

# Using QI Tools to Make a Difference in H1N1 Flu Immunization Clinics: A Local Health Department's Experience

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## Introduction and Background:<sup>2</sup>

The Public Health Foundation (PHF) has demonstrated that the Deming Plan-Do-Check-Act<sup>3</sup> (PDCA) of quality improvement (QI) techniques/methods can be successfully applied in public health to identify and solve community health and system problems and issues. Taking advantage of the recent lessons learned from the H1N1 flu event, now is the time to use QI methods and tools to prepare for future H1N1 flu events and the 2010 flu season by reviewing, refreshing, and revitalizing your pandemic plans.

Emergency Preparedness is, in its design and organization, inherently a reflection of the PDCA cycle. Effective response demands the development of a good plan (Plan) that is tested by exercises or real events (Do); analyzed in hotwashes, debriefings, and after action reports (Check); and then revised or used again (Act). It is an ongoing cycle as responders implement the plans and learn from their actions to improve the plans even more. Public health and safety depend on the continuous repetition of this cycle, and evidence has shown that it works.

A contemporary example utilizing the QI tools to improve immunization clinics' service by flow charting processes, surveying customers about service received, and obtaining staff input for improvements through the use of a Stop/Start/Continue Matrix is presented in this brief paper.

## Exemplar Organization:

The Northern Kentucky Independent District Health Department (NKIDHD) serves four counties in Northern Kentucky just across the Ohio River from Cincinnati. The district serves more than 370,000 residents in a combination of urban, suburban and rural

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<sup>2</sup> Review, Refresh, and Revitalize Your Pandemic Flu Plan For Fall 2009, Ron Bialek, Jack Moran, Kim McCoy, William Riley, Lillian Shirley July 2009, [www.phf.org/Review-Refresh-and-Revitalize-Your-Pandemic-Flu-Plan-for-Fall-2009.pdf](http://www.phf.org/Review-Refresh-and-Revitalize-Your-Pandemic-Flu-Plan-for-Fall-2009.pdf), Accessed October 26, 2009.

<sup>3</sup> *Out of Crises*, W. Edwards Deming, MIT Press, 1986, Refers to PDCA as the Shewhart Cycle on P. 88.

settings. The population in the northern parts of the district closest to Cincinnati is a mix of urban and suburban.


The Northern Kentucky Independent District Health Department is partnering with the Public Health Foundation to become an Exemplar public health organization. An Exemplar organization is one which infuses quality throughout its organization. It continually improves itself by understanding customers' changing needs, internal staff needs, and processes needing improvement, while nurturing a culture that focuses on continual improvement of everything that the health department does.

**Immunization Clinics:**

NKIDHD decided to build quality improvement into the process while developing its plan to do H1N1 immunization clinics. They were able to do a trial of the process to be used since they had clinics scheduled targeting their first responders. The first three immunization clinics provided vaccinations to first responders and served 1,035 people. As they acquired more doses, the clinics had the ability to provide vaccinations to 8,000 to 10,000 clients in a day. Later, they provided vaccinations to students in schools. The first three clinics, however, provided a test of the system and a chance to gather customer and staff data on where improvements could be made.

The customer satisfaction survey was distributed to every 30<sup>th</sup> person attending each clinic. A sampling of the results of the first five clinics is shown in Table 1. Also captured was the time a survey respondent was in the clinic so they could understand the cycle time for the immunization process.

