goals for applying QI to reduce health-care inequities.
- Describe how QI can affect health-care inequities
- Review the importance of collecting data on race, ethnicity, language, and social and behavioral risk factors.
- Review the importance of patient safety for vulnerable patients.
- Describe the “Triple Aim” QI framework.
- Describe the eight steps of a QI initiative.

Olivia has worked for 3 months at a community health center that serves a vulnerable patient population. The staff is wonderful, with many dedicated people, but some are worn down by chronic staffing shortages and overwhelming patient needs. The patients are very poor with many psychosocial stressors. Some have no telephone or are homeless; others cannot afford bus fare to the clinic; about a third speak little or no English. A small yet significant number of patients use illicit drugs. Olivia has been given 10% “QI time” in her job description to help the clinic tackle long-standing quality of care issues and to start making some operational and clinical improvement. While finding the task somewhat daunting, she is excited to dive in. However, she is not sure how to begin.

### INTRODUCTION

Even the most dedicated and idealistic practitioners can be daunted in their quest to care for complicated patients in limited resource settings. Health-care delivery

systems can support the individual practitioner in that quest. Those systems that focus on continually improving patient health (outcomes) define improved care (performance) as requiring the constant, combined efforts of everyone in the system. System-based approaches to improving patient outcomes and care can follow formal methods of analysis and strategies for progress.

Quality Improvement (QI) is one system-based approach borrowed from other industries that has been applied to health care. The Agency for Healthcare Research and Quality defines QI as “a multidisciplinary, systems-focused, data-driven method of understanding and improving the efficiency, effectiveness, and reliability of health processes and outcomes of care.”<sup>1,2</sup> While interest in QI has exploded in the United States over the past two decades, the extent to which those efforts have improved health care for vulnerable patients is unclear. This chapter addresses the specific challenges of quality improvement in safety-net settings with vulnerable patient populations. We present an eight-step approach to designing, implementing, and evaluating QI efforts, emphasizing



data-driven and team-based approaches, adapted from the Institute for Healthcare Improvement. We describe concrete steps that can be used to guide QI efforts, with advice about how to adapt or expand their use in safety-net settings.

## QUALITY IMPROVEMENT AND VULNERABLE PATIENT POPULATIONS

Since the publication of the Institute of Medicine (IOM) report "Crossing the Quality Chasm,"<sup>3</sup> a report that documented the ways in which the US health-care system not only failed to deliver high quality care but actually harmed patients, the United States has experienced a surge in QI activities. QI efforts have been closely tied to efforts to improve patient safety (see "Patient Safety and Vulnerable Populations") and to decrease medical errors. While there is debate about how best to improve quality,<sup>4,5</sup> QI has succeeded when there is engaged leadership, adequate resources, and experience, and the processes are data-driven, stepwise approaches to improving services. Quality improvement efforts have been promoted by many organizations.

The potential for QI initiatives to decrease health disparities has long been recognized. In the report "Crossing the Quality Chasm," from the Institute of Medicine (IOM), included improving "equity" and reducing racial and ethnic disparities as one of the six critical pillars of improving health-care quality in the nation.<sup>3</sup>

The IOM's 2003 report, "Unequal Treatment," further focused attention on health-care disparities. However, the traditional, implicit stance of the QI movement has been that, while health-care disparities exist and should be addressed, a well-designed QI initiative will be of benefit to all patient groups. The Institute for Health Care Improvement, for example, in their 22-session QI educational series for health-care trainees, has no module that addresses the relationship of QI and health-care disparities,<sup>6</sup> or how to use QI to address health-care disparities. The assumption has been that overall improvement in quality of care will help patients vulnerable to health-care disparities, or that a "rising tide lifts all boats."

The Health Research and Services Administration's (HRSA) National Health-Care Disparities initiative, on the other hand, has explicitly attempted to link quality improvement efforts with a reduction in health-care disparities. Nevertheless, the vast majority of QI initiatives have had neither the explicit goal of decreasing health-care disparities nor have they assessed the interventions for their impact on health-care disparities. Failing to explicitly consider the needs of vulnerable patients and neglecting to assess the impact of QI initiatives on patient subgroups may result in actually creating health-care inequities. The QI efforts may not benefit all groups

equally or could, in some cases, decrease health-care quality for some patient groups.

