Reaching Target Vaccination Groups: Utilizing School-Based Clinics to Provide H1N1 Vaccine to Children

A Policy Development Case Assessment

"The Transformers"
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Abstract
On April 25, 2009, New York City officials reported that approximately 150 students at one high school in Queens, New York are ill with flu-like symptoms. Twenty-five of these students had traveled to Mexico. A school nurse was quick to notice the abnormal volume of students presenting with similar symptoms and notified the New York City Department of Public Health. Previous to this report, most cases of suspected H1N1 had come from people who had directly traveled to Mexico, or who were living on the U.S./Mexico border. On the same day, the World Health Organization called an emergency meeting to consider declaring a public health emergency. On April 26, 2009 the U.S. declared the spread of H1N1 a public health emergency. The Queens case represents a critical turning-point in the outbreak of H1N1 influenza.

Since the April 25th case, schools have remained a critical point in the spread of and response to H1N1 in the U.S. As the virus spread throughout the country, schools provided timely information to health departments as to absences and illnesses, allowing health departments to better assess how the virus was spreading. Schools also served as a critical vehicle for disseminating public health information to local communities.

On October 5, 2009 the first batches of H1N1 vaccine became available to states, for distribution to local entities to the five groups the CDC determined to be "priority" for receiving the vaccines. Children and young adults ages six months to 24 years were targeted as one of the populations most in need of the vaccine. A 2001 *New England Journal of Medicine* article examined the spread of a deadly influenza in Japan in the late 1960s and early 1970s and found that widespread vaccination of school-age children is essential to lowering the death rate of the elderly from influenza. The study found that one of the best ways to develop "herd immunity" in a community is by ensuring that school-aged children are vaccinated.

As communities struggled to determine the best way to deliver limited amounts of vaccine to the priority groups, some communities decided to put most of their efforts into school-based H1N1 vaccine clinics. This case will look at the decision to utilize these clinics, and how successful they might have been in two comparative communities. The results will inform the development of policy regarding the response to H1N1 using school-based clinics, and could have implications regarding how useful schools can be in responding to other infectious disease outbreaks.

Introduction

The responsibility of allocating H1N1 vaccine during the pandemic of 2009 fell to State Public Health Departments. However the dissemination of the vaccine to the five identified priority

groups typically fell to local health departments. Across the country there was much attention paid to vaccination of school-aged children, as children seemed to have higher rates of morbidity and mortality from this H1N1 virus, and as studies have shown that wide vaccination of children could provide “herd immunity” to communities.

Two counties with similar demographics, Megatron and Optimus Prime, utilized school-based vaccination clinics in an attempt to efficiently vaccinate as many school-aged children as possible. However, the counties had drastically different results. In looking at the development of policies to disseminate vaccines using school-based clinics, many lessons can be learned from the different experiences of these similar counties.

I. Megatron

Background

Megatron, a county of 1.2 million people, is one of the largest and most diverse counties in the State of New Transformerland. The county consists of 15 cities and townships, each with its own local governmental body that has a varying amount of influence within the community. The county has dense urban areas as well as suburban and burgeoning suburban areas. The suburban areas of the county have experienced a significant amount of population growth over the past five years. Many of these areas are struggling to develop infrastructure to serve the growing communities.

The local health department (LHD) has approximately 100 people on staff to manage the public health operations for the population of Megatron. Like most counties across the country, Megatron is experiencing fiscal challenges due to state and county budget cuts. While federal emergency preparedness planning funding helps the Megatron Health Department, the department is struggling to keep up with other daily operations, and has experienced a number of staff layoffs.

After 9-11 and Katrina there has been an increased interest at the federal level to make sure that local counties are ready to respond in an emergency. For the past four years Megatron has been working to develop their emergency preparedness plan for their region to make sure that they would be ready in the event of a public health emergency. There are a number of unique challenges that exist for Megatron when working to implement any health policy for their region, especially public health emergency planning. The LHD finds that they have to develop targeted, specific approaches to reach each of the communities they work with in order to be effective. H1N1, also known as “swine flu,” served as the department’s first real test of the systems that the county worked so hard to develop.

