Novel H1N1 Influenza
Delaware Response

April 2009 to March 2010

AFTER ACTION REPORT/IMPROVEMENT PLAN

June 1, 2010

ADMINISTRATIVE HANDLING INSTRUCTIONS

The information gathered in this AAR/IP is classified as a public document and can be distributed as such.

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SECTION 1: EXECUTIVE SUMMARY

Event Overview
This After Action Report/Improvement Plan (AAR/IP) summarizes and critiques the Delaware response to the Novel H1N1 Influenza outbreak in Spring 2009 through Spring 2010. Input was gathered from numerous participants, stakeholders and the public through a series of "hot washes", critiques, surveys and interviews.

Between July 13, 2009 and March 8, 2010, the State of Delaware successfully responded to the outbreak of a Novel H1N1 Influenza within its borders. In accordance with established plans and procedures, the Delaware Division of Public Health (DPH) activated the State Health Operations Center (SHOC); coordinated with key preparedness partners; maintained international, national and regional situational awareness through heightened surveillance and communication; provided timely public information through the DPH Call Center, press briefings and other media avenues; ensured continual supply of antivirals and personal protective equipment; vaccinated all school-aged children with informed consent; conducted six mass vaccination clinics and coordinated with federal agencies to receive resources. During this eight month period, the State of Delaware mitigated the outbreak, changed policies to meet changing conditions, executed the procedural changes made from the lessons learned during the spring 2009 event and implemented a state-wide vaccination program.

This document is a three-part analysis of the Novel H1N1 response. The results reflected in the main body of the document are overarching issues related to the response. Tab A is reflective of the school mass vaccination campaign. Tab B is reflective of the mass clinic vaccination campaign coordinated with the federal response team. The lessons learned about Novel H1N1 in this past season are presented in this report to be acted upon to enhance preparedness and to be memorialized as strengths and best practices.

Major strengths include:
Mass Vaccination

- Mass clinics are an effective way to provide vaccine to the public. Appointments proved to decrease crowds and were especially effective in minimizing wait times for risk populations such as small children, frail/elderly, mentally disabled, very ill, etc.
- 67,202 school-aged children were vaccinated through the School Vaccination Campaign.
- 5,872 people were vaccinated through the Neighborhood Emergency Help Centers (NEHC).
- Hospitals, primary care providers, emergency medical community staff, and pharmacies played a major role in vaccination the community and essential workers.

Command, Control and Coordination

- SHOC leads held weekly allocation meetings that were helpful in ensuring cross-functional communication, coordination and strong situational awareness.
- The federal Public Readiness and Emergency Preparedness (PREP) Act was critical in activating supplemental staff. The ability to supplement staff to provide vaccinations;

media, call center and laboratory support is a critical element in a successful response and was done successfully with the activation of the Delaware Medical Reserve Corps, the Disaster Medical Assistance Team, and by employing contractors in multiple roles. Prearranged contracts and pre-season training allowed for rapid response. Routine public health services were able to be maintained.

- Without a state of emergency, immediate access to the DAG and the DPH Medical Director and the Public Readiness and Emergency Preparedness (PREP) Act were critical in activating volunteers, establishing Standing Medical Orders and quickly addressing liability concerns, such as use of school property, vulnerability of medical licenses/malpractice insurance premium hikes, to be able to vaccinate almost 400,000 (about half of the state's population) over an eight month period.
- The concern that massive school vaccination campaign consumed much of the early meager amounts of vaccine meant for high risk populations was tempered by fact that it proved good use of LAIV which was not useful for much of targeted population (i.e. pregnant women).

Medical Supplies and Medical Management:

- The In-State Stockpile of Personal Protective Equipment, lab kits, and antivirals distributed from two warehouse locations (Dover, Wilmington) allowed for a quick state-wide response prior to receiving Strategic National Stockpile assistance. Flexibility was required to adjust for changing priorities, plans and multiple new locations without compromising on 100% inventory, chain of custody or monitoring issues. Fleet Services, SHS/NHS Logistics and PHPS Logistics successfully coordinated delivery support for the first time.

Emergency Public Information and Warning

- Call Center, presentations, press releases, Delaware Health Advisory Network communications and weekly DPH calls to the hospital network quells fears, manages rumors, communicates priorities and increases the immunization rate. Multiple venues need to be used to target not only medical providers and the media but the greater community. CDs and multiple Spanish documents were generated as part of the state outreach. Consistency of the message between the CDC and neighboring states is critical especially regarding vaccine allocation and high risk groups. Future communications could consider YouTube and Twitter.

Areas for improvement include:

Mass Vaccination

- Earlier use of local pharmacies in the state once vaccine allocation was lifted to provide vaccinations would streamline delivery of the vaccine.

Community Engagement

- Engage the Public Health and Medical Ethics Group and the general medical community in planning, decision making, and communications earlier in the event.

- Standardize communication streams to ensure most current message about vaccine availability, high priority groups, changing criteria is disseminated quickly to all medical personnel and to the public.
- Acquire an immunization reporting system to allow for easier communications regarding vaccine administered.

Command, Control and Coordination

- Software tools enhancing the tracking of immunization reporting, managing supply inventory, tracking laboratory results and Call Center activity improve the quality of the epidemiological data and situational awareness. Further investment is needed to capture real-time vaccination activity, vaccine/supply inventory, scheduling software to reduce the administrative burden during the event, to allow cross-functionality visibility throughout the event and to expedite epidemiological reporting. Conversely, Web-Based Emergency Operations Center (WebEOC) software did not provide the link to other states or the CDC network and was more cumbersome to use than blackberries and a shared drive though email. Volume needs to be better managed.

- The extended length of this event and the associated support activities strained internal and volunteer resources. Other priorities need to be tabled to assure flawless execution of critical public health services. Resources need to be staggered to minimize "burn-out". Employees covered by federal grants need to be available to support the event. Flexibility in job assignments is required to meet the changing needs of the event.

- The detailed learnings from each area need to be captured and shared across the state to establish state-wide "best practices" for future events as there was some regional execution inconsistencies. Timely action against the improvement opportunities defined during the spring 2009 event contributed heavily to the success of the fall event.

- Develop alternative funding and execution scenarios if federal monies are unavailable. Pre-arrange support and contractual agreements for immediate execution when needed.

Overall, this event was successful in protecting the public from the Novel H1N1 flu outbreak. The spring event identified improvements needed before the next flu season, and timely corrective actions allowed for a smooth SHOC response in the fall event. Noteworthy is the implementation of a highly successful statewide school vaccination program for the first time.

SECTION 2: EVENT DETAILS

Event Overview
Prior to and subsequent to closure of the spring Novel H1N1 event on May 12, 2009, the items identified in the spring event's improvement plan were being addressed in preparation for the fall flu season. Additional guidance continued to be issued by the CDC and Delaware Health Alert Network (DHAN) from May 12, 2009 through February 4, 2010.

On August 20, 2009, weekly Novel H1N1 Working Group meetings were established. DPH's Office of Health and Risk Communications executed 63 Novel H1N1 influenza training sessions between September 1, 2009 through February 24, 2010, reaching over 2,623 people, as well as distributing an information resource CD containing over 60 English and Spanish documents for distribution to schools and health care providers, and publishing seven issues of *Together in Fighting Flu* newsletter. The DPH Director began weekly media briefings on October 1, 2009.

On September 30, 2009, the CDC indicated that the makers of Tamiflu® acknowledged limited commercial and stockpiled supplies of the oral suspension. On October 7, 2009, the DPH Director indicated that there was a shortage of mercury-free Novel H1N1 influenza vaccine for children six months to eight years of age and pregnant women. Alternatives to Tamiflu® for pediatric patients were communicated on October 13, 2009. Distribution of vaccine supply was temporarily narrowed to the target high risk population on October 21, 2009. Prioritization of vaccine distribution required frequent review during the temporary shortage. The first Novel H1N1 death occurred in Delaware on October 22, 2009.

SHOC Level II was declared on October 27, 2009. The school vaccination program began on November 2, 2009, and ran until March 8, 2010. Six National Disaster Medical System (NDMS) clinics were held, three between November 20 and November 22, 2009 and between December 15 and December 17, 2009. The DPH Call Center was activated from November 4 to December 15, 2009.

The number of confirmed cases for Delaware as of March 16, 2010 was 1,973. The number of deaths in Delaware was six. The number of hospitalizations due to Novel H1N1 was 68.

Non-safety related quality vaccine problems were experienced by Sanofi and Medimmune and were reported on December16, 2009, December 23, 2009, February 1, 2010 and February 4, 2010. Local hospitals and providers experienced shortages of N95 and surgical masks, which were released to them from the DPH stockpile.

SHOC Level II adjusted down to SHOC Level I on January 12, 2010.

For a complete timeline of events, please see Table 1: Event Timeline.

Participating Organizations

Federal

- U.S. Department of Health and Human Services
    - Regional Office
    - Centers for Disease Control and Prevention
    - Office of Preparedness and Emergency Operations
    - The National Disaster Medical System

State

- Governor's Office
- Department of Education
    - Appoquinimink School District
    - Brandywine School District
    - Caesar Rodney School District
    - Cape Henlopen School District
    - Capital School District
    - Charter Schools
    - Christiana School District
    - Colonial School District
    - Delmar School District
    - Indian River School District
    - Lake Forest School District
    - Laurel School District
    - Milford School District
    - New Castle County Votech School District
    - Polytech School District
    - Red Clay School District
    - Seaford School District
    - Smyrna School District
    - Sussex Technical School District
    - Woodbridge School District
- Department of Services for Children, Youth, and their Families
- Department of Safety and Homeland Security
    - Office of the Secretary
    - Delaware Emergency Management Agency
    - Delaware State Police
    - Delaware Information and Analysis Center
- Department of Health and Social Services
    - Office of the Secretary
    - Disaster Coordinators
    - Department of Health and Social Services Nurses
    - Division of Medicaid and Medical Assistance
    - Division of Public Health
        - Director's Office

- Southern Health Services
- Northern Health Services
- Public Health Preparedness Section
- Delaware Medical Reserve Corps
- Office of Health and Risk Communications
- Immunization Program
- Health Promotion and Disease Prevention
- Laboratory

Local
- Emergency Medical Services
- County and City Emergency Management Agencies

Non-Governmental
- Private Schools
- Independent Schools
- Maxim Healthcare, Inc.
- Delaware Healthcare Association
- A.I. DuPont Hospital for Children
- Christiana Care Health Systems
- Bay Health Medical Center
- Beebe Medical Center
- First State School at Wilmington Hospital
- Nanticoke Health Services
- St. Francis Hospital
- Universities and Colleges
- Federally Qualified Health Centers
- Medical Society of Delaware
- Delaware Pharmacies
- Private Medical Providers
- Private Businesses

Number of Participants
The event response included 1009 personnel from a full spectrum of disciplines within the Division of Public Health. All were incorporated into the SHOC Incident Command System. The number of stakeholders participating in the event cannot be determined. Many people throughout the state had a role and responsibility in this event.

DHS Target Capabilities
Capability 1: Communications
Capability 2: Epidemiological Surveillance and Investigation
Capability 3: Laboratory Testing
Capability 4: Emergency Operations Center Management
Capability 5: Emergency Public Information and Warning

Capability 6: Medical Surge
Capability 7: Medical Supplies Management and Distribution
Capability 8: Mass Prophylaxis
Capability 9: Responder Safety and Health

SECTION 3: EVENT SUMMARY

Overarching Event Purpose and Goals
The overarching purpose of this event was to respond to, recover from and mitigate the effects of the Novel H1N1 Influenza virus.

Goals
- Provide immunizations.
- Provide prophylaxis/treatment to individuals exposed to the Novel H1N1 virus.
- Assist CDC in identifying the spread of the Novel H1N1 virus.
- Provide accurate and timely information and guidance to our preparedness partners and the general public.
- Deploy medical supplies and assets as appropriate.

Event Objectives
- Execute policies developed during and after the spring 2009 Novel H1N1 event.
- Establish and staff the State Health Operations Center (SHOC) to maintain SHOC Operations, as appropriate.
- Vaccinate all school children in public, private and charter schools as requested through informed consent.
- Activate mass vaccination clinics.
- Activate Logistics to receive and secure the additional Strategic National Stockpile (SNS) assets prior to distribution and demonstrate performance.
- Activate Division of Public Health Laboratory (DPHL) to receive and process Novel H1N1 samples.
- Maintain safety and health of public and workforce.
- Develop all required incident documentation during SHOC operations.
- Provide timely information to the public, media, healthcare community, first responders, and other agencies and organizations statewide through the use of the DPH website, the DHAN, media outlets, and press briefings.
- Activate Call Center to facilitate public and preparedness partner inquiries.

DHS Target Capabilities

Capability 1: Communications
- Incident Management Software System
- Communications with the Director's Office
- Communications with Physician Community
- Communications with the Hospital Community
- Physician Pre-registration and Enrollment Communications

Capability 2: Epidemiological Surveillance and Investigation
- Changes in Flu Case Definitions
- Lack of Data Granularity and Delay in Analysis

Capability 3: Laboratory Testing

- Number of Laboratory Tests
- Changes in Laboratory Testing Practices

Capability 4: Emergency Operations Center Management

- SHOC Activation
- Incident Command: Legal
- Incident Command: Lack of Involvement of Ethics Group in Allocation Decisions
- Finance and Administration Section: Novel H1N1 Funding
- Finance and Administration Section: Fiscal Support
- Planning Section: Medical Protocols, Standing Orders, and Medical Oversight
- Operations Section: Further need to Engage Partners

Capability 5: Emergency Public Information and Warning

- Outreach
- Call Center – Scheduling Software
- Call Center Staffing
- Changing Information from CDC and Resultant Vaccine Distribution
- Expand DHAN
- Flu Locator

Capability 6: Medical Surge

- Implementation of Novel H1N1 Triage Protocols in Hospital Emergency Departments
- Utilization of Trailer to Triage
- Hospital Visitation Policy
- Student Nurses Working in Hospital Setting

Capability 7: Medical Supplies Management and Distribution

- Logistics Statistics
- DPH Warehouse as a Receiving, Staging, and Storing Facility
- Antiviral Distribution to Hospitals
- Vaccine Allocation and Ordering
- Vaccine Allocation and Distribution to Hospitals
- Vaccine Packaging
- Duplication of Inventory Records due to Concern about Inventory Resource Management System (IRMS) Reliability
- Inventory/Vaccine Movement no Visible to Immunization
- Reporting Requirements
- Remaining or Expired Vaccine

Capability 8: Mass Prophylaxis

- Mass Prophylaxis Statistics

- Emergency Medical Services Vaccination
- Hospital Internal Vaccination: Types of Vaccines
- Hospital Internal Vaccination: Patient Forms

Capability 9: Responder Safety and Health

- Insufficient Supply of N95 and Surgical Masks
- Hospital Internal Vaccination: Types of Personal Protective Equipment
- Timeliness of Provider Vaccinations

Table 1: Event Timeline

DATE (As of 3/16/2010)	E V E N T
04/04/2009	Mexican Ministry of Health (MOH) reported a significant increase in influenza cases during March and April in Mexico.
	DPH Lab upgraded to the newly approved Food and Drug Administration (FDA) molecular diagnostic method for seasonal influenza testing.
04/24/2009	Delaware DPH received information that Novel H1N1 was discovered in the United States.
04/25/2009	SHOC activated at Level 1.
04/26/2009	DHAN #172: Risk of Swine Flu Associated with Travel to Affected Areas.
	National Public Health Emergency declared for the United States.
	Centers for Disease Control and Prevention (CDC) Division of Strategic National Stockpile (DSNS) contacted Preparedness – CDC to release 25% of Delaware's SNS pan flu assets - antivirals, Personal Protective Equipment (PPE).
04/27/2009	DHAN #173: Delaware Health Update Public Health Laboratory Testing for Swine Flu.
	SHOC activated at Level 2.
	University of Delaware (UD) experiences an unexpected increase in the number of students seeking care for a respiratory illness.
	Statewide briefing through bridge call begins.
	Enhanced surveillance initiated.
	DHAN #174: Swine Influenza A (Novel H1N1) Update.
	Public Affairs Command Group issues first of 19 Novel H1N1 influenza (Swine Flu) press releases between April 27 and May 13. The group also posts to the Delaware Division of Public Health website its first of nine Novel H1N1 influenza (Swine Flu) fact sheets developed in response to the emerging crisis.
04/28/2009	4 specimens submitted to DPH Lab reported out as untypeable; sent to CDC.
	Web pages re-organized to highlight flu materials.
	Joint Information Center (JIC) at UD.
	Public Affairs Command Group conducts first of eight daily media phone briefings.
04/29/2009	SHOC activated at Level 3.
	UD NEHC opened at 10:00 a.m. staffed by Northern Health Services (NHS).
	DPH Call Center activated in Dover.
	The World Health Organization (WHO) increased alert level of Novel H1N1 to Phase 5 (human-to-human spread of the virus in two or more countries in one WHO region).

04/30/2009	CDC Invited to Delaware to assist in UD investigation.
	First cases of Delaware Novel H1N1 confirmed (all four that were submitted to the DPH Lab on 4/28).
	Press Conference: Governor Markell gives details of Delaware's response to event.
05/01/2009	UD NEHC closed.
	CDC Epidemiological Team arrived.
	CDC DSNS assets received at Logistics warehouse.
	Tamiflu® delivered to First State School and Christiana Care Health Systems (CCHS).
	CDC recommended schools should dismiss students where H1N1 outbreaks are found.
05/02/2009	DHAN #175: Guidance for the Medical Community in Delaware Regarding Diagnosis and Treatment of Swine Influenza.
	DHAN #176: Tamiflu®.
05/04/2009	Baltz School closes due to student with Novel H1N1.
	DPH Laboratory was the first state lab to be validated and certified by CDC to conduct analysis on Novel H1N1 samples.
	NHS Advanced Practice Nurse deployed to SHOC – possible SHOC staff with ILI symptoms – Tamiflu delivered to SHOC.
05/05/2009	DHAN #177: A:Novel H1N1 Swine-Like Influenza Lab Courier Standard Operating Protocols.
05/06/2009	CDC retracted school dismissal guidance.
05/07/2009	DHAN #178: A:H1N1 Swine-Like Influenza Lab Courier Standard Operating Protocols Updated May 7, 2009.
	DHAN #179: New And Updated Interim CDC Guidance Documents On Novel H1N1 Flu.
05/08/2009	DHAN #180: New And Updated Interim CDC Guidance Documents on Novel H1N1 Flu CDC 289.
	DHAN # 181: DPH Guidance For The Medical Community In Delaware Regarding Diagnosis And Treatment Of Swine Influenza: Updated As Of May 8, 2009.
05/12/2009	DHAN#182: New And Updated Interim CDC Guidance And Information On Novel H1N1 Flu.
	DPH Lab certified for confirmatory testing using the CDC Swine Influenza Virus Reverse Transcription-Polymerase Chain Reaction (RT-PCR) method.
	SHOC downgraded to Level 1.
	DPH Call Center in Dover closed at 4:30 p.m.
05/15//2009	DHAN# 183: Updated Guidance: Patient Testing For Novel Influenza A (H1N1) Virus As Of May 15, 2009.
05/21/2009	DHAN #184: Novel Influenza H1N1: Guidance For School And Child Care Programs.
05/28/2009	DHAN# 185: New And Updated Guidance Related To Novel H1N1 Flu.
06/11/2009	The World Health Organization (WHO) increased alert level of Novel H1N1 to Phase 6 (human-to-human

	spread of the virus in two or more countries in more than one WHO region; threat of pandemic).
07/13/2009	DHAN# 190: CDC Reports Three Reports Of Oseltamivir Resistant Novel Influenza A (H1N1) Viruses.
07/21/2009	DPH's Office of Health and Risk Communications (OHRC) began coordinating and scheduling Novel H1N1 influenza training in response to constituent requests. The training began Sept. 1, 2009. Between Sept. 1, 2009 and Feb. 24, 2010, DPH completed 63 presentations to community groups and worksites, reaching over 2,623 people.
08/07/2009	DHAN #191: CDC Updates Recommendations for the Amount of Time Persons with Influenza-Like Illness Should Be Away From Others.
	DHAN #192: CDC Evaluates Rapid Influenza Diagnostic Tests for Novel Influenza A (H1N1) Viruses.
08/11/2009	DPH's Office of Health and Risk Communication began making arrangements for paid print, TV, radio and Internet advertisements to commence September 1. The ads encourage both seasonal and Novel H1N1 influenza vaccination.
08/20/2009	Weekly Novel H1N1 Working Group meetings established.
08/28/2009	DHAN #193: Pre-Registration for Providers Interested in Administering the Novel H1N1 Influenza Vaccine.
09/01/2009	Press Release: Pre-Registration Needed for Providers Administering Novel H1N1 Flu Vaccine.
	DPH's Office of Health and Risk Communication issues its first e-card to staff, other State of Delaware public information officers, and health partners. OHRC issued 10 e-cards through 12/14/2009.
09/02/2009	Press Conference: Governor, Department of Education (DOE), Department of Health and Social Services (DHSS)/DPH about preventing and preparing for the flu season.
09/09/2009	DPH's Office of Health and Risk Communication issues its first issue of *Together in Fighting Flu*, a newsletter e-mailed to staff and health partners. Seven issues are issued through 12/3/2009.
09/23/2009	Novel H1N1 Vaccination Distribution Plan meeting with DHSS Secretary Landgraf.
09/24/2009	DOE presentation to Superintendents of all Districts.
09/25/2009	DHAN #195: Influenza Testing.
09/28/2009	DHAN #196: Updated Pediatric Antiviral Dosing Syringe & Compounding Information for 2009 Novel H1N1 and Seasonal Flu.
09/29/2009	DHAN #197: Influenza Activity in Delaware.
09/30/2009	CDC sent a message to the states that the makers of Tamiflu® acknowledged limited commercial and stockpiled supplies of the oral suspension.
10/01/2009	DPH Director, Dr. Rattay, begins weekly media briefings.
	DPH's Office of Health and Risk Communication creates an information resource CD containing over 60 documents, in English and Spanish, for distribution to schools and health care.
10/07/2009	Dr. Rattay signs 'Declaration of Shortage' of mercury-free Novel H1N1 influenza vaccine for children 6 months to 8 years of age and pregnant women.

