Quality Improvement in Public Health: It Works!

Strategic
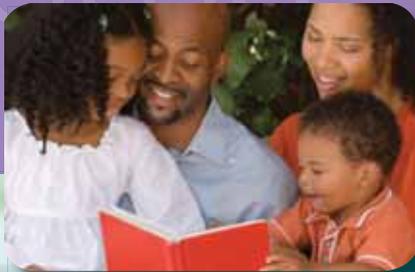
COLLABORATION

Action

Systems

THINKING

ACCOUNTABILITY

Efficiency

Equity

COMMITMENT

"Ensuring the accountability of the governmental public health system is everyone's responsibility. Agency accreditation is one tool that helps us measure our success in meeting that responsibility."

Georges C. Benjamin,
MD, FACP, FACEP (E)
Executive Director, APHA

How It Works

QUALITY IMPROVEMENT (QI) in public health works. This brochure describes national efforts that provide a consistent foundation for QI in public health at all levels of government; provides stories of QI successes in public health departments; and offers resources to assist public health professionals who recognize the importance of applying QI to public health practice.

For more information about APHA and Quality Improvement Initiatives, visit *www.apha.org/programs/standards/*

The American Public Health Association's (APHA) Role in QI

APHA has advanced quality improvement in both health care delivery and public health and has been on the forefront of ensuring quality in public health systems through its standards-setting texts, education programs, and policies that promote quality improvement in a range of public health systems. APHA has lent its expertise and support to a host of widely embraced national programs that have long promoted quality improvement in public health. These include the Public Health Accreditation Board;[1] the Multi-State Learning Collaborative Lead States in Public Health Quality Improvement;[2] and the Turning Point Performance Management National Excellence Collaborative.[3] Addition-

ally, APHA is engaged in a strategic partnership with the Department of Health and Human Services to ensure that public health leaders are actively engaged in quality improvement.

APHA is committed to promoting quality improvement in public health systems in a comprehensive way across the nation.

For information on program planning, QI, and evaluation visit *www.cdc.gov/stltpublichealth/Performance/index.html*

QI Fundamentals

DESPITE THE EXISTENCE OF WIDESPREAD NATIONAL PROGRAMS promoting QI in public health, the public health practice field was without a shared definition of quality improvement for a long time. For this reason, APHA and other members of the Accreditation Coalition,[4] which is supported by the Centers for Disease Control and Prevention and the Robert Wood Johnson Foundation, adopted the following definition of "Quality Improvement in Public Health":

Quality improvement in public health is the use of a deliberate and defined improvement process, such as Plan-Do-Check-Act, which is focused on activities that are responsive to community needs and improving population health. It refers to a continuous and ongoing effort to achieve measurable improvements in the efficiency, effectiveness, performance, accountability, outcomes, and other indicators of quality in services or processes which achieve equity and improve the health of the community.

—R. Bialek, L.M. Beitsch, A. Cofsky, et al., unpublished data, 2009

QI in Public Health: What It Means

Increasingly, the public health community has embraced this concept, which emphasizes "defined improvement process" and "measurable improvements."

A number of well-established QI processes have been applied in public health settings, including Six Sigma,[5] Lean,[6] Kaizen,[7] Plan-Do-Check-Act,[8] the Model for Health Improvement,[9] Juran's Trilogy,[10] the Baldrige Method,[11] and the Turning Point Model.[12] All of these models provide a proven, systematic approach to achieving measurable improvements.

Basic steps within all QI processes include collecting baseline data, implementing an intervention, and collecting and analyzing post-intervention data to measure how much improvement has been attained. Although obtaining data in a public health setting can be challenging, public health professionals are becoming increasingly adept at generating quantitative data from qualitative information and identifying data sources to support their QI efforts. Using data to measure improvements is a hallmark of QI. Improved health and health equity are the ultimate goals of public health improvements. Collectively, public health organizations at the national, state, tribal, and local levels are using QI to make a difference.

Plan-Do-Check-Act: A Popular Starting Point

Among the many QI programs used by public health, Plan-Do-Check-Act (PDCA) is one of the most popular. PDCA has served as an excellent foundation and initial foray into QI for public health departments. It is both simple and powerful. Its simplicity comes from the systematic, straightforward and flexible approach that it offers. Its power is derived from its reliance on the scientific method—i.e., it involves developing, testing, and analyzing hypotheses. This foundation helps public health professionals become acquainted with basic quality improvement methods and techniques, and, from there, address more complex problems and employ additional QI tools.

PDCA is based on the "Shewhart cycle" and was made popular by Dr. W. Edwards Deming, considered by many to be the father of modern quality control.[13] During his lectures in Japan

in the early 1950s, Deming noted that the Japanese participants shortened the cycle's steps to the now traditional plan, do, check, and act. It is interesting to note that Deming preferred plan, do, *study*, act because the translation of "study" from Japanese to English has connotations closer to Shewhart's intent than does "check."[14]

The purpose of the **PLAN** phase is to investigate the current situation (including the collection and examination of baseline data that help to describe the current state); fully understand the nature, or root cause, of any problem to be solved; and develop potential solutions to the problem that will be tested. The **DO** phase involves implementing the solutions, or interventions, that were developed, and collecting data along the way. This is the "testing" part of the cycle. **CHECK** (or study) entails comparing post-intervention data to the baseline data to determine whether an improvement was achieved. **ACT** marks the culmination of the planning, testing, and analysis that determines whether the desired improvement was achieved. The purpose is to act upon what has been learned, which could mean adopting the intervention if it was successful, adapting the intervention and retesting it, or abandoning this particular course and returning to the plan phase.