As the number of vulnerable patients increases, it is especially critical to realize the potential of QI efforts to reduce health-care disparities. Recognizing the major challenges to ensuring that QI efforts reduce racial, ethnic, and language disparities is vital for success.<sup>7</sup> Documenting disparities is never a comfortable undertaking, even when attempting to improve them. Indeed, attempting to diminish the appearance of disparities can create perverse incentives for providers to avoid serving vulnerable patients altogether. Fully engaging vulnerable patients in QI programs may also present difficulties due to language or other barriers. QI projects must also be tailored to address specific needs of vulnerable populations. Furthermore, institutions that provide care to underserved patients may not have the resources to fully implement adequate QI programs.

To assure that QI initiatives realize their promise to decrease health-care inequities, they must be designed specifically to do so. Health-care disparities should be assessed before, during, and after implementation of the initiative. Careful attention needs to be paid to avoid incentives for providers to avoid higher-risk patients. Interventions also must be fashioned to overcome barriers to implementation. For example, programs need to be applied regardless of patient language and in organizations that care for minority patients or patients with socioeconomic challenges.

## PATIENT SAFETY AND VULNERABLE POPULATIONS

Mr. P, a patient with long-standing diabetes on insulin and a major depressive disorder, had a syncopal episode while riding the bus. He was taken to the emergency department, where he was found to be hypoglycemic. He subsequently revealed to his primary care provider that he occasionally skipped meals because of lack of access to food, and was not knowledgeable about how to manage his diabetes medications when he did not eat.

Patient safety, or the prevention of harm to patients, poses particular challenges for vulnerable populations.<sup>8</sup> Communication challenges such as limited health literacy or limited English proficiency can make self-management of chronic diseases very difficult for patients and families. Inability to interpret medication labels correctly, for instance, can lead to poor or dangerous medication use.

Poverty impedes the management of chronic conditions in indirect ways, such as not adhering to medications due to cost,<sup>9</sup> or direct ways, such as lack of food access leading to hypoglycemia.<sup>10</sup> Moreover, economic



pressure increases the demand of caregiving, as vulnerable patients and families choose between lost wages and supervision of ill family members.

### THE IMPACT OF QI ON HEALTH DISPARITIES: FOUR POSSIBLE SCENARIOS

A review of several different QI projects demonstrates some of the complexities in understanding the effect QI projects may have on health-care inequities (Figure 18-1).

#### SCENARIO A: IMPROVED CARE AND REDUCED DISPARITIES

In some cases, QI initiatives *have* improved the quality of care for all patients and closed the health-care gap for our most vulnerable patients (Figure 18-1A). One large-scale example is HRSA's Health Disparities Collaborative, where health-care disparities in cancer screening were reduced through a traditional QI approach.<sup>11-13</sup> Another well-known example is a CMS initiative to improve outcomes in hemodialysis patients that both improved care overall and reduced disparities in care for African-American patients.<sup>14</sup>

#### SCENARIO B: IMPROVED CARE AND DISPARITIES UNCHANGED

In other cases, the rising tide may actually lift all boats, while disparities remain constant (Figure 18-1B). In such cases, care does improve for vulnerable patients, but no more than it improves for the overall population. Examples of this include QI initiatives in the Veteran's Administration (VA) and Medicare populations, in which interventions across multiple domains of care such as diabetes and cancer screening improved process and

outcome metrics for both white and African-American populations, but because improvement was not differentially greater for African Americans, the disparity remained.<sup>15</sup> Another example includes the study by Jha et al of the effects of pay-for-performance on poor performing hospitals, which showed consistent overall improvement but no change in health-care disparities.<sup>16</sup>

#### SCENARIO C: IMPROVED CARE FOR VULNERABLE PATIENTS

In other scenarios, a QI initiative may not improve quality of care for a population overall—but *does* improve care for vulnerable patients (Figure 18-1C). A large-scale initiative to improve quality of care for patients with diabetes, for example, failed to demonstrate population-wide improvement, but analysis of a subgroup population of low-literacy patients showed significant improvement.<sup>17</sup>

#### SCENARIO D: WORSEN HEALTH-CARE DISPARITIES

Another scenario is possible, however. If incentives are applied incorrectly or the intervention's impact on vulnerable groups is not continually assessed, QI interventions can worsen health-care disparities (Figure 18-1C). The reasons for this are myriad—physicians and health-care organizations may feel that they have to “cherry-pick” patients to remain competitive, or they may design or implement interventions in ways that do not reach their most vulnerable patients. When New York City instituted its coronary artery bypass report cards, for example, hospitals instituted widespread changes in patient selection for surgery to avoid high-risk patients that would worsen their score. Using methods that included racial profiling, the bypass report cards worsened outcomes for minority patients.<sup>18</sup>