Table 1

 <b>NORTHERN KENTUCKY INDEPENDENT DISTRICT HEALTH DEPARTMENT</b>		Average time in clinic: 13.5 minutes Shortest: 4 minutes / Longest: 57 minutes			
		<b>CUSTOMER SURVEY RESULTS – H1N1 VACCINATION CLINIC</b>		Date: xx/xx/09	
(NOTE: Results in chart below stated in percentages. 180 surveys total.)					
Based on your interaction with the Health Department staff, please rate your level of satisfaction with our H1N1 vaccination clinic services in the following areas:					
1 = Poor      2 = Fair      3 = Good      4 = Excellent      N/A = Not applicable					
	1	2	3	4	N/A
1. Friendliness and courtesy of the staff.		1.2	3.4	95.4	
2. Ability of staff to put me at ease.		1.1	8.7	85.6	4.6
3. The time I waited to receive services or resolve my problem(s) was reasonable.	0.6	1.7	20.1	75.2	2.4
4. My questions and concerns were addressed.		1.7	7.5	82.1	8.7
5. Staff knowledge.		0.5	7.5	89.7	2.3
6. Accurate and useful information was made available to me.		0.5	7.5	89.6	2.4
7. Options and alternatives were offered when possible.		1.7	7.0	79.7	11.6
8. My overall satisfaction.		1.1	8.2	90.7	

In addition to the check box survey the following questions were asked as part of the survey:

9. ***What is the one thing, in your opinion, we did well and should continue doing in these clinics? Some Sample Comments:***

- Workers were extremely friendly and informative.
- All was great. (12)
- Went very well.
- Very organized/smooth flow/efficient. (7)
- The organization made it very quick and efficient! (5)
- Good process setup – lines moved quickly. (10)
- No place to improve. A+
- Make the person feel calm.
- Well done, no suggestions.
- Free vaccinations and superb services.

10. ***What is the one thing, in your opinion, we should do differently to improve our process? Some sample responses:***

- Nothing. It was great. (14)
- I think the clinic was more organized than I could have imagined! Excellent job.
- More locations.
- The organization set-up made us go to one side then the other - should be a straight line.
- Could have had the line waiting inside. (2)
- You had several big posters about the H1N1 vaccine that everyone walked past. It would have been better to have the posters or people in a location where they could be read while in line.
- Have more people filling out applications.
- More signage.
- Make the location better for older people – separate entrance. (2)
- All went smoothly; no suggestion to give you.
- Let people fill out paperwork in line.
- More screeners.
- Make it a little faster.
- Should have provided tickets before getting into line if there are quantity limits for vaccine.
- Appointment times.
- Use voting precincts and more locations.
- Communication regarding parking, transport, and time in line. Also, restroom location and availability.

11. ***General comments: Some sample responses:***

- Great work. (15)
- Thanks.(6)
- Thank you so much for putting our minds at ease.
- The TV with cartoons was helpful for the children.
- Great staff!

- Thank you - not a bad experience and my kids left smiling.
- Website was very informative also.
- Everything was well organized and ran smoothly.
- For such an undertaking, it was a very well-executed operation.

The time and effort NKIDHD took to plan and deploy a plan for immunization clinics as well as the follow up to correct any process flaws for the next clinic resulted in a very satisfied group of customers. This conclusion can be seen from the results of the customer survey shown in Table 1.

*A comment from the Director of Clinical Services – “I wanted to take this time to thank all who were involved in yesterday’s Bank of Kentucky H1N1 clinic and to those who helped us to get ready for the event. It was a **huge** success from the time we opened the doors until we closed at 6pm. I can’t tell you how many positive comments our agency has received about yesterday, both by e-mail, satisfaction surveys and word of mouth. It is because of YOU that we, as a team, could pull this off and have received so many kudos. Each of you should feel so proud of your job and what you did for the community. Everybody worked at 100%, and it showed!!!!*

*Along with our clinic effort we have sent out 18,500 doses to the enrolled medical providers in our community. We are also in the planning stages to go into the schools who accept our invitation in December. More details to come about that plan as soon as we confirm the schools.*

*In summary, **many, many thanks** to all for their hard work and dedication to our agency and our mission. In the words of one of the patients who received her shot yesterday, “YOU GUYS ROCK!”*

The customer suggestions in low scoring areas were grouped into similar themes, evaluated, and then incorporated into the existing process to make improvements. They plan to track implementation of customer suggestions to understand the impact on improving the process.