Developing the School Aged Children Vaccination Plan

Dr. Diana Garrett, the Local Health Administrator for Megatron, worked tirelessly through spring 2009 when H1N1 first appeared in her community. She and her team worked closely with the State to make sure that her LHD received the necessary antiviral and SNS supplies. Her staff also worked diligently to provide timely lab reporting of suspected H1N1 cases, as surveillance was essential to provide situational awareness for the community. In May it the CDC announced

that there was going to be an H1N1 vaccine available to distribute in the fall, although it was not clear how much would be available. In June Megatron realized that there would need to be a well-organized effort to distribute vaccine within the community. The State decided that each local health department would receive a supply of vaccine, and then each department would determine the best way to distribute the vaccine to their communities.

She and her team decided that they were going to put together a plan to distribute vaccine to school children first, not only because they were designated to be one of the priority groups, but because Dr. Garret believed that vaccinating children first is the best way to create "herd immunity." Studies have shown that mass vaccination school-aged children could reduce widespread influenza morbidity and mortality. In August of 2009, Dr. Garrett, convened a meeting to discuss how Megatron could best accomplish the task of vaccinating school-aged children in their community. At the meeting was Laura West, public information officer; Dr. Gary Smith, the infectious disease director; and Smith Jerrot, the county's legal counsel. After a significant amount of deliberation, Megatron decided that working with the schools to offer school-based clinics would be the focus for their vaccination efforts. This decision was not an easy one, given that the political leadership of a large neighboring county, Metropolis, had already decided against utilizing schools for vaccinations.

There were three reasons why Megatron decided to implement a school-based vaccination plan: 1) ACIP had recommended that children six months to 18 years of age be one of the top priorities for vaccination; 2) Studies have shown that children must be aggressively vaccinated to reduce the morbidity and mortality of influenza in a community; and 3) It was expected that the H1N1 vaccine would first be available in a nasal spray form, which would only be appropriate for individuals under the age of 50. The next step for Megatron after deciding the agency policy for priority distribution was to make sure that the LHD engaged the local school districts.

<u>Reaching out to the School Districts</u>

Staff at the Megatron LHD knew that planning had to begin immediately in order to reach all of the school-aged children in an effective and timely manner. Dr. Garrett organized a local school superintendent meeting for the entire region on a Friday in August to explain the need for school-based vaccination clinics, and receive the "buy-in" from the schools. All 15 school districts were represented at the meeting by their superintendents and relevant staff. Dr. Garrett and her staff presented a power point presentation that reviewed basic information about H1N and how the LHD proposed carrying out the school-aged children vaccination plan. Dr. Garrett's first priority, however, was making sure the schools would be active and willing participants in the plan to hold vaccination clinics at schools.

The LHD received a number of questions at the meeting. Unfortunately, the LHD and the State still had a number of unanswered questions for the federal government, but the LHD staff tried their best to answer the questions. The questions included: "Is the vaccine safe?" "When will it be available?" "How do we know when to shut down the school?" "How do we make sure that teachers receive the vaccination?" "When will we get the vaccine?" "Who is responsible if something goes wrong when the vaccinations are happening at a school?"

Many of the questions about vaccination safety were being asked because of the media coverage. At the time, there were a lot of press stories that raised questions about the safety of the vaccine due to the quick production timeline and adverse reactions to other vaccinations, in particular to previous influenza vaccines. The media was hyping up the severity of H1N1 as well as perpetuating fear about the vaccination, which posed challenges for planning mass school-based vaccinations. The lack of accurate information proved to be a challenge all around. Laura West, the public information officer, worked to get timely, specific information to the local media. However, the national media was driving many of the local stories. She focused on distributing planning information immediately to the local media so they could assure the public that regardless of the severity of the pandemic, Megatron's LHD was prepared.

During the school superintendent meeting many participants questioned what liability would the school districts have when storing and distributing the vaccine. Smith Jerrot, the county's legal counsel, was prepared for that question and circulated a Memorandum of Agreement (MOA) that he drafted for all of the participating school districts. Jerrot worked only with his fellow legal colleagues to develop this document, and gave it to Dr. Garrett just as they were walking into the meeting. Dr. Garrett had not had time to review the MOA, but given this was the first time the department was going to work to vaccinate at this large of scale the MOA was viewed as a necessary formality. Because of the WHO pandemic declaration and the Presidential and Gubernatorial disaster declarations, Megatron did not think that there would be push back from the local school superintendents. There were several counties nationally that were requiring that school districts participate in vaccination clinics.