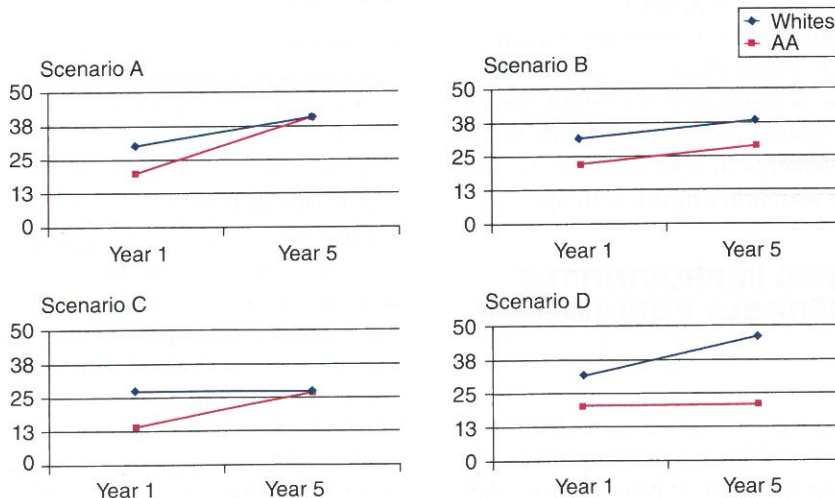


Figure 18-1. Quality improvement and health disparities: four possible scenarios.



## PAY FOR PERFORMANCE AND HEALTH DISPARITIES

As the challenge of combining QI and health-care disparities reduction efforts has garnered greater attention, several approaches have emerged. These include the standardized collection of data on race, ethnicity, and English language proficiency for all patients; the creation of “equity reports” for organizations in the era of health-care reform<sup>19</sup>; and the careful crafting of pay-for-performance programs to encourage the reduction of health-care disparities.<sup>20-24</sup>

Pay for performance (P4P) refers to the increasingly common practice of offering financial incentives to physicians and other health-care providers to meet defined quality, efficiency, or other targets.<sup>25</sup> Although P4P remains a small portion of overall health spending and health-care provider compensation in the United States, P4P often drives quality improvement initiatives.

P4P programs may exacerbate health disparities.<sup>20-24</sup> Physicians and health systems caring for low-income populations care for more uninsured or publically insured patients. In turn, these systems lack resources to invest in quality improvement processes and information systems. Thus, systems that care for more advantaged populations may improve, while safety-net health systems, and the vulnerable populations they serve, are left behind. This argument is referred to as the “inverse care law,” or the idea that care is least available to those who need it most.<sup>26</sup>

Moreover, it is clear that patients’ social context affects their ability to adhere to treatment recommendations; P4P measures that encompass patient adherence to recommended screening or treatment will be influenced by patients’ social conditions. Studies have demonstrated that safety-net health systems, those that disproportionately serve vulnerable populations, do not perform as well on quality reporting.<sup>27-29</sup> The National Quality Forum has recommended risk adjustment for socioeconomic characteristics in quality measurement and reporting, to account for social differences that impact outcomes.

In addition to risk adjustment, a further recommendation is to reward relative improvements in performance rather than an absolute performance threshold, which may benefit safety-net systems. In one study, financial incentives led to improvements in safety-net health systems, bring them on par with other health systems.<sup>16</sup>

## PREREQUISITES FOR IMPROVING THE HEALTH OF VULNERABLE POPULATIONS

### HIGH-QUALITY DATA

High-quality data defining high-risk groups and identifying disparities is a prerequisite to documenting improvements wrought by quality initiatives. Collecting race, ethnicity, and language (“REAL”) data has not always occurred in clinical

settings. However, several initiatives have encouraged this data collection. The National Health Plan Collaborative, for example, provided tools, coaching, and incentives to 11 major health insurance companies to improve care for vulnerable racial/ethnic groups and developed recommendations and resources for collecting REAL data.<sup>30</sup> The Health Research and Educational Trust (HRET) disparities similarly developed a toolkit in association with the AHA<sup>31</sup> (see “Resources” section). Finally, The Health Information Technology for Economic and Clinical Health (HITECH) Act mandated, with its “meaningful use” criteria, that all applicable health-care organizations routinely collect REAL data.