This model has been applied for 60 years and it remains relevant in today's public health world, providing a defined and well tested process to achieve lasting improvement to the problems and challenges now facing public health.

Evaluating, Assuring, and Improving Quality—How They Are Different

Despite establishing a definition for "Quality Improvement in Public Health," confusion still exists between QI, quality assurance, and evaluation. All of these activities are valuable and understanding how they are different is important. Before embarking on QI, it is important to understand clearly the distinctions between these three activities. The diagram on this page gives a definition and overview of each activity and explains how they are different. *When used collectively, quality improvement, quality assurance, and evaluation activities help strengthen the impact of public health programs.*

Quality Improvement	Quality Assurance	Evaluation
Defined: A prospective and proactive examination of existing processes and making measurable improvements.	**Defined:** A planned, systematic review of a process; sometimes includes quality control, which is focused on reviewing the outputs, or products of a process.[15]	**Defined:** A systematic application of scientific methods to assess the design, implementation, improvement, or outcomes of a program.[16]
Self regulating to create a culture of continuous improvement.	**Driven by** government regulations in many cases.	**Informs and/or drives QI** efforts, but doesn't include a method to measure improvements.
Implemented by staff at all levels.	**Implemented by** managers.	**Assesses** a program at a moment, or moments, in time.
Ongoing dynamic process that entails conducting in-depth examinations of problems to uncover root causes, as well as identifying and implementing interventions specifically aimed at addressing the root causes.	**Preformed** on a periodic or scheduled basis.	**Uncovers needs,** doesn't define solution.
Interventions are monitored by collecting data in quantifiable, numeric terms, to monitor expected outcomes.	**Operates on** a Pass/Fail basis.	
This process seeks to exceed expectations and always sets the bar higher.	**Can inform or drive QI** when a deficiency is exposed and corrective action is needed.	

Using Standards to Drive QI

TWO EXISTING STANDARDS-BASED PROGRAMS have set the stage for wide adoption of quality improvement (QI) methods. First, the National Public Health Performance Standards Program (NPHPSP),[17] launched in 1998, has been used by many state and local public health departments, as well as boards of health, to help guide their work to improve *public health systems* and governing boards. Second, the voluntary national Public Health Accreditation Board (PHAB) started accepting applications for its accreditation program in 2011. Many governmental public health departments have been preparing to meet the program's standards for *public health agencies* since the draft guidance was released approximately two years earlier.

As a national partner organization for the NPHPSP and a founding member of PHAB, APHA strongly supports both these programs, particularly as foundations for QI.

NPHPSP: Improving Public Health Systems

The NPHPSP works to improve the quality of public health practice and the performance of public health systems. Designed in collaboration with the Centers for Disease Control and Prevention, APHA, and five other national public health organizations,[18] the three NPHPSP instruments contain model standards to assess, respectively, state and local public health systems and boards of health.

The NPHPSP Version 2 instruments and User Guide, released in 2007, reflect the growing interest in QI since Version 1 was developed. QI now is reinforced within the standards, and the updated User Guide facilitates the translation of assessment findings into action toward quality improvement.

NPHPSP Version 2 Evaluation and QI Improvements

The User Guide and training curricula provide tips and recommendations for:

- understanding the assessment data
- prioritizing areas for action
- exploring root causes of poor performance
- developing and implementing improvement plans
- regularly monitoring and reporting progress.

The Guide includes quotes, suggestions, and examples from the field for QI concepts and techniques such as:[19]

- Plan-Do-Check-Act (PDCA) cycle
- Priority-setting matrix
- Fishbone techniques (cause and effect diagram).

Although this material was written to catalyze action from NPHPSP assessment findings, it is highly relevant to developing any quality improvement plan that addresses weaknesses identified by any public health agency, system, or community health needs assessment.

PHAB: Creating a Culture of Quality Improvement

Quality improvement is the foundation of PHAB's accreditation program,[20] to the extent that a health department attains accreditation status only if it embodies a culture of quality improvement. This culture is manifested both through the accreditation process and through several standards.

At the conclusion of a PHAB site visit, the last step in the conformity assessment process, the site visit team generates a report for the health department. The report describes the degree of conformity with each measure and areas of excellence and also identifies opportunities for improvement. Once accredited, health departments are required to submit annual reports throughout the duration of the accreditation period. The reports include a description of how the health department has addressed areas for improvement noted in the site visit report.

PHAB accreditation Domain 9 is dedicated to QI and related activities. This domain requires health departments to evaluate and continuously improve health department processes, programs, and interventions.