The first three clinics provided NKIDHD an opportunity to develop and test the process that they would use in future clinics. Before the clinic was conducted, they flow charted the process that they planned to use. This activity allowed everyone involved to see how each part of the process --intake, inoculation, and processing out-- related to each other. The flow chart, as shown in Figure 1, provided a training opportunity for staff who would be involved to understand how their piece fit in with the overall process and where handoffs occurred so that they could be seamless and reduce customer waiting time. This H1N1 Mass Clinic Layout template was completed with names of staff and used to designate where they would be stationed during each flu clinic. While it was important for all staff to demonstrate positive attitudes, “Greeters” were key to setting a welcoming environment as patients first stepped into the facility. These staff asked people to complete customer satisfaction surveys as they moved through the flu clinic and then leave the surveys with staff at the Exit. “Flow” personnel efficiently helped patients

progress through the flu clinic as they directed customers to specific tables. “Runners” provided support to staff who were stationed at various sites throughout the clinic, from replenishing depleted supplies to delivering messages and questions to and from key personnel.

Figure 1

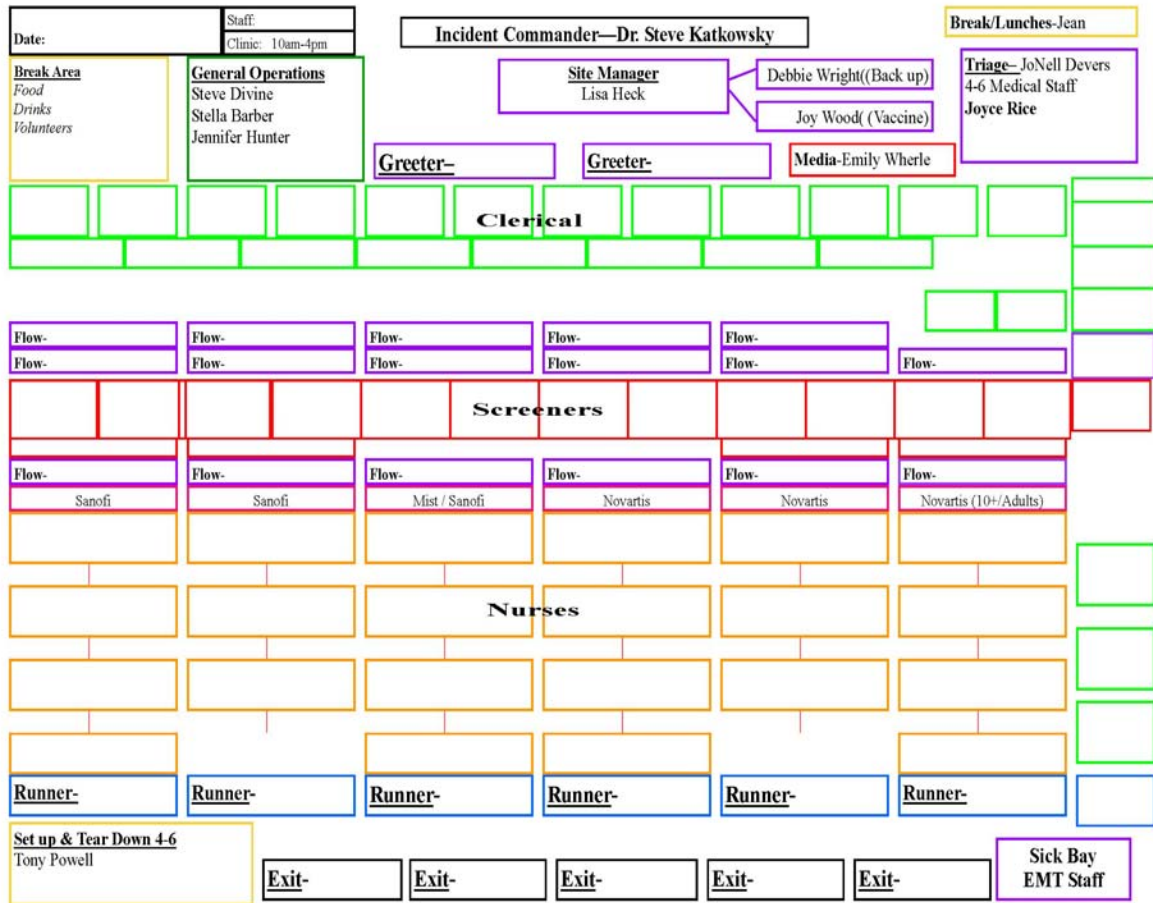
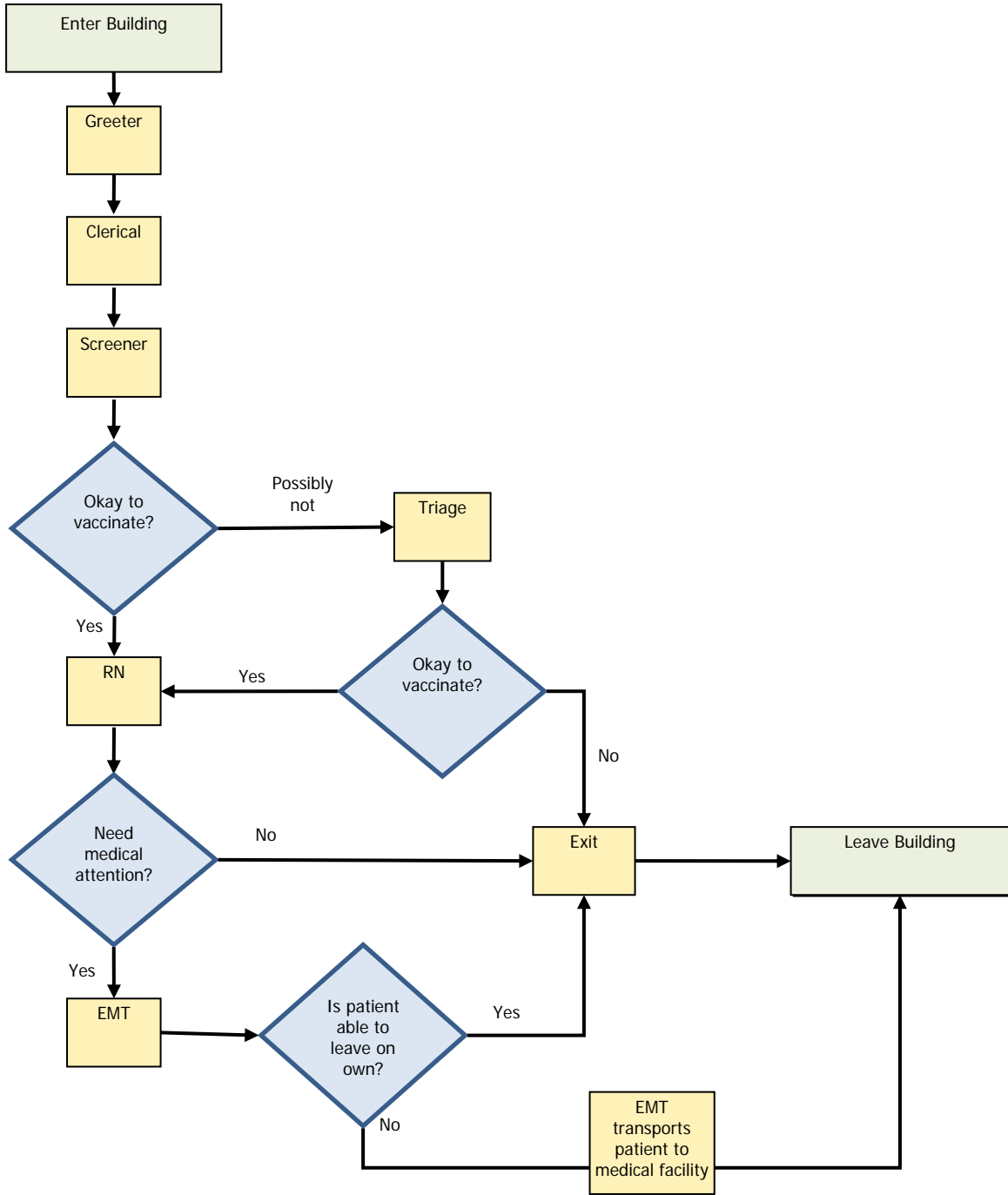


