



## The Quarterly Quality Report

March 2010

*The ASQ Quarterly Quality Report provides a detailed look at a variety of quality-related topics and issues. The report is developed by the American Society for Quality in keeping with its role as the steward of the quality profession—to promote the use of quality as a global priority, an organizational imperative, and a personal ethic, and to promote quality concepts, technology, and tools to make the world a better place.*



### H1N1 Influenza and Quality Tools: What Have We Learned?

Use of quality tools and methods by public health departments has been on the rise in recent years. At a time when state and local health department budgets across the United States are being stretched ever thinner, there has been growing recognition that quality tools and an understanding and application of quality methods can be a key element in helping public health agencies more efficiently fulfill their charge to protect the public from threats posed by communicable and emerging infectious diseases.

The identification of the “swine flu” threat posed by the H1N1 virus offered an excellent test case for the impact of quality tools and methods in responding to a newly emergent disease. Numerous local and state public health departments subsequently applied their newly acquired quality knowledge in response to the 2009 H1N1 influenza pandemic. In the process, valuable lessons are emerging about how quality methods can equip health departments to deal not only with this particular novel disease but with any other public

health threat that might arise—and to operate more effectively and efficiently in providing a wide range of public services.

Health departments are reporting positive results in a number of areas, such as improving distribution of vaccines, rationalizing processes to eliminate waste and improve public satisfaction with vaccination services. In addition, improving communications to ensure the smooth flow of relevant information to the public and key stakeholders is a critical area for applying quality methodologies.

This report documents the experiences of several public health agencies, which demonstrate that momentum is building for the use of quality tools and techniques in addressing public health challenges.

### ***Getting Past the Exploring Stage***

For many years ASQ has been actively involved in expanding quality knowledge in all aspects of healthcare, including public health. Within the public health field, quality improvement activities have received a boost from organizations such as the Public Health Foundation and the National Network of Public Health Institutes.

John Moran, a past chair of the ASQ Quality Management Division who now serves as senior quality advisor to the Public Health Foundation, observes that use of quality tools in public health settings is a phenomenon that is picking up speed. “They’re past the exploring stage—they’re getting into really how to apply it,” he says. Many initial projects were done as a trial basis and demonstrated conclusively that the tools work. “People are finding out that we can use these tools on almost anything we do today—we can apply it to things that happen to us on a regular basis, like immunizations, clinics, things like that,” he says.

Moran began his career in manufacturing before migrating to healthcare. After his retirement from a senior vice president position at a large New England hospital, he became active with the Public Health Foundation, helping that organization translate quality tools and techniques from industry into public health. He describes the foundation as an education and research organization dedicated to promoting quality improvement in the public health sphere.

Moran believes that the push for systematic application of quality improvement strategies and tools is resulting in a better prepared public health community. “We’re starting to see the evidence now,” he states.

Reflecting on the current H1N1 situation, Moran observes: “In public health there’s something every year like this—some major crisis. So if they just keep applying the tools I think it’s going to help them get better prepared to meet the needs and be more efficient and more effective in the process.”

With budgets being cut in virtually every state and local health department, operating smarter and leaner pays added dividends. “If you reduce costs and become more effective then you can use the resources you saved to help fund other programs,” Moran says.

Quality consultant Grace Duffy, a former member of the ASQ board of directors, describes the work she and other ASQ members have been doing in collaboration with the Public Health Foundation. “We have worked with a number of local health departments to use cause-and-effect diagrams, affinity charts, interrelationship digraphs, and flowcharts for process mapping to help the individual organizations walk through what their response should be to the outbreak of H1N1,” she says.

Duffy has observed that most public health quality improvement initiatives have stayed at the PDSA level. She counsels public health agencies to concentrate on basic quality tools whose application they can fine tune to their own needs and their particular culture and leadership style as they tackle challenges such as H1N1.

“We suggested the local departments look at their response as a current state from the spring outbreak of H1N1 and then look at the requirements to meet the need in the fall, and do a gap analysis—looking at what worked, what didn’t, and lessons learned. Use the PDSA problem-solving process to figure what worked well in the spring, what we should have done better in the spring, and then how we can put improved processes in place to anticipate and monitor further incursions of H1N1 in each locale.”