Standard 9.1 requires a performance management system that is completely integrated into daily operation. The system must include organizational objectives across all levels of the department, with specifically assigned responsibilities for monitoring progress and identifying areas where QI processes are needed to achieve objectives.

Standard 9.2 requires a comprehensive QI plan that is integrated into all programmatic and operational aspects of the organization. Elements of the plan include a governing body to oversee plan implementation and evaluation, the provision of QI training to staff throughout the health department, alignment of QI activities with the agency's strategic plan, time-framed performance targets, and regular communication of QI activities to health department staff and the governing body. Examples of specific QI efforts in programmatic and administrative areas also are required.

When PHAB launched the accreditation program, it emphasized that the standards and measures in use are considered Version 1.0. In subsequent years, the standards, measures, and processes will be revised as needed in response to PHAB's own quality improvement efforts and also to reflect improvement in public health practice.

PHAB Quality Improvement Standard Overview

Domain 9: Evaluate and Continuously Improve Processes, Programs, and Interventions

Standard 9.1: Use a Performance Management System to Monitor Achievement of Organizational Objectives

Standard 9.2: Develop and Implement Quality Improvement Processes Integrated into Organizational Practice, Programs, Processes, and Interventions

Public Health: Creating a Culture of QI

PUBLIC HEALTH AGENCIES—both public and private—have always had to "do more with less." The need for strategies to accomplish this has never been more acute than now, as public health resources have grown increasingly strained while demands have increased. QI, a defined, systematic way to identify and resolve problems and inefficiencies in organizations, is therefore more relevant than ever. More and more health departments are putting QI methods to work. These success stories show what can be achieved.

OKLAHOMA

Oklahoma State Department of Health

The ultimate goal of QI in public health is to improve the population's health status. Initial QI efforts are often directed at narrowly defined processes that result in small, incremental improvements. This is an effective strategy to introduce QI in a health agency and a first step in developing an agency-wide culture in which QI is valued and routinely practiced. Over time, in addition to using QI processes routinely, health departments can also engage in more ambitious efforts. Oklahoma provides an excellent example of this progression.

For more information on the CATCH Kids Club, see *www.ok.gov/health/Community_Health/Community_Development_Service/Health_Promotion/CATCH/index.html*

Collaboration

Statewide QI Programs Began with a Pilot Project

Reducing childhood obesity was the primary goal of the Oklahoma State Department of Health's (OSDH) "CATCH Kids Club," a 3-year pilot program conceived within a quality improvement framework. The program began in the central office and eventually expanded to include 20 counties in the pilot (and now 72 sites throughout the state). Interventions included increasing physical activity and nutrition awareness among parents as well as the children participating in after-school programs. Measured results regarding increased knowledge and physical activity were quite favorable. Moreover, data at the end of the pilot program indicated a significant decrease in student body mass index (BMI) measurements.

More QI Programs Followed

The state is now in the midst of quality improvement efforts targeted at reducing infant mortality and premature births in the state. Interventions are underway at both state and local levels. While the efforts are still ongoing, early indications suggest significant decreases in the number of elective deliveries prior to 39 weeks, and in the total percentage of preterm births in the state. Numerous other QI initiatives have been conducted across the state as well.

A convergence of events and funding opportunities is at the heart of the OSDH momentum and success in making measurable improvements in health outcomes. The state Health Commissioner and Cabinet Secretary for Health and Human Services, Dr. Terry Cline, actively supported preparation for accreditation, including the movement to a culture of quality improvement, as soon as he began his tenure. The state was awarded a grant for the Multi-State Learning Collaborative-3: Lead States in Public Health Quality Improvement (MLC-3), supported by the Robert Wood Johnson Foundation. Oklahoma also was selected to participate as a Public Health Accreditation Board beta test site, which had a QI component.

Coordination

Moreover, National Public Health Improvement Initiative awards from the Centers for Disease Control and Prevention further bolstered their efforts to broaden support of QI.

OSDH Centralized Structure and Commitment to QI Supports Statewide Implementation

OSDH, by virtue of its centralized structure (all but two local health departments are county-based offices of the state health department), is well poised to take on improvements in statewide health outcomes. QI activities can be classified into three categories: 1) those conducted by the central office for all or parts of the state; 2) those conducted by teams comprising both central and county office staff; and 3) those conducted at the county office level, with support from the central office.

Moreover, OSDH has worked hard to ensure a meaningful connection among all of its improvement efforts. The agency-wide performance management system and QI plan, as well as the Public Health Accreditation Board standards and select Healthy People 2020 goals, are all aligned with the state Health Improvement Plan.

Add to all of these ingredients a capable and committed performance management staff and the result is a robust, multi-tiered group of integrated activities that are making a measurable difference. Joyce Marshall, Director of the Office of Performance Management, credits all public health workers, who

"want to make a difference in the lives of Oklahomans—and especially don't want parents to outlive their kids."