	Press Release: Major Pharmacy chains in Delaware have begun to receive Novel H1N1 vaccine under an agreement with the federal government.
10/08/2009	DHAN #198: Exemption to Mercury Law and Prioritization of Mercury-Free Novel H1N1 Vaccine for the 2009-10 Flu Season.
	DPH's Office of Health and Risk Communication re-establishes regular media telephone briefings. Between 10/8/09 and 12/10/09, nine are held weekly with the exception of Thanksgiving week.
10/9/2009	DPH Media Director reports that DPH Director Dr. Karyl Rattay speaks at a press conference about Tel-Med flu messages. The event is convened by Delaware Academy of Medicine.
10/13/2009	DHAN #199: Alternatives to Tamiflu® Oral Suspension for Pediatric Patients.
	DHAN #200: Vaccine Adverse Events Reporting System (VAERS).
10/16/2009	DPH released 738 courses of its limited in-state stockpile to participating pharmacies and hospitals throughout the state.
	DPH's Office of Health and Risk Communication (OHRC) works with the Google Health Team to populate the new Google Flu Locator with current Delaware information. OHRC reviews the website daily and updates as needed.
10/19/2009	DHAN #201: Recommendations for Early Empiric Antiviral Treatment in Persons with Suspected Influenza Who are at Increased Risk of Developing Severe Disease.
	N95 masks delivered to Bayhealth – Kent General due to shortage of N-95 masks in supply chain.
10/21/2009	DHAN #202: Influenza Vaccine Supply.
	DPH has temporarily narrowed the target population for Novel H1N1 vaccine to those most at risk.
10/22/2009	Press Release & DHAN #203: First Delaware Novel H1N1 – Related Death.
	DHAN #204: DPH Testing.
10/23/2009	DHAN #205: Implementation of the Recently Issued CDC Guidance on Healthcare Infection Control Measures for Novel H1N1 Pertaining to Respiratory Protection, Specifically, the use of N95 Respirators.
10/24/2009	During the week ending 10/24/09, DPH Lab tested 555 specimens (all time weekly record) of which 445 were positive for nH1N1 influenza. This was 81% positive rate for nH1N1 flu for the week.
10/25/2009	N-95 masks picked up by A.I. DuPont due to shortage of N-95 mask in supply chain.
10/27/2009	DHAN # 206: Peramivir Emergency Use Authorization for Treatment of 2009 Novel H1N1 Influenza.
	SHOC LEVEL II DECLARED AT 1330 (Localized Event/Potential Statewide Impact).
11/02/2009	School Vaccination Campaign Begins.
11/04/2009	DHAN #207: Revision of Vaccination Priorities for 2009 Novel H1N1.
	DPH Call Center Activated.
11/09/2009	DHAN #208: Key Issues for Clinicians Concerning Antiviral Treatments for 2009 Novel H1N1.
11/11/2009	Ethics Committee and Medical Professionals meet to discuss vaccination strategy.
	Hospitals Requesting N95 masks as their supplies deplete.

11/13/2009	DHAN #209: Referring Patients to the Division of Public Health for 2009 Novel H1N1 Vaccinations.
11/20/2009	DHAN #210: Pneumococcal Vaccination Recommended to Help Prevent Secondary Infections.
	NDMS Clinic – Delaware Technical Community College (DTCC)/Terry Campus, Dover, 1:00 - 8:00 p.m.
	DPH's Office of Health and Risk Communication staffs a press conference at the NDMS Clinic that announces the nation's first Joint Vaccination Novel H1N1 flu clinic.
11/21/2009	NDMS Clinic – DTCC/Stanton Campus, New Castle, 9:00 a.m. to 4:00 p.m.
11/22/2009	NDMS Clinic – DTCC/Owens Campus, Georgetown, 9:00 a.m. to 4:00 p.m.
11/24/2009	DPH creates a DVD of a Novel H1N1 influenza trainer and offers it to constituent groups at no cost.
12/01/2009	Meeting with Hospitals and Delaware Healthcare Association – to discuss current Novel H1N1 situation, vaccine distribution strategies.
12/11/2009	DHAN #211: Vaccination Priorities for 2009 Novel H1N1.
	DHAN #212: Antiviral Recommendations.
	DPH's Office of Health and Risk Communication is asked to forward gubernatorial talking points for a media event that announces a 'Sid the Science Kid' national public service announcement.
12/15/2009	NDMS Clinic – DTCC/Terry Campus, Dover, 1:00 – 8:00 p.m.
	DPH's Call Center closed.
12/16/2009	NDMS Clinic – DTCC/Owens Campus, Georgetown, 1:00 – 8:00 p.m.
	DHAN #213: Non-Safety Related Voluntary Recall/Certain Lots/Sanofi Pasteur Novel H1N1 Pediatric Vaccine in Pre-filled Syringes.
12/17/2009	NDMS Clinic – DTCC/Stanton Campus, New Castle, 1:00 – 8:00 p.m.
12/23/2009	DHAN #214: Medimmune Monovalent 2009 (Novel H1N1) Influenza Nasal Spray Vaccine – Shortened Shelf Life of Certain Lots.
12/28/2009	DHAN # 215: Planned 2009 Novel H1N1 Vaccine Target Group Expansion and Availability of Novel H1N1 Vaccination in Pharmacies.
12/31/2009	DPH announces that health care providers can now vaccinate any Delawareans over 6 months of age effective 12/31/09 due to increase in Novel H1N1 vaccine supply.
01/04/2010	DPH launched its second wave of Novel H1N1 influenza outreach and education work. Products are refocused to encourage the unvaccinated public to be vaccinated and not be complacent.
01/08/2010	DHAN #216: Novel H1N1 Vaccination Target Group Expansion Reminder and Opportunity to Order Additional Vaccine.
01/07/2010	Press Release - Major pharmacy chains in Delaware have begun to receive Novel H1N1 vaccine under an agreement with the federal government.
01/12/2010	SHOC LEVEL II down to SHOC LEVEL I
01/14/2010	During an advertised media event, DPH Director Dr. Karyl Rattay administers the Novel H1N1 influenza vaccine to Lt. Governor Denn and Delaware Health and Social Services Secretary Rita Landgraf.

01/19/2010	Public School Vaccination Campaign completed.
02/01/2010	DHAN #217: Non-Safety Related Voluntary Recall of Unused Doses From Certain Lots of Sanofi Pasteur Novel H1N1 Vaccine in Pre-filled Syringes.
02/04/2010	DHAN #218: Sanofi Pasteur Monovalent 2009 (Novel H1N1) Influenza Vaccine in Pre-filled Syringes – Shortened Shelf Life in Certain Lots.
03/08/2010	School Vaccination Campaign Completed.

SECTION 4: ANALYSIS OF CAPABILITIES

The U.S. Department of Homeland Security provides target capabilities of which public health must prove competency as noted in Public Health Preparedness Section's two main funding sources: the Hospital Preparedness Program and the Public Health Preparedness Cooperative Agreements. This section reviews the performance related to each capability during the event. Each capability is followed by related strengths or areas for improvement, which include issues, analysis, and recommendations.

Capability 1: Communications

Capability Summary: Communications is the fundamental capability within disciplines and jurisdictions that practitioners need to perform the most routine and basic elements of their job functions. Agencies must be operable, meaning they must have sufficient communications technology to meet their everyday internal and emergency communication requirements before they place value on being interoperable, i.e., able to work with other agencies. Communications interoperability is the ability of public safety agencies (police, fire, Emergency Medical Services (EMS)) and service agencies (public works, transportation, hospitals, etc.) to talk within and across agencies and jurisdictions via radio and associated communications systems, exchanging voice, data and/or video with one another on demand, in real time, when needed, and when authorized. It is essential that public safety has the intra-agency operability it needs, and that it builds its systems toward interoperability.

Issue: Incident Management Software System

Analysis:
The Incident Management Software System restricted access to SHOC staff hampering its use. It was also less useful when not in the SHOC and persons relied more on blackberries and shared computer drives to maintain situational awareness and tasks. DPH did not have access to the CDC WebEOC.

Recommendations:
1. Review permissions of SHOC staff to WebEOC and consider lifting restrictions.
2. Test system in upcoming drills/exercises.
3. Allow access to partners (hospitals, HHS, etc.)

Issue: Communications with the Director's Office

Analysis:
Operational communication with the hospitals was very good. If hospitals had questions they were able to reach SHOC Operations at all hours. Hospitals expressed appreciation of DPH Director being on calls with the hospitals groups and requested increased communications from the Director's office. Conference calls should start prior to vaccine distribution.

Recommendation:
1. Recommend that DPH Director/designee participate in all hospital calls, if available.

Issue: Communications with Physician Community

Analysis:
Joint DPH and Medical Society of Delaware (MSD) communication to Delaware physicians is a very effective mode for crisis management. Physicians are more likely to use professional channels for getting technical information during a crisis.

During Novel H1N1, physicians for the most part did not see distribution of vaccine as a DPH issue, but a federal government issue. Physicians look to public health for the determination of the appropriate priority groups for treatment and prophylaxis, but want flexibility in reevaluating priority groups that reflect the available data in Delaware during the progression of the crisis. Doctors need to have direct communication from a credible source(s) and the majority of doctors would probably look to the DPH and the MSD for that leadership. The development of crisis standards of care is very important and should be developed and led by the DPH with a focus on resource allocation and the triaging of patients.

The declaration of an emergency does not appear to lead to any behavior change on how physicians will treat patients during a crisis.

Recommendations:
1. Continue with the development of the Vaccine Technical Advisory Committee, which allows planning and input on topics related to infectious disease crises and significant issues that can affect large numbers of Delawareans.
2. Development of Crisis Standards of Care led by DPH through Public Health Preparedness and the Office of Emergency Medical Services (OEMS).
3. Reevaluate the processes used to communicate to physicians led by OHRC with input from MSD.
4. Consider issuing a letter to the editor from the President of the MSD and DPH on importance of working together and lack of input on the MSD survey (and results) from doctors on the things most affecting their practices during the Novel H1N1 pandemic.

Issue: Communications with the Hospital Community

Analysis:
Hospitals wanted more information and literature about the vaccine, which should include more studies and statistical data and the pro and cons of nasal and injectable vaccine. This information would assist the hospitals with providing vaccine to their staff and patients.

Hospitals also communicated that priority groups varied from state to state in the tri-state area causing problems for their hospitals with individuals seeking vaccine from Delaware. In Maryland, Wicomico County was offering clinics opened to the public and Delaware was not open to the public at that time.

Recommendations:
1. CDC and the WHO should have provided better communications to the medical community in this respect so that they were better able to communicate their patients.
2. Provide summaries of regional calls to states to distribute to their hospitals.

Issue: Communications with the Disabilities Community

Analysis:
Effort was made to include at-risk populations in the vaccination campaign. A survey was conducted after the campaign to determine successes and improvements for future responses.

Twenty-three persons representing various organizations responded to the anonymous online survey. Their comments are summarized below:

- Concern regarding the vaccine, the use of Thimerosal, and the media coverage regarding the Novel H1N1 influenza virus.
- Sought out additional information if concerned about the vaccine, consulting a variety of sources for more information, and seemed to value the CDC website and trusted persons, such as physicians and clergy, the most.
- Placed roughly the same value on the Novel H1N1 vaccine as they did on the seasonal flu vaccine. The majority of respondents do not intend to receive a vaccination in the fall.
- Sufficient accommodations were made for their needs in the vaccination efforts, but just over half said that their needs were not met in these efforts. Due to lack of explanation, information is not available to distinguish reasons for these results.
- Amount of attention placed on the vaccination efforts was appropriate. A minority said that the vaccination efforts made them think of the Division of Public Health (DPH) in a more positive or negative way, but the majority said it did not change the way they thought of DPH.
- The best practices of these vaccination efforts included: the inclusive nature of the school vaccination program, providing free shots (at Walgreens), prominent advertising, and the fact that the vaccines were triaged based on vulnerability.
- Items that needed improvement for future vaccination efforts included: quicker production of vaccine, further testing for vaccine safety and efficacy, not using 'scare tactics' in the media, and available information on risks and benefits of the vaccine.

Recommendation:
1. None

Issue: Physician pre-registration and enrollment communications

Analysis:
Physicians were confused about pre-registration and enrollment to receive vaccine. Pre-registration was meant to be a survey to assess needs followed by actual registration to place orders for vaccine. Providers were to return the signed agreement packages. Some did not return the agreement packages. There was not enough staff or time to call all physicians and follow-up accordingly.

Recommendation:
1. Collaborate with MSD to improve communications process.

Capability 2: Epidemiological Surveillance and Investigation

Capability Summary: The Epidemiological Surveillance and Investigation capability is the capacity to rapidly conduct epidemiological investigations. It includes exposure and disease (both deliberately released and naturally occurring) detection, rapid implementation of active surveillance, maintenance of ongoing surveillance activities, epidemiological investigation, analysis and communication with the public and providers about case definitions, disease risk and mitigation, and recommendation for the implementation of control measures.

Issue: Changes in Flu Case Definitions

Analysis:
Inconsistency of compliance with CDC's case definitions can skew data. However, the definition of "wide spread" for a state of Delaware's size can be unique.

Recommendations:
1. Tailor CDC's definition of wide spread to address the uniqueness of Delaware's size.
2. Reemphasize and provide communications regarding CDC/tailored flu definitions prior to the start of the season.

Issue: Lack of data granularity and delay in analysis

Analysis:
More in-depth analysis of data could not be completed due to lack of granularity of the data collected. It would be helpful to be able to determine the percentage of people in high risk groups that were vaccinated, such as the number of children under age nine who received the first dose and subsequently the second dose. Consideration should be made in regards to pharmacy data that should be collected, e.g. sale of thermometers that could be tied to morbidity markers, etc. Analysis of immunization reports have been delayed until after the event.

Recommendations:
1. Modify data collection forms to allow for additional granularity of data.
2. Look at North Carolina and other states' weekly Epidemiological (EPI) reports to determine what else might be appropriate to track.

Capability 3: Laboratory Testing

Capability Summary: DPHL testing capability is the ongoing surveillance, rapid detection, confirmatory testing, data reporting, investigative support and laboratory networking to address potential exposure or actual exposure to all hazards which include chemical, radiological, and biological agents in all matrices including clinical specimens, food and environmental samples, (e.g., water, air, soil). Such all-hazard threats include those deliberately released with criminal intent, as well as those that may be present as a result of unintentional or natural occurrences.

Issue: Number of Laboratory Tests

Analysis:
Over 5000 tests were completed; testing went extremely well. Pre-purchase of the test kits was valuable.

Recommendation:
1. None

Issue: Changes in Laboratory Testing Practices

Analysis:
Testing practices were changed during this timeframe causing confusion and possible skewing of data. Paperwork was not filled out properly and the Lab rejected specimens if this was the case.

Recommendations:
1. Re-emphasize and provide communications regarding testing guidelines prior to the start of the season. Ensure clarity about who is and is not to be tested per the CDC guidelines.
2. Recommend the Lab have authority to reject specimens if paperwork is not filled out properly.
3. Ensure testing regimen remains the same throughout the season.
4. Separate surveillance from reference testing.

Capability 4: Emergency Operations Center Management

Capability Summary: Emergency Operations Center (EOC) Management has the capability to provide multi-agency coordination (MAC) for incident management by activating and operating an EOC for pre-planned or no-notice events. EOC management includes EOC activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts among neighboring governments at each level and among local, regional, State, and Federal EOCs; coordination of public information and warning; and maintenance of the information and communication response and recovery activities. Similar entities may include the National (or Regional) Response Coordination Center (NRCC or RRCC), Joint Field Offices (JFO), National Operating Center (NOC), Joint Operations Center (JOC), Multi-Agency Coordination Center (MACC), Initial Operating Facility (IOF), etc.

Issue: SHOC Activation

Analysis:
Sustained maintenance of SHOC Level II resulted in overtaxing some key personnel especially in the areas of immunization and risk communications. It was not always clear how best to prioritize workload, which tasks can be temporarily suspended, how to best coordinate sharing of resources across functional groups; decision making was not always consistent between groups.

Recommendations:
1. Include sustained maintenance of a given SHOC level as a justification to move to the next SHOC

level, or define tasks that can be temporarily suspended.
2. Finalize Continuity of Operations Plan (COOP) as soon as possible to determine what can be let go or what alternative testing could be used.
3. Reassign/realign individuals or responsibilities based upon the needs of the incident. Employees to raise any conflicts to their supervisors for timely resolution.
4. Communicate better with supervisors on what employee's SHOC role is and expectations and let individuals know that they could be assigned a different role than what their primary SHOC role is. Discuss this need for flexibility in task books and during training.

Issue: Incident Command: Legal

Analysis: The federal PREP Act was critical to successful implementation of the Emergency Operations Plan (EOP). Without the PREP Act liability protections, it may have been operationally necessary to have declared a State of Emergency. Several drafts of State of Emergency were written, but never used. Issues surfaced since Delaware was not under a declared state of emergency: the pharmacy and Emergency Medical Service (EMS) community would not vaccinate or work around the issues because of liability concerns; schools were very worried about liability; volunteers could not be used for seasonal flu shots, just Novel H1N1; and some funds were not as easily available resulting in delayed contractor agreements. Within the emergency management community, it was perceived as showing a lack of governmental commitment. Access to the DAG during this incident was very critical and was readily available throughout the incident

Recommendations:
1. Debrief with Secretary/Deputy Secretary and Delaware Attorney General (DAG) on how better to educate governmental leaders and engage them in the decision making process on the pros/cons of declaring a state of emergency.
2. Review current Delaware Public Health Emergency laws including declaration process; protection for volunteers, etc.

Issue: Incident Command: Lack of Involvement of Ethics Group in Allocation Decisions

Analysis:
Initially, there was a severely limited vaccine supply overall and specifically for those younger than 6 months. Some members of the ethics group were involved in the allocation/rationing decision process, but the formal "Ethics Group" was not activated. Some of the questions received from the Ethics Group once engaged related to quarantine, school closures, announcing and advertising mass vaccinations, college residents vs. non-residents, EMS community, and vaccinating those under 18 at pharmacies. Similar concerns were raised about not engaging the Ethics Group earlier in the spring 2009 event.

Recommendations:
1. Activate the Ethics Group to be officially involved in vaccine allocation decisions.
2. Utilize the Ethics Group to communicate to the medical community the decision making process and criteria.

Issue: Finance and Administration Section: Novel H1N1 Funding

Analysis: Novel H1N1 Public Health Emergency Response (PHER) funding was not originally available to use to support the response and other funding was used initially. This caused a huge administrative burden to re-code funding. Preparedness funding is normally overseen by the Preparedness Section but their roles shift to Logistics during a SHOC operation. The current Finance & Administration Section Staff of SHOC, staffed by DPH Fiscal group, does not normally get involved with the response until later in the response in more of a recovery operation. This caused the Preparedness Fiscal Group to be stretched thin.

Recommendations:
1. Assign additional staff to assist with recoding during/after an event.
2. Re-evaluate SHOC roles and determine when to activate SHOC F&A Group.
3. Develop Finance & Administration Standard Operating Guidelines.
4. Consider using State funds to fund the response until the Novel H1N1 funding is made available.

Issue: Finance and Administration Section: Fiscal Support

Analysis:
Approval of contracts and Memorandum of Understanding (MOUs) were slow to be completed unless there was intervention by Deputy Director. Allocation of time and salaries was not clarified before-hand requiring non-value added time to sort out the problems during the event. There was inconsistency in billing support and pharmacies were designated a priority over hospital payments.