Immediately after receiving the MOA superintendents began to voice concerns about the document and liability. Carmine Sanchez, the superintendent for District 9, stood up and asked if signing the MOA was required for a district's participation. If that was the case, she would need her attorney to review the document. There was a buzz around the room immediately, with many expressing the same sentiment and questioning what liability would fall on the schools.

Dr. Garrett asked that everyone take the materials back to their lawyers for review. While participation was voluntary, the school districts needed to complete the MOA to participate in the clinics. She needed the forms returned immediately to determine which school districts would be working with the LHD. While it was unclear when the LHD would receive the vaccine, and how much vaccine they would receive, they needed to start planning for the clinics now.

<u>School District Participation</u>

The MOA served to cause a lot of concern within some of the local school districts. There were nine local school councils who elected not to participate in the school based vaccination program. They felt that the MOA made it clear that there were too many legal issues surrounding liability to take into consideration, and did not feel comfortable taking on this level of responsibility. Instead, the children in their district would need to make appointments at the local health department or go to their doctor to receive the vaccination.

The remaining six school districts that participated in the school-based vaccination effort had full support from their local school board as well as their local elected officials. In many cases those participating districts had conducted similar vaccination efforts for other children vaccinations.

The LHD was very short-staffed for this effort, and was in desperate need of volunteers. In the schools where there were school nurses, the nurses were able to call upon colleagues in the community to volunteer to participate in the clinics. However, Megatron was simply too overwhelmed with such a large population to address and did not have the time or resources to put together a large-scale volunteer drive.

Parental Notification and Consent Forms

The participating school districts circulated the letter, an information sheet on the vaccine and parental consent forms to the students' parents prior to the vaccine availability. In some school districts, the information was posted on their website and also sent out in parental newsletters. The vaccination clinics were designed to occur during school hours. The vaccinations were only designated for students who attend the school. Parents and the local community would not be eligible to receive the vaccine at these clinics.

Results

Megatron LHD staff held school-based vaccination clinics were held at schools within the six participating school districts over a three-month period. Approximately 28% of the students enrolled in these schools received the vaccine through a clinic at their school. Data are still being analyzed to understand what the vaccination rate of school-aged children was within the county. Of the six participating school districts, only two had in-house school nurses. According to LHD staff, the schools with school nurses had a higher participation rate than schools that did not have a school nurse. LHD staff expressed that school nurses provided on site reassurance to schools and parents who were nervous about having children vaccinated.

II. Optimus Prime

Background

Optimus Prime is a smaller county within New Transformerland, similar in diversity and geography to Megatron. Optimus Prime has a population of approximately 64,000. Optimus Prime is a county that is comprised of one major township and several unincorporated communities lying outside of the township. The county and elected officials in the county collaborate frequently and tend to have a very good working relationship.

Developing the School Aged Children Vaccination Plan

The Administrator of the Optimus Prime Health District (OPLHD), Dr. Helen Carter, immediately focused on the need to vaccinate school-aged children. Not only was this group selected by the Advisory Committee on Immunization Practices (ACIP) as one of the priority groups to vaccinate, Dr. Carter, like Dr. Garrett, believed that focusing primarily on school-aged children would provide a needed "herd immunity" for Optimus Prime County. OPLHD had a long history

of working with the school districts in their county to provide vaccines to school children through school-based clinics. Dr. Carter then spent the spring and summer of 2009 developing a plan based on the Health District's previous experiences, to deliver H1N1 vaccine to as many of the approximately 17,000 attendees and employees of the county's schools and daycares. school-aged children as possible, as quickly as possible, in the fall of 2009.

Reaching out to the School Districts

Dr. Carter put together a meeting with all of the school superintendants in August to discuss her plans for school-based clinics. The Optimus Prime LHD had very good relationships with the schools in their communities and had been working together on school-based vaccination clinics for years. Because of this history and the need to move expeditiously, Dr. Carter presented the plans for school-based clinics for H1N1 to the schools, and did not specifically ask for permission to proceed with the clinics. She informed the schools that these clinics would operate under the authority of the LHD, and that the liability would ultimately fall on the LHD, and not the schools. The group came together, with all schools on board, and put together a calendar for the clinics.

