

REVIEW

REFRESH

REVITALIZE

Your Pandemic Flu Plan for Fall 2009

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INTRODUCTION

An emergency response organization differs substantially from our usual public health organization for day to day business. However, as the Spring 2009 H1N1 outbreak highlighted, usual public health processes are fundamental for effectively responding to a public health emergency. The key challenge we will face in the Fall and Winter of 2009 is not the planning for an H1N1 outbreak but the establishment of clear criteria for the public health workforce to determine priorities in their jurisdictions. The Federal Government grants for Emergency Preparedness to States and Local jurisdictions include a Program Element (PE 12) that requires a Homeland Security Exercise Evaluation. A key element of this requirement is an improvement plan based on learnings from required exercises of the preparedness plans. However, a 20 page After Action Report (AAR) may not be helpful in real time decision making. The challenge is to make these reports actionable and nimble. Using quality improvement (QI) methods and tools alongside our situation status reports as actual information and data unfolds can be an invaluable way to determine next steps in our response cycle.

The easy part in preparing for the Fall flu season is recognizing that lessons learned from the H1N1 outbreak need to be applied. The more difficult part is developing an effective process to understand the reasons, or root causes, contributing to your successes and challenges. Using quality improvement methods and tools for determining these root causes, dissecting and improving your processes, and testing and retesting your assumptions and processes will lead to better prepared communities and more successful responses to the Fall 2009 flu season.

This document presents suggested QI methods and tools that you can begin using today to protect and promote your community's health.

BACKGROUND

The Public Health Foundation (PHF) has observed the Deming Plan-Do-Check-Act² (PDCA) of quality improvement (QI) techniques/methods successfully applied in public health to help identify and solve community health and system problems and issues. For example, in a nine-month period, the Orange County (FL) Health Department was able to reduce its community's

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² *Out of Crises*, W. Edwards Deming, MIT Press, 1986, Refers to PDCA as the Shewhart Cycle on P. 88.

syphilis rate by more than 30 percent.³ With recent lessons learned from the H1N1 flu event, now is the time to use QI methods and tools to prepare for the Fall 2009 flu season by reviewing, refreshing, and revitalizing your pandemic plans.

Emergency Preparedness is, in its design and organization, a reflection of the PDCA cycle. Effective response demands the development of a good plan (Plan) that is tested via exercises or real events (Do); analyzed in hotwashes, debriefings, and after action reports (Check); and then revised or used again (Act). It is a cycle that hopefully never ends as responders implement the plans and learn from their actions. Public health and safety depend on the continuous repetition of this cycle, and evidence has shown that it works.

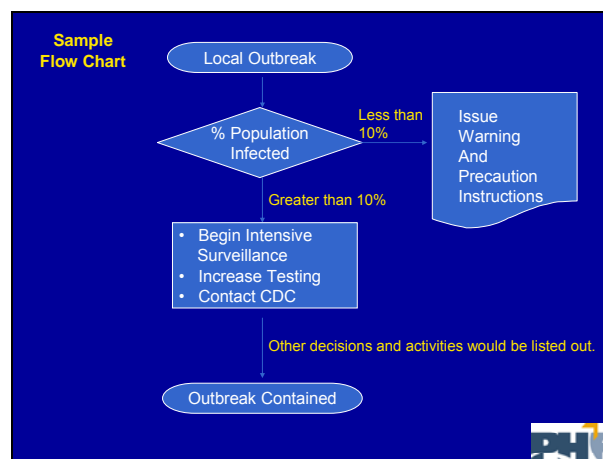
An example of a lesson learned in the case of H1N1 response may be around the decision-making process for social distancing. In general, pandemic flu plans contain extensive processes for making these decisions. Experience from the recent H1N1 flu event reveals that many communities deferred to the Centers for Disease Control and Prevention (CDC) for major aspects of this decision-making. Given this reality, perhaps state and local processes could be simplified to save time and resources that were being diverted from other critical processes and actions. Rather than making all of the decisions about social distancing, states and local communities could refine their processes related to effective implementation of CDC guidance and focus on communicating the appropriate messages to schools, the media, elected officials and others.

USING QI METHODS AND TOOLS TO IMPROVE YOUR PANDEMIC FLU PLAN

Expert panelists⁴ assembled for the May 2009 American Society for Quality's World Conference on Quality and Improvement discussed this issue, "Given that we could have a pandemic on our hands later this year, how can we use QI methods, tools, and techniques to review and refresh State and Local pandemic flu plans and improve the outcomes? What specific suggestions would you recommend?"