The work that Duffy is doing with two counties in the Orlando, FL, area “is already showing increased performance” on several dimensions, she says. Work on improving the immunization process has ensured that vaccine is delivered to the people who need it, in a timely fashion, which also ensures that vaccine is not wasted by sitting unused past its expiration date. Front-line workers at the health departments have received training to better meet the immediate needs of people walking into immunization clinics.

There were also internal operating improvements and efficiencies that freed up cash flow for frontline client services activities rather than being consumed by administrative overhead. “The community probably won’t see these internal improvements,” Duffy says. “However, what they are going to see is that there are fewer lines outside the door to the health department, that we in community services are able to get people into housing more quickly, and we can get the disabled and the veterans approved for services more quickly. Those things are working.”

Duffy and Moran are co-authors of [\*The Public Health Quality Improvement Handbook\*](#), which is one of the growing number of quality tools available to public health officials.

### ***Customer Feedback Generates Cycles of Continuous Improvement***

Waves of feedback from immunization clinic clients and internal staff customers formed a central element in the success of H1N1 vaccination clinics conducted by the Northern Kentucky Health Department, which serves a mix of rural, urban, and suburban residents in four northern Kentucky counties across the Ohio River from Cincinnati, OH.

When the H1N1 threat loomed, the department already had the basics of a plan in place that had been developed in 2004 to deal with a possible avian flu outbreak. At about the same time, the department had begun working with the Public Health Foundation to become an Exemplar public health department. That program involves “using quality improvement processes and techniques to continually improve what we do and how we

do it, aligning ourselves with our vision and mission,” according to Louise Kent, planning administrator for the Northern Kentucky Health Department.

The department decided to incorporate a customer satisfaction survey in the H1N1 mass vaccination clinics that were planned. They captured information from approximately every thirtieth person going through the clinic. “We gave them a clipboard with a survey and pen and asked them to take it with them as they proceeded through the clinic, and when they walked out the door they gave it to our exit people,” says Kent.

The good ideas gathered from those surveys were combined with input from staff and from medical reserve corps volunteers in a start-stop-continue matrix. “We received input from people on the front lines, from greeting people, giving vaccinations, providing



*Quality tools helped the Northern Kentucky Health Department ensure a high level of satisfaction at busy vaccination clinics like this one held November 11 at the Bank of Kentucky Center.*

supplies and other support, processing paperwork, to exiting patients out the door— suggestions as to what we should start doing that we were not yet doing, continue doing what was going well, or stop doing what was hindering our efforts,” she states. “We were able to get feedback from both customers and staff, and then we took that information and we made improvements for the next clinic.”

The results? “Fabulous,” according to Kent. “Residents coming in to get their shots were blown away. They could not believe how efficient we were; they commented how friendly we were and how quickly they got through.”

Problems at other vaccination sites in the region may have established low expectations among the public. But when they completed the vaccination process typically in 15 or 20 minutes, with some people in and out in as little as four minutes, they were greatly pleased.

Asked why her department’s vaccination clinics worked so well, Kent replies: “No. 1, we had a plan and we worked it; no. 2, we listened to our customers; and then we took actions accordingly to improve what we were doing. Above all, we had dedicated staff that put their all into providing a high-quality service.”

She also believes that their successes, and having documented customer satisfaction, fueled the department’s desire to continue doing things better. “Staff could feel really

great because they knew they were being received positively by our community, so that really fixed our desire to do it even better—to showcase our efficiency, showcase our professionalism, and make it as pleasant an experience as possible,” Kent says.

Kent, who is an ASQ Certified Quality Improvement Associate, was introduced to quality in the public sector while working in the juvenile courts. She received mentoring from a friend who was actively involved in quality initiatives at Xerox Corporation and from colleagues implementing quality programs at area hospitals. She is a firm believer in continuous staff training that features the introduction of new quality tools as they are needed on the job.

“A good part of my job is working with staff to train them in QI, in the plan-do-check-act cycle, which is the improvement process that public health is embracing on a national level,” she says. “I provide training in quality improvement tools, so as a particular team moves through a process and they need to use the affinity diagram, or they need a force-field analysis, I introduce that tool and they learn it—they’re going through experiential learning with the tools and can actually apply them right there as a team and then continue on.”

### ***Quality Essential in Preparedness Activities and Communications***

Quality improvement is deeply embedded in public health preparedness activities, as experiences in the state of Kansas show.