Integrated

activities

MICHIGAN

GENESEE COUNTY HEALTH DEPARTMENT

Front-line Genesee County Health Department (GCHD) staff members were flooded with calls when H1N1 first emerged. They requested a phone bank staffed by nurses to respond to the demand for information. Instead, April Swartout, Public Health Program Coordinator, wanted first to understand the nature of the problem. Was there truly an increase in calls, and if so, was the problem the sheer volume of calls or was there another, underlying issue that needed to be addressed?

QI Works!

QI: A "Tool of the Trade" for Every Day

Swartout designed a simple check sheet to tally both the number of calls received and the type of information being requested. For three days, staff recorded this information, which Swartout then quickly analyzed. Indeed, GCHD was receiving more calls than usual; however, most of the calls required just very basic information that could easily be provided by existing staff. Moreover, GCHD had already augmented its nursing staff to assist with vaccinations and other related duties for the H1N1 response, so additional capacity could be made available to respond to specific health-related information. Equipped with this knowledge, Swartout developed a "triage" document for all staff answering phones to instruct them where to direct various questions, and also assigned one or two nurses or health educators to the phones each day.

Despite the "gut reaction" of staff, no additional resources were in fact needed to address their concerns. This episode succinctly illustrates Swartout's deep appreciation of the power of using QI "tools of the trade," and how knowledge gained through undertaking Plan-Do-Check-Act (PDCA) processes can be simply and swiftly applied to solve an urgent problem.

PDCA: How and When to Use

For several years, Swartout has participated in and led PDCA cycles, received and led PDCA training, and served as a mentor for other local public health departments in Michigan employing the PDCA cycle. "Engaging a team in a PDCA cycle is a very rich experience, and is very valuable to employees, organizations, and their stakeholders.

Sometimes, however, an entire cycle isn't feasible due to resource limitations, or isn't necessary, depending on the task at hand. Understanding the effective application of QI tools to help address issues and solve problems is one way to make the most out of QI experiences. While PDCA is valuable, integrating the tools of the trade has been a way to integrate QI principles in everything we do," says Swartout.

5 Whys: An Important First Step

The initial framing of a problem is critical. Swartout observes that the first step at the outset of addressing a problem is to avoid assuming that you have identified the "real" problem. Sometimes the problem may be self-evident, but other times it may not. A quick 5 Whys, or the more comprehensive fishbone diagram, can help ensure that a team's efforts are directed at the most significant issue underlying the problem. Simply put, 5 Whys entails asking why a problem occurs five times, thus helping to trace a problem back to its origins. A fishbone diagram (also known as a cause-and-effect or Ishikawa diagram) graphically displays, in increasing detail, all of the possible causes related to a problem and discovers its underlying or root cause(s).

Flowcharts and Process Maps: Clarifying Complex Processes

Flowcharts and process mapping can clarify complicated processes and also serve as the basis for eliminating unnecessary duplication of steps and enhancing communication among different program areas. Moreover, they can have lasting value and utility. For instance, GCHD staff identified disconnects within the health department in managing foodborne outbreaks. Communicable disease staff, food safety staff, and the epidemiologist were not effectively com-

municating with one another. To resolve this issue, staff developed a detailed process map that outlined and aligned decision trees, action plans (including some steps that need to occur within a matter of minutes), and communication points. The process map has been laminated and posted on the walls. Swartout reports that the process map also serves as the basis of efforts to enhance the health department's response to new norovirus cases in the wake of a statewide increase in such cases. Funding cuts and staff turnover have contributed to inefficiencies in handling these cases. Therefore, a new effort is underway to refresh the process originally designed for foodborne outbreaks so that it is specific to norovirus and reflects the new staffing patterns in the health department.

Qualitative Data: Critical for Measurable Improvements

Of all the skills that Swartout has mastered, she cites the ability to use qualitative data effectively as perhaps one of the most important. The ability to quantify data is critical in the pursuit of measurable improvements, yet Swartout is cognizant of the lack of easily available quantitative data. "Much of what we do in public health rests on qualitative data, so it was important to learn how to capture qualitative information in a quantitative format," says Swartout. Her experience demonstrates that, armed with these and other tools of the trade, public health professionals are equipped to make many improvements in their daily work.

Quantitative data

For a description of basic QI tools and their application, Swartout recommends *Embracing Quality in Public Health: A Practitioner's Quality Improvement Guidebook,* which can be found at *http://mphiaccredandqi.org/Guidebook.aspx.*

Qualitative data

OHIO

In the mid-nineties, the Mahoning County District Board of Health (MCDBH) in Ohio made a promise to area Realtors that "Point of Sale" (POS) inspections (i.e., septic and well inspections for real estate transactions) would be completed in a timely manner. Fifteen years later, health department officials believed they had kept that promise, but wanted to confirm this through data and also sought to further improve the process as part of their engagement with the Public Health Accreditation Board beta test.

Process Map

Teamwork, a Detailed Process Map, and a New Discovery

MCDBH formed a quality improvement (QI) team and invited members of the local Realtors Association to join the effort. Eliciting participation from the Realtors proved difficult, so the team met at the Realtors' location. Once the Realtors understood the team's aim, they were appreciative of the effort and a few of these stakeholders agreed to contribute to the process.