Recommendations:
1. Identify all contracts and MOUs that were required to support this event and establish contingency contracts and MOUs prior to future events.
2. Set up an event related fast-track billing mechanisms, including payment terms and priorities, prior to the event.
3. Clarify time/salary allocation guidelines and communicate prior to event.

Issue: Planning Section: Medical Protocols, Standing Orders, and Medical Oversight

Analysis:
Standing Medical Orders provided medical oversight for the DPH and DMRC medical personnel during the late 2009 Novel H1N1 Mass Vaccination Campaign. DPH utilized existing Novel H1N1 Standing Orders that were being utilized during the Novel H1N1 school and clinic vaccination campaign. During the first mass vaccination campaign in November there was some confusion about which standing medical orders covered the DMRC and DPH vaccinators– NDMS or DPH. After discussion with Division of Public Health Medical Director (DPHMD), it was decided that DMRC and DPH personnel would operate under the DPH Standing Medical Orders. If medical questions arose during the clinics, DPH and DMRC medical personnel operating under DPH's standing orders would contact by phone DPHMD, or Chief Bureau of Public Health Services, if DPHMD were unavailable.

During the clinics several DMRC and DPH personnel were called upon to staff the vaccination area which included vaccinating, syringe preparation, triaging consent forms, and answering medical questions and operated under DPH's standing orders. DMRC and DPH personnel vaccinating were briefed each day that they were operating under DPH standing orders and were provided copies of the plan with the standing orders prior to the clinics. DPHMD and Chief, Bureau of Public Health Services were called upon twice at the DTCC Stanton Campus vaccination clinic: once for a needle stick by a NDMS vaccinator that was susceptible to a bloodborne pathogen and another time to see if a physician assistant (PA) was able to bring a syringe home to vaccinate her husband.

Recommendations:

1. Ensure there is one set of standing orders that will cover all medical treatment events; these should be in place prior to the season.
2. Resolve issues limiting use of LPNs and volunteers to broaden their use with the appropriate oversight.
3. Define actions to be taken in the event of needle sticks and allowing vaccinators to vaccinate family members at home prior to event.
4. Establish schedule for medical director coverage of NDMS clinics and clarify which phone numbers to use for successful contact on the first phone number. Ensure all medical directors are aware of who is on call at a specific time or location.
5. Prior to vaccinators conducting clinics providing any type of inoculation, conduct safety briefing to review needle stick procedure.

Issue: Operations Section: Further need to engage other partners in planning and decision making

Analysis:

Due to staffing gaps tied to hiring freeze, the Immunization Section did not have adequate staff to coordinate with the hospitals and medical community earlier in the planning throughout the event. Some partners were frustrated with the vaccine ordering process because they did not understand the limited availability of vaccine. Blast faxes didn't make it to the physicians.

SHOC Leads and allocation meetings were valuable but some decisions changed after the meetings due to variable vaccine allocations. Changes were not well-communicated to all parties causing confusion.

Recommendations:

1. Establish hotline for medical providers to call to receive information in addition to the DHAN and Medical Society.
2. Advise medical community to use Ethical Group or use Medical Advisory Group.
3. Set up a meeting to further discuss decision making and follow up with American Associated Pharmacies (AAP) and Pharmacy Board to discuss further.
4. MSD to pass information to doctor offices.
5. Determine methods to ensure that key players and partners are kept informed of changes.

Capability 5: Emergency Public Information and Warning

Capability Summary: The Emergency Public Information and Warning capability includes public information, alert/warning and notification. It involves developing, coordinating, and disseminating information to the public, coordinating officials, and incident management and responders across all jurisdictions and disciplines effectively under all hazard conditions.

Issue: Outreach

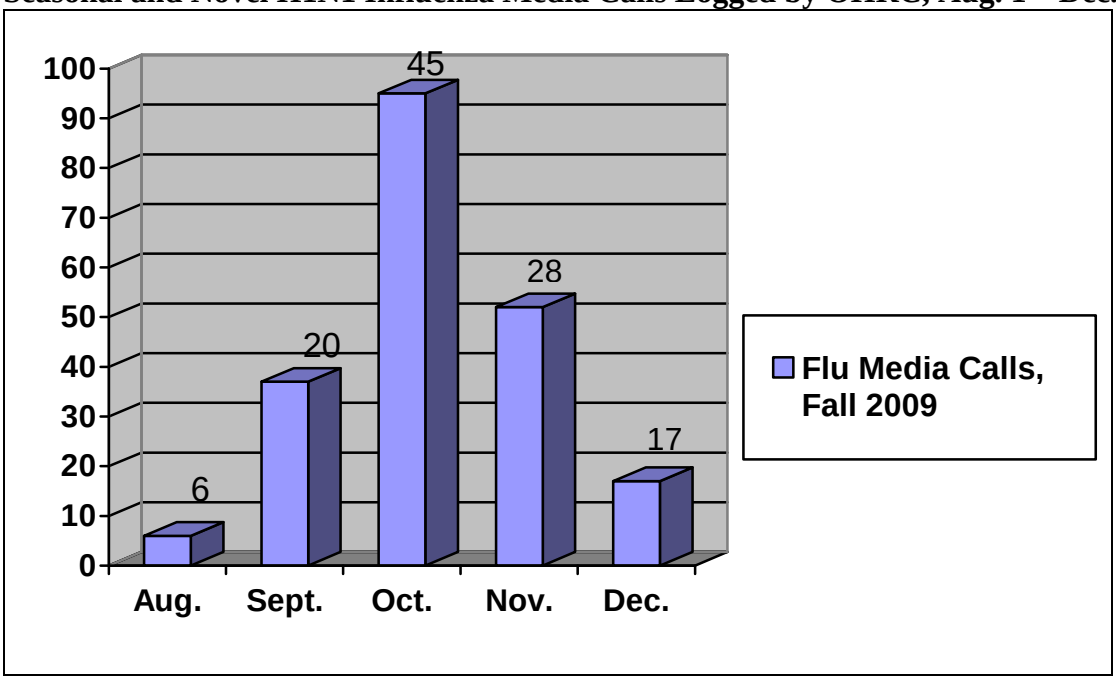
Analysis:
The SHOC Public Affairs group and the Office of Health and Risk Communications Section developed master distribution lists for over 3,000 partner/stakeholders/constituency groups. A Novel H1N1 mass media campaign was launched at a cost of $524,000. The campaign included weekly "Together Fighting Flu" newsletter for stakeholders. The new DHAN system worked well in reaching individuals, although it needs to be expanded beyond the current 1100 to reach all state medial professionals (45,000).

Outreach	
109	outreach products produced
$524,417	outreach expenditures (mass media campaign)
370	media contacts
2,623	Training interactions (persons)
5,787	Call Center contacts (calls)

Hits to DPH's Novel H1N1 Influenza Webpages, Aug. 1 – Nov. 30, 2009					
	8/1 - 8/31	9/1-9/30	10/1-10/31	11/1-11/30	Total
swineflugeneral.html	433	1,032	3,425	2,414	7,304
swineflucomm.html	445	661	1,412	1,368	3,886
swinefluprofessional.html	373	634	1,123	734	2864
swineflufreematerials.html	460	1,674	1,800	924	4,858
swinefludph.html	0	0	266	311	577

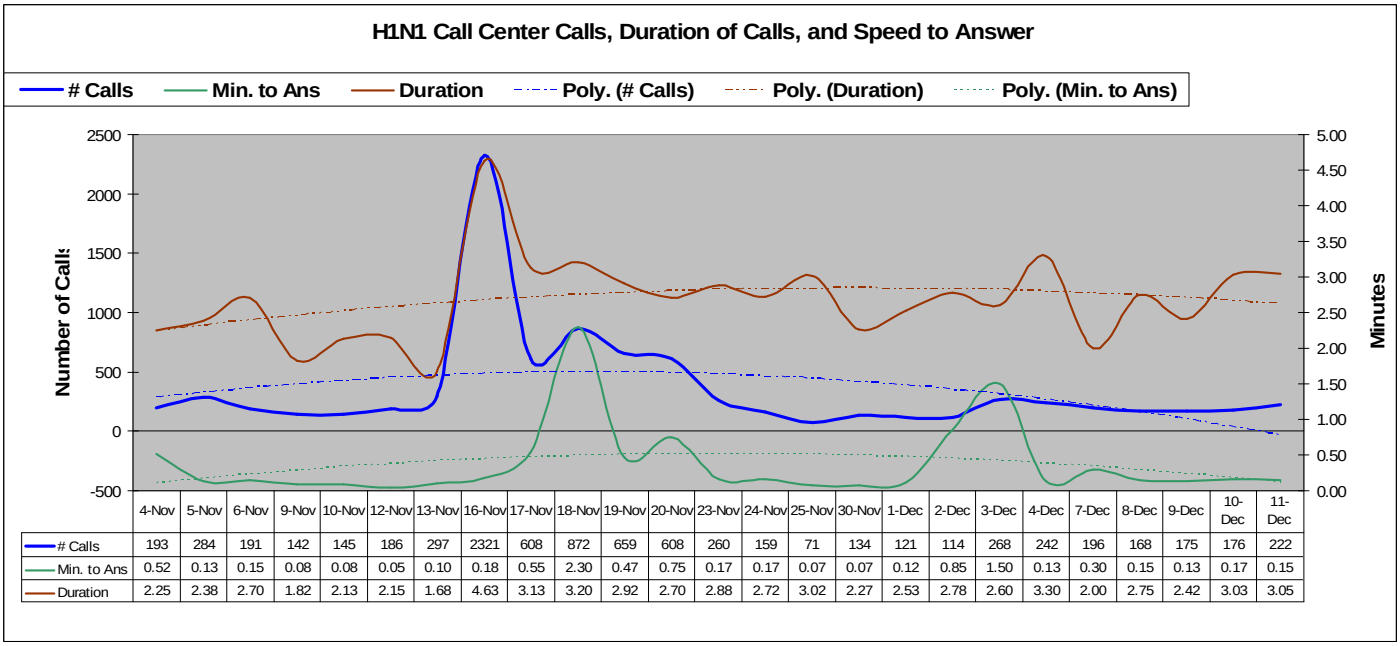
Source: Jean Collison, DPH, Support Services Section, IT

Seasonal and Novel H1N1 Influenza Media Calls Logged by OHRC, Aug. 1 – Dec. 15, 2009



Source: DPH/OHRC media call slips

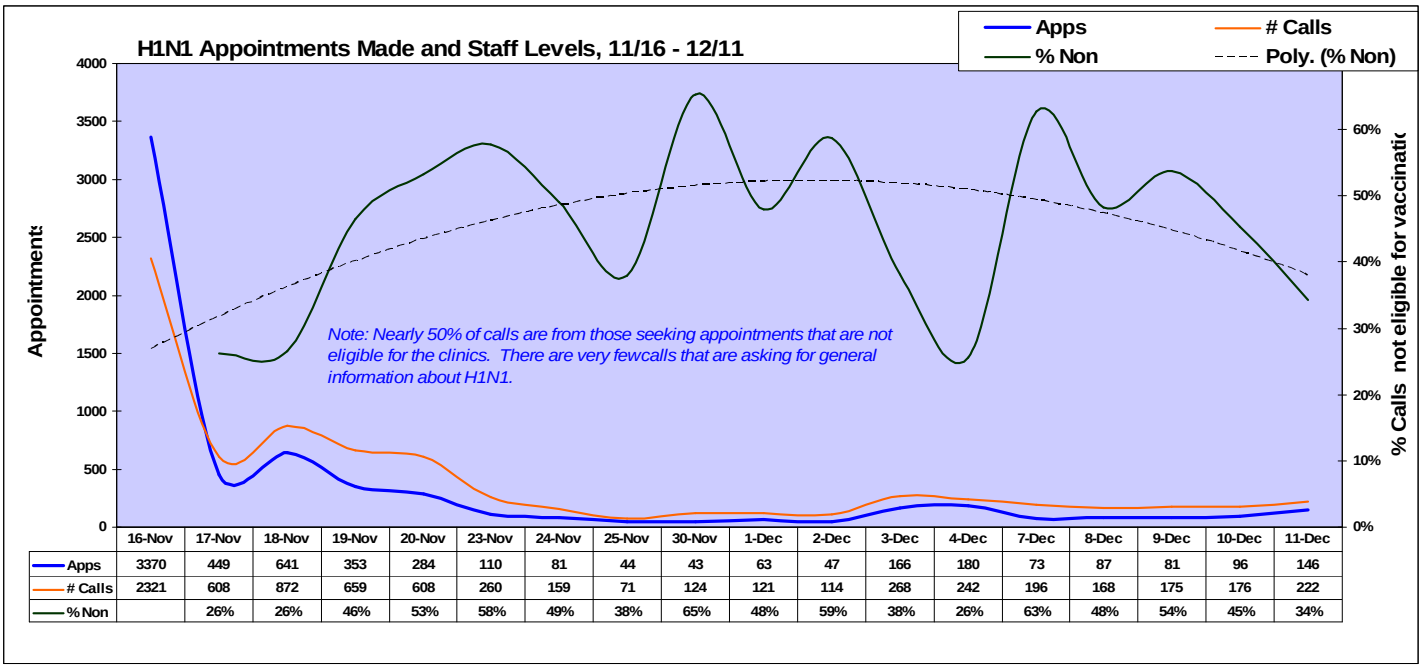
Call Center Calls, Duration and Speed to Answer (Nov. 4 - Dec. 11, 2009)



	4-Nov	5-Nov	6-Nov	9-Nov	10-Nov	12-Nov	13-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	23-Nov	24-Nov	25-Nov	30-Nov	1-Dec	2-Dec	3-Dec	4-Dec	7-Dec	8-Dec	9-Dec	10-Dec	11-Dec
# Calls	193	284	191	142	145	186	297	2321	608	872	659	608	260	159	71	134	121	114	268	242	196	168	175	176	222
Min. to Ans	0.52	0.13	0.15	0.08	0.08	0.05	0.10	0.18	0.55	2.30	0.47	0.75	0.17	0.17	0.07	0.07	0.12	0.85	1.50	0.13	0.30	0.15	0.13	0.17	0.15
Duration	2.25	2.38	2.70	1.82	2.13	2.15	1.68	4.63	3.13	3.20	2.92	2.70	2.88	2.72	3.02	2.27	2.53	2.78	2.60	3.30	2.00	2.75	2.42	3.03	3.05

Source: Robert Vella, DPH, Alternate Call Center Officer

Call Center Appointments Made (Nov. 4 – Dec. 11, 2009)



	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	23-Nov	24-Nov	25-Nov	30-Nov	1-Dec	2-Dec	3-Dec	4-Dec	7-Dec	8-Dec	9-Dec	10-Dec	11-Dec
Apps	3370	449	641	353	284	110	81	44	43	63	47	166	180	73	87	81	96	146
# Calls	2321	608	872	659	608	260	159	71	124	121	114	268	242	196	168	175	176	222
% Non		26%	26%	46%	53%	58%	49%	38%	65%	48%	59%	38%	26%	63%	48%	54%	45%	34%

Source: Robert Vella, DPH, Alternate Call Center Officer

Issue: Call Center – Scheduling Software

Analysis:
Scheduling software did not allow for those scheduling appointments to select an appointment time, change appointments, or cancel appointments out of the system. This resulted in Information Management Systems (IMS) staff and Call Center supervisors doing hours of work that has an easy technological solution.

Recommendation:
1. Procure new software to allow Call Center staff to manage appointment scheduling better.

Issue: Call Center Staffing

Analysis:
DMRC volunteers who did not want to vaccinate could have been used in the Call Center. Call Center personnel could have done other tasks when not taking Novel H1N1 calls. DPH could not use federally funded employees for more than 5% of their time without changing the scope of the federal agreements; renegotiation of an agreement should not be done during an incident. Some DPH supervisors were unaware of the importance of the Call Center and did not provide staff to support the activity.

Recommendations:
1. Prescreen DMRC volunteers for their willingness to vaccinate; direct all others to support the Call Center.

2. Recommend that federal grants be revised for emergency incidents. DPH could provide split funding federally funded positions need to be activated/redirected for SHOC.
3. Reevaluate decision making criteria for when contractor support for the Call Center should be initiated.
4. Emphasis by Director of Call Center importance and mandate participation to DPH staff when called upon.

Issue: Changing Information from CDC and Resultant Vaccine Distribution

Analysis:
Due to the temporary shortage of vaccine, the CDC modified their recommendations on vaccine distribution several times. The promised CDC communications were delayed for seven weeks. This resulted in changing messages to callers, media and the community at large, and vaccine distribution. Credibility of the public health community was lost. Once the vaccine recall (non-safety issues) occurred, demand for vaccine dropped off significantly.

Recommendations:
1. Recommend that the CDC pre-develop message scenarios that would fit various vaccine shortage scenarios so that the states will have the correct information to communicate to their residents.
2. Reevaluate historical "rule of thumb" allowing two hours to develop a press release/statement in light of the immediacy of today's media. Develop message to say we don't know when we don't know.

Issue: Expand the Delaware Health Alert Network

Analysis:
The new DHAN system worked well, reaching the 1100 individuals currently targeted. DHAN needs to be expanded to reach the rest of the state medical community (4,500) and consider using DHAN system to reach fire group, dentists, and other partners. State users should be educated on how to use the system.

Recommendations:
1. Expand DHAN to reach entire medical community. Legislation is needed to push it out; however, the DPH Director and DAG could champion this effort.
2. Train more internal users.

Issue: Flu Locator

Analysis:
Flu locator is a great tool to help the community find influenza vaccine; however, accuracy was poor nationally. Only five pharmacies were reporting through Flu Locator. In Delaware, the largest pharmacy (Happy Harry's/Walgreens) never registered.

Recommendation:

1. Build OHRC's situational awareness to access Flu Locator rather than contacting different individuals daily.

Capability 6: Medical Surge

Capability Summary: Medical Surge is the ability to rapidly expand the capacity of the existing healthcare system (long term care facilities, community health agencies, acute care facilities, alternate care facilities and public health departments) in order to provide triage and subsequent medical care. This includes providing definitive care to individuals at the appropriate clinical level of care within sufficient time to achieve recovery and minimize medical complications. The capability applies to an event where the number or types of patients overwhelm the day-to-day acute care medical capacity. Planners must consider that medical resources are normally at or near capacity at any given time. Medical surge is defined as rapid expansion of the capacity of the existing healthcare system in response to an event that results in increased need of personnel (clinical and non-clinical), support functions (laboratories and radiological), physical space (beds, alternate care facilities) and logistical support (clinical and non-clinical equipment and supplies).

Issue: Implementation of Novel H1N1 Triage Protocols in Hospital Emergency Departments

Analysis:
Lessons learned from the spring Novel H1N1 outbreak caused several Hospitals to implement Novel H1N1 triage protocols for those patients with Novel H1N1 symptoms. Patients were separated from the general public and where asked to wear a surgical mask.

Recommendation:
1. Capture the protocols and place them in each hospital plan and the state's surge plan.

Issue: Utilization of Trailer to Triage

Analysis:
Bayhealth Medical Center utilized a trailer to triage and treat individuals with Novel H1N1 symptoms. The trailer was considered part of the hospital and water and electric were hooked up. The trailer needed to be cleaned and sterilized before use. The permits also took about a week to receive before the Hospital could start seeing patients.

Recommendations:
1. Capture the process in a policy for each hospital's plan and place in the state's surge plan.
2. Preplan for standing trailer permit.

Issue: Hospital Visitation Policy

Analysis:
The Delaware Healthcare Association (DHA) provided visitor guidelines to hospitals for the Novel H1N1 flu season. All Delaware hospitals implemented the same policy. However, Obstetrician (OB) and Pediatric doctors were not aware ahead of time of the changes in policies. Several complaints were filed about the policy when family flew in or drove long distances to visit those hospitalized and were turned away.

Recommendations:
1. Increase communications to physicians that are directly affected by the policy change especially those that are family centered.
2. Partner with MSD to more effectively reach out to the physicians based upon their physician survey results.

Issue: Student Nurses working in Hospital Settings

Analysis:
There was a lack of policies regarding student nurses. Policy should have been written or including in the visiting guidelines that student nurses must either wear a surgical mask or provide proof of their Novel H1N1 vaccination. This is needed to protect vulnerable patients within the hospitals.

Recommendations:
1. Include student nurses in plans and policies.
2. Inform nursing schools of policies regarding student nurse and required PPE or prophylaxes. Guidance on how students are prioritized (students working in hospitals vs. schools) should be developed.

Capability 7: Medical Supplies Management and Distribution

Capability Summary: Medical Supplies Management and Distribution is the capability to procure and maintain pharmaceuticals and medical materials prior to an incident and to transport, distribute, and track these materials during an event.

Issue: Logistics Statistics

Analysis:
Two hundred and seventy five (275) deliveries were made, which included 205 deliveries of vaccines, 32 deliveries of antibiotics, 38 deliveries of supplies only (N95 and surgical masks). IRMS was used for tracking inventory. Pick list and shipping documents were created for every vaccine that left the warehouse. Additionally, manual spreadsheets were kept. Inventory was accurate. The 15 vans received from Fleet worked well for distribution. There was good logistical coordination with the NHS and Southern Health Services (SHS) logistics teams.