“As I worked and talked with our statewide public preparedness staff about their use of QI, it became evident that QI very much exists within the work that happens in a lot of preparedness activities,” states Shirley Orr, director of local health in the Bureau of Local and Rural Health Systems at the Kansas Department of Health and Environment (KDHE).

Orr explains that there are fairly standard processes that are used nationwide for the planning, implementation, and evaluation of public health emergency preparedness activities. “The evaluation cycle for the after-action reporting process pretty much mirrors the plan-do-check-act cycle,” she says.

When Kansas counties implement their required preparedness activities, they submit reports to KDHE containing data gathered from their after-action reporting process. This data is compiled into performance management dashboards, which Orr describes as local activity that’s used to evaluate, gauge, and improve local and regional preparedness response work.

“After-action reporting is the clearest example of how we use a QI tool in public health,” Orr states.

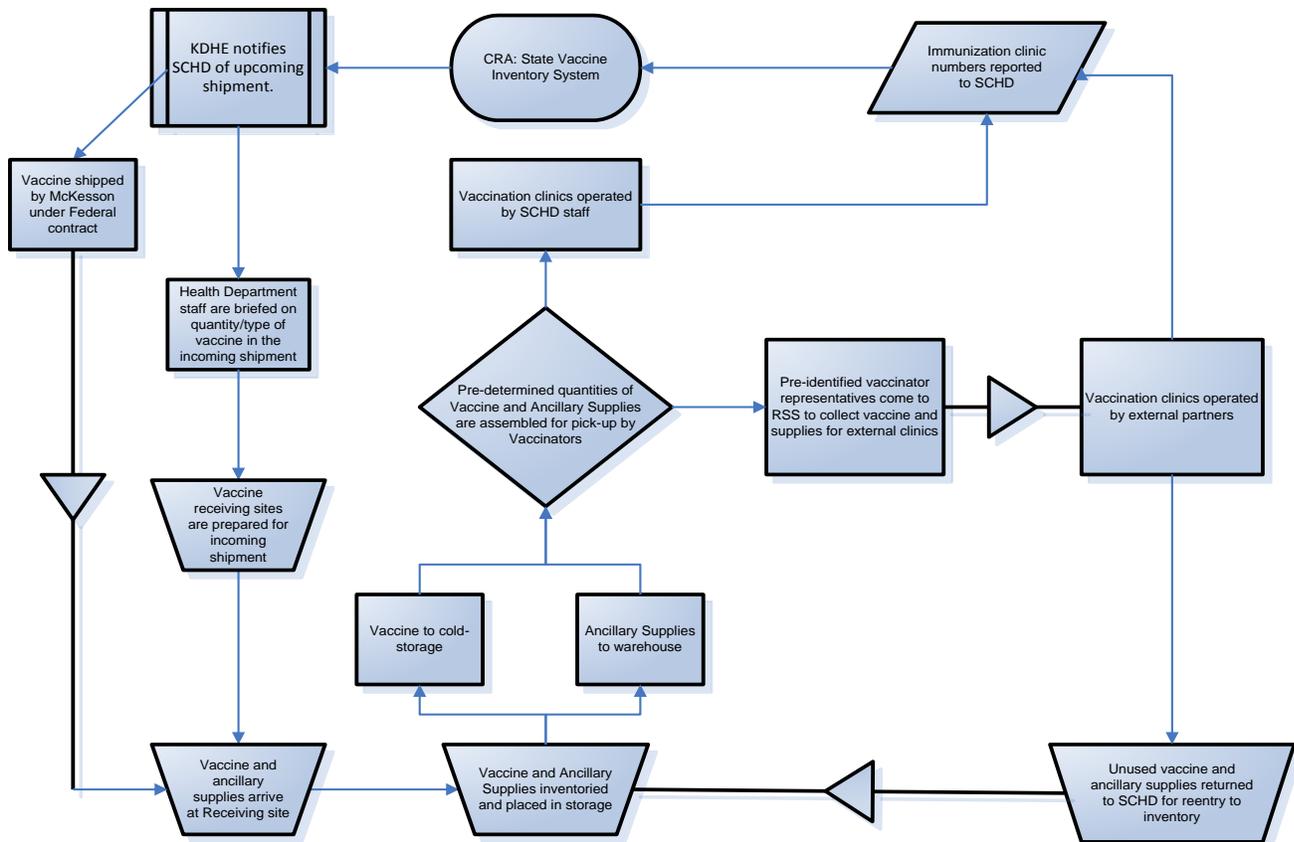
Orr cites the experiences of two Kansas counties to demonstrate quality improvement in H1N1 preparedness.