Although significant strides are being made to collect REAL data, this is only part of the battle. Not all vulnerable patients can be identified by REAL data, nor does REAL data assess all areas of importance to health-care disparities. Data on homelessness/marginal housing status, food insecurity, psychiatric disease, chemical dependency, and income level are also important to collect to elucidate the variability in care quality experienced by diverse patient populations. There are few national efforts to collect such data systematically and it is unclear how to collect social risk factor data in electronic health records. The IOM recommended a specific set of social and behavioral screening questions to be adopted by primary care.<sup>32,33</sup> Until there is a national consensus on how to best incorporate these screening questions, however, individual organizations may need to develop their own data collection efforts if they treat significant numbers of patients from high-risk groups. Of course, collecting data on REAL demographics and patients’ social and behavioral factors alone does not guarantee improvement in care or health; much work is needed to analyze and act on that data. However, access to these data is the first, very necessary step toward eventual improvement.

## THE IMPORTANCE OF LANGUAGE ACCESSIBLE SERVICES

In settings with immigrant patients, language-access services are a prerequisite to achieving equity in health care and in assuring the effectiveness of QI initiatives across all groups. While the importance of language-accessible services is addressed elsewhere in this book (see Chapter 31), it is worth mentioning here that the development of Culturally and Linguistically Appropriate Services in Health Care (CLAS) standards by the US Department of Health and Human Services’ Office of Minority Health, as well as federal mandates to provide language assistance in health-care centers, has helped spur significant improvement in these services and thus in the accessibility to improvement initiatives by all populations. In fact, the introduction of language-access services into health organizations is one area that has demonstrated robust improvements in clinical care in vulnerable populations.<sup>34,35</sup>



### Common Pitfalls

- Most QI projects are not designed explicitly to decrease inequities in health.
- QI projects may cause unintended harm to some patient groups.
- Measuring disparities is a prerequisite to any plan to document improvement.
- It may be uncomfortable to document disparities, potentially undermining morale and reputation.
- Failing to measure disparities can lead to unintended consequences in a QI initiative.
- Efforts to decrease disparities may paradoxically incentivize providers to avoid caring for some patients.
- Barriers to full participation for all patients are not considered when designing QI projects.
- Organizations that care for large populations of underserved patients may not have the resources to undertake robust QI projects.

## ADDRESSING QUALITY IMPROVEMENT AND DISPARITIES SIMULTANEOUSLY

### FRAMEWORK FOR QI: THE IHI'S TRIPLE AIM

The Institute for Healthcare Improvement (IHI) and other organizations have developed approaches to identifying and addressing quality issues in health care. IHI reframed its approach to QI, titling it the “Triple Aim,”<sup>36</sup> which proposes that new designs should be developed to simultaneously pursue three dimensions<sup>37</sup>: (1) improving the patient experience of care (including quality and satisfaction); (2) improving the health of populations; and (3) reducing the per capita cost of health care. More recently, many in the field have suggested the idea of the “Quadruple Aim,” which includes staff experience and satisfaction as a fourth goal.<sup>38</sup> Using a multidimensional approach such as the Triple Aim allows organizations to adopt a comprehensive approach to improvement, in which attention paid to one domain does not sap needed attention from other critical areas.

Olivia first spends some time assessing the current situation. The clinic has a good population-based registry system that allows her to understand how it performs against nationally benchmarked data (i.e., HEDIS, CGCHAPS). In addition to collecting quantitative data from the electronic system, she also solicits staff, provider, and patient input. Based on the available data and input gathered, she and her team select three issues to tackle first: high smoking rates, poor phone access to clinic staff, and high emergency department utilization rates. By creating an improvement plan that prioritizes three distinct issues, they create a natural set of balancing measures to their efforts.

### Box 18-1. The Eight Steps of a QI Initiative

1. Find a process to improve.
2. Identify team and stakeholders.
3. Clarify current knowledge: What's been tried before? What are best practices for this issue?
4. Analyze current situation.
5. Set aims and measure to improve.
6. Design intervention.
7. Perform iterative cycles of improvement.
8. Communicate progress to stakeholders and team; collect input on next cycles of change.

### THE EIGHT STEPS OF A QI INITIATIVE

Quality improvement provides for a stepwise approach to identifying and addressing quality issues in health care. One model, modifying IHI's rapid change cycle, describes the steps simply (Box 18-1).

#### Find a Process to Improve

Whether tackling an area of clinical quality, patient experience, or efficiency, the first step is to *identify the process to improve*. This is not as simple as it sounds. It is appealing to start with an interesting intervention and just implement it, but understanding if it is the right intervention for the identified problems is a complex issue.

With limited resources and staff bandwidth, determining which issues should be addressed first is an important consideration. There is an opportunity cost to everything—addressing one set of issues will mean that others will have to wait. In selecting which problems to tackle, it is important to get the input of key stakeholders—anyone with knowledge of and interest in the organization, community, and patient population.