Novel H1N1 Distribution DE:

- Total Novel H1N1 vaccine distributed in DE through DPH - 340,600.
- Total Novel H1N1 vaccine distributed directly to large chain pharmacies in DE - 25,980.
- Number of providers that participated by category – 363.

Ambulatory Surgery	2
Asthma/Allergy	6
Community	0
Vaccinators	1
Dermatology	4
Dialysis	15
Drug Treatment	1
Ear/Nose/Throat	2
Family Practice	122
FQHC	4
Hospice	6
Hospitals	8
Internal Medicine	50
Long Term Care	25
OBGYN	36
Employee Health	5
Pediatrics	48
Pharmacies	3
Psychiatric Facility	3
Pulmonary	3
Colleges	4
Urgent Care	6
Schools (Maxim)	2
Other	6
PHPS	1
Total	363

Recommendation:
1. None

Issue: DPH Warehouse as a Receiving, Staging, and Storing Facility

Analysis:
DPH's Warehouse also serves as a receiving, staging, and storing facility for the Strategic National Stockpile. The warehouse worked flawlessly in receiving medications and medical supplies. The Delaware Home for the Chronically Ill (DHCI) Pharmacy was a useful asset when receiving vaccine.

Recommendation:
1. None

Issue: Antiviral Distribution to Hospitals

Analysis:
Hospitals communicated that the antiviral distribution of the oral suspension was great. There was one circumstance that a hospital transferred oral suspension to a pharmacy and that tighter chain of custody controls should have been implemented.

Recommendation:
1. None

Issue: Vaccine Allocations and Ordering

Analysis:
There needs to be a clear process for how the vaccine is ordered and distributed. For example, Immunization receives an order to distribute, but at some point, a decision is made to redirect distribution. When decisions are made, tracking errors occur and data is inaccurate. Additionally, the site that was expecting vaccine was not informed that changes in the vaccine distribution had occurred, and they were not going to receive what they had ordered. To avoid cross lines of ordering and distribution, ordering and distribution systems need to communicate with each other.

Recommendation:
1. Use an "Amazon" order communication type process (confirm order, indicate if order is able to be shipped or backordered, indicate when order is to be shipped, confirm order is shipped, confirm delivery).

Issue: Vaccine Allocation and Distribution to Hospitals

Analysis:
Vaccine and Antiviral medications were distributed to hospitals throughout the Novel H1N1 flu seasons. Hospitals were one of the first facilities to receive vaccine in the state of Delaware for nurses and doctors. Additionally, the DPH distributed antiviral oral suspension to hospitals and pharmacies in October 2009 due to a supply shortage in the market.

There was a shortage of vaccine at the beginning of the season. As a result, the flow of vaccine to the hospitals was not steady or communicated well enough. Hospitals would have implemented different policies for distributing vaccine to essential personnel. All hospitals agreed that it was appropriate for A.I. DuPont for Children to receive vaccine first.

Several of the providers affiliated with the distribution hospitals were receiving vaccine before the hospitals, which was creating challenges for the hospitals in distributing the vaccine according to the official policies.

Recommendations:
1. Communicate in advance to providers about current and probably vaccine availability and capacity.

2. The Immunization Section messaging to vaccine providers should have included that providers affiliated with hospitals need to go through the hospital to receive vaccine, so that the hospitals could be the distribution point for the hospital healthcare providers.
3. Include distribution policies for vaccine for the hospital healthcare providers in the hospital emergency plans.
4. Conduct a survey among primary care providers to see if they are able to administer the vaccine to patients and how many would actually do this. This may help determine how best to provide vaccine to the public. Many patients were bumped.
5. The Immunization Section needs to be more aware of the overall activities and to have a part in considerations when event decisions are being made. A running log of all issues, pending decisions, etc. accessible to all groups could be maintained to provide real-time updates to all functions.

Issue: Vaccine Packaging

Analysis:
The hospitals liked receiving the vaccine packages, which included the needles and cards. This allowed them to be well prepared for vaccine administration.

Recommendation:
1. None

Issue: Duplication of Inventory Records

Analysis:
As a result of concerns about the reliability of IRMS, manual spreadsheets of inventory transactions were maintained in addition to tracking inventory through IRMS.

Recommendation:
1. Resolve concerns about IRMS reliability.

Issue: Inventory/Vaccine Movement not visible to Immunization

Analysis:
Vaccine distribution priorities changed frequently during the temporary shortage. Execution of the changing directives (what was being shipped where and to whom) was not visible to Immunization Team.

Recommendation:
1. Provide visibility of IRMS inventory and shipping orders by linking the Immunization registry to IRMS.

Issue: Reporting Requirements

Analysis:
Reporting requirements were group-dependent. As a result, some forms did not require all of the information needed for all groups. Several different groups reported that the immunization forms were not identical so different information was collected; some information was missing that might have allowed alternative data analysis and some was collected that was not used. For example, the patient form for schools was different than the forms used in other vaccination methods. Consent forms were also more conservative than standing orders, particularly regarding allergies and medical history.

Recommendations:
1. Have the different groups/sections review reporting needs: what data is to be collected, what is needed, any specific methods, etc. and revise forms to meet requirements of all groups. Look at building templates into everyday reporting and be able to modify for different situations. Possibly use the same form for both everyday needs and pandemic needs. Include a subset for additional information or tracking that is readily available if needed. For example, include a 'for official use only' segment on the form.
2. Evaluate real-time electronic means of data capture and verification, such as data entry and verification and automated tabulation of activity at the vaccination site and automated reporting to key functional groups, e.g. SHOC, Medical, Nursing.
3. Ensure staff understands the diligence needed in collecting data and the value their role plays in the monitoring of any incident and future mitigation efforts.

Issue: Remaining or Expired Vaccine

Analysis:
As vaccine is season dependent, unused vaccine will expire and not be used. This vaccine needs to be disposed of or returned appropriately.

Recommendation:
1. Establish vaccine replacement or buy-back program with vaccine manufacturers under federal directive to minimize the amount of vaccine that is wasted and ends up being destroyed.

Capability 8: Mass Prophylaxis

Capability Summary: Mass Prophylaxis is the capability to protect the health of the population through the administration of critical interventions in response to a public health emergency in order to prevent the development of disease among those who are exposed or are potentially exposed to public health threats. This capability includes the provision of appropriate follow-up and monitoring of adverse events, as well as risk communication messages to address the concerns of the public.

Issue: Mass Prophylaxis Statistics

Analysis:
Immunizations were made available at school for all school-aged children. Six NDMS clinics were held. Vaccination also occurred at pharmacies, State Services Centers, and specialized venues (Reference Tab A: School Vaccination Campaign AAR; Appendix D: NDMS Mass Vaccination Clinics AAR).

Doses Administered by DPH or Contractors			Doses Ordered*		Resources	
		Doses		Doses		Number
Education			Internal Medicine	12290	N95 Distributed	7500
	Public Schools, First Dose	42386	OB/GYN	11,220	Antiviral Distributed	1656
	Public Schools, Second Dose	14467	Pediatrics	44050	Surgical Masks	1000
	Private Schools First Dose	8417	Family Practice	42760	Procedural masks	9000
	Private Schools Second Dose	1374	Other Provider	44851		
Clinics			Hospitals	61480		
	NDMS	5873	Colleges	8400		
	Service Centers (DPH clinics)	3510	Dialysis	1120		
			Schools	101,740		
	Special Venues (Farmer's market e.t.c.)	2240	DPH Clinics	4120		
	Other		Long Term Care	6070		
Pharmacies		3600		338101		

* Excludes doses distributed directly to pharmacies through CDC pharmacy program

Recommendation:
1. None

Issue: Emergency Medical Services Vaccination

Analysis:
Arrangements were made through the Office of Emergency Medical Services (OEMS) to vaccinate Advance Life Support (ALS) and Basic Life Support (BLS) personnel. Clinics were held at the various fire houses to accommodate the population.

Recommendation:
1. None

Issue: Hospital Internal Vaccination: Types of Vaccines

Analysis:
Through the state, hospitals were provided vaccine to distribute to their personnel and patients. Enforcing vaccine policies were challenging due to allocation fluctuations and the inadequacy of communications regarding those fluctuations.

Hospitals were not aware of the types of vaccine (multi dose and pre-filled syringes) that they would be receiving until they actually arrived, which caused problems with administering the vaccine.

Recommendation:
1. Communicate types of vaccine to the providers that they will be receiving along with quantities.

Issue: Hospital Internal Vaccination: Patient Forms

Analysis:
Hospitals questioned the need for patient demographics on the patient forms and that the state needs to develop a statewide patient tracking system. Hospitals were entering the patient information into their Information Technology (IT) systems and exporting it to excel in the format needed by DPH.

Recommendation:
1. Improve reporting process by implementing a software solution that will download data from the hospital IT systems.

Capability 9: Responder Safety and Health

Capability Summary: Responder safety and health is the capability that ensures adequately trained and equipped personnel and resources are available at the time of an incident to protect the safety and health of on scene first responders, hospital/medical facility personnel (first receivers), and skilled support personnel through the creation and maintenance of an effective safety and health program.

Issue: Insufficient Supply of N95 and Surgical Masks

Analysis:
Due to demand, suppliers were unable to provide sufficient quantities of N95 and surgical masks to hospitals and immunization programs. Masks from the in-state stockpile were released for their use.

Recommendation:
1. Meet with local providers to review their supply strategy for the future flu seasons to mitigate the potential for future shortages.
2. Evaluate whether DPH is fiscally able to maintain "safety" stock.

Issue: Hospital Internal Vaccination: Types of Personal Protective Equipment

Analysis:
Hospitals had supply issues with their surgical and N95 mask vendors and many of the hospitals instituted utilization policies during Novel H1N1. Additionally, hospitals had some concerns with the different models of N95 mask that were stockpiled by the federal government and the state. Utilizing different models requires fit testing. The state started stockpiling a universal model (1870); however, other types are still available through the stockpile.

Recommendation:

1. Hospitals recommend that the state and the federal government stockpile one consistent N95 based upon a recommendation by CDC or Occupational Safety and Health Administration (OSHA).

Issue: Timeliness of Provider Vaccinations

Analysis:

With a shortage of vaccine at the beginning of the season, some providers, especially those who volunteered to assist, were not immunized prior to state-wide immunization efforts.

Recommendation:

1. Immunize all providers and volunteers prior to their involvement in immunization efforts.

SECTION 5: CONCLUSION

DHS Target Capabilities
This AAR has been generated to capture areas and activities where the response met the needs, excelled and to identify areas for improvement. It is important to note that there are multiple opportunities for improvement, yet the state response was overwhelmingly successful in mitigating the spread of the Novel H1N1 in Delaware. Most of the recommendations for improvement are easily implemented and many items have already been completed.

The following Target Capabilities were addressed during this event:

Capability 1: Communications
Capability 2: Epidemiological Surveillance and Investigation
Capability 3: Laboratory Testing
Capability 4: Emergency Operations Center Management
Capability 5: Emergency Public Information and Warning
Capability 6: Medical Surge
Capability 7: Medical Supplies Management and Distribution
Capability 8: Mass Prophylaxis
Capability 9: Responder Safety and Health

Major strengths include:
Mass Vaccination

- Mass clinics are an effective way to provide vaccine to the public. Appointments proved to decrease crowds and were especially effective in minimizing wait times for risk populations such as small children, frail/elderly, mentally disabled, very ill, etc.
- 67,202 school-aged children were vaccinated through the School Vaccination Campaign.
- 5,872 people were vaccinated through the Neighborhood Emergency Help Centers (NEHC).
- Hospitals, primary care providers, emergency medical community staff, and pharmacies played a major role in vaccination the community and essential workers.

Command, Control and Coordination

- SHOC leads held weekly allocation meetings that were helpful in ensuring cross-functional communication, coordination and strong situational awareness.
- The federal Public Readiness and Emergency Preparedness (PREP) Act was critical in activating supplemental staff. The ability to supplement staff to provide vaccinations; media, call center and laboratory support is a critical element in a successful response and was done successfully with the activation of the Delaware Medical Reserve Corps, the Disaster Medical Assistance Team, and by

employing contractors in multiple roles. Prearranged contracts and pre-season training allowed for rapid response. Routine public health services were able to be maintained.

- Without a state of emergency, immediate access to the DAG and the DPH Medical Director and the Public Readiness and Emergency Preparedness (PREP) Act were critical in activating volunteers, establishing Standing Medical Orders and quickly addressing liability concerns, such as use of school property, vulnerability of medical licenses/malpractice insurance premium hikes, to be able to vaccinate almost 400,000/about half of the state's population over an eight month period.
- The concern that massive school vaccination campaign consumed much of the early meager amounts of vaccine meant for high risk populations was tempered by fact that it proved good use of LAIV which was not useful for much of targeted population (i.e. Pregnant woman).

Medical Supplies and Medical Management:

- The In-State Stockpile of PPE, lab kits, and antivirals distributed from two warehouse locations (Dover, Wilmington) allowed for a quick state-wide response prior to receiving Strategic National Stockpile assistance. Flexibility was required to adjust for changing priorities and plans and multiple new locations without compromising on 100% inventory, chain of custody or monitoring issues. Fleet Services, SHS/NHS Logistics and PHPS Logistics successfully coordinated delivery support for the first time.

Emergency Public Information and Warning

- Call Center, presentations, press releases, Delaware Health Alert Network communications and the weekly DPH calls to the hospital network quells fears, manages rumors, communicates priorities and increases the immunization rate. Multiple venues need to be used to target not only medical providers and the media but the greater community. CDs and multiple Spanish documents were generated as part of the state outreach. Consistency of the message between the CDC and neighboring states is critical especially regarding vaccine allocation and high risk groups. Future communications could consider YouTube and Twitter.

Areas for improvement include:

Mass Vaccination

- Earlier use of local pharmacies in the state once vaccine allocation was lifted to provide vaccinations would also streamline delivery of the vaccine.

Community Engagement

- Engage the Public Health and Medical Ethics Group and the general medical community in planning, decision making, and communications earlier in the event.

- Standardize communication streams to ensure most current message about vaccine availability, high priority groups, changing criteria is disseminated quickly to all medical personnel and to the public.
- Acquire an immunization reporting system to allow for easier communications regarding vaccine administered.

Command, Control and Coordination

- Software tools enhancing the tracking of immunization reporting, managing supply inventory, tracking laboratory results and Call Center activity among others improve the quality of the epidemiological data and situational awareness. Further investment is needed to capture real-time vaccination activity, vaccine/supply inventory, scheduling software to reduce the administrative burden during the event, to allow cross-functionality visibility throughout the event and to expedite epidemiological reporting. Conversely, Web-Based Emergency Operations Center (WebEOC) software did not provide the link to other state or the CDC network and was more cumbersome to use than blackberries and a shared drive though email volume needs to be better managed.

- The extended length of this event and the associated support activities strained internal and volunteer resources. Other priorities need to be tabled to assure flawless execution of critical public health services. Resources need to be staggered to minimize "burn-out". Employees covered by federal grants need to be available to support the event. Flexibility in job assignments is required to meet the changing needs of the event.

- The detailed learnings from each area needs to be captured and shared across the state to establish state-wide "best practices" for future events as there was some regional execution inconsistencies. Timely action against the improvement opportunities defined during the spring 2009 event contributed heavily to the success of the fall event.

- Develop alternative funding and execution scenarios if federal monies are unavailable. Pre-arrange support and contractual agreements for immediate execution when needed.

Overall, this event was successful in protecting the public from the Novel H1N1 flu outbreak. The spring event identified improvements needed before the next flu season, and timely corrective actions allowed for a smooth SHOC response in the fall event. Noteworthy is the implementation of a highly successful statewide school vaccination program for the first time.

APPENDIX A: IMPROVEMENT PLAN

This Improvement Plan has been developed specifically for DPH. These recommendations came from participants in the event preparation and planning and from opportunities that presented during the actual event. These recommendations are drawn from the After Action Report.