The health agency in Shawnee County, which includes the city of Topeka, developed several two-page PDSAs around key elements in its local response to the H1N1 threat. One of the PDSAs dealt with vaccine distribution management, covering the design and

implementation of a process to monitor the receipt of vaccination doses and procedures for providing vaccines to public sites and coordinating distribution to private vaccination sites. The PDSA exercise supported real-time inventory control and facilitated timely and accurate data on vaccine doses throughout all the mass vaccination clinics. Another PDSA covered staffing issues. It helped to appropriate time allotment for check-in, equipment set-up, and JIT training for the H1N1 clinics. Yet another PDSA dealt with signage for vaccination stations, which helped the Shawnee County Health Department realize a 23-percent per-hour increase in throughput at its vaccination clinics.

In the Wichita area, the Sedgwick County Health Department made extensive use of process flowcharting to ensure smooth operation of vaccine ordering and dissemination activities. In Kansas, H1N1 vaccines were received at local health departments for distribution beyond public health agencies. The local health departments coordinated with their local providers, which may have included private physician practices, group practices, hospitals, and others within the community. The process looked a little bit different in each of the state's 100 counties.

### Process Flow for Community-Wide Vaccine Distribution Management



Source: Sedgwick County Health Department

Within KDHE itself, communication and coordination with all the other players in the H1N1 response was a major challenge. “As we identified how we could organize the communications structure and the various strategies, we did use quality improvement tools to plan and refine those communications strategies as we went along,” says Orr.

Coordinating the overall statewide response required engaging with many partners in addition to the traditional local health department partners. The need for regular, efficient communication with emergency management, with healthcare providers outside the public health system, with schools, and with a great many other public audiences led to the development of a new electronic newsletter. Process flow mapping was a great aid to the communications and coordination efforts, especially in development of the newsletter. “We did a lot of process flow mapping about how that process worked in terms of compilation of content, what it should look like, what the forms should be, how it was edited, and then the distribution piece was an ever-important part,” says Orr.

When asked whether she sees evidence that using quality tools is resulting in a better prepared public health community, Orr responds with a qualified yes. “To the extent there has been information dissemination about quality improvement, yes, that’s beginning to happen,” she says. “In terms of, are we at a point of achieving critical mass in that regard, I would say that we are probably not there yet...although there is definite evidence of progress. We haven’t fully adopted QI processes to the largest extent that we could, either in preparedness or in our overall public health work.”

Orr credits the Multistate Learning Collaboratives coordinated by the National Network of Public Health Institutes with raising awareness about how quality tools can be applied in public health. She also points to efforts to create public health performance standards and a process to accredit local and state health departments as important drivers down the road to quality in the future. “You cannot prepare for accreditation without considering quality,” she says.

Orr expects the quality emphasis to intensify. “There’s quite a lot of push right now within the public health system for us to learn about quality improvement, begin to learn the tools, apply them to our work, and find ways to institutionalize quality in our public health work,” she states.

### ***Managing Public Expectations in an Uncertain Environment***

Some of the main lessons to be learned from the public health system’s experience with the H1N1 flu have to do with improving the ability to better predict the public’s behavior in reacting to the emergence and spread of a new virus, according to Paul Biedrzycki, director of disease control and environmental health with the City of Milwaukee Health Department.

Biedrzycki believes public health officials miscalculated public reaction in this regard on a number of levels by relying on a “one size fits all” pandemic influenza plan. This included: the public’s perceptions regarding severity of the disease and how it affected compliance with public health recommendations on mass vaccination and social distancing; the effect of economic conditions on citizen response to public health

recommendations on school closures or staying home from work; and the whole area of managing risk communication in an environment of rapidly evolving information.

“Compliance with public health recommendations, from my perspective, needs to be calibrated against the severity of disease,” Biedrzycki states. With the severe avian flu fresh on the minds of public health officials, many were primed for the emergence of a severe influenza pandemic. “But we learned later that because the disease was mild and perceived by many in the general public to be unimportant, citizenry became increasingly skeptical and somewhat desensitized to public health recommendations that were being repeatedly broadcast,” he says. “It was seen as almost a ‘crying wolf’ scenario and an overreaction by the public health community. Unless the public witnesses widespread severe illness, meaning hospitalizations and deaths, strict compliance with traditional public health recommendations such as isolation and quarantine and other social distancing measures becomes less relevant to the populace. The same holds true with public interest in mass vaccination campaigns or participation in the distribution of any new medical countermeasure, for that matter.”

