

Quality Improvement (QI) in Action



Health departments in the nation are using different QI models to illustrate the importance of applying QI to public health practice and to improve population health.

This brochure identifies two different models illustrating how QI works to improve public health practices. They are:

1. **PDCA** (Plan- Do- Check-Act) a four-step model focused on activities that are responsive to community needs for carrying out change in public health practice and improving population health. The PDCA cycle should be repeated again and again for continuous quality improvement.
2. **LEAN** focuses on value; the measurement of value and the processes behind delivering value. Lean accounts for the reduction of waste in order to achieve real as well as potential change in public health practice.

Using the Plan-Do-Check-Act (PDCA) Cycle to implement Quality Improvement (QI) in food inspection in Kanawha County, WV

What began as County Commission President's demand to have a better way of informing the public about the results of food establishment inspections evolved into a Quality Improvement (QI) initiative for the Kanawha County. In addition to resolving food inspection inconsistencies, the Kanawha-Charleston Health Department used the four-step Plan-Do-Check-Act (PDCA) Cycle framework to provide transparency through an inspection rating system with input from the public, the first of its kind in the state of West Virginia.

County Commission President's Challenge

Citing commitment to food safety, the President of the Kanawha County Commission, most populous county in the state of West Virginia encompassing the Capitol City, challenged the Health Department to come up with a food establishment rating system that would make it simpler for the public to review and understand information while reducing the inter-operative inconsistencies from different food inspectors. The Commissioners committed resources including funding to establish QI project, also a first in the state of West Virginia.

Mapping a complex public health task

The purpose of the Kanawha-Charleston Health Department (KCHD) Quality Improvement (QI) work plan is to utilize a (QI) initiative that will guarantee public health excellence of the population living in or visiting Kanawha County. Among the most widely used tools for continuous improvement is a four-step quality model known as the Plan-Do-Check-Act (PDCA) cycle.

The specific goals include developing an enhanced food establishment inspection rating system, solving food inspection inconsistencies and providing public health management transparency.

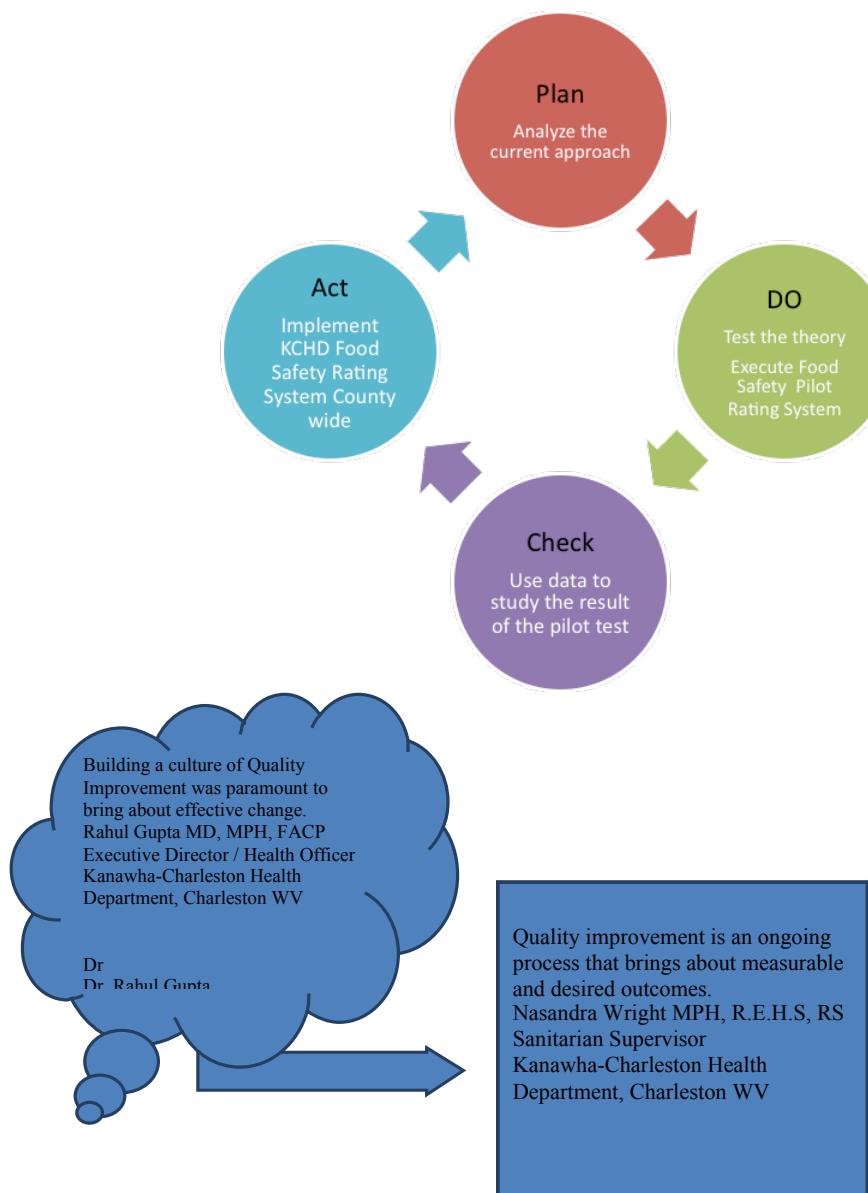
- a. A food committee was commissioned comprising of representatives from: Charleston city council, county commission, state and local environmental health divisions, community leaders, National Restaurant Association, WV Hospitality Association, private restaurant owner, and County's Health Officer.
- b. Meetings were scheduled monthly for a year. During the first meeting, and through the feedback provided by the committee, an "Aim Statement" was developed and milestones set.
- c. Routine meetings were held to define and accomplish plans towards set goals and recommendations presented to the Kanawha-Charleston Board of Health at a public meeting followed by a motion to approve which passed unanimously.