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Communications	Incident Management Software System	Review permissions of SHOC staff to WebEOC and consider lifting restrictions.						
Capability 1: Communications	Incident Management Software System	Test system in upcoming drills/exercises.						
Capability 1: Communications	Incident Management Software System	Allow access to partners (hospitals, HHS, etc.)						
Capability 1: Communications	DPH Director's Role in Hospital Communications	Recommend that DPH Director/ designee participate in all hospital calls, if available.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Communications	Communications with Physician Community	Continue with the development of the Vaccine Technical Advisory Committee, which allows planning and input on topics related to infectious disease crises and significant issues that can affect large numbers of Delawareans.						
Capability 1: Communications	Communications with Physician Community	Development of Crisis Standards of Care led by DPH PHPS and OEM.						
Capability 1: Communications	Communications with Physician Community	Reevaluate the processes used to communicate to physicians led by OHRC with input from MSD.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Communications	Communications with Physician Community	Consider issuing a letter to the editor from the President of the MSD and DPH on importance of working together and lack of input on the MSD survey (and results) from doctors on the things most affecting their practices during the H1N1 pandemic .						
Capability 1: Communications	Communications with the Hospital Community	CDC and the WHO should have provided better communications to the medical community in this respect so that they were better able to communicate their patients.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Communications	Communications with the Hospital Community	Provide summaries of regional calls to states to distribute to their hospitals.						
Capability 1: Communications	Physician pre-registration and enrollment communications	Collaborate with MSD to improve communications process.						
Capability 2: Epidemiological Surveillance and Investigation	Changes in Flu Case Definitions	Tailor CDC's definition of wide spread to address the uniqueness of Delaware's size.						
Capability 2: Epidemiological Surveillance and Investigation	Changes in Flu Case Definitions	Reemphasize and provide communications regarding CDC/tailored flu definitions prior to the start of the season.						
Capability 2: Epidemiological Surveillance and Investigation	Lack of data granularity and delay in analysis	Modify data collection forms to allow for additional granularity of data.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 2: Epidemiological Surveillance and Investigation	Lack of data granularity and delay in analysis	Look at North Carolina and other states' weekly Epidemiological (EPI) reports to determine what else might be appropriate to track.						
Capability 3: Laboratory Testing	Changes in Laboratory Testing Practices	Reemphasize and provide communications regarding testing guidelines prior to the start of the season. Ensure clarity about who is and is not to be tested per the CDC guidelines.						
Capability 3: Laboratory Testing	Changes in Laboratory Testing Practices	Recommend the Lab have authority to reject specimens if paperwork is not filled out properly.						
Capability 3: Laboratory Testing	Changes in Laboratory Testing Practices	Ensure testing regimen remains the same throughout the season.						
Capability 3: Laboratory Testing	Changes in Laboratory Testing Practices	Separate surveillance from reference testing.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 4: Emergency Operations Center Management	SHOC Activation	Include sustained maintenance of a given SHOC level as a justification to move to the next SHOC level, or define tasks that can be temporarily suspended.						
Capability 4: Emergency Operations Center Management	SHOC Activation	Finalize Continuity of Operations Plan (COOP) as soon as possible to determine what can be let go or what alternative testing could be used.						
Capability 4: Emergency Operations Center Management	SHOC Activation	Reassign/realign individuals or responsibilities based upon the needs of the incident. Employees to raise any conflicts to their supervisors for timely resolution.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 4: Emergency Operations Center Management	SHOC Activation	Communicate better with supervisors on what employee's SHOC role is and expectations and to let individuals know that they could be assigned a different role than what their primary SHOC role is. Discuss this need for flexibility in task books and during training.						
Capability 4: Emergency Operations Center Management	Incident Command: Legal	Debrief with Secretary/Deputy Secretary and Delaware Attorney General (DAG) on how better to educate governmental leaders and engage them in the decision making process on the pros/cons of declaring a state of emergency.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 4: Emergency Operations Center Management	Incident Command: Legal	Review current Delaware Public Health Emergency laws including declaration process; protection for volunteers, etc.						
Capability 4: Emergency Operations Center Management	Incident Command: Lack of Involvement of Ethics Group in Allocation Decisions	Activate the Ethics Group to be officially involved in vaccine allocation decisions.						
Capability 4: Emergency Operations Center Management	Incident Command: Lack of Involvement of Ethics Group in Allocation Decisions	Utilize the Ethics Group to communicate to the medical community the decision making process and criteria.						
Capability 4: Emergency Operations Center Management	Finance and Administration Section: Novel H1N1 Funding	Assign additional staff to assist with recording during/after an event.						
Capability 4: Emergency Operations Center Management	Finance and Administration Section: Novel H1N1 Funding	Re-evaluate SHOC roles and determine when to activate SHOC F & A Group.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 4: Emergency Operations Center Management	Finance and Administration Section: Novel H1N1 Funding	Develop a Finance and Administration Standard Operating Guidelines.						
Capability 4: Emergency Operations Center Management	Finance and Administration Section: Novel H1N1 Funding	Consider using State funds to fund the response until the Novel H1N1 funding is made available.						
Capability 4: Emergency Operations Center Management	Finance and Administration Section: Fiscal Support	Identify all contracts and MOUs that were required to support this event and establish contingency contracts and MOUs prior to future events.						
Capability 4: Emergency Operations Center Management	Finance and Administration Section: Fiscal Support	Set up an event related fast-track billing mechanisms, including payment terms and priorities, prior to the event.						
Capability 4: Emergency Operations Center Management	Finance and Administration Section: Fiscal Support	Clarify time/salary allocation guidelines and communicate prior to event.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 4: Emergency Operations Center Management	Planning Section: Medical Protocols, Standing Orders, and Medical Oversight	Ensure there is one set of standing orders that will cover all medical treatment events; these should be in place prior to the season.						
Capability 4: Emergency Operations Center Management	Planning Section: Medical Protocols, Standing Orders, and Medical Oversight	Resolve issues limiting use of LPNs and volunteers to broaden their use with the appropriate oversight.						
Capability 4: Emergency Operations Center Management	Planning Section: Medical Protocols, Standing Orders, and Medical Oversight	Define actions to be taken in the event of needle sticks and allowing vaccinators to vaccinate family members at home prior to event.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 4: Emergency Operations Center Management	Planning Section: Medical Protocols, Standing Orders, and Medical Oversight	Establish schedule for medical director coverage of NDMS clinics and clarify which phone numbers to use for successful contact on the first phone number. Ensure all medical directors are aware of who is on call at a specific time or location.						
Capability 4: Emergency Operations Center Management	Planning Section: Medical Protocols, Standing Orders, and Medical Oversight	Prior to vaccinators conducting clinics providing any type of inoculation, conduct safety briefing to review needle stick procedure.						
Capability 4: Emergency Operations Center Management	Operations Section: Further need to engage other partners in planning and decision making	Establish hotline for medical providers to call to receive information in addition to the DHAN and Medical Society.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 4: Emergency Operations Center Management	Operations Section: Further need to engage other partners in planning and decision making	Advise medical community to use Ethical Group or use Medical Advisory Group.						
Capability 4: Emergency Operations Center Management	Operations Section: Further need to engage other partners in planning and decision making	Set up a meeting to further discuss decision making and follow up with American Associated Pharmacies (AAP) & Pharmacy Board to discuss further.						
Capability 4: Emergency Operations Center Management	Operations Section: Further need to engage other partners in planning and decision making	MSD to pass information to doctor offices.						
Capability 4: Emergency Operations Center Management	Operations Section: Further need to engage other partners in planning and decision making	Determine methods to ensure that key players and partners are kept informed of changes.						
Capability 5: Emergency Public Information and Warning	Outreach: Call Center – Scheduling Software	Procure new software to allow Call Center staff to manage appointment scheduling better.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 5: Emergency Public Information and Warning	Call Center Staffing	Prescreen DMRC volunteers for their willingness to vaccinate; direct all others to support the Call Center.						
Capability 5: Emergency Public Information and Warning	Call Center Staffing	Recommend that federal grants be revised for emergency incidents. DPH could provide split funding federally funded positions need to be activated/redirected for SHOC.						
Capability 5: Emergency Public Information and Warning	Call Center Staffing	Reevaluate decision making criteria for when contractor support for the Call Center should be initiated.						
Capability 5: Emergency Public Information and Warning	Call Center Staffing	Emphasis by Director of Call Center importance and mandate participation to DPH staff when called upon.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 5: Emergency Public Information and Warning	Changing Information from CDC and Resultant Vaccine Distribution	Recommend that the CDC pre-develop message scenarios that would fit various vaccine shortage scenarios so that the states will have the correct information to communicate to their residents.						
Capability 5: Emergency Public Information and Warning	Changing Information from CDC and Resultant Vaccine Distribution	Reevaluate historical "rule of thumb" allowing two hours to develop a press release/statement in light of the immediacy of today's media. Develop message to say we don't know when we don't know.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 5: Emergency Public Information and Warning	Expand the Delaware Health Alert Network	Expand DHAN to reach entire medical community. Legislation is needed to push it out; however, the DPH Director and DAG could champion this effort.						
Capability 5: Emergency Public Information and Warning	Expand the Delaware Health Alert Network	Train more internal users.						
Capability 5: Emergency Public Information and Warning	Flu Locator	Build OHRC's situational awareness to access Flu Locator rather than contacting different individuals daily.						
Capability 6: Medical Surge	Implementation of Novel H1N1 Triage Protocols in Hospital Emergency Departments	Capture the protocols and place them in each hospital plan and the state's surge plan						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 6: Medical Surge	Utilization of Trailer to Triage	Capture the process in a policy for each hospital's plan and place in the state's surge plan.						
Capability 6: Medical Surge	Utilization of Trailer to Triage	Preplan for standing trailer permit.						
Capability 6: Medical Surge	Hospital Visitation Policy	Increase communications to physicians that are directly affected by the policy change especially those that are family centered.						
Capability 6: Medical Surge	Hospital Visitation Policy	Partner with MSD to more effectively reach out to the physicians based upon their physician survey results.						
Capability 6: Medical Surge	Student Nurses working in Hospital Settings	Include student nurses in plans and policies.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 6: Medical Surge	Student Nurses working in Hospital Settings	Inform nursing schools of policies regarding student nurse and required PPE or prophylaxes. Guidance on how students are prioritized (students working in hospitals vs. schools) should be developed.						
Capability 7: Medical Supplies Management and Distribution	Vaccine Allocations and Ordering	Use an "Amazon" order communication type process (confirm order, indicate if order is able to be shipped or backordered, indicate when order is to be shipped, confirm order is shipped, confirm delivery).						
Capability 7: Medical Supplies Management and Distribution	Vaccine Allocation and Distribution to Hospitals	Communicate in advance to providers about current and probably vaccine availability and capacity.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 7: Medical Supplies Management and Distribution	Vaccine Allocation and Distribution to Hospitals	The Immunization Section messaging to vaccine providers should have included that providers affiliated with hospitals work through the hospital to receive vaccine, so that the hospitals could be the distribution point for the hospital healthcare providers.						
Capability 7: Medical Supplies Management and Distribution	Vaccine Allocation and Distribution to Hospitals	Include distribution policies for vaccine for the hospital healthcare providers in the hospital emergency plans.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 7: Medical Supplies Management and Distribution	Vaccine Allocation and Distribution to Hospitals	Conduct a survey among primary care providers to see if they are able to administer the vaccine to patients and how many would actually do this. This may help determine how best to provide vaccine to the public. Many patients were bumped.						
Capability 7: Medical Supplies Management and Distribution	Vaccine Allocation and Distribution to Hospitals	The Immunization Section needs to be more aware of the overall activities and to have a part in considerations when event decisions are being made. A running log of all issues, pending decisions, etc. accessible to all groups could be maintained to provide real-time updates to all functions.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 7: Medical Supplies Management and Distribution	Duplication of Inventory Records	Resolve concerns about IRMS reliability.						
Capability 7: Medical Supplies Management and Distribution	Inventory/Vaccine Movement not visible to Immunization	Provide visibility of IRMS inventory and shipping orders by linking the Immunization registry to IRMS.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 7: Medical Supplies Management and Distribution	Reporting Requirements	Have the different groups/sections review reporting needs: what data is to be collected, what is needed, any specific methods, etc. and revise forms to meet requirements of all groups. Look at building templates into everyday reporting and be able to modify for different situations. Possibly use the same form for both everyday needs and pandemic needs. Include a subset for additional information or tracking that is readily available if needed. For example, include a 'for official use only' segment on the form.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 7: Medical Supplies Management and Distribution	Reporting Requirements	Evaluate real-time electronic means of data capture and verification, such as data entry and verification and automated tabulation of activity at the vaccination site and automated reporting to key functional groups, e.g. SHOC, Medical, Nursing.						
Capability 7: Medical Supplies Management and Distribution	Reporting Requirements	Ensure staff understands the diligence needed in collecting data and the value their role plays in the monitoring of any incident and future mitigation efforts.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 7: Medical Supplies Management and Distribution	Remaining or Expired Vaccine	Establish vaccine replacement or buy-back program with vaccine manufacturers under federal directive to minimize the amount of vaccine that is wasted and ends up being destroyed.						
Capability 8: Mass Prophylaxis	Hospital Internal Vaccination: Types of Vaccines	Communicate types of vaccine to the providers that they will be receiving along with quantities.						
Capability 8: Mass Prophylaxis	Hospital Internal Vaccination: Patient Forms	Improve reporting process by implementing a software solution that will download data from the hospital IT systems.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 9: Responder Safety and Health	Insufficient Supply of N95 and Surgical Masks	Meet with local providers to review their supply strategy for the future flu seasons to mitigate the potential for future shortages.						
Capability 9: Responder Safety and Health	Insufficient Supply of N95 and Surgical Masks	Evaluate whether DPH is fiscally able to maintain “safety” stock.						
Capability 9: Responder Safety and Health	Hospital Internal Vaccination: Types of Personal Protective Equipment	Hospitals recommend that the state and the federal government stockpile one consistent N95 based upon a recommendation by CDC or Occupational Safety and Health Administration (OSHA).						
Capability 9: Responder Safety and Health	Timeliness of Provider Vaccinations	Immunize all providers and volunteers prior to their involvement in immunization efforts.						

TAB A: SCHOOL VACCINATION CAMPAIGN AFTER ACTION REPORT

Novel H1N1 Influenza
School Vaccination

NOVEMBER 2009 – MARCH 2010

AFTER ACTION REPORT/IMPROVEMENT PLAN

June 1, 2010

ADMINISTRATIVE HANDLING INSTRUCTIONS

The information gathered in this AAR/IP is classified as a public document and can be distributed as such.

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SECTION 1: EXECUTIVE SUMMARY

Event Overview

This After Action Report (AAR)/Improvement Plan (IP) summarizes the Delaware Public Health (DPH), the Department of Education (DOE), and School District activities during the school vaccination campaign, which was conducted between Nov 2, 2009 and March 8, 2010. Through the partnership, the state successfully administered 67,202 vaccinations to children in grades K-12. The vaccination team consisted of Public Health nurses, Delaware Medical Reserve Corps (DMRC) volunteers, and a contractor.

The campaign initially took broad form in a series of DPH Novel H1N1 meetings. Centers for Disease Control and Prevention (CDC) resource materials were of great assistance in guiding discussions and program development. DPH Nursing Director and DOE Nurse/Director of School Support Services worked closely to further delineate the program plan and outlined responsibilities for DPH and DOE, School Districts, Schools and School Nurses.

Traveling DPH–led teams of DHSS/DPH nurses and DMRC volunteers vaccinated students with parental consent in public and charter schools K-5 with nasal spray, and contractor teams vaccinated students in public and charter schools grades 6-12 with injectable vaccine. In addition, the contractor vaccinated all K-12 students (Grades K-5 received nasal spray; grades 6-12 received injectable vaccine) with parental consent in private and parochial school with school nurses, as well as Department of Services for Children, Youth and their Families (DSCYF) facilities. The plan was later expanded for home-schooled students and those in private schools without a school nurse to have the opportunity for vaccinations through weekend contractor clinics held in Wilmington and Dover.

The final plan was approved by DPH and then presented to Secretary of Education/ District Superintendents for buy-in. Since the Governor had not issued an order for vaccination, each public school district superintendent had an option to participate. District Superintendents opted in, but had some concerns of which the major concern was liability. Communication on the Public Readiness and Emergency Preparedness (PREP) Act smoothed the path. Superintendents choose to appoint District Vaccination Contact persons to be the primary conduit for general program information from DPH (via DOE Nurse Director of School Support Services).

DPH initially reached out to private and parochial schools through Wilmington Diocese contact/Independent School Association and contacts/presentation to private and parochial school nurse group. Private and parochial schools with school nurses were invited to participate via letter to Heads of Schools. Nearly 95% of private and parochial school choose to participate. DPH modified the plan for the School Vaccination Plan (SVP) to accommodate Private and Parochial Schools.

As of March 15, 2010, the following numbers of students were vaccinated:

DPH Public Schools (Flumist) –	21,525
Contractor Public Schools (Injectables) –	20,920
Contractor Private Schools (Flumist/Injectables) –	8,358
Contractor Clinic Private School without nurses –	63
Total # Vaccinated	50,866

School Students Vaccinated (2nd Dose):

DPH Public Schools (Flumist) -	14,459
Contractor Private Schools (Flumist) -	1,877
Total	16,336

Total School Vaccinations 67, 202

Overall, about 30% of the school-aged children were vaccinated at school. This number may change as the billing and audit processes are completed.

Utilizing the schools as a location for vaccination of school-aged children was positive, as it eased the burden on parents; they didn't have to take off from work or make a doctor's appointment. It provided an avenue to reach adolescents, who do not frequent the doctor as often as younger children. It allowed for increased and better tracking of administration of first and second doses.

Schools were appreciative of this first ever initiative. A survey was conducted that gathered data on the schools perception of and experience with the vaccination campaign (see Appendix B).

Major Strengths:

- To further expand capacity, DPH contracted with Maxim, Inc. to provide immunizations for public and charter school students in grades 6-12 and K-12 in private and parochial schools and DSCYF facilities. The services provided by Maxim, Inc. staff proved to be an effective means to expand DPH capabilities.
- Public School Superintendents appointed District Vaccination contact personnel to be primary conduits for general program information from DPH via DOE as well as specific information from Northern or Southern Health Services Vaccinations Teams for clinic scheduling. In private and parochial schools the school nurse was most often the primary point of contact.
- Traveling teams of nurses that went to each school increased the rate of vaccination by providing a convenience to the families.

Areas of Improvement:

- Establish a means for cross communicating and coordinating on policy implementation issues early in the planning phase between school district nurses and Public Health Operations staff.
- Simplify the consent form and the process for parents, schools and public health, and establish guidance on statewide records management of consent forms.
- Proactively seek and resolve any differences in interpretation of standing orders and consent form in advance of program start.

SECTION 2: EVENT DETAILS

Participating Organizations
DPH communicated with a wide range of federal, state, local, and private agencies and organizations.

Federal

- U.S. Department of Health and Human Services
    - Centers for Disease Control and Prevention

State

- Governor's Office
- Department of Education
    - Appoquinimink School District
    - Brandywine School District
    - Caesar Rodney School District
    - Cape Henlopen School District
    - Capital School District
    - Charter Schools
    - Christiana School District
    - Colonial School District
    - Delmar School District
    - Indian river School District
    - Lake Forest School District
    - Laurel School District
    - Milford School District
    - New Castle County Votech School District
    - Polytech School District
    - Red Clay School District
    - Seaford School District
    - Smyrna School District
    - Sussex Technical School District
    - Woodbridge School District
- Department of Health and Social Services
    - Office of the Secretary
    - Division of Public Health
        - Director's Office
        - Southern Health Services
        - Northern Health Services
        - Public Health Preparedness Section
        - Office of Health and Risk Communications
        - Immunization Program

Non-Governmental

- Diocesan Catholic School District
- Independent Schools

DHS Target Capabilities

Capability 1: Mass Prophylaxis

SECTION 3: ANALYSIS OF CAPABILITIES

Capability 1: Mass Prophylaxis

Capability Summary: Mass Prophylaxis is the capability to protect the health of the population through the administration of critical interventions in response to a public health emergency in order to prevent the development of disease among those who are exposed or are potentially exposed to public health threats. This capability includes the provision of appropriate follow-up and monitoring of adverse events, as well as risk communication messages to direct and address the concerns of the public.

Activity 1: Directing Mass Prophylaxis Operations

Capability Summary: In response to a notification of an incident requiring mass prophylaxis, provide overall management and coordination of mass prophylaxis operations.

Issue 1a: Initiation of Mass Prophylaxis School Campaign

Analysis:
Comprehensive and collaborative program developed quickly under severe time constraints. The SVP began with initial outreach from DHSS/DPH to DOE. The plan took broad form in a series of DPH Novel H1N1 meetings.

Recommendations:
1. Anticipate and address issues/concerns in advance to allay concerns and minimize problems.
2. Ensure representation from all three counties so that each is included in the planning effort to ensure the diversity of needs.

Issue 1b: Operational Planning and Supportive Resources

Analysis:
DPH and DOE worked closely creating detailed Public/Charter School Vaccination Program plans, which outlined responsibilities for DPH and DOE, School Districts Vaccination Contacts, Schools and School Nurses. CDC materials and prototype forms were useful as a framework from which to develop program documents. DAG guidance was provided in developing consent forms. Documents created for the public and charter schools included: School Vaccination Program plan/responsibilities, letter to Superintendents, letter to principals, letters to parents (4), vaccination consent forms (4), clinic reminder letters (4), guidelines for consent form review (for nurses), guidelines for post-vaccination observation, and guidelines for tissue – sanitizer assistant.

Parallel documents were created for private and parochial schools, as well as for DSCYF facilities and others as needed. All documents developed for parents were also translated into Spanish.

Recommendation:
1. None

Activity 2: Communications

Activity Description: Implementation of the on-site vaccination plan required extensive communication and coordination between the DPH chain of command and the DOE as well as local interaction with the five public school districts and potentially 73 individual elementary schools.

Issue 2a: Communications and Coordination with the School Systems – Directorate Level

Analysis:
Public School Superintendents appointed a District Vaccination Contact person to be the primary conduit for general program information from DPH via DOE. In private and parochial schools the school nurse was most often the primary point of contact.

In consultation with DPH, information on the SVP was disseminated through DOE Nurse/Director of School Support Services to Superintendents and District Vaccination Contacts. District Vaccination Contacts, in turn, were responsible for information dissemination to School Principals and School Nurses. Information distributed included letters, plan, responsibilities, consent forms, reminders and guidelines, as well as ongoing updates, such as FAQs based on input from school nurses and vaccination contacts.

The school consent forms were more conservative then Standing Orders regarding allergies and medical history, as the parents were not going to be present at the time of immunization. This caused confusion and had to be clarified and orders signed off on by DPH Director. Training was provided via webinars and conference calls. DOE Nurse Director and DPH Nurse Director held webinars on topic of consent form review and other guidelines. Webinars included Q & A. Webinars were targeted at district lead nurses and district vaccination contacts. Webinars were taped so all school nurses could subsequently view. Some school nurses reported they did not receive all information or did not have time to read it.

DPH disseminated information to Private and Parochial Schools through Heads of Schools and School Nurses. Conference calls were held with private and parochial school nurses to present and discuss the plan, responsibilities, consent forms, consent form review and guidelines as well as to answer questions. Updates such as FAQs were provided principally through e-mail.

In Kent County, all project coordination and communication had to be done through district offices, which caused barriers. Some communication problems (lack of) were observed between districts and their personnel.

Recommendations:

1. Establish a means for cross-communicating and coordinating on the policy implementation issues early in the planning phase between school district nurses and the public health operational staff.
2. Send plan/responsibilities, consent forms and other documents and FAQs via official lines of communications, but also post and update on agreed upon public folder, web site and/or shared system, as well as through Delaware School Nurses Association (DSNA) to maximize effective communication.
3. Consider in-services for school vaccination contracts and nurses in each school district/county (parallel to those done for DPH/DHSS/MRC). Nurse team leaders could contact school nurses. Focus on clarifying school nurse roles vs. vaccinator roles.
4. Clarify accountability for biowaste disposal, supplies, etc.
5. Vaccinate partners.

Activity 3: Staffing

Activity Description: To administer Novel H1N1 vaccination to five public districts required on-site visits to 149 individual school sites. This required assigning nurses to administer the vaccine and support staff to handle all aspects of the logical support needed.

Issue 3a: In-House Staffing Plan

Analysis:
A staffing matrix for scheduling nurses and clinics for K-5 public and charter schools was developed by Northern Health Services (NHS) and Southern Health Services (SHS) using prior year public health vaccination workload data from another state system. The number of vaccinators needed was calculated using school population, estimated number of students with parental volunteer consents divided by the vaccinator per hour rate. This staffing matrix provided the flexibility to change any of the rates and recalculate by individual school site. Some problems were experienced with rotating nursing staff to different schools; consistent assignments would have been beneficial. Locating and assigning staff was more difficult near the end of the campaign.

NHS/SHS leadership scheduled clinics to maintain equitable presence and progress through each district. For the most part, schools (but not always parents) were satisfied with this approach. The contractor similarly tried to moved equitably through public and charter middle and high schools, as well as private and parochial schools and facilities, but found it challenging, with much “telephone tag”. In retrospect, the contractor suggested that it may have been beneficial if DPH developed a set schedule for the contractor to implement or if the schools completed written clinic request forms. The logistical support staff was required to pre-pack supplies, deliver, set-up, breakdown, and provide on-site support. This was refined with on-the-job experience during the campaign. Overall, a valuable staffing tool to plan and assign staff was generated.