The QI team developed a very detailed process map that depicted all of the steps involved in POS inspections, noting that each step was based on regulation and essential to the POS inspection method. The team examined the data regarding response times (i.e., how long it takes to complete an inspection from the time the request is filed to the time the inspection report has been provided). They discovered that inspections in outlying areas of the county took longer due to extended travel times, and that the sanitarian assigned to these cases had a larger inspection workload than the other two sanitarians who also perform these duties. (All three sanitarians have other duties in addition to POS inspections). Up until this point, the sanitarians had assigned territories and performed all of the inspections needed in those territories. Understanding that inspection assignments were a variable within their control, the sanitarians agreed to redistribute their workload so that all POS inspections in outlying areas were evenly shared among them.

Exceeding the Goal, Sharing Results, and Achieving More Improvements and Collaboration

Within 6 weeks, the inspection time decreased 40% (from 11.8 days to 7.1 days), substantially exceeding the goal of a 15% decrease, or 10 days. The team facilitator, Environmental Health Director, and a sanitarian presented the results at a Realtor Association "lunch and learn" meeting. The process map depicting POS inspections proved to be an extremely valuable way to explain the entire process. The agents expressed a better understanding of the health department limitations due to regulations, as well as their own accountabilities in the process. The health department team also described other improvements that had been made at the suggestion of the Realtors who participated in the effort, including modifications to the forms and the inclusion of more information about inspections on the health department website.

Environmental Health Director Mary Helen Smith determined that it would be important to assess any seasonal effect on inspection times because

both POS requests and other routinely scheduled environmental health inspections increase in the spring. When she analyzed the data one year later, Smith discovered that while POS inspections were completed with the original goal of 10 days, response times for other inspections had increased.

From the earlier QI experience the team knew that the health department could not simplify the inspection process. Furthermore, the new data confirmed that POS inspections in the outlying areas were assigned in a more balanced manner. However, the workload could not be proactively balanced by territories during the high demand season, due to the randomness of the customer work applications. Given all of these factors, Smith decided to replicate the earlier intervention across all program inspections, and now the sanitarians use a team approach to assign inspections during peak work months, with a goal of adhering to a 10-day response for all of them. This new intervention is underway and the recent purchase of new software will greatly assist in tracking response times for all inspections. These data will continue to be evaluated on an annual basis, in order to clarify what occurs during high-demand times as well as times that are predictably less busy, and to modify how inspection assignments are made if necessary.

The QI process also yielded another significant improvement. Examining the process chart a year after the initial intervention, Smith discovered that only 50% of plumbing problems discovered through the POS inspections were adequately addressed. She is working with plumbers now to ensure that these issues are brought to the attention of those involved in real estate transactions.

Quantified Data a Key to QI Success

Prior to this effort, MCDBH was no stranger to QI. For a number of years, the agency had been the beneficiary of technical assistance from the QI division of the Ohio Department of Health and had engaged in QI processes in a variety of program areas. Smith notes that an important attribute of this particular process was the availability of good, accurate data. "Data can be a big challenge in health department QI efforts," she says. "Fortunately, environmental health activities can usually be quantified, and I think it was satisfying for both the sanitarians and our external stakeholders—the real estate agents—to see a measurable improvement in the service that we provide."

Measurable Improvements

PENNSYLVANIA

CITY OF BETHLEHEM

What began as a single effort to improve the food safety permit process in the City of Bethlehem has become a cumulative series of improvements in all of the city Health Bureau's food safety efforts. Kristen Wenrich, Risk Behaviors Manager, anticipates that this snowball effect will continue because employees have wholeheartedly embraced efforts to make their work easier.

A Mayor's Commitment to QI

Bethlehem's mayor committed to improving efficiencies in all city agencies when he was inaugurated in 2006. Originally with the help of Air Products, a Fortune 500 company, newly appointed QI leads in each agency engaged in a number of QI efforts that have continued to generate impressive results. The city has now cultivated enough "in-house" expertise that it is preparing to launch its own QI training team for city employees. The goal is to train every employee before the mayor's tenure ends in 2014. The city is well on its way to institutionalizing QI in all agencies.

Mapping a Complex Process

One of Wenrich's first charges as the Health Bureau's QI lead was part of a city-wide initiative to improve the process for issuing permits—in her case, permits for food establishments. The effort was enlightening. "We brought together everyone involved in food establishment permits, which included not only the Health Bureau, but a number of other services as well—fire, tax, engineering, and more. We were all involved and yet there was no coordination," says Wenrich.

The very first step was to describe the current state of permit operations and generate a flowchart. Initially, it was complex and confusing and many problems quickly emerged. For example, applications could be submitted through several entry points, and no tracking process existed (making it nearly impossible to track the status of an application). Clients submitted incorrect paperwork, and instructions for employees processing paperwork were unclear. The entire process took a long time.