When working with vulnerable patient populations, it is essential to determine which issues are most pertinent to the defined population. It may be beneficial to align efforts with ongoing, system-wide initiatives for which data is readily available, for example, joining a large diabetes collaborative within the state network. However, if other issues are more immediately relevant to a practice's population, it may be wiser to focus on these first—such as food insecurity if the organization works primarily with patients who are homeless or marginally housed. Careful analysis of the organization's data and information from key stakeholders should guide choices.

#### Identify Team and Stakeholders

One key to the success of any good QI project is the formation of a team to implement the project or initiative. The Agency for Healthcare Research and Quality defines a QI team as “the group of individuals within a practice charged with carrying out improvement efforts.” To be effective, it is



recommended that the team include representatives from all areas of the practice that will be responsible for implementing changes brought about by the project; that a clear leader or “champion” be identified; and that the team meet regularly to review small “tests of change” for the project.<sup>39</sup>

Key stakeholders are different than a project team. “Stakeholder” is defined as anyone who will be affected significantly by—or who has a vested interest in—the problem being addressed or the intervention planned. QI projects may be undermined when a hidden or stakeholder is not included in the process. The emergency department practitioners, for example, who feel that opening a new pediatric urgent care service will affect the volume of their business; the medical assistants who have just had three new added responsibilities and may feel overwhelmed by being asked to screen for smoking at every patient visit. Key stakeholders may be able to contribute to the success of initiatives by acting as a helpful advisor or providing critical resources.

### Clarify Current Knowledge

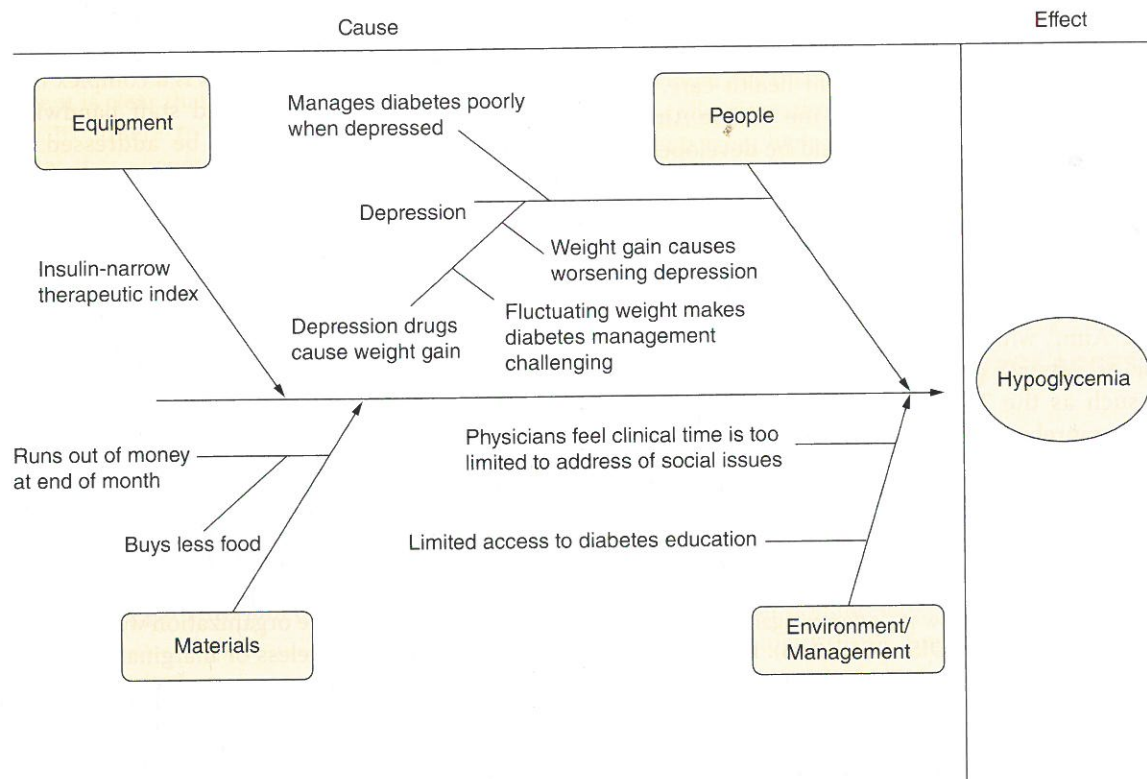
Reviewing what’s been tried before and the best practices for a given issue is an important next step. It may involve a search of the literature for best practices or an assessment of the organization’s prior efforts to improve the problem.