The LHD informed the schools that they would provide all oversight of the clinics, including of any volunteers, while also providing one LHD nurse for each clinic. The LHD would deliver, set-up and break down all necessary vaccine supplies and maintain all of the vaccination records. In exchange the LHD asked the schools to do the following to conduct the clinics: distribute informational letters and consent forms to parents before school resumed in the fall; identify a space for the clinic; provide tables and chairs for these clinics; collect signed consent forms from students ahead of the clinic; and ensure that children arrive at the clinic at the designated time.

However, as the media kept up their coverage about how "unsafe" the vaccine might be, and as other neighboring school districts raised concerns about potential liability for school-based clinics, four schools came to Dr. Carter with concerns about liability. While Optimus Prime LHD did not require MOAs from the schools for the clinics, the LHD signed MOAs with the four schools to alleviate their concerns.

School District Participation

The Optimus Prime LHD had four full-time nurses available for all H1N1 vaccine efforts, including school-based clinics. The Optimus Prime LHD put out a call for community volunteers to assist with the clinics, and reached out to all of the resources into their community. They received volunteer nursing faculty and students from the local nursing school, and had other community health professionals volunteer. As a result, Optimus Prime was able to hold vaccine clinics with staffing made up entirely of volunteers. Each school was assigned a volunteer "point person" to coordinate the clinics with the community and the LHD.

Optimus Prime also has a number of religious schools in their county, and reached out to those religious leaders to ensure that they were a part of the effort to vaccinate in the schools.

Optimus Prime LHD felt that having these religious leaders actively participate in the clinics was essential to a successful vaccination drive.

Parental Notification and Consent Forms

Optimus Prime has a very diverse community, with over 80 languages spoken throughout the county and 40% of the students in the schools in Optimus Prime being children of foreign-born parents. The county has a policy not to translate materials into other languages, however the LHD and the schools needed consent forms from parents for every child having a vaccine at a school clinic. Optimus Prime LHD felt this was a limitation in vaccinating the children of parents who did not speak English, and so they worked with local groups in different racial and ethnic communities to help those parents who did not speak English understand the consent forms.

Results

Optimus Prime was able to conduct school-based H1N1 vaccination clinics at all 52 schools in their county in one month. As a result, they were able to vaccinate approximately 52% of the school-aged children in their county through these clinics. Similar to Megatron, the schools in Optimus Prime with in-house school nurses had higher vaccination rates. The schools where the Administrators were actively part of engaging the parents and the community also had higher participation rates.

III. Lessons Learned

Both Megatron and Optimus Prime health departments feel that H1N1, and specifically the delivery of vaccinations through school-based clinics, challenged and tested their agencies in ways that they had never been tested before. They both feel that they were successful in their efforts, while also realizing that there is room for improvement in the future. Megatron LHD specifically feels that they could have been more successful if they had only had more staff to help with the efforts. Megatron had not anticipated how much push-back they received from the school districts with participation, and some school districts and elected officials have stated that the liability issue and the subsequent MOA proved the biggest challenge for proceeding with the vaccination clinics.

Optimus Prime LHD feels that they were successful in all of their vaccination clinic efforts, but does cite the language barrier with foreign-born parents as their biggest limitation.

Both LHDs are looking to other county and state models to understand and adopt applicable best practices for school-based vaccination clinics.

Timeline

March 18, 2009 - The World Health Organization (WHO) began to pick Influenza Like Illness (ILI) in Mexico

April 23, 2009 – Mexico reported the first confirmed case of H1N1 to the WHO. The United States reported seven confirmed cases.

April 25, 2009 – WHO recommended that a Public Health Emergency of International Concern (PHEIC) to be declared.

April 25, 2009 – New York High School has 100 students who are sick with influenza like illness.