Recommendations:

1. Nurse volunteer information should be maintained in a spreadsheet containing all contact information.
2. Standardize use of this scheduling model and base assumptions based upon this event.
3. In the future consider an approach to scheduling which is equitable, but not excessively time consuming. For contractor clinics, particularly when scheduling "unrelated" private and parochial schools, consider the use of written clinic request forms. School would be sent dates from which to choose. Schools could select first, second, and third choice of dates and submit those dates to the contractor, who would then schedule based on current availability.

Issue 3b: DHSS Staffing Availability

Analysis:

To implement the plan to offer Novel H1N1 immunizations to Delaware's school children, DPH needed to expand the number of registered nurse vaccinators beyond those in DPH. Staff to sustain a mass immunization event without closing all other services strained available resources.

Recruitment efforts resulted in nurse volunteers from throughout DPH as well the Division of Developmental Disabilities Services (DDDS), Division of Services for Aging and Adults with Physical Disabilities (DSAAPD), Division of Medicaid and Medical Assistance (DMMA), and Division of Substance Abuse and Mental Health (DSAMH). In addition RNs and MDs were recruited from the Medical Reserve Corps. Support staff recruitment from units other than Kent County Health Unit (KCHU) was problematic due to child care issues, lack of understanding of the need and responsibility, and/or the perceived utilization unfairness. The process was successful, especially during the first dose vaccination round, but waned somewhat with volunteer availability by the second round doses. Non-nurse volunteers were not available to draw upon to support the logistical staffing requirement, which was critical to the operation.

To further expand capacity, DPH contracted with Maxim, Inc. to provide immunizations for pubic and charter school students in grades 6-12 and K-12 in private and parochial schools and DSCYF facilities. The contract was an effective means to expand DPH capabilities.

DHSS nurses, DMRC volunteers, and contractor staff made valuable contributions to the SVP. Recruitment and partnership work done was a strongly positive experience, which will facilitate collaboration and communication in future endeavors.

Recommendations:

1. Continue collaborative efforts including biannual/annual DHSS nurse preparedness training and outreach to DMRC.
2. Contract as needed to further expand DPH vaccination capabilities. Generic contract template should be prepared and ready to customize.
3. Sustaining a volunteer base over a sustained period of time requires a larger volunteer

pool. Consider untapped alternatives.
4. Clarify expectations of support from non-medical personnel in other divisions during an event and how best to tap these resources. Identify alternative support pools.

Issue 3c: Substitute Coverage

Analysis:
Complexity and scarcity of assigning staff one week or longer in advance resulted in a shortage if an individual was unable to report at the last moment. There was not an adequate manpower stand-by pool to assign coverage or a consistent procedure across the various teams for rapid adjustment to absences.

Recommendation:
1. Establish a manpower substitute pool and guidelines.

Issue 3d: Medical Reserve Corps Badge Identification

Analysis:
All staff needs to be properly identified, recommending that badges include picture, name, and their professional credentials, i.e. nurse, physician, etc.

Recommendation:
1. Standardize identification badge format and requirements for Medial Reserve Corps volunteers.

Issue 3e: Training for Vaccinator Teams

Analysis:
2009 Novel H1N1 Influenza Vaccination and SVP in-service training was required for DHSS and DPH nurses and Medical Reserve Corps volunteers. Training (of approximately 3 hours) was held in Newark, October 14 & 16, in Dover, October 28 and in Georgetown on October 30. Training was provided for later recruits in small groups or on an individual basis. In-service topics included Novel H1N1 background and overview, school vaccination program plan and responsibilities, review of forms and processes, DHSS/DPH/MRC Team logistics (including scheduling, equipment and supplies and paperwork), Novel H1N1 vaccine standing orders, vaccine documentation, vaccine information sheets, vaccine storage and handling, infection contract, vaccine administration techniques, vaccine administration errors, post vaccination, emergency standing orders, and blood borne pathogens policy. In-service presentation included PowerPoint slides and packet of information for all attendees. All attendees had opportunity to use demo nasal spray syringes, which was very effective in allaying concerns. All attendees had the opportunity to receive Novel H1N1 and seasonal flu vaccinations.

Updates were sent via e-mail from the DPH Nursing Director through County Administrators through Vaccination Teams. Some inconsistency was reported in the

dissemination of information.

Recommendation:
1. Conduct in-services as above but also post all program information, documents, FAQs on public folder or shared access site to maximize communication.

Issue 3f: Vaccinating School Vaccinators

Analysis:
DPH provided Novel H1N1 and seasonal influenza vaccinations to interested school nurses at statewide Delaware School Nurse Association (DSNA) conference which generated much goodwill. Vaccinating during in-service training would have increased the numbers.

Recommendation:
1. Vaccinate vaccinators during in-service trainings.

Activity 4: Logistics

Activity Description: Success of a mass immunization program is dependent upon the ability of the process to provide the required supplies and equipment in a timely and sustainable fashion.

Issue 4a: Sustainable Logistic Staffing Support

Analysis:
The long duration of the immunization campaign, combined with the early hours to pack-up and physically move the supplies a long distance to the loading location in inclement weather taxed the staffing pool. As the campaign continued, the incidence of staff canceling availability for logistic support increased.

Recommendation:
1. Increase the staffing pool assignment for logistic support and/or the availability of volunteers.

Issue 4b: Transporting Staff to On-Site Locations

Analysis:
Staff was required to report to unfamiliar elementary schools scattered across the entire county often times early in the morning. Additionally, the volunteers who were not part of the regular office team had to report individually to these sites and join up with the main public health vaccinating team. Occasionally, this resulted in not knowing until close the start-up time at the new school site if or when all team members would be arriving. Also, parking was limited at some schools and knowing which entrance to use. Several teams used central check-in locations and car pooling, which reduced last minute staffing concerns.

Recommendation:
1. Implement centralized transporting.

Issue 4c: Alternative Warehouse Site

Analysis:
An alternate logistics site was established at the Emily Bissell State Chronic Care on the fourth floor utilizing two adjoining patient rooms not in use. An excess commercial pharmacy refrigerator was moved into place on emergency generator power, a new freezer was installed for ice packs, and a contract to install shelving was completed.

One elevator was down for maintenance and there was a long distance to load the vehicles for multiple teams, which caused delays first thing in the mornings. Additionally, the loading dock was not convenient for regular vans and parking the vehicles at the main entrance was prohibited by Security. Although these problems existed, a cross section of NHS administrative staffing was utilized and the clinic manager in charge implemented a very successful operation to sustain support during the entire school immunization campaign.

Recommendation:
1. Find an alternative warehouse location with easy vehicle access for future mass immunization campaigns.

Issue 4d: Communication Connections from Warehouse to On-Site Logistics

Analysis:
The logistics team operated independently from the nursing/vaccinator teams, which necessitated having a means to communication real-time, i.e. via cell phones. In route logistic teams occasionally needed to know which entrance to use at a school vaccination site or to communicate a time delay. Having a communication link to the on-site vaccination team would have assisted in this process. Additionally, having communication links between the on-site logistic teams and the logistic warehouse staff was equally critical.

Recommendation:
1. Maintain cell phone or 800 MHz radio capability and connections among all logistic teams, on-site vaccinator teams, and warehouse staff for every event for the entire campaign.

Activity 5: Operations

Activity Description: Operating a mass vaccination clinic in Delaware schools requires adequate knowledge and implementation of vaccine and logistics administration skills.

Issue 5a: Developing Standing Orders/Consent Form

Analysis:
Novel H1N1 Influenza Vaccination Standing Orders were developed in accordance with Advisory committee on Immunization Practices (ACIP)/CDC Recommendation(s). Despite best efforts for standardization (such as guidelines for consent form review), there were differences in interpretation of consent forms, which resulted in consternation on part of community physicians, parents, school nurses, and vaccinators. Clarification was needed regarding allergies.

Recommendation:
1. Proactively seek and resolve any differences in interpretation of standing orders and consent form in advance of program start.

Issue 5b: Consent Form Clarification on Medical Issues

Analysis:
DPH and DOE had to work together to ensure safe and efficient vaccination of all elementary students by first acquiring parental consent. This process involved getting a signed informed consent by appropriately communicating the medical benefits of vaccination for their child to the parent. The process of vaccinating required extensive detailed planning involving the individual school nurses to screen medical records to ensure no medical contraindications since parents would not be present in addition to the where, when, and how to set-up the vaccinating sites. Getting the details from the high Directorate level communicated and coordinated effectively down to the individual school nurses and cross connected to the public health vaccinating staff was problematic.

Consent form questions regarding medical contraindications caused an extraordinary number of hours attempting to resolve at both the school nurse and public health vaccinator level.

Recommendation:
1. Resolve contraindication questions on the consent forms and/or provide clear definitive guidance to parents, school nurses and public health staff.

Issue 5c: Consent Form Complicated for Parents

Analysis:
There was some confusion regarding first dose, second dose, and what was felt by many to be too much information on the consent form. There was also confusion about which children could and could not receive the nasal vaccine. Information may have been at a higher level of comprehension for the general public's understanding.

Recommendations:
1. Simplify the consent form and process for parents, school, and public health.
2. Consider FAQ handout or referring parents to the DPH Call Center if they have

questions after reviewing the consent form.

Issue 5d: Consent Forms Complicated for School Personnel

Analysis:
The complexity of the form and the lack of sufficient time to train those recording at the schools resulted in inconsistencies in the reporting between schools. Some information that was captured was not used in reported, i.e. wasted vaccine.

Recommendations:
1. Simplify documents as much legally possible and provide clear guidance up front to all involved. More concise explanation of the meaning of categories (i.e. contraindications, opt outs, refusals) would assist.
2. Ensure consistency of forms across all vaccination venues to ease data entry and reduce errors.
3. Ensure representation by all counties in the planning effort to ensure all have equal understanding of the plan and the plan can be implemented consistently across the state.
4. Ensure all details are covered as much as possible in the plan, e.g. waste disposal, problems with incorrectly stocked emergency kits not being correctly stocked, cold chain of custody, training related to use of warm marks (thermometers), ice packs and coolers.

Issue 5e: Consent Form Processing

Analysis:
There were some inconsistencies among schools and teams in regards to the number of copies and who was responsible for making copies of the consent forms, along with coordination for final disposition.

Recommendations:
1. Establish clear guidance statewide for record management of the consent forms.
2. Evaluate if it is better to copy forms on an ongoing basis or as groups are immunized if real time electronic data collection cannot be implemented.

Issue 5f: Lack of back-up support for the school nurses

Analysis:
Depending upon the school district and the individual school, there was inconsistency in regards to how much support the school nurse was provided in-house preparing for and during the actual school vaccination clinic. The key limiting factor for maintaining a high vaccinating rate per vaccinator was highly dependent upon students being properly medically screened in advance by the school nurse, lined up, properly identified, organized, and ready to be vaccinated. Frequently, vaccinators were idle waiting for the next child to present to be vaccinated, whereas the system was staffed to handle a constant flow in a mass vaccination scenario.

Recommendations:
1. Establish and communicate down to the school nurse level and school administrators the immunization process requirements.
2. Have school nurses communicate directly with public health nurses who are most familiar with mass immunization requirements and mechanisms to optimize. Establish best practices model.

Issue 5g: Ensuring Identity of Students

Analysis:
The young population of student/client patients from kindergarten to fifth grade resulted in a few instances of identification problems. Since students were not accompanied by the parent/guardian, 100% identification accuracy is essential by students being accompanied by their teacher. An identification badge with first and last name, verbally asking child their full names, and comparing directly against the parent approved/signed consent form would be helpful.

Recommendations:
1. Establish written protocol for student identification with required compliance at all school sites.
2. Consider reformatting Vaccination Administration Record (VAR) forms to include teacher, class and homeroom information so if there are questions or errors the teacher can be more easily identified for confirmation.

Issue 5h: Percent of Enrolled School Population

Analysis:
Four baseline measures were collected daily throughout the school vaccination campaign and analyzed at the conclusion. An in-depth analysis is available, but a summary of the finding on each measure are provided below.

The planning assumption was based on previous history in Harford County, MD that 50% of enrolled population would consent to be vaccinated. In theory, this measure tells how effectively public health at the local and national levels communicated the message to the public. Overall, the average was 44% of the DE school population's parents granted consent.

Recommendations:
1. Need accurate enrollment counts from the school districts.
2. Total vaccination counts by area.
3. Surveys to help identify why parents did not grant consent.

Issue 5i: Methodology of Tracking Reported Consent and Vaccination Numbers

Analysis:
Tracking of consent and vaccination numbers was needed for internal/program and external/media reporting. Methodology of tracking reported consent and vaccination numbers was not given its due consideration in advance of program kick-off. District vaccination contacts were asked to count and report number of consents and report to DPH by a given date. They were told to update if changed by +/- 10%. Unfortunately interest by media placed emphasis on % of students with consents and % of those with consents being immunized but numbers were a moving target. (School may have had 100 consents originally but prior to vaccination clinic added 10 new consents and 15 parents withdrew consent. If 95 children were immunized, then technically 100% of those with consents were immunizations; however, it would be recorded as 95%.) All involved were overburdened.

Recommendation:
1. Determine what data will be collected and what statistics reported and how it will be collected (e.g. via spread sheet) in advance of program start. Keep it simple.

Issue 5j: First Vaccination as a Percent of Consents

Analysis:
The overall average was 85% with the assumption it would be closer to 100%. This measure can be used to measure the effectiveness of the DOE and DPH to communicate the importance of vaccination to the parents and establish an effective process and DOE/DPH's combined efforts to communicate and follow protocols.

Recommendation:
1. A final consent count should be completed on the vaccination day including the counts/categories rejected by the school nurse.

Issue 5k: Second Vaccination as a percent of First Vaccination

Analysis:
Overall average was 65% with assumption rate would be close to 100% to measure effectiveness of local and national message to convince public on need for full protection. Artificially low percent because those individuals 10 years of age and older did not require a second vaccination, and those numbers were not available.

Recommendations:
1. Clarify those individuals rejected for the second dose and record; survey those who should have gotten 2nd dose but did not.
2. Include age in tracking measures to improve data accuracy.

Issue 5l: Vaccinations per RN per Hour

Analysis:
Planning assumption that RNs would be able to vaccinate 20 students per hour based on historic information from Harford County, MD. Overall average was 16.8 per RN per hour on the 1st dose and 20.3 per RN per hour on the 2nd doses. However, the range varied from as low as 6.4 per hour to a high of 48.5 per hour. The determining factor was primarily the school process by which the paperwork and organization of the students in for mass vaccination.

Recommendations:
1. Approval of the medical consent must be done prior to vaccination day by the school nurse.
2. A continuous stream of students in queue who have been cleared to be vaccinated with no gaps.
3. Close collaboration and communication among public health, school nurse and school administrators to ensure continuity of the vaccine protocols.
4. Need support from the higher school administration, superintendent and principal to ensure the vaccine process is given priority on vaccination day.
5. Schools to provide volunteers or other coverage so that classroom teacher is with those students who have consent to be vaccinated for identification purposes, and other supervision is provided back in the classroom for students not being vaccinated. Volunteers are also beneficial to assist with other administrative tasks such as copying consent forms, monitoring student queue or waiting lines.
6. Ensure school process in place so only those students with approved parental and school nurse consent should be in the vaccination lines.
7. Data collection process to provide multiple counts and timings at schools with AM/PM kindergarten.

Activity 6: Contractor Management

Activity Description: To enhance staffing, Maxim was contracted to provide vaccine to school-aged children. Clinical services needed to be monitored to ensure contract compliance.

Issue 6a: Contract Compliance/Quality of Services

Analysis:
Contractor teams vaccinated students in public and charter schools grades 6-12 with injectable vaccine. In addition, contractor vaccinated all K-12 students (K-5 nasal spray; 6-12 injectable vaccine) with parental consent in private and parochial school with school nurses, as well as DSCYF facilities. DPH monitored contractor compliance with contract and quality parameters. DPH supplied/monitored contractor with vaccine and supplies.

Quality assurance site visits were conducted at 40% of the nearly 200 contractor school clinics. Fourteen parameters were monitored including standing orders and emergency medication on site, team on schedule and adequately staffed, vaccine properly stored,

confidentiality/privacy maintained, hands washed/sanitized, consent form completed, nurses documentation completed, team cooperative with school team and team utilized medical waste containers and removed from school facility. Any discrepancies were conveyed via report, and if needed, by immediate phone call by QA site visitor to PHND who in turn communicated concern to Contractor through e-mail, weekly conference calls or phone call (if necessary) for prompt remediation.

Recommendation:

1. QA site visits served as an effective way to monitor clinical services. Ongoing e-mail communication and principally phone calls, as well as weekly conference calls also promoted contract compliance/quality of services.

Issue 6b: Contractor Vaccine Supply Monitoring

Analysis:

Vaccine supply was critical to scheduling of contractor clinics particularly in the early stages of the campaign when shortages were severe. Contractor respectively requested better way for DPH/contractor to monitor the amount of vaccine in supply and amount needed.

Recommendation:

1. Create system in advance and ask contractor to use.

Issue 6c: Contractor Supplies

Analysis:

DPH provided contractor with vaccine, needles, alcohol wipes and sharps containers (and tissues when vaccinating K-5). Contractor did not receive tissues for 6-12 students, drape sheets, band aids, biohazard bags, hand sanitizer or thermometers. While contractor did not necessarily expect all these items, it was not perfectly clear to them what they would or would not receive, and clarification in future contracts is needed. This is particularly important given the plan with schools, in which DPH vaccination teams would supply certain items (e.g., tissues and hand sanitizer) and have certain responsibilities (e.g., take temperature of student if presented to vaccinator with apparent fever and remove all bio-waste.)

Recommendation:

1. Clarify supplies to be received from DPH as well as those needed to be supplied by contractor in contract

SECTION 4: CONCLUSION

Overall, the Novel H1N1 School Vaccination Program was a success. DPH was able to vaccinate a large number of school age children and found the experience to be extremely well organized, well planned and the districts would participate in a school vaccination program in the future. Most of the recommendations for improvements are easily implemented and many items have already been completed.

The following Target Capabilities were addressed during this event:

Capability 1: Communications
Capability 2: Emergency Operations Center Management
Capability 3: Medical Surge
Capability 4: Planning

Major Strengths:

- To further expand capacity, DPH contracted with Maxim, Inc. to provide immunizations for public and charter school students in grades 6-12 and K-12 in private and parochial schools and DSCYF facilities. The services provided by Maxim, Inc. staff proved to be an effective means to expand DPH capabilities.
- Public School Superintendents appointed District Vaccination contact personnel to be primary conduits for general program information from DPH via DOE as well as specific information from Northern or Southern Health Services Vaccinations Teams for clinic scheduling. In private and parochial schools the school nurse was most often the primary point of contact.
- Traveling teams of nurses that went to each school increased the rate of vaccination by providing a convenience to the families.

Areas of Improvement:

- Establish a means for cross communicating and coordinating on policy implementation issues early in the planning phase between school district nurses and Public Health Operations staff.
- Simplify the consent form and the process for parents, schools and public health, and establish guidance on statewide records management of consent forms.
- Proactively seek and resolve any differences in interpretation of standing orders and consent form in advance of program start.

Appendix A: Improvement Plan

This Improvement Plan has been developed specifically for DPH. These recommendations came from participants in the event preparation and planning and from opportunities that presented during the actual event. These recommendations are drawn from the After Action Report.