Streamlining a Complex Process Pays Off

The ultimate solution was to develop a streamlined process that is run by a newly designated permit coordinator, who uses newly purchased "Community Plus" software (available for all city permitting) to process food establishment permits. The measures of improvement speak for themselves. The number of forms involved was reduced from four to one, and the cycle time was reduced from an average of 41 days to 14 days. The more efficient and customer-friendly process has also resulted in reduced travel time for applicants and employees and the ability of all employees to easily track permit status.

Commitment

More Ways QI Saves Time and Improves Results

Having successfully tackled the permitting process, the city next addressed the way food establishments were inspected. Inspectors historically had visited establishments, completed handwritten forms, entered the information into a computer back at the Health Bureau, and then printed and sent the reports to the clients. An examination of this process illuminated its inefficiencies and led to a discussion about how to simplify it. Health Bureau staff discovered that the city already had software to streamline inspections, but it was vastly underutilized. Wenrich led a team in establishing a new process, using technology that enabled the inspectors to enter information in a computer at the inspection site and immediately generate a printed report. This improvement was shared with other agencies, prompting them also to start using the available software to simplify inspection processes across the city.

Compliance with Food and Drug Administration (FDA) food standards was the next QI challenge. The FDA has issued nine national food regulatory standards and provided small grants to health departments that volunteer to work on meeting the standards. Recognizing that better staff understanding of foodborne outbreak investigation processes was needed, the Health Bureau successfully applied for one of these grants with an emphasis on foodborne illness and the food defense response. A QI process is now in place to develop procedures that result in staff adherence to the requirements of FDA standards.

Wenrich observes that, over time, "light bulbs go off as staff see that QI efforts make their lives easier. More staff members are increasingly willing to invest the time, and don't view their role in QI as participating in a discrete project. It's not something to get 'over and done with'; rather, people are eager to find more ways to improve."

Building a Culture of QI in Bethlehem Across Agencies

As to what's next on the QI horizon, Wenrich cites city events—festivals, races, and other community-sponsored activities. Extra security, street closures, and food safety concerns all demand that police, public works, health, and other agencies become involved in event planning. All are eager to streamline the planning process, use fewer resources and staff, cut down on overtime, and otherwise drive efficiencies in how the city meets its responsibilities for these events.

In addition to the mayor's highly visible support, two other features have evolved to further embed QI into the culture of how the City of Bethlehem operates. "Process owners" ensure that successful interventions take root; a senior staff member in each agency engaged in a QI effort becomes responsible for ensuring accountability, convening follow-up meetings, monitoring data, and sustaining the improvements. Moreover, each agency has been charged with weaving program-specific QI efforts into its strategic plan. With these innovations, Wenrich is "hopeful and optimistic that QI will be a part of how we do business for years to come. I'm a true believer in its power to promote 'good government' staffed by highly motivated employees."

For more information about these initiatives, contact Kristen Wenrich at kwenrich@bethlehem-pa.gov.

Accountability

Monitoring data

SOUTH CAROLINA

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENT CONTROLS

It's an all-too-familiar scenario in governmental public health departments across the country: funding cuts, decreased services, and increased demand. Faced with this uncomfortable reality, staff in the South Carolina Department of Health and Environment Control (SC DHEC) decided that it was time to test a "Fast Track" approach in order to "do more with less." They set out to increase the number of clinic slots in sexually-transmitted disease (STD) clinics for symptomatic patients. Using a quality improvement (QI) approach, DHEC demonstrated in three voluntary pilot regions that by offering asymptomatic patients who "just want to be checked" a Fast Track appointment, they were able to satisfy customer expectations, increase the total number of STD services, reduce total time in the clinic for Fast Track clients, and elicit high employee satisfaction. Most impressive, 101 clinic slots were made available for symptomatic clients.

From Small Scale to Full Scale: A Strategy for Statewide Improvements

SC DHEC is a centralized health department, with all of the county health departments organized into regions and staffed by state government employees. The centralized structure is ideal for using "Rapid Cycle Improvement," in which interventions are first tested through a Plan-Do-Check-Act (PDCA) cycle. Then, pending the results of the

first PDCA cycle, they are replicated in additional settings and eventually institutionalized. Joe Kyle, Director, Office of Performance Management and Health Improvement, most appreciates the ability to prove effectiveness on a small scale before launching state-wide changes, noting, "Not only do we know that we're doing it 'right,' but the regions themselves have proven how a change will benefit everyone."

The Strategy

Fast Track refers to a service option for asymptomatic clients presenting at an STD clinic for lab work and minimum education—no physical exam is involved. This approach had been implemented in other states with apparent success. Fast Track offers significant potential for using non-traditional providers for asymptomatic clients, thus freeing up clinical slots for symptomatic clients and their contacts.

The process includes the following components:

- A screening protocol used by appointment staff, in which they determine whether to schedule a client for a Fast Track or non-Fast Track appointment slot

- A screening questionnaire administered by clinic staff that determines whether the client continues in Fast Track or needs a clinic slot

- Standard lab work and specific health education messages provided by staff

- Communication of lab results according to existing protocols.

In preparation for the pilot, DHEC Central Office staff developed a Fast Track policy that included the protocol, questionnaire, standing lab orders, and health communications. They also developed metrics to measure the project's objectives.