Figure 2 illustrates a process flow chart with decisions needed to be made as a patient moved through the H1N1 flu clinic.

Figure 2  
Patient Flow



NKIDHD involved all staff in this continuous improvement process by utilizing a Stop/Start/Continue Matrix. This matrix can be used for a quick analysis to see what actions are currently being done that need to be stopped, what processes should be started to improve your pandemic flu plan, and what practices are currently in place that should be continued. In the staff break room, they had a flip chart for the staff to indicate what actions they should Stop/Start/Continue doing. H1N1 management team members (also known as the Swine Flu Crew) then did a wrap-up within a few days to determine the areas needing improvement and how to make changes for the next clinic. Some examples of the data collected in the Stop/Start/Continue matrix are shown in Table 2. These Stop/Start/Continue suggestions were evaluated by the staff, and actions that were to be taken were documented next to the suggestions.

Table 2  
**Examples from the Stop/Start/Continue Matrix**

<b><u>Things We Should Stop Doing</u></b>	<b><u>Action To Be Taken:</u></b>
Change "serious egg allergies" to any egg allergy.	Changed.
Confusion about drinks for staff allowed in clinic areas.	Policy put in place and communicated to all involved in the clinics.
Starting before staff arrives.	Community partner miscommunicated clinic start time, so 1 <sup>st</sup> responders arrived early; NKHD accommodated in this instance. Will review start and end times with staff and community before the next clinic.
Handouts at exit will back up exiting process.	Element tried. Site logistics and various other elements determined this process not viable. Will not provide handouts at exit in future clinics.
<b><u>Things We Should Start Doing:</u></b>	<b><u>Action To Be Taken:</u></b>
Need coloring sheets or something for kids to do while waiting, especially when we do community clinics.	Try to arrange for a video or other activity when it is feasible for a site being selected to keep children occupied.
If lines form, give consumers info sheets to read so screeners can answer questions.	To be considered for future sites based on customer feedback on what information they desire.
Tissues for flu mist.	Supply to be secured.
More signage with arrows.	Number signs in various colors, colored tape and arrows, and sign placement have all been planned for and implemented in exercises and actual events. In this particular site, numerous elements were considered and site logistics, including gym floor, determined those put in place. In future, more arrows will be used.

Provide restrooms at end of process so people don't go back against flow to restroom facility.	Potential sites are judged on the restroom adequacy for the population to be served.
Identify staff & volunteer sign-in location in advance for each location.	Location will be communicated before each clinic to staff.
Standardized answer for, "Which vaccine should I get?" and "What's the risk?"	Screening criteria was considered and developed. Continued training and refresher training before every event will continue.
More pens that write.	Defective pens disposed of, replaced with new pens.
<b><u>Things We Should Continue Doing:</u></b>	<b><u>Actions To Be Taken:</u></b>
Positive, adaptive attitudes of staff.	Stressed prior to clinics; staff thanked for their attitudes, flexibility and willingness to contribute when and where needed.
To not ask the patient all the questions about the mist ("yes or no") if they know they want the shot.	Appropriate, improved screening measures will be implemented. Just in time and refresher training will incorporate most appropriate elements.
Assistance between nurses.	Site logistics, staffing, continued staff availability and numbers of patient thru-put are all considered in development of the staffing plan. Site management is pleased that dispensers find the assistance helpful.