For example, the Milwaukee Health Department’s initial pandemic flu plans anticipated that between 40 percent and 60 percent of the population would opt for vaccination during an influenza pandemic. Actual uptake of the vaccine was only 5 percent in the city and 9 percent to 10 percent in the surrounding region—far below expectations. That miscalculation was primarily based on the mild nature of the disease and fears of vaccine safety. It had further repercussions on departmental logistics of providing vaccinations throughout the city—particularly as related to the cost-effectiveness in using a mass vaccination model.

Officials also failed to take into adequate consideration how the ailing economy would affect the public’s willingness to comply with many of the original pre-planned interventions to control and limit the spread of disease during a “mild” as opposed to a more severe pandemic. This included their willingness to stay away from work or having their children stay home from school, which has an economic impact on working parents. “So we were unprepared to deal with the pushback that we received early on from parents and the community in general about the social distancing measures that were meant to mitigate the spread of a novel disease in the community regardless of the severity,” says Biedrzycki.

His department also learned that attempting to standardize risk messaging about the H1N1 threat was inadequate given how quickly information was flowing and changing as public health transitioned through the spring and fall waves of the pandemic. In addition, the Milwaukee Health Department recognized the need to conduct outreach to specific targeted populations in a fundamentally different way to overcome linguistic and cultural barriers that prevented certain populations from clearly understanding the nature of the disease and appropriate responses. “Public health needs to do a much better job of managing citizen expectations when there’s limited information or uncertainty as to the trajectory of a disease outbreak,” Biedrzycki states. He believes this is especially important when addressing minority and economically disadvantaged communities.

That brings public health squarely into the arena of better understanding their customers and striving to meet their needs and demands. It’s an area where Biedrzycki sees a significant gap when it comes to current public health practice. Quality tools and

methods can play a role in helping to better manage public expectations in an atmosphere of uncertainty.

“I think there obviously is a role, because I think the whole focus in the paradigm of quality control and assurance is to improve the system, not only to make it more efficient but also more *meaningful*,” Biedrzycki says.

Public health is just now beginning to push the envelope in developing more meaningful and impactful public messaging about disease prevention. Messaging that changes individual behaviors to reduce unnecessary risk and improve overall quality of life, which is what Biedrzycki believes public health is all about. As an example he points to a provocative regional public health flu and hand hygiene information campaign that the Milwaukee Health Department mounted last fall to raise awareness about the role of hygiene in preventing the spread of disease. The campaign relied on private sector marketing consultants along with audience focus groups and demographic analyses to more effectively reach the public. This type of initiative “certainly would never have been initiated by public health in response to a major disease outbreak even five years ago,” he says.

Public health officials have not written off the possibility of a third wave of H1N1, although Biedrzycki thinks that becomes increasingly less likely as we move into spring without seeing large increases in H1N1 infection. Still, he’s apprehensive. “I think a certain degree of complacency and disinterest is beginning to set in, definitely with the public, somewhat with our key stakeholders in healthcare, and even within our own employee ranks.”

The unpredictable nature of flu viruses adds to his nervousness. “These bugs, you know, are going to be with us for a long time, and this bug still has the potential to change arbitrarily, as new flu viruses do,” Biedrzycki says. His assessment: “We’re not out of the woods yet.” Which is why public health departments need every resource at their command—not the least of which is a well-equipped quality toolbox.

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*ASQ (American Society for Quality), [www.asq.org](http://www.asq.org), has been the world’s leading authority on quality for more than 60 years. With more than 85,000 individual and organizational members, the professional association advances learning, quality improvement, and knowledge exchange to improve business results and to create better workplaces and communities worldwide. As a champion of the quality movement, ASQ offers technologies, concepts, tools, and training to quality professionals, quality practitioners, and everyday consumers. ASQ has been the sole administrator of the prestigious Malcolm Baldrige National Quality Award since 1991. Headquartered in Milwaukee, WI, ASQ is a founding sponsor of the American Customer Satisfaction Index (ACSI), a prominent quarterly economic indicator.*