Accomplishing the task

- a. To standardize the process for conducting routine food inspections, the Environmental Health (EH) staff met and reviewed the 2005 FDA Food Code criteria. All food inspection reports were reviewed by the supervisor and the KCHD Quality team for internal consistency.
- b. To determine the root causes of the problem the EH staff members reviewed current and past inspection practices. All Food sanitarians were retrained on the practical application of the FDA Food Code during the month of January 2013.

- c. A free Annual Food Safety Training was established with all food establishments invited to attend.
- d. A food establishment rating was initiated, first as pilot program and then expanded to the entire county. Each food establishment was rated as 'Excellent', 'Good' or 'Satisfactory'
- e. The inspection report posting policy was also revised to ensure reports are posted publicly and visible to all at the food establishments.

Below is an example of how the PDCA Cycle was used to implement QI in food inspection in Kanawha County, WV.



Using Lean to Improve Public Health Practices

North Carolina has been a leader in the application of quality improvement (QI) in public health. For example, North Carolina was one of the first five states to participate in the Multi-state Learning Collaborative – participation was one of the key factors that helped spur demand for building QI capacity in the state’s public health system.

Given the increasing importance of QI and the fact that the North Carolina public health system lacked adequate resources to support its implementation, public health leaders in North Carolina began working together to create a comprehensive resource. In 2008, N.C. Division of Public Health's (NCDPH) leaders worked with the North Carolina Association of Local Health Directors, the North Carolina Institute for Public Health, North Carolina Area Health Education Centers, the North Carolina Hospital Association, and 3 foundations—The Duke Endowment, Blue Cross and Blue Shield of North Carolina Foundation, and the Kate B. Reynolds Charitable Trust—to create a comprehensive QI center for North Carolina's public health system. In 2009, the Center for Public Health Quality (CPHQ) was launched with an original focus on providing QI training and support for NC's 85 local health departments (LHDs). In late 2010, the CPHQ was awarded a 5-year grant from the National Public Health Improvement Initiative of the Centers for Disease Control and Prevention, which allowed the CPHQ to greatly expand its QI programs for NCDPH. CPHQ's tremendous success in the North Carolina public health system led it to expansion as a national QI resource in 2012.

Building a CQI Organization: a top down and bottom up approach

In order to assist NCDPH in becoming a robust CQI organization, the CPHQ quickly recognized the need to take a top down and bottom up approach to support this transformation.

Top-Down Approach

Engaging senior leadership to assist in advancing their knowledge and support of QI was an important initial step for the CPHQ. This involvement with leadership facilitated the development of a cadre of senior leaders who serve as champions of QI and who actively promote efforts that support a CQI transformation. This support became a crucial element in the creation of an organization-wide strategic plan that incorporates QI as a central tenet. Senior leaders communicate the CQI vision and the need to internal and

external stakeholders. The CPHQ recently convened a QI Council with representation from across the organization to ensure that QI initiatives are aligned with the NCDPH strategic plan, and to guide, achieve, and sustain these QI change efforts across NCDPH.