The project's objectives:

- Satisfy customer expectations
- Increase the number of clinic slots for symptomatic clients
- Minimize referral errors
- Reduce total time in clinic
- Elicit high employee satisfaction.

The data collected from the three pilot sites (SC DHEC Regions 2, 3, and 5):

- Number of clients scheduled for Fast Track slots
- Number showing symptoms
- Number ineligible for Fast Track
- Time spent in clinic
- Time spent by administrative and other staff
- Number and types of positive diagnoses
- Client satisfaction.

Additionally, the DHEC Central Office measured regional office staff satisfaction with the Fast Track protocol.

The Positive Results

Given the overwhelmingly positive results of the pilot test, in which all objectives were achieved, SC DHEC decided to fully deploy Fast Track statewide. Central Office staff developed a change package that included the new policy, forms, metrics, the results of the pilot test, and lessons learned. Roll-out of the change packet involved two training sessions, each followed by an action cycle to gradually expand the policy and engage in ongoing testing and refinement. The entire implementation was scheduled for a 6-month period.

The Fast Track work has been a success not only because of the gains made in increasing clinical slots for STD treatment, but also as another significant step

in spreading QI throughout the state. Full-scale implementation included formal PDSA training, with some just-in-time training along the way, for a number of employees. The ranks of SC DHEC staff with QI training and experience are growing. Twelve employees have received a green belt in Six Sigma QI model, and 20 staff members have been trained in Lean QI processes. All are poised to be leaders and mentors in future QI efforts in the variety of program areas they represent. "We've been very pleased so far with the response when we've asked regional offices to volunteer for QI efforts. I think that being at the heart of determining what actually works makes QI very appealing, and I think we'll see even more volunteers for future QI pilots," says Kyle.

The Need to Stress the Value of Data Collection is Critical to Success

The greatest challenge with implementation so far lies with data collection. "Employees are already busy. Collecting data feels like an added responsibility, and unless staff truly understand why it's critical to collect data, it's difficult to get the data that we need from the regions to monitor progress and identify additional areas for improvement," notes Kyle.

The next steps for SC DHEC include tying program performance metrics into the agency's nascent performance management system. Future QI work will contribute to these metrics, and more will be generated when performance monitoring reveals areas needing improvement.

For more information on Fast Track, contact Janet Tapp, Director, Division of STD/HIV/AIDS at *tappjw@dhec.sc.gov*, or Joe *Kyle, at kyleja@dhec.sc.gov.*

Training

WASHINGTON

SPOKANE REGIONAL HEALTH DISTRICT

There is no magic bullet. Cultivating a culture of QI in an agency doesn't hinge on a single intervention, a specific amount or source of funding, or a particular person. According to Torney Smith, Administrator, Spokane Regional Health District (SRHD), "creating a web of support to help staff seek and achieve improvements" is the key to establishing and maintaining an organization-wide focus on QI.

Cultivating a QI Culture: A Web of Support

Washington State has a rich history of promoting improvement. The landmark Washington State Public Health Improvement Plan has been widely hailed as the foundation for a nationwide focus on public health standards and improvement. It is characterized by a state–local partnership in which public health agencies at both levels of government hold themselves publicly accountable to a set of standards, with a requirement that they demonstrate improvement each time they are reassessed.

Against this backdrop, SRHD has quietly emerged as one of the most successful health departments in the nation in establishing a culture of QI. Smith attributes the agency's reliance on logic models, a central feature of QI, as a significant factor in their success. Over time, the logic models began to serve as a basis for discussing quality improvement. As Smith notes, "Room for improvement always exists, and logic models help to conceptualize areas for potential improvements."

Strategies to Support a QI Culture

SRHD's QI culture is bolstered by a number of other strategies that are woven into the daily operations of the health department. Its multifaceted approach to QI has evolved to include the following:

- A Quality Council, comprising staff with all levels of seniority and QI experience, provides overall guidance and direction to the agency's QI efforts.

- Ongoing QI education and training opportunities are available for all employees.

- Widespread visibility and recognition is afforded to every individual who engages in QI efforts.

Partnerships

Developing this web of support required understanding the various motivations of employees, coupled with an appreciation for the need to permeate the working environment with consistent messaging and integrated activities. Smith offers the following advice to those embarking on a journey to a QI organizational culture:

- Leadership must truly believe in the value of QI and be willing to engage in QI initiatives.

- Expect resistance and be prepared to stay the course. Initial reactions are likely to include skepticism about the value, relevance, need, and permanence of QI activities.

- Do your best to ensure that every person understands the value of individual contributions to QI and acts accordingly—for this culture to truly take hold, everyone must be involved.

- Engage in succession planning to ensure the continuity of QI efforts even after more senior employees who are active and engaged in QI retire. Along these same lines, groom younger and newer employees as part of your overall strategy.

- When confronted with a problem, pose the question: "Is this a QI effort?"

- With all employees undertaking QI efforts, ask: "How do you plan to support this?"

- Encourage staff to aim high when establishing their measurable objectives; if goals are set too low, there is a real risk of a wasted effort.