Specific Quality Improvement Tools and Methods⁵ recommended by this panel and PHF for reviewing, refreshing, and revitalizing pandemic flu plans include:

- **Flow Charting:** Flow Charting is a method to identify the important steps in the flow of work in an organization. Look at events over the past few months and map the processes that were used to respond. Then, map the processes as they appear in your pandemic flu plan. Did your "reality" match what is contained in your plan? Why were certain processes used while others were not? Where and why did you deviate from your plan? Where may processes and your plan be refined? Flow Charting is an effective tool to analyze your "current state"



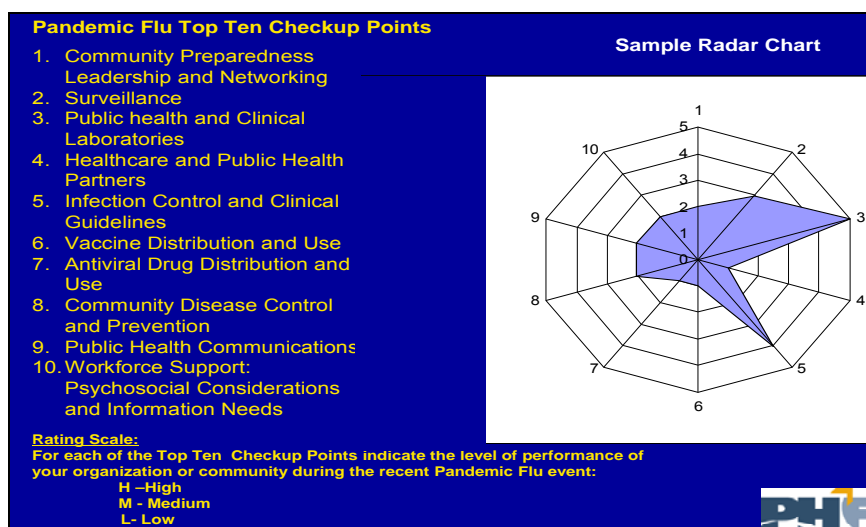
³ Orange County Health Department, *STD Quality Improvement Project Storyboard*, (October 2005 – July 2006), Public Health Foundation, Washington, DC, 2007, <http://www.phf.org/resourcestools/Documents/orangecountystoryboard.pdf>, accessed February 23, 2011.

⁴ Ron Bialek, Kim McCoy, and William Riley.

⁵ For more details on the tools see The Public Health Quality Improvement Handbook - http://bookstore.phf.org/product_info.php?products_id=660, R. Bialek, G. Duffy, and J. Moran editors, ASQ Quality Press ©2009, Chapters 14 and 15.

(what actually happened) and what you thought was your “desired state” (what is in your plan) and determine what steps are necessary, what steps could be revised to make improvements, and new decision points that need to be incorporated into your pandemic flu plan (e.g., are there decision makers that need to be included who were not?). A Flow Chart is the best method to improve the value stream in an emergency operations center. It assists the team to identify the value added steps and to eliminate non-value added steps. It helps to identify handoff errors, bottlenecks, unnecessary redundancies, and other inefficiencies. Examples of how Flow Charting may be useful as you revisit your pandemic flu plan are:

- » social distancing decision making and implementation -- How precisely did you follow the procedures in your plan?
 - » distribution of medications through PODS -- Were PODS being used as intended?
 - » clinician testing -- Were clinicians following the process for administering the quick flu test?
- **Radar Chart:** A Radar Chart can be used to visually show in one graphic the size of the gaps among a number of both current organizational performance areas and ideal performance areas. Plot the 10 checkpoint points developed by the U.S. Department of Health and Human Services and CDC⁶ on a Radar Chart and determine how well they each performed on a scale of low – medium – high and determine the “Why” of the score. This plot and the “why” can be the basis of determining where to focus improvement efforts. The ten checkpoint points are as follows:
 - ✓ Community Preparedness Leadership and Networking
 - ✓ Surveillance
 - ✓ Public Health and Clinical Laboratories
 - ✓ Healthcare and Public Health Partners
 - ✓ Infection Control and Clinical Guidelines
 - ✓ Vaccine Distribution and Use
 - ✓ Antiviral Drug Distribution and Use
 - ✓ Community Disease Control and Prevention (including managing travel-related risk of disease transmission)
 - ✓ Public Health Communications
 - ✓ Workforce Support: Psychosocial Considerations and Information Needs

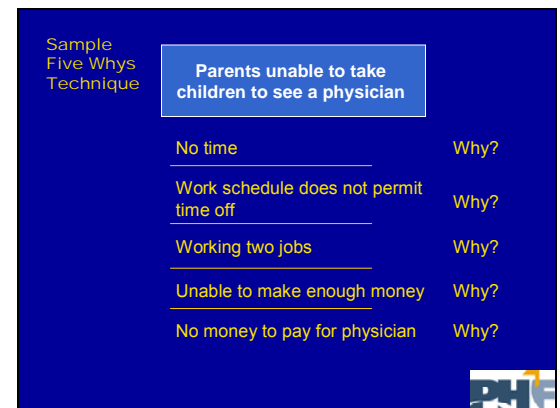


- **Cause and Effect Diagram:** A Cause and Effect Diagram (CE) will help your team to identify, explore, and graphically display the possible causes related to a problem. The CE provides your team with a systematic and rigorous approach to help it understand the complexity of a problem and list all causal factors contributing to the problem. The CE is sometimes called a “Fishbone” diagram because when constructed it can look like the skeleton of a fish. The major purpose of the CE is to act as a first step in problem solving by having your team brainstorm a comprehensive list of possible causes of the indicated effect.