The Stop/Start/Continue approach allows the staff to quickly capture practices that should be Stopped which are the learnings we discover as we test the process, actions which should be Started which are the Aha's! that we have as we roll out a process and are usually the events that we forgot, and those processes that we should Continue which are our best practices and are value added to the process, the customer and the staff.

### Summary

As with any other public health emergency, preparedness for an H1N1 outbreak will be strengthened if the public health system is tested in a comprehensive, vigorous and planned manner to find areas that can be improved and result in better outcomes and improved customer satisfaction. Northern Kentucky Independent District Health Department's critical analysis of their first three immunization clinics revealed areas where issues indicated the need for change in their immunization process.

Exemplar organizations like NKIDHD build the philosophy of quality improvement into their processes and culture by continually striving to do a better job of serving their customers and testing and measuring their processes using quality improvement tools and techniques.

Nothing makes a better ending to a summary than the compliment below about the flu clinics by a local newspaper reporter:

***“Time flu by in H1N1 line; not so in Target”<sup>4</sup>***

*Business Courier of Cincinnati Blog Lucy May, Senior Staff Writer  
Monday, November 30, 2009, 10:44am*

*Standing in a tortuous line at Target at 7 a.m. on Black Friday made me appreciate the H1N1 vaccination clinic I visited with my family just the weekend before.*

*It wasn't because the shoppers were feverish and coughing, although being in line with the masses made me all the more happy that I'd gotten my shot.*

*It was because the Northern Kentucky Health Department's clinic at an Independence middle school was so much more efficient than the check-out line at Target.*

*In about 40 minutes, my family moved quickly through a line of hundreds of people for our swine flu shots. My husband remarked more than once how impressed he was with the health department's efficiency and professionalism. The staff was polite and kept things moving in a way that made me glad we had spent our Saturday afternoon waiting in line.*

*In contrast, the Target line crept along, inch by inch. And for what? So I could get a deal on some movies and save a few bucks on a gizmo?*

*After about 20 minutes and no progress, I did the unthinkable. I left my spot and went home to eat breakfast and enjoy my morning. Keeping my kids safe from the H1N1 virus, I decided, was worth the wait. A \$10 copy of “Monsters vs. Aliens” was not.*

*Next year, I'm getting flu shots for everyone on my Christmas list.”*

Your immunization clinics can get the same type of compliments if you use QI tools and techniques to plan and continuously improve them.

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**QI RESOURCES FOR PUBLIC HEALTH:**

In recent years, a variety of QI resources have been developed for public health. Resources available through PHF include:

- *The Public Health Quality Improvement Handbook* – Released in May 2009, this 28-chapter book contains public health QI case examples, methods, and basic and advanced tools - [http://bookstore.phf.org/product\\_info.php?products\\_id=660](http://bookstore.phf.org/product_info.php?products_id=660)
- Public Health Infrastructure Resource Center – In particular, the performance management section of this online resource - <http://www.phf.org/infrastructure/>

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<sup>4</sup> May, L. (2009, November 30). Time Flu by in H1N1 Line; Not So in Target. Message posted to [http://cincinnati.bizjournals.com/cincinnati/blog/2009/11/time\\_flu\\_by\\_in\\_h1n1\\_line\\_not\\_so\\_in\\_target.html](http://cincinnati.bizjournals.com/cincinnati/blog/2009/11/time_flu_by_in_h1n1_line_not_so_in_target.html)

- *The Public Health Memory Jogger II* – This pocket guide contains 22 basic QI tools and examples - <http://www.phf.org/pmqi/resources.htm#memoryjogger2>
- The National Public Health Performance Standards Program Online Resource Center – Online resources designed to help you improve your public health systems performance - <http://www.phf.org/nphpsp/>

*Please submit feedback on this paper to Ron Bialek, [rbialek@phf.org](mailto:rbialek@phf.org). Thank you*