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Initiation of Mass Prophylaxis School Campaign	Anticipate and address issues/concerns in advance to allay concerns and minimize problems.						
Capability 1: Mass Prophylaxis	Initiation of Mass Prophylaxis School Campaign	Ensure representation from all three counties so that each is included in the planning effort to ensure the diversity of needs.						
Capability 1: Mass Prophylaxis	Communications and Coordination with the School Systems – Directorate Level	Establish a means for cross-communicating and coordinating on the policy implementation issues early in the planning phase between school district nurses and the public health operational staff.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Communications and Coordination with the School Systems – Directorate Level	Send plan/responsibilities, consent forms and other documents and FAQs via official lines of communications, but also post and update on agreed upon public folder, web site and/or shared system, as well as through DSNA to maximize effective communication.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Communications and Coordination with the School Systems – Directorate Level	Consider in-services for school vaccination contracts and nurses in each school district/county (parallel to those done for DPH/DHSS/MRC). Nurse team leaders could contact school nurses. Focus on clarifying school nurse roles vs. vaccinator roles.						
Capability 1: Mass Prophylaxis	Communications and Coordination with the School Systems – Directorate Level	Clarify accountability for biowaste disposal, supplies, etc.		Communications				
Capability 1: Mass Prophylaxis	Communications and Coordination with the School Systems – Directorate Level	Vaccinate partners.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	In-House Staffing Plan	Nurse volunteer information should be maintained in a spreadsheet containing all contact information.						
Capability 1: Mass Prophylaxis	In-House Staffing Plan	Standardize use of this scheduling model and base assumptions based upon this event.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	In-House Staffing Plan	In the future consider an approach to scheduling which is equitable, but not excessively time consuming. For contractor clinics, particularly when scheduling "unrelated" private and parochial schools, consider the use of written clinic request forms. School would be sent dates from which to choose. Schools could select first, second, and third choice of dates and submit those dates to the contractor, who would then schedule based on current availability.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	DHSS Staffing Availability	Continue collaborative efforts including biannual/annual DHSS nurse preparedness training and outreach to DMRC.						
Capability 1: Mass Prophylaxis	DHSS Staffing Availability	Contract as needed to further expand DPH vaccination capabilities. Generic contract template should be prepared and ready to customize.						
Capability 1: Mass Prophylaxis	DHSS Staffing Availability	Sustaining a volunteer base over a sustained period of time requires a larger volunteer pool. Consider untapped alternatives.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	DHSS Staffing Availability	Clarify expectations of support from non-medical personnel in other divisions during an event and how best to tap these resources. Identify alternative support pools.						
Capability 1: Mass Prophylaxis	Substitute Coverage	Establish a manpower substitute pool and guidelines.						
Capability 1: Mass Prophylaxis	Medical Reserve Corps Badge Identification	Standardize identification badge format and requirements for Medial Reserve Corps volunteers.						
Capability 1: Mass Prophylaxis	Training for Vaccinator Teams	Conduct in-services as above but also post all program information, documents, FAQs on public folder or shared access site to maximize communication.						
Capability 1: Mass Prophylaxis	Vaccinating School Vaccinators	Vaccinate vaccinators during in-service trainings						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Sustainable Logistic Staffing Support	Increase the staffing pool assignment for logistic support and/or the availability of volunteers.						
Capability 1: Mass Prophylaxis	Transporting Staff to On-Site Locations	Implement centralized transporting.						
Capability 1: Mass Prophylaxis	Alternative Warehouse Site	Find an alternative warehouse location with easy vehicle access for future mass immunization campaigns.						
Capability 1: Mass Prophylaxis	Communication Connections from Warehouse to On-Site Logistics	Maintain cell phone or 800 MHz radio capability and connections among all logistic teams, on-site vaccinator teams, and warehouse staff for every event for the entire campaign.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Developing Standing Orders/Consent Form	Proactively seek and resolve any differences in interpretation of standing orders and consent form in advance of program start.						
Capability 1: Mass Prophylaxis	Consent Form Clarification on Medical Issues	Resolve contraindication questions on the consent forms and/or provide clear definitive guidance to parents, school nurses and public health staff.						
Capability 1: Mass Prophylaxis	Consent Form Complicated for Parents	Simplify the consent form and process for parents, school, and public health.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Consent Form Complicated for Parents	Consider FAQ handout or referring parents to the DPH Call Center if they have questions after reviewing the consent form.						
Capability 1: Mass Prophylaxis	Consent Forms Complicated for School Personnel	Simplify documents as much legally possible and provide clear guidance upfront to all involved. More concise explanation of the meaning of categories (i.e. contraindications, opt outs, refusals) would assist.						
Capability 1: Mass Prophylaxis	Consent Forms Complicated for School Personnel	Ensure consistency of forms across all vaccination venues to ease data entry and reduce errors.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Consent Forms Complicated for School Personnel	Ensure representation by all counties in the planning effort to ensure all have equal understanding of the plan and the plan can be implemented consistently across the state.						
Capability 1: Mass Prophylaxis	Consent Forms Complicated for School Personnel	Ensure all details are covered as much as possible in the plan, e.g. waste disposal, problems with incorrectly stocked ER kits not being correctly stocked, cold chain of custody, training related to use of warm marks (thermometers), ice packs and coolers.						
Capability 1: Mass Prophylaxis	Consent Form Processing	Establish clear guidance statewide for record management of the consent forms.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Consent Form Processing	Evaluate if it is better to copy forms on an ongoing basis or as groups are immunized if real time electronic data collection cannot be implemented.						
Capability 1: Mass Prophylaxis	Lack of back-up support for the school nurses	Establish and communicate down to the school nurse level and school administrators on the immunization process requirements.						
Capability 1: Mass Prophylaxis	Lack of back-up support for the school nurses	Have school nurses communicate directly with public health nurses who are most familiar with mass immunization requirements and mechanisms to optimize. Establish best practices model.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Ensuring Identity of Students	Establish written protocol for student identification with required compliance at all school sites.						
Capability 1: Mass Prophylaxis	Ensuring Identity of Students	Consider reformatting Vaccination Administration Record (VAR) forms to include teacher, class and homeroom information so if there are questions or errors the teacher can be more easily identified for confirmation.						
Capability 1: Mass Prophylaxis	Percent of Enrolled School Population	Need accurate enrollment counts from the school districts.						
Capability 1: Mass Prophylaxis	Percent of Enrolled School Population	Total vaccination counts by area.						
Capability 1: Mass Prophylaxis	Percent of Enrolled School Population	Surveys to help identify why parents did not grant consent.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Methodology of Tracking Reported Consent and Vaccination Numbers	Determine what data will be collected and what statistics reported and how it will be collected (e.g. via spread sheet) in advance of program start. Keep it simple.						
Capability 1: Mass Prophylaxis	First Vaccination as a Percent of Consents	A final consent count should be completed on the vaccination day including the counts/categories rejected by the school nurse.						
Capability 1: Mass Prophylaxis	Second Vaccination as a percent of First Vaccination	Clarify those individuals rejected for the second dose and record; survey those who should have gotten 2nd dose but did not.						
Capability 1: Mass Prophylaxis	Second Vaccination as a percent of First Vaccination	Include age in tracking measures to improve data accuracy.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Vaccinations per RN per Hour	Approval of the medical consent must be done prior to vaccination day by the school nurse.						
Capability 1: Mass Prophylaxis	Vaccinations per RN per Hour	A continuous stream of students in queue who have been cleared to be vaccinated with no gaps.						
Capability 1: Mass Prophylaxis	Vaccinations per RN per Hour	Close collaboration and communication among public health, school nurse and school administrators to ensure continuity of the vaccine protocols.						
Capability 1: Mass Prophylaxis	Vaccinations per RN per Hour	Need support from the higher school administration, superintendent and principal to ensure the vaccine process is given priority on vaccination day.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Vaccinations per RN per Hour	Schools to provide volunteers or other coverage so that classroom teacher is with those students who have consent to be vaccinated for identification purposes, and other supervision is provided back in the classroom for students not being vaccinated. Volunteers are also beneficial to assist with other administrative tasks such as copying consent forms, monitoring student queue or waiting lines.						
Capability 1: Mass Prophylaxis	Vaccinations per RN per Hour	Ensure school process in place so only those students with approved parental and school nurse consent should be in the vaccination lines.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Capability 1: Mass Prophylaxis	Vaccinations per RN per Hour	Data collection process to provide multiple counts and timings at schools with AM/PM kindergarten.						
Capability 1: Mass Prophylaxis	Contract Compliance/ Quality of Services	QA site visits served as an effective way to monitor clinical services. Ongoing e-mail communication and principally phone calls, as well as weekly conference calls also promoted contract compliance/quality of services.						
Capability 1: Mass Prophylaxis	Contractor Vaccine Supply Monitoring	Create system in advance and ask contractor to use.						
Capability 1: Mass Prophylaxis	Contractor Supplies	Clarify supplies to be received from DPH as well as those needed to be supplied by contractor in contract						

Appendix B: School Survey

Summary of Findings:
School Personnel Reporting on the School Vaccination Program

Overview of Respondents
A total of 185 people responded to a survey conducted at the end of the vaccination program regarding the School Vaccination Campaign. The total percent of respondents by role are:

- Lead Administrator: Superintendent, Head of District/Charter, Other Administrator = 3%
- Local School Administrator: Principal, Dean of Student, Other = 9%
- Vaccination Contact Person (Designated by Lead Administrator) = 26%
- School Nurse = 79%
- School Faculty: Teachers, Specialists = 4%
- District Level Staff = 2%
- Other role = 8%

Results
Respondents who reported a positive experience with this program attributed it to strong teamwork, accessible and timely information, and provision of resources and staff for the increased work burden. Recommendations based on reports of positive program experiences are made below.

Over 95% of respondents considered this vaccination program important for students. They felt that the program was valued as it promoted service and safety and as it fostered inclusion for students who have lesser access to healthcare outside of schools. 94% of respondents thought their role in the campaign was a good fit, considering their position .

Recommended Best Practices
Use nurses as points of contact. By presenting medical information to a medical professional issues, concerns and questions can be identified and answered more quickly.

Strong communication between nursing team and school is required. Ongoing communication and addressing of questions and concerns prepared teams and schools for a smooth operational experience.

Identify and address concerns proactively. 43% of respondents had concerns about the vaccine, but many said that when they had access to good information through accessible and timely communication channels, they no longer were worried about the vaccine's safety or efficacy, or the nature of the program.

Determine duties, tasks and needed personnel, so support resources and staff can be requested and used as available and appropriate. Many respondents described an immense work burden. Those who had the support of other staff or volunteers found this a successful way to handle the increased work burden.

External Factors of Difficulty/Needs for Improvement in Future Efforts

Consent forms, parental concerns, street talk and media hype. The media coverage of Novel H1N1 exacerbated parental concerns and many parents did not feel confident to complete the consent form, or did so by making notes of other medical information on it, rendering it unusable. This difficulty with the consent forms, the amount of time required reviewing them, and successfully answering parental concerns were reported by nearly all respondents as a source of great work burden and frustration in the School Vaccination Program.

Survey Questions and Responses

Did you consider the 2009 NovelH1N1 flu vaccine important for your students?	What role did you play in the vaccination efforts?						
	Lead Administrator: Superintendent, Head of District/Charter, Other Administrator	Local School Administrator: Principal, Dean of Student, Other	Vaccination Contact Person (Designated by Lead Administrator)	School Nurse	School Faculty: Teachers, Specialists	District Level Staff	Other Role
Yes	**6**	**15**	**41**	**132**	**7**	**3**	**14**
No	**0**	**1**	**5**	**6**	**0**	**0**	**1**

Cross Tabulation 1

Questions for School Personnel from School Vaccination Program.

1. What student population(s) do you represent? Please check all that apply.

#	School Type	K-5	6-12	Responses
1	School District	53%	47%	169
2	Private or Parochial School	50%	50%	52
3	Charter School	44%	56%	18

2. In which county in your school located? (Choose one).

#	Answer	Response	%
1	New Castle County	117	66%
2	Kent County	31	18%
3	Sussex County	29	16%
	Total	177	100

3. Did you consider the 2009 Novel H1N1 influenza vaccine important for your students? Why or why not? (Choose one).

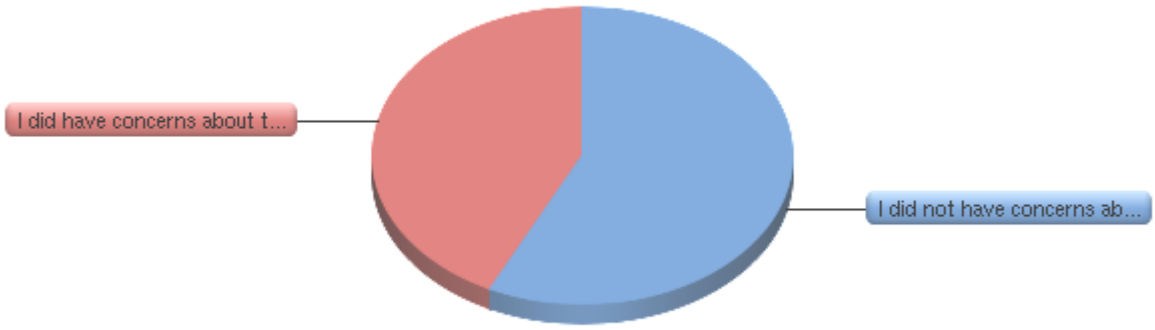
    a. Yes (95%). Prevention, avoid school absences, accessibility for all, protect high risk students.

    b. No (5%). Mild illness/Need exaggerated, parent's responsibility, didn't receive vaccines soon enough, should develop natural immunity.

4. Did you have concerns about the 2009 Novel H1N1 vaccine? Please explain (choose one).

    a. I did not have concerns about this vaccine.

    b. I did have concerns about this vaccine (open response).



5. Given your knowledge and skills, were the responsibilities assigned to you in the vaccination efforts a good fit? Please explain (choose one).

    a. Yes (94%)

    b. No (6%)

6. Were you able to make contact/connections with people needed to play your role in the vaccination efforts? Please explain (choose one).

1	Yes	152	88%
2	No	20	12%
	Total	172	100

7. Did your school or district provide you with additional resources (beyond those provided by DPH) during this campaign? Please indicate all that apply.

Resource	Response	%
Substitute nurse	130	74%
Substitute teacher	23	13%
Relocating staff resources	80	45%
Document printing	80	45%
Overtime for staff	20	11%
Other resources:	50	28%
My school or district did not provide me with additional resources.	16	9%
I am unaware of who provided resources.	0	0%

8. Who were your sources of information for in the vaccination efforts? Please check all that apply.

1	Division of Public Health (DPH)		157	89%
2	Department of Education (DOE)		123	69%
3	Maxim Contractor		55	31%
4	Other:		46	26%

9. Did you receive the information you needed in a timely fashion to play your role in the vaccination efforts? If not, what further information did you need, and/or what were concerns about the timing of the information? Please be specific as to time frame of information needed vs. information received (choose one).

1	Yes, I received the information I needed in a timely manner.		118	68%
2	No, I did not receive the information I needed, or I did not receive it in a timely manner.		56	32%
	Total		174	100%

10. Did you have concerns about the quality of the information provided? If so, please explain and identify the source of the information that was concerning (DPH, DOE, other).

1	No, I did not have concerns concerning the quality of the information provided.		130	74%
2	Yes, I had concerns about the information provided:		45	26%
	Total		175	100%

11. Did parents contact you with concerns regarding the vaccine or vaccination efforts? If so, what were their concerns? (Choose one).

1	No, parents did not contact me with concerns.		24	14%
2	Yes, parents did contact me with concerns:		153	86%
	Total		177	100%

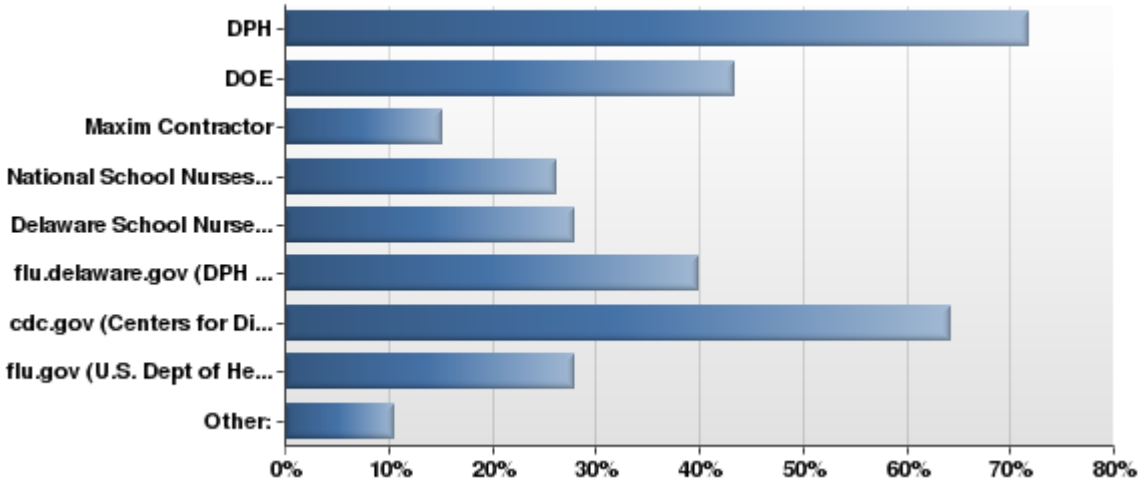
12. Which, if any, of the following issues did you face with consent forms?

1	Printing	28	16%
2	Copying	74	43%
3	Receiving from parents in an untimely manner	139	81%
4	Answering parent questions	86	50%
5	Translating needed in the following language:	21	12%
6	Collecting	101	59%
7	Reviewing	111	65%
8	Withdrawal of permission	120	70%
9	Inaccuracies of submitted form	125	73%
10	Other:	43	25%

13. Did you seek out additional information concerning the vaccine or the vaccination efforts? If so, from what source? (Choose one)

1	No, I did not seek out additional information.	65	37%
2	Yes, I sought out additional information from:	109	63%
	Total	174	100%

14. Which sources of information were the most helpful and reliable during the vaccination efforts? Please check all that apply.



15. Was an appropriate amount of attention given to the vaccination efforts? (Check all that apply)

Question	Too much	The right amount	Too little	Responses	
1	By DPH	9	134	27	170
2	By DOE	13	128	25	166
3	By your school community	11	140	18	169
4	Other:	3	11	4	18

16. Did you receive sufficient support in the vaccination efforts? (Choose one per row)

Question	Yes	No	Responses	
1	DPH	142	29	171
2	DOE	128	37	165
3	Your own school community	152	16	168
4	Other:	16	4	20

17. Were you able to balance the responsibilities of the 2009 Novel H1N1 vaccination efforts with your other professional responsibilities? Please explain (choose one).

Were you able to balance the responsibilities of the 2009 Novel H1N1 vaccination efforts with your other professional responsibilities?

Yes	**20**	**11%**
Qualified yes	**102**	**58%**
No	**54**	**31%**
	176	**100%**

TAB B: NDMS MASS VACCINATION CLINICS

Novel H1N1 Influenza Mass Vaccination Clinic

State of Delaware

Phase I: November 20, 2009 to November 22, 2009

Phase II: December 15, 2009 to December 17, 2009

After Action Report / Improvement Plan

January 11, 2010

HANDLING INSTRUCTIONS

The information gathered in this AAR/IP is classified as a public document and can be distributed as such.

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SECTION 1: EXECUTIVE SUMMARY

Event Overview
On October 27, 2009, the Division of Public Health (DPH) raised the State Health Operations Center (SHOC) Level from Level I-Heightened Assessment to Level II-Localized Event/Potential Statewide Impact in order to address the Novel H1N1 Vaccination Campaign. Two methodologies were used to provide vaccine to the public. The first was providing vaccine to private medical providers, including hospitals and doctor's offices. The second was to provide vaccine to school aged children. While many Delawareans and visitors were served in these operations, additional methods needed to be employed to capture those who could not be served. For example, at-risk children were unable to receive the inhaled version of the vaccine at schools and the uninsured population did not have access to private medical providers. To remedy this, mass vaccinations clinics were deployed using the NEHC model.

Phase I clinics were conducted between November 20, 2009 and November 22, 2009. Phase II clinics were conducted between December 15, 2009 and December 17, 2009. To minimize crowds, appointments were scheduled prior to the event for those who met the following priority groups. For Phase II, priority groups were increased and tiered due to available vaccine.

Phase I Priority Groups

- Pregnant women
- Infants and children 6 months to 4 years of age
- Those 5 to 64 years of age with chronic conditions diagnosed and documented by a physician, such as:
    - Asthma
    - Neurological and neurodevelopmental conditions
    - Chronic lung disease
    - Heart disease
    - Blood disorders (such as sickle cell disease)
    - Endocrine disorders (such as diabetes mellitus)
    - Kidney disorders
    - Liver disorders
    - Metabolic disorders (such as inherited metabolic disorders and mitochondrial disorders)
    - Weakened immune system due to disease or medication (such as people with HIV or AIDS, or cancer, or those on chronic steroids)

Phase II Priority Groups

- Tier 1 (Highest Priority)
    a. Pregnant women
    b. Persons who live with or provide care for infants aged <6 months (e.g., parents, siblings, and daycare providers)
    c. Health-care and emergency medical services personnel

d. Persons aged 6 months – 24 years
e. Persons aged 25 – 64 years who have medical conditions that put them at higher risk for influenza-related complications such as:
    - Asthma
    - Neurological and neurodevelopmental conditions
    - Chronic lung disease
    - Heart disease
    - Blood disorders (such as sickle cell disease)
    - Endocrine disorders (such as diabetes mellitus)
    - Kidney disorders
    - Liver disorders
    - Metabolic disorders (such as inherited metabolic disorders and mitochondrial disorders)
    - Weakened immune system due to disease or medication (such as people with HIV or AIDS, or cancer, or those on chronic steroids)

- Tier 2
    a. Other persons aged 25 – 64 years

- Tier 3
    a. Persons aged 65 years and older

A total 5,872 people were vaccinated across Delaware's three counties. Per county percentages of total vaccinations are: New Castle County (42%), Kent County (27%) and Sussex County (31%). During Phase I, all three sites had a total of 994 appointments registered for each site. On November 20, at the Terry Campus (Dover, Kent County), 783 people were vaccinated between the hours of 1:00 pm and 8:00 pm. On November 21, at the Stanton Campus (Christiana, New Castle County), 913 were vaccinated between the hours of 9:00 am and 4:00 pm. On November 22, at the Owens Campus (Georgetown, Sussex County), 891 were vaccinated between the hours of 9:00 am and 4:00 pm. Phase I vaccinations represent 49% of the total vaccinations. Patient feedback forms were quite positive with 75% of those filling out surveys stating that they had an excellent experience (see Appendix B for more information regarding patient comments).