⁶ <http://pandemicflu.gov/professional/states/statelocalchecklist.html>, accessed February 23, 2011.

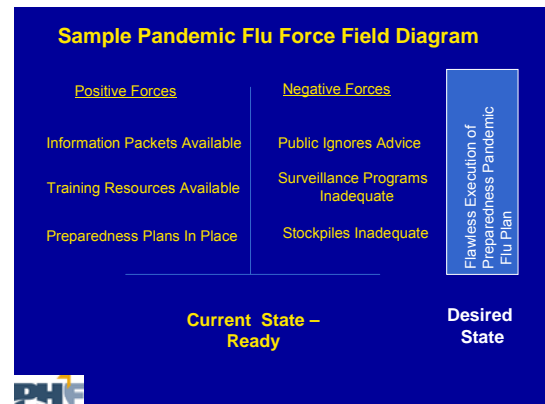
The causes generated are then grouped into categories of like items. Each grouping is identified as a major cause category and the related sub-causes. Each major grouping of causes becomes one of the bones of the CE. Major cause categories could be work environment, training, knowledge, systems, costs, time, etc. The CE will help your team identify the areas to focus on to develop solutions to solve the effect. The causal factors can be prioritized and then the top ones analyzed in detail using the Five Whys technique (described below) to determine the sub causes and potential root cause of the problem. Incident reports and feedback from partner organizations from the recent H1N1 outbreak can be a starting point to use the Cause and Effect diagram to identify and investigate areas needing to be improved.

- **Five Whys Technique:** The Five Whys is an extremely useful technique to explore the cause of a problem that occurs in a work flow. It is a standardized method of inquiry that attempts to identify the real cause of an issue rather than a superficial or most easily identified cause. It is a simple method that asks “why?” five times. Used together, a Cause and Effect diagram combined with a Five Whys approach can help get to a root cause of an issue and enable your organization and community to take real corrective action. For example, if no cases of H1N1 were reported in your school district, was this due to there actually being no cases, tests not being conducted by health care providers, back-up in laboratories for testing? As you identify issues, you continue to ask the Five Whys. If tests were not conducted by providers, was this due to lack of access, lack of provider knowledge, costs to providers, parents unable to take children to see a physician, laboratories not accepting samples?



- **Rapid Cycle PDCA:** Use these improvement tools quickly and repeatedly in your analysis to really get ready. Do not take three to four months to analyze a priority area -- do it in a few days. After mapping your process and identifying the root cause of the problem, select and implement evidence-based solutions on a small-scale to see if they will result in the needed corrections. Gradually adapt and increase the scale of these tests before launching a full scale implementation of the solutions. Then pick another problem area and do the rapid cycle again.
- **Other QI Tools that were not mentioned by the panelists that would also be helpful are:**
 - **Process Decision Program Chart (PDPC):** for contingency planning on any of the 10 checkup areas. PDPC systematically identifies what might go wrong in the 10 checkup areas in a pandemic plan and develops countermeasures to prevent or offset those problems. By using PDPC an organization can either revise its pandemic plan to avoid the problems or be ready with the best response when a problem occurs. PDPC forces you to ask the following two killer questions – “If we wanted this to fail, how could we accomplish that?” “What assumptions are we making that could turn out to be wrong?”

- **Force Field Analysis:** to determine which forces at the community level are driving the citizens to take precautions against the H1N1 virus and which ones are dissuading them from taking precautions. A Force Field Analysis can be used to identify the forces and factors in place that support or work against the solution of an issue or problem so that the positives can be reinforced and/or the negatives eliminated or reduced. The Pandemic Flu team can use the prioritized listing of positive and negative forces to suggest approaches to strengthening the positives and reducing the impact of negatives to help have a smooth implementation of the Pandemic Flu Plan.
- **Stop/Start/Continue Matrix:** this can be used for a quick analysis to see if there are any things currently being done that need to be stopped, any things that should be started to improve your pandemic flu plan, and what things are currently being done that should be continued.



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 and vigorous manner that pushes the limits of system capacity. Critical analysis of tests will reveal areas where capacity may be an issue and indicate the need for contingency plans.

The human and business impacts of H1N1 in the coming months in local jurisdictions are uncertain. We may face a situation that is no worse than the typical Fall/Winter flu season. We also could experience a more serious situation, with increased levels and severity of illness. In either event the systematic application of QI strategies will result in a better prepared public health community.

QI RESOURCES FOR PUBLIC HEALTH

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

- Public Health Improvement Resource Center – More than 100 accessible resources organized here support the initiation and continuation of quality improvement efforts - <http://www.phf.org/improvement>
- 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
- The Public Health Memory Jogger II – This pocket guide contains 22 basic QI tools and examples - http://www.goalqpc.com/shop_products_detail.cfm?PID=754
- 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. Thank you