- Use logic models as a means to illustrate that the desired outcome of all of the health department's efforts is improved health status—it is very powerful to keep this outcome in front of all staff.

For additional information about SRHD's initiatives, contact Torney Smith at *tsmith@spokanecounty.org*.

Ongoing Education

- Each position description includes individual responsibility for quality improvement.

- The annual employee performance review process clearly links the employee's responsibilities to the organization strategic plan, public health standards, customer service standards, and public health competencies. Within this framework, employees generate a goal statement regarding what they are doing to improve their work.

- QI outcomes are linked to the new Public Health Accreditation Board standards and staff members ask, "Are we as good as we need to be?"

- At least once a week, Smith reminds his direct reports to think about QI, and encourages them to do the same.

- Storyboards are generated, posted, and shared with the governing board.

Recognition

FOOTNOTES

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4   Organizations participating in the Accreditation Coalition include American Public Health Association, Association of State and Territorial Health Officials, Centers for Disease Control and Prevention, National Association of County and City Health Officials, National Association of Local Boards of Health, National Indian Health Board, National Network of Public Health Institutes, Public Health Foundation, and Robert Wood Johnson Foundation.

5   Pande PS, Neuman RP, and Cavanagh RR. *The Six Sigma Way: How GE, Motorola, and Other Top Companies Are Honing Their Performance.* New York, NY: McGraw Hill Books; 2000.

6   Chalice R. *Improving Healthcare Using Toyota Lean Production Methods: 46 Steps for Improvement.* Milwaukee, WI: American Society for Quality Press; 2007.

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15 *http://asq.org/learn-about-quality/quality-assurance-quality-control/overview/overview.html.* Accessed April 26, 2012.

16 Rossi PH, Lipsey MW, and Freeman HE. *Evaluation: A Systematic Approach (7th ed.).* Thousand Oaks: Sage; 2004.

17 *http://www.cdc.gov/nphpsp.* Accessed April 26, 2012.

18 NPHPSP partners include American Public Health Association, Association of State and Territorial Health Officials (ASTHO), Centers for Disease Control and Prevention, National Association of County and City Health Officials, National Association of Local Boards of Health, National Network of Public Health Institutes, and Public Health Foundation.

19 Corso LC, et al. The National Public Health Performance Standards: Driving Quality Improvement in Public Health Systems. *Journal of Public Health Management and Practice.* 2010; 16(1):18-23.

20 *www.phaboard.org,* accessed April 26, 2012.

RESOURCES

Embracing Quality in Local Public Health: Michigan's Quality Improvement Guidebook

The Michigan Multi-State Learning Collaborative recently updated its popular manual for public health practitioners interested in quality improvement.

http://mphiaccredandqi.org/Guidebook.aspx

Local Health Department Tools, Training, and Stories

The National Association of County and City Health Officials (NACCHO) has a wealth of resources for local health departments working on quality improvement initiatives.

www.naccho.org/topics/infrastructure/ accreditation/quality.cfm

Memory Jogger II Continuous Quality Improvement Tool

The Public Health Memory Jogger II contains many quality control and management and planning tools along with real-life examples that relate specifically to public health.

www.goalqpc.com/shop_products_detail. cfm?PID=754&PageNum_GetProducts=1

NPHPS Program Online Resource Center

The Public Health Foundation has built a resource center for public health agencies interested in improving performance related to the 10 essential public health services.

www.phf.org/nphpsp

Performance Management and Quality Improvement

The Public Health Foundation offers a robust package of training, tools, consultation, and other resources to bring the benefits of Performance Management and Quality Improvement to health departments and other public health organizations.

http://www.phf.org/focusareas/pmqi/pages/ default.aspx

Performance Management Collaborative Products

The Turning Point Initiative developed many materials and reports focusing on performance and quality improvement in public health. The initiative no longer receives funding, but the documents are available for download.

www.turningpointprogram.org/Pages/ perfmgt.html

Plan-Do-Check-Act Cycle

The Institute for Healthcare Improvement has developed a guide for process improvement, including a description of Rapid Cycle Improvement and the PDCA cycle. Visitors can download tools to use when conducting the cycles.

www.ihi.org/knowledge/Pages/HowtoImprove/ default.aspx

Public Health Certificate in Performance Improvement

The University of Minnesota School of Public Health offers an online certificate program in public health QI designed for working professionals. It is intended specifically for health departments working to meet and exceed the requirements for Domain 9 in the PHAB Version 1.0 standards and measures.

http://www.sph.umn.edu/programs/ certificate/piph

Public Health Performance Improvement Resources

An extensive toolkit, QI storyboards, and archived meetings and webinars are available through the National Network of Public Health Institutes.

www.phf.org/focusareas/pmqi/pages/ default.aspx

Quality Tools

The American Society for Quality website contains a comprehensive list of useful quality tools, each including a description and materials.

http://asq.org/learn-about-quality/ quality-tools.html

State Health Department Resources

The Association of State and Territorial Health Officials maintains a broad list of national quality and performance improvement initiatives.

www.astho.org/t/list.aspx?id=6233

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