Understanding how previous efforts have succeeded and failed is an important starting place for any new initiative. Evidence that the previous programs were successful may help leverage support for restoring them, while failed previous attempts may haunt new endeavors.

### Analyze Current Situation

The fourth step in the QI process is to analyze current workflows (including sources of variability) and current root cause (RCA) of the problem being addressed. Workflow (or process) mapping can be done with computer programs, or with a simple wipe board or a flip chart with sticky notes (Figure 18-2). The most critical element in using these tools is using them with a multidisciplinary team that includes people with a wide range of experiences and responsibilities from nurses to front desk staff.

Analyzing the current situation includes getting input from patients on the problem and on proposed solutions. Ideally, patients can be part of the project team; at a minimum, it is important to seek out patient input as key stakeholders. Many organizations have a patient advisory board where QI ideas can be discussed. In addition, input can be solicited by having a few providers ask several patients for their thoughts during clinical encounters.



**Figure 18-2.** Fishbone (Ishikawa) diagram: The Ishikawa diagram seeks to identify all possible contributing causes to a problem in order to facilitate thinking of many possible solutions. The categories for the causes (equipment, process, etc.) can be modified for the particular problem under study. In this example, a case of patient hypoglycemia is analyzed. (From <http://www.qualitygurus.com/qualitypedia/about/fishbone-diagram/>.)



Without eliciting diverse viewpoints, critical elements of the process may be missed. As a team works through these exercises, areas of variability in task performance and unnecessary or duplicative work can be identified.

### Set Aims and Select Metrics

Before launching the intervention, it is important to create goals and objectives for the project and to select a metric by which to measure project success. For multipronged, long-term interventions, long-term project planning with multiple goals and objectives may be appropriate. All interventions, regardless of size, should have at least one major objective that meets “SMART” criteria: specific, measurable, achievable, relevant, and time-bound.

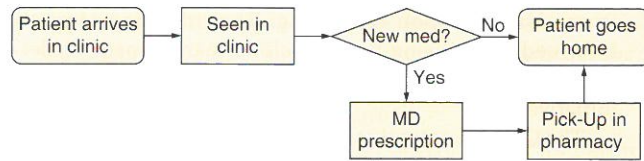
Using the SMART rubric has several advantages. It clearly states the intent of the project. It requires selecting the criteria by which the project will be assessed as it progresses toward achieving the objective. It measures the effectiveness of the intervention. It establishes a timeline for the project. The SMART rubric can effectively be applied to programs addressing health-care disparities explicitly. SMART objectives can be structured to include metrics stratified by race, ethnicity, or language, for example. Most importantly, this rubric commits the QI team to a single, clearly-stated objective for the project.

QI metrics can also be defined through the *structure–process–outcome* framework. A *structural* metric is a measure of organizational characteristics (e.g., the percentage of staff who knows how to make a referral to smoking cessation counseling). A *process* metric is a series of actions, changes, or functions bringing about a result (e.g., the percentage of visits at which medical assistants collect smoking cessation status). An *outcome* metric is a change (desirable or undesirable) in individuals and populations that are linked to health care (e.g., the percentage of patients in the clinic who smoke).

In addition to having frameworks to help define metrics, it is important to set aims that are aspirational yet attainable. Objectives of limited scope or interest may undermine the impact of a project and enthusiasm for future QI projects, whereas aims that are unrealistically ambitious can be equally disheartening for the project team and stakeholders.

Olivia and her teams create the following SMART objectives for their projects:

- Within 1 year, smoking rates in the patient population will decline from 22% to 15%; and smoking rates in African-Americans and Asian men will decline by 10% (from 27% to 17% and from 30% to 20%, respectively)
- Within 6 months, the percentage of patients who rank their satisfaction with the clinic’s phone access positively will improve from 50% to 65%.
- Within 18 months, emergency department visits for clinic patients for ambulatory-sensitive conditions will decline from 27 a month to 15 a month.