April 26, 2009 – United States declared a health emergency

April 28, 2009 - Governor issued disaster proclamation

April 30, 2009 – Nearly 300 schools across the country are closed

May 3, 2009 – HHS Secretary Sebelius announces plans are underway to develop a vaccine

May 5, 2009 – CDC issues guidelines for school closures

June 11, 2009 - WHO Director General declares that “the world is now at the start of the 2009 influenza pandemic,” and raised flu alert to Phase 6

September 15, 2009 – Federal Government approved H1N1 vaccine

October 5, 2009 – Limited doses of the vaccine are beginning to be distributed

October 27, 2009 – States began receiving vaccine through McKesson

TEACHER AND TRAINER GUIDE

After reviewing the case study, what functional area do you think is addressed in the study?

- Policy Development

Comparing the two counties, did willingness on behalf of the LHDs to absorb risk on behalf of the school districts haves a large impact on obtaining cooperation from the school districts? How? Was the silo effect at work in Megatron (referring to Legal working on one thing and Policy working on another). What would be an effective way for Megatron to overcome the silo effect?

Did confidence in the approach as well as emergency planning execution play a large role in implementation of the vaccination clinics? What worked for the counties? What didn't work?

Discuss how the Megatron County PIO dealt with the national media assault on confidence in the H1N1 vaccine. What was effective? Could the PIOs have played a larger role in the process? How should the counties utliize them in the future?

What kind of community outreach worked in the counties? Based on what you heard, what was the single most effective community outreach tool? What was a barrier to community outreach and did the counties overcome that barrier with any type of leadership methodology?

What other challenges can you identify that served as a barrier to effective implementation of the school-based clinics?

Based on the case study, should both counties continue to use school-based clinics as a way to fight pandemic influenza? Why or why not? What are the major factors to be considered in effective policy implementation?

References

1. Arkansas Department of Public Health (2009, December 4). Arkansas School-Based Vaccination Clinics. Retrieved from http://www.cidrap.umn.edu/cidrap/

2. Counard, C., Gallagher, L., Rigoni, A., Lockerby, J., Tennes, A., Czerwinski, R., Slankard, M., Letendre, A., Johnson, B., Jones, B., Reisberg, S., Braden, C., Hartford, J., Neirick, B., Codd, D., (2010, March). Pandemic Influenza Response Planning Meeting for Schools. Draft.

3. Hawaii Department of Health (2010, March 2). School Surveillance and Prior Vaccination Clinics Strengthen H1N1 Response. Retrieved from http://www.cidrap.umn.edu/cidrap/

4. Holleman, Joey (2010, February 8). School Vaccination Program Serves Short-and Long-term goals. Retrieved from http://www.thestate.com/2010/02/02/1137493/school-vaccination-program-serves.html

5. Los Angeles County Health Department (2009). A School-Based Influenza Vaccination Pilot Campaign in an Urban Setting: An Analysis of School District Implementation Strategies. Retrieved from http://wwwlapublichealth.org/ip/

6. McNeil, Jr, D. (2010, March 9). Flu Shots in Children Can Help Community. The New York Times. Retrieved from http://www.nytimes.com

7. Reichert TA, Sugaya N, Fedson DS, Glezen WP, Simonsen L, Tashiro M. (2001). The Japanese experience with vaccinating schoolchildren against influenza. New England Journal of Medicine; 344, 889-896.

8. Rhode Island Department of Public Health (2009, November 24). School-based H1N1 Vaccination Clinics at each K-12 School. Retrieved from http://www.cidrap.umn.edu/cidrap/

9. Rhode Island Department of Public Health (2009, November 18). H1N1 Material in Multiple Languages: Basic Information, Special Groups and School Vaccination Clinics. Retrieved from http://www.cidrap.umn.edu/cidrap/

10. Schnirring, L. (2010, January 6) CIDRAP News. Public Health Officials share school-based vaccination strategies. Retrieved from http://www.cidrap.umn.edu/cidrap/

11. South Carolina Department of Health and Environmental Control (2010, January 15). School Vaccination Campaign. Retrieved from http://www.cidrap.umn.edu/cidrap/

12. Virginia State Department of Health (2010, February 26). Collaborations and outreach Via Schools Encourages Parent to Get the Facts. Retrieved from http://www.cidrap.umn.edu/cidrap/