While senior leaders were initially targeted, the CPHQ discovered the importance of also engaging mid-level management in QI efforts. The focus on leadership and management across the organization has been crucial for building trust, developing momentum and creating initial quick wins that demonstrate the effectiveness of QI efforts. CPHQ recently piloted a successful program focused on the leaders and managers at LHDs with the goal of enhancing their leadership skills to more effectively support QI efforts as well as building their capacity to develop a QI infrastructure and culture. The program will now be provided at NCDPH.

Bottom-Up Approach

CPHQ developed training programs with a primary focus on developing the QI capacity of the North Carolina public health workforce. Recognizing the importance of building off models known to be effective, the CPHQ adapted its QI 101 training program from the highly successful North Carolina Area Health Education Centers QI 101 program, which employs the Model for Improvement, a proven QI method commonly used by key local partners. Given that the value of Lean QI methods has been clearly demonstrated in healthcare and public health settings, the CPHQ also worked in partnership with the North Carolina State University Industrial Extension Service to integrate Lean methods and tools into all of its training programs. The CPHQ's adaptation of a successful program as well as the use of proven methods enabled the Center to have a training program that was up and running quickly (within 2 months) as well as increase the likelihood of success.

Building Workforce Capacity: The N.C. Division of Public Health QI 101 Program

The NCDPH QI 101 Program is a six month, longitudinal, experiential learning program designed to help staff at NCDPH build their expertise in using QI methods and tools while simultaneously improving the quality of their programs and services. The program is based on adult learning principles, and participants learn the QI methods and tools through a combination of on-site trainings and faculty coaching, and become skilled at applying QI methods and tools by completing a specific QI project in their program. Since the pilot program started in 2011, approximately 20 NCDPH programs have participated in this program.

Developing QI Leaders: The QI Advisor Program

The ultimate goal of NCDPH's training programs is to create a culture and an infrastructure that support continuous improvement within NCDPH. To build on the initial QI capacity developed in the NCDPH QI 101 Program, the QI Advisor Program provides advanced QI training to those individuals who will be leading QI efforts in their programs. These QI advisors coach and facilitate improvement teams on an ongoing basis and help their leaders create an infrastructure and a culture that support continuous improvement. To date, five QI Advisors at NCDPH have participated in this training.

Key Learnings from the NCDPH's QI Training Programs

- Incorporated a “diffusion of innovation” approach by starting with those who were willing by putting out a call for volunteers and inviting those known to be early adopters and innovators. CPHQ invested heavily in the successes of the initial programs and communicated their successes extensively.
- Focused on results, which include health outcomes as well as return on investment (ROI), intangible benefits, and qualitative results. It has been crucial to extensively communicate the results of QI efforts in a variety of ways to continue to build interest and gain momentum.
- Became more prescriptive after learning from the innovators and early adopters on key items such as how to form an effective QI team (cross functional, comprised mostly of frontline staff, energetic about QI, project management skills, etc.) and how to select a QI project (typically a relatively small project focused on processes within the control of the team and sponsor).
- Learned the importance of understanding the root cause of resistance. Modified the training programs to include a session on the psychology of change and how to overcome resistance.
- Used a formative evaluation process and made improvements during each training and with each new training cohort.
- Adapted the training approach when working with different types of groups (e.g., state vs. local, small vs. large); one of most important adaptations has been using examples that reflect the groups being trained.
- Tried to “over-communicate.” Engaged stakeholders through a multifaceted approach (newsletters, website, presentations at conferences, publications, and reports at stakeholders meetings).

ORGANIZATIONAL OUTCOMES

- One of CPHQ's important outcomes is the positive ROI/economic impact (EI) that participating programs have achieved. Based on an analysis of the initial 6 NCDPH teams, an average of \$299,000 in EI has been generated by each team within 2 years.
- Participants' confidence to conduct a QI project increases dramatically following the QI 101 training (7% of participants were confident prior to the training and 67% were confident after the training);
- Participants are spreading the QI tools and methods they learn during the QI 101 training (87% of participants have shared QI tools and methods with their co-workers; of these, 53% have shared tools with more than 7 co-workers); and

RESOURCES

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