**Figure 18-3. Process mapping:** Process mapping creates a visual diagram of a current workflow (or “process.”) As an exercise for a multidisciplinary group, process mapping can help identify areas of uncertainty, variability, and duplicative work in current workflows and pinpoint areas for improvement. **Above:** simplified version of a process map. (Figure courtesy of Will Huen. For more information see Agency for Healthcare Research and Quality website at [https://cahps.ahrq.gov/quality-improvement/improvement-guide/analysis-of-results/Quantitative-Analyses/Performance-Problems\\_Tools/Process-Mapping.html](https://cahps.ahrq.gov/quality-improvement/improvement-guide/analysis-of-results/Quantitative-Analyses/Performance-Problems_Tools/Process-Mapping.html))

### Design Intervention

The process mapping or RCA session may generate some early ideas for interventions; if more ideas are needed, a team brainstorming session may be helpful (Figure 18-3). The intervention should be sustainable, able to be brought up to an organization-wide scale, and have buy-in from key stakeholders. Teams should learn from experience in designing their interventions and take into consideration best practices and proven strategies. However, it is important to be open to diverse ideas from team members. Interventions can be graded by their potential impact. Sometimes, an intervention that is more difficult to implement at the outset—because it involves more team members or changing workflows and protocols—can have the most impact in the long run.

Olivia’s smoking cessation team generates the following distinct intervention ideas:

- *Option 1:* Designate a current staff member from the behavioral health staff to become trained in smoking cessation counseling and implement a warm handoff model from PCPs for interested patients.
- *Option 2:* Educate all providers in how to prescribe nicotine replacement medication and adjuvant medication treatment.
- *Option 3:* Implement a medical assistant workflow protocol: medical assistants will screen for smoking status and offer smokers information about a free 800-number for smoking cessation counseling.
- *Option 4:* Have the clinic’s smoking cessation handouts translated into Chinese and Spanish. Ideas they consider but reject for now include group visits for smokers, which is impractical given space limitations.

After a team meeting in which they discuss the potential impact of all the interventions and the perspectives of key stakeholders, the team decides to try option no. 1, the training of staff members from the behavioral health team



in smoking cessation counseling. Their decision is partly informed by knowing that the clinic management leadership team will support the dedication of staff time to this initiative.

The QI team notes that local data indicate that their Asian men and African-American patients have the highest smoking rates. They discuss how to ensure that their intervention reaches these groups. They decide to prioritize training for their Cantonese-speaking behavioral health team member. Given the data on the greater effectiveness of interventions targeted in culturally appropriate ways for specific groups, they seek out a training module that includes tailored information evidence-based strategies for counseling with diverse populations.<sup>40,41</sup>

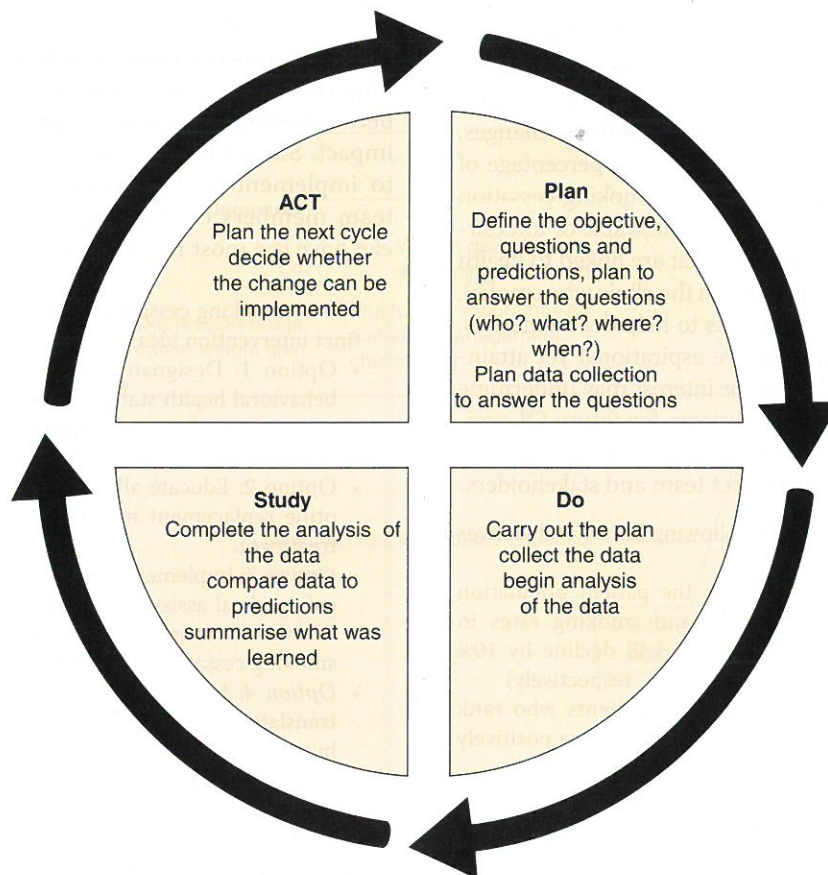
### Perform Iterative Cycles of Improvement

In order to test whether an intervention is effective, it is critical to implement small, iterative pilots or “PDSA” cycles: plan, do, study, act (Figure 18-4). Initial PDSA cycles should start small. For example, piloting an intervention with a limited number of providers first could allow workflows to be streamlined. The “study” involves collecting data from the pilot. However, unlike research,

these data do not have to be blinded and carefully planned. Even a qualitative 15-minute discussion with involved staff members after a trial would suffice. For projects with an aim to decrease disparities as well as improve metrics for the whole patient population, the study phase needs to collect and analyze data on the impact by patient characteristics such as race and ethnicity. If preliminary evidence indicates that the intervention may not be effective in target groups, adjustments can be made to the intervention prior to the next cycle. Acting involves enacting any necessary changes to improve the intervention. If no change is necessary, the “A” can involve a scale-up of efforts.

### Communicate Progress to Stakeholders and Team

As the PDSA cycles progress, communication of progress should be shared with stakeholders. This can be accomplished in many ways: in-person meetings, e-mail updates, and/or individual feedback. Posting charts, graphs, and other visual depictions of progress is one mechanism of sharing progress. A run chart can share the metric used to follow improvement, and to show historical trends and demonstrate progress to a goal. The run chart can also separate data into subgroups (e.g., by race and ethnicity)



**Figure 18-4.** Institute for Healthcare Improvement’s rapid change cycle (PDSA cycle): PDSA cycles are a critical step in implementing new initiatives.



to reveal the effect of the initiative on vulnerable patients as well as on the overall patient population.

## CONCLUSION

Quality improvement is an important tool to use in settings with vulnerable patient populations. Appropriate data collection and analysis and thoughtful, team-based approaches to designing and implementing interventions can improve quality of care, cost, and patient experience in vulnerable groups as well as at a population level.

## KEY CONCEPTS

- Quality improvement refers to efforts to improve patients outcomes and health system practices by targeting health-care processes.
- QI efforts may reduce or exacerbate health-care disparities.
- QI efforts should take the specific needs of vulnerable patient groups into account from the start.
- QI that also targets health-care disparities should be based on data collection and analysis, which could include the collection of race, ethnicity, and language (REAL) data.
- A multidisciplinary team, including patients, that gathers input from stakeholders is the preferred way to choose and implement QI project.
- Repeated QI cycles are usually necessary to tweak processes and sustain gains.

## CORE COMPETENCY

### Analyze Current Workflow (Step 4)

- Workflow (or process) mapping can be done with computer programs, or with a simple wipe board or a flip chart with sticky notes.
- Assemble multidisciplinary group with in-the-trenches experience with the process.
- Have each individual contribute to the portion of the process they know best.
- Create the map based on everyone's input, to a small level of detail.
- Review the map as a group highlighting key areas for improvement.

## DISCUSSION QUESTIONS

1. A health plan decides to improve its flu shot rate by sending postcard reminders to all elderly patients. How might this approach improve flu vaccination rates? How might it fail? What else would you like to know before

implementing this approach? After discussing this question, see Schneider, <http://jama.jamanetwork.com/article.aspx?articleid=194224>, for a discussion of managed care plans and African-American flu disparities.

2. A clinic examines the diabetes control rate of its Latino patients. Should it stratify those patients by English proficiency? What about stratifying by the Spanish-speaking ability of the clinicians? What might this approach elucidate? See Fernandez, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3019330/>.

## RESOURCES

The Institute for Healthcare Improvement is a national organization that has taken a leadership role in creating large-scale QI collaboratives and initiatives. IHI also has multiple conferences, training programs, and online learning resources such as the IHI Open School. For more information:

<http://www.ihl.org/Pages/default.aspx>

<http://www.ihl.org/resources/Pages/HowtoImprove/ScienceofImprovementEstablishingMeasures.aspx>

<http://www.ihl.org/education/ihlopenschool/>

LEAN is a QI strategy that applies strategies from the Toyota Management System to health-care systems improvement. Many health-care organizations have transformed their operations and culture by using a LEAN approach. For more information:

Graban, Mark. *Lean Hospitals: Improving Quality, Patient Safety, and Employee Engagement*.

<http://www.leanblog.org/eight-types-of-waste-in-healthcare/>

Jackson, Thomas. *Kaizen Workshops for Lean Healthcare*

Intermountain Health Care is an example of an organization that uses QI principles throughout its organizational system and has been remarkably successful in its outcomes. Intermountain also leads intensive QI training programs for interested organizations and individuals. For more information: <http://intermountainhealthcare.org/qualityandresearch/institute/courses/Pages/home.aspx>

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