Phase I

Location	Appointments	Total Vaccinated	Number of Vaccinators	Percent of Total Vaccinations (Both Phases)
Kent County 11/20/209	994	783	16	13%
New Castle County 11/21/2009	994	913	18	16%
Sussex County 11/22/2009	994	891	18	15%
Totals	2,982	2,587	Average 17	44%

During Phase II, Stanton and Terry Campus had a total of 1,244 appointments registered and Owens Campus had 947 appointments registered. On December 15, at the Terry Campus (Dover, Kent County), 783 people were vaccinated between the hours of 1:00 pm and 8:00 pm. On December 16, Owens Campus (Georgetown, Sussex County), 657 were vaccinated between the hours of 1:00 pm and 8:00 pm. On December 17, at the Stanton Campus (Christiana, New Castle County), 1,244 were vaccinated between the hours of 1:00 pm and 8:00 pm. Phase II vaccinations represent 51% of the total vaccinations.

Phase II

Location	Appointments	Total Vaccinated	Number of Vaccinators	Percent of Total Vaccinations (Both Phases)
Kent County 12/15/209	1244	812	21	14%
Sussex County 12/16/2009	947	947	21	16%
New Castle County 12/17/2009	1244	1,526	21	26%
Totals	3,435	3,285	Average 21	56%

Pre-event, operational plans were coordinated with key preparedness partners, to include the National Disaster Medical System (NDMS) provided by the U.S. Health and Human Services (HHS), Delaware Medical Reserve Corps (DMRC), and the Delaware Technical and Community College (DelTech) facilities management and student nurses. During operations, DPH established unified command with HHS to meet both known and unknown challenges, adjust to changing conditions, and maintain situational awareness. Major lessons learned are noted below.

Major Strengths:

- Unified Operations: DPH was able to seamlessly employ personnel resources from a variety of sources, to include NDMS, DMRC, and student nurses, to address staffing shortfalls within the state as a result of the school vaccination campaign.
- Flexibility: To minimize crowds and long lines, plans were quickly adjusted by employing appointments for the public and ensuring that the flow during operations was efficient based on populations for that day, especially when pediatric populations are being served.
- Throughput: During Phase I, a total of 2,587 patients were vaccinated with an average processing time of 13 minutes and 53 seconds from registration through vaccination. During Phase II, a total of 2,713 patients were vaccinated with an average processing time of 14 minutes and 20 seconds.

Areas for Improvement:

- Medical Consultation: Provide training to medical consultants regarding issues surrounding thimerosal, chronic diseases, and DPH policy on priority groups prior to the event.

- Appointments: Acquire appointment software and provide training to call center associates prior to the event to minimize errors.

SECTION 2: EVENT DETAILS

Participating Agencies and Organizations
DPH communicated with a wide range of federal, state, local, and private agencies and organizations.

Federal

- U.S. Department of Health and Human Services
    - Regional Office
    - Centers for Disease Control
    - Office of Preparedness and Emergency Operations
    - The National Disaster Medical System

State

- Governor's Office
- Department of Health and Social Services
    - Office of the Secretary
    - Division of Public Health
        - Director's Office
        - Public Health Preparedness
- Department of Safety and Homeland Security
    - Delaware State Police
    - Delaware Information and Analysis Center
- Delaware Technical and Community College
    - Office of the President
    - Nursing Program
    - Facility Management
- Delaware Medical Reserve Corps

Private

- Primecare Health Services

DHS Target Capabilities

- Capability 1: Mass Prophylaxis

SECTION 3: ANALYSIS OF CAPABILITIES

Capability 1: Mass Prophylaxis

Capability Summary: Mass Prophylaxis is the capability to protect the health of the population through the administration of critical interventions in response to a public health emergency in order to prevent the development of disease among those who are exposed or are potentially exposed to public health threats. This capability includes the provision of appropriate follow-up and monitoring of adverse events, as well as risk communication messages to direct and address the concerns of the public.

Activity 1: Direct Mass Prophylaxis Tactical Operations

Activity Description: In response to a notification of an incident requiring mass prophylaxis, provide overall management and coordination of mass prophylaxis operations.

Issue 1a: Unified Command

Phase I
Unified command was established that included an Incident Commander from DPH and HHS. Both Incident Commanders were experienced in their role, managed emergencies previously, understood the Incident Command System, and served as agency points of contact (POC) to determine all arrangements between agencies prior to and during activation. This structure led to excellent operations and integration of state, federal, local, private, and volunteer resources. The use of color coded vest and uniforms for all staff was helpful during operations, allowing all staff to understand the role of staff that may be unfamiliar.

Recommendation:
1. None

Phase II
The same Command Structure was established, resulting in excellent operations and a seamless integration of state, federal, local, private and volunteer resources.

Recommendation:
1. None

Issue 1b: Plans Integration

Phase I
DPH had an already established NEHC Plan to address operations that had been exercised annually for a number of years. Nonetheless, the uniqueness of the Novel H1N1 Vaccination Campaign and the use of NDMS resources required an event-specific

Concept of Operations Plan. Federal plans were also necessary. Both were well integrated. The only issue was a misunderstanding of the NDMS team's required operational time to vaccinate 994 individuals to reach the necessary throughput and hours of operations. Due to time constraints and scheduled appointment throughput, NDMS added more vaccinators to meet the demand.

Recommendation:
1. None

Phase II
During both phases, many adjustments were made to the existing Concept of Operations Plan to allow for increased efficiencies in the process. The deployment of additional NDMS vaccinators allowed a smoother processing of patients with fewer bottlenecks in the staging areas.

Recommendation:
1. Review and adjust plans to include all lesson learned from the NDMS clinics.

Issue 1c: Facilities

Phase I
DelTech provided the facilities for all three clinics and contracts were established prior to the event. Facilities were generally adequate. Parking was sufficient, restrooms were accessible, and all buildings were handicap accessible. Operations were set up in the gym at the Owens Campus, the auditorium at the Terry Campus, and a series of small conference rooms as well as the cafeteria at the Stanton Campus. The Owens and Terry Campuses had adequate space for operations. The large open areas allowed for flexibility in site set up. The Stanton Campus was more restrictive. The square footage was significantly less, the rooms were separated by movable walls, and the hallway for registration and waiting was very narrow. Since operations were set up in the gym at the Owens Campus, the floor was required to be protected. DPH contracted to have a floor covering placed on the gym floor prior to site set up. DelTech facility POCs were available at all three campus locations; however, it was unclear at two of the facilities who these people were at times. DPH staff did visit the sites prior to activation; however, an on-site meeting was not held to determine specific logistical needs. These needs were established over the phone through the contractual process.

Recommendation:
1. None

Phase II
The same facilities were used during Phase II; however, there was a miscommunication about room availability at the Stanton Campus that caused for a reconfiguration of set up during the day of the event. Specific rooms were not outlined in the contract, which may have prevented this.

Recommendations:

1. Ensure contracts specify specific rooms needed.
2. Explore other potential NEHC sites in the Stanton area with special attention given to open areas such as gymnasiums or large open conference areas.
3. Clearly establish a Point of Contact for each facility and ensure it is noted in the contract.
4. Schedule a site visit prior to the signing of any contracts to meet with facility staff and clarify facility utilization issues.
5. Revisit the current DelTech Memorandums of Understanding to incorporate the use of the gymnasium at Stanton.
6. Research additional options to protect the gym floor, such as cleaning and buffing the floor as opposed to laying down a floor covering.

Issue 1d: Patient Throughput

Phase I

During Phase I, a total of 2,587 patients were vaccinated with an average processing time of 13 minutes and 53 seconds from registration through vaccination. For a sample of patients, see Appendix C.

Recommendation:

1. None

Phase II

During Phase II, a total of 2,713 patients were vaccinated with an average processing time of 14 minutes and 20 seconds.

Recommendation:

1. None

Activity 2: Communications

Activity Descriptions: Provide communications between various operational areas within the NEHC to allow for efficient operations when staff must stay at their stations or consistently move among each area.

Issue 2a: Interoperable Communications

Phase I

800 MHz radios were issued to clinic staff at all locations so that staff did not have to leave their areas and communicate their needs. Law enforcement personnel were able to maintain contact with one another on their radios; however, they did not have a radio to maintain communications with clinic staff since the two radios are programmed under different templates. NDMS staff did not have access to radios nor did Interpreter Corps members.

Recommendations:
1. Issue radios (2) to NDMS staff.
2. Issue radios to Interpreter staff.
3. Issue a radio to law enforcement lead.

Phase II
Radios communications was maintained and enhanced. Radios were provided to the NDMS team lead as well as the interpreters and the lead for law enforcement.

Recommendation:
1. None

Issue 2b: Briefings

Phase I
A briefing was done a half hour prior to operations every day. The Operations Section Chief led each briefing and provided a map of the facility layout and the flow of patients. A safety briefing was also provided by the Safety Officer. Both briefings were adequate but varied each day, which provided incomplete information to new clinic participants. A hotwash was conducted each evening with area leads to identify and correct issues for the next day's operations.

Recommendation:
1. Standardize all briefings and include site and event specific hazards in the safety briefing.

Phase II
Briefings were standardized by both the Operations Section Chief and the Safety Officer and remained consistent throughout the three days (see Appendix D for Operations Brief). Hotwashes continued to provide valuable information for the next day's operation.

Recommendation:
1. None

Activity 3: Security

Activity Descriptions: Provide security to clinic personnel and operations to minimize incidents and address crowd control.

Issue 3a: Staffing

Phase I
Security was provided by the Delaware State Police, local police, and campus security at each location and was very effective. There were no incidents or thefts. The NEHC Plan provides guidance for the number of police officers. One is needed to assume command

and 14 additional officers for general security. A total of 15 police officers, which included local law enforcement and campus security, staffed each clinic and were stationed both inside and outside the facility. Police vehicles were used outside to direct traffic when needed. The law enforcement lead maintained direct communications with the NEHC Command staff; however, there was no call code to alert law enforcement if an incident was occurring in a specific area within the clinic. State police officers were trained in riot protection.

Recommendations:
1. Evaluate numbers of law enforcement personnel needed in different situations (with/without appointments; demand on vaccine; etc.) and determine various stations based on the layout of facilities.
2. Implement a radio call code to request law enforcement support.

Phase II
The same standards were used for this phase as the previous. No incidents occurred. A Code Delta was established to address calls for law enforcement assistance.

Recommendation:
1. Update appropriate plans to denote a code or utilize Code Delta for law enforcement assistance.

Activity 4: Safety

Activity Description: Assure that the facility is a safe environment for staff and patients to include prevention and identification of all known hazards.

Issue 4a: Accidents

Phase I
Two patients tripped on the floor covering used to protect the gym floor at the Owens Campus, though without serious injury. Consideration should be made to tape the floor covering down and an incident reporting procedure should be in place. A safety cone was placed over a trip hazard in the Staging Area. Routine safety walkthroughs are important to maintaining safety.

Recommendations:
1. Inspect the facility for safety hazards and include potential safety hazards in the safety briefing.
2. Develop accident reporting procedures and protocols and communicate procedures to staff.
3. Ensure that the Safety Officer conducts a routine hourly safety walk-through and mitigates safety threats.
4. Tape down the Owens Campus floor covering.

Phase II
Prior to Phase II, DPH established some basic radio codes to notify and alert staff to any incidents requiring assistance; however, the codes established may not be consistent with standard codes commonly used. A Code Blue was established for any medical situation requiring a medical response. While this is important, additional codes are needed for accidents that occur and assistance is required, such as someone falling and needing assistance with getting up, or when a child is missing. Code Blue is not appropriate.

Recommendations:
1. Establish a universal language concerning codes/assistance needed to include a Code Card to attach to staff identification badges as a reminder to staff.
2. Create a lost child procedure.

Activity 5: Staffing

Activity Description: Ensure that appropriate staff is provided during the event to maintain adequate operations.

Issue 5a: Adequate Staffing

Phase I
Staffing was provided from state, federal, local, private, and volunteer sources (see Participating Agencies and Organizations in Section 2). Integration and teamwork was excellent. Staffing was as follows.

INCIDENT COMMAND STAFF			
	Terry Campus	Stanton Campus	Owen Campus
Incident Commander	2	2	2
Deputy Incident Commander	0	0	0
Public Information Officer	2	2	2
Safety Officer	1	1	1
Police	15	15	15
Chief Medical Officer	1	1	1

OPERATIONS STAFF			
	Terry Campus	Stanton Campus	Owens Campus
Operations Chief	1	1	1
Greeting	4	4	4
Registration	5	5	5
Issues	2	3	2

Staging	6	5	5
Triage/Screening	4	4	4
Vaccination	16	18	18
Documentation	2	2	2

LOGISTICS STAFF			
	Terry Campus	Stanton Campus	Georgetown Campus
Logistics Chief	1	1	1
Logistics Staff	4	4	4

Recommendation:

1. Ensure staffing requirements are met.

Phase II

Changes in staffing were made based upon lesson learned during Phase I and due to an increase in scheduled appointments and potential walk-ins. The NDMS team brought more vaccinators to facilitate a smoother throughput. The requirement for two Public Information Officers was reduced to one and personnel were reassigned to other areas of the NEHC based on need. Additional volunteers were needed to staff the vaccine preparation area as well as the consent form review area. The individual flexibility of all staff allowed the team to move and shift resources as the process demanded, which was very helpful for adjusting operations based upon patient volume. The staffing for Phase II is listed below.

INCIDENT COMMAND STAFF			
	Terry Campus	Stanton Campus	Owens Campus
Incident Commander	2	2	2
Deputy Incident Commander	1	1	1
Public Information Officer	1	1	1
Safety Officer	1	1	1
Police	15	15	15
NDMS Chief Medical Officer	1	1	1
DPH Medical Officer (Off-site)	2	2	2

OPERATIONS STAFF			
	Terry Campus	Stanton Campus	Owens Campus
Operations Chief	1	1	1
Greeting	4	4	4
Registration	6	6	5
Registration	2	2	2

Confirmation Medical Consultation	2	2	2
Staging	6	7	7
Triage/Screening	4	4	4
Vaccination	21	21	21
Documentation	2	2	2

LOGISTICS STAFF			
	Terry Campus	Stanton Campus	Owens Campus
Logistics Chief	1	1	1
Logistics Staff	4	4	4

Recommendation:
1. None

Issue 5b: Staff Compensation

Phase I
Recruitment of public health staff was difficult due to overtime issues leading to lack of confidence that staff would be compensated for time and mileage on weekends. While this was resolved, it was resolved too late to acquire the staff needed.

Recommendation:
1. Ensure that a policy is in place for compensating DPH staff.

Phase II
Compensation issues continued to present a challenge during this phase. Some staff chose not to participate due to seemingly unclear compensation policies. In addition, some of the Interpreter Corps volunteers were DHSS employees. These employees were unable to participate as a part of their normal jobs because their supervisors either denied the request or forced them to take vacation time. Interpreters are a vital component of the NEHC and as such should have SHOC assignments, which will allow them to respond as DHSS employees rather than volunteers.

Recommendations:
1. Ensure policy for compensation is very clear for future events and train SHOC employees on the policy.
2. Establish a SHOC assignment for interpreters that are DHSS staff.

Activity 6: Logistics

Activity Description: Ensure overall management, receipt, and distribution of supplies and equipment to support a mass vaccination clinic. Ensure the smooth flow of patients through the process by setting up the physical layout of clinic operations.

Issue 6a: Liability

Phase I
Liability was not an issue due to the federal Public Readiness and Emergency Preparedness (PREP) Act; however, liability may be more difficult to arrange in the absence of such an Act and without a public health emergency. Had this not been in place, it may have been difficult to arrange for the facility and volunteer staffing.

Recommendation:
1. Develop procedures to address liability issues when PREP Act is not in place.

Phase II
The PREP Act was in place during Phase II, which provided liability coverage.

Recommendation:
1. None

Issue 6b: Signage

Phase I
Signs were placed outside and throughout the facility in both English and Spanish. Signs were neither anchored nor waterproofed; however, weather conditions did not warrant such measures. Road signs were not put into place at the campus entrances. Typically, this is done to draw more clients; however, since the clinic was restricted to people with appointments, the draw was not necessary. Road signs may have helped people to find the location, especially at the Terry Campus. Many patients could not locate the campus and were calling the Public Health Call Center for information. To mitigate this, the Incident Commander asked that law enforcement place vehicle outside the entrance to direct patients.

Recommendations:
1. Consider placing outdoor and road signs directing patients to clinics.
2. Ensure weights for signs are available and all signage is waterproofed.

Phase II
The clinics employed significant signage during deployment, which was noted as a best practice by the NDMS team. The signs were clearly written, worth the effort to produce in both languages, and essential to the successful flow of patients throughout the process. Currently, the signs DPH purchased lean heavily towards NEHC operations involving medication dispensing rather than vaccination or appointments. Many new signs had to be created to accommodate this particular event, such as “Please have your ID ready.” Other signage, such as “Ramp” should be considered as an added convenience to patients who are unfamiliar with the facilities they are accessing. During the past five years, DPH has always made arrangements to borrow the large, self-powered roadside signs from the Delaware Department of Transportation (DelDOT). These signs were again used during

Phase II. While DelDOT has been extremely accommodating about the use of its signs, the availability of the signs are based upon DelDOT needs first, which could potentially make them unavailable during the event. In addition, DPH was unaware that the correct message on the DelDOT road sign would not be activated until the clinic actually opened, which caused confusion. The Operations Section Chief called DelDOT to fix the error, so the signs would display the appropriate message at the appropriate time. The Operations Section Chief then had to check the signs to ensure they were operational

Recommendations:
1. Investigate the possibility of purchasing roadside signs.
2. Ensure that the Operations or Logistics Section performs an outside walk-thru prior to the NEHC opening.
3. Consider developing a "Ramp" sign.
4. Develop signage that is more appropriate to Mass Vaccination NEHC operations.

Issue 6c: Food/Respite

Phase I
Food service was continuous and well-maintained by caterers. One-hundred meals were provided. The respite area was separate from the public area and allowed for adequate seating. At times, clinic staff did not always know when meals were available although there was continuous fruit, drinks, and snacks. During two of the three days, meals arrived late for NDMS staff that had begun meal rotation. Lunch menus consisted of cold-cut sandwiches. Afternoon snacks were open tray of cookies, crackers, and cheese trays.

Recommendations:
1. Ensure that meal times are stated at the operations briefing each morning so that managers can plan shift changes.
2. Ensure that the menus accommodate dietary restrictions and healthy choices.

Phase II
The quality and quantity of food was excellent although expensive. DelTech facilities required DPH to use pre-established caterers, which were more expensive than normal. DPH increased the catering to 150 people since staffing was increased in Phase II. Beverages and snacks were available throughout the day with more variety than in Phase I. Lunch meals were served for a three hour period to better accommodate lunch break times. Lunch meals consisted of assorted hot and cold sandwiches. Individually bagged salads, fruit, and vegetables were available to increase variety and to provide a healthy choice.

Recommendation:
1. Investigate the possibility of amending the DelTech Memorandum of Agreement to allow other catering options.

Issue 6d: Equipment and Supplies

Phase I
The Logistics Section maintained supply and equipment trailers that consisted of office supplies, forms, medical equipment, medical screens, and other clinic needs. Some minor items were needed to include binders and forehead thermometers. Specialized carts for the various areas, especially those that rely heavily on supplies such as Registration, would ease the set up and demobilization process.

Recommendations:
1. Review the existing NEHC supply inventory and adjusted as needed.
2. Consider developing specialized carts for each NEHC area.

Phase II
Consideration should be made to purchase larger vests. Large is not big enough for some staff. Screens that provide privacy to floor level should also be considered. A patient in the vaccination area fainted and could be seen by others since the partition screens do not reach to the floor. Bariatric wheelchairs are also needed. Additional in-ear thermometers should be added to the NEHC inventory as well.

Recommendations:
1. Purchase XXX large vests in all colors.
2. Purchase medical screens that go to the floor level.
3. Purchase additional bariatric wheelchairs.
4. Purchase additional in-ear thermometers.

Issue 6e: Facility Set Up

Phase I
The Stanton campus had very limited space. Set up of the each NEHC was completed within one hour to an hour and 15 minutes. Logistics was set up in the hallways, creating congestion and possibly hindering emergency evacuation in one hallway. For a checklist of items that were set up during the November 20, 2010 clinic, please see Appendix E.

Recommendation:
1. Set up a Logistics staging area at all campuses to allow more room for the Logistics Section to set up.

Phase II
Due to the practical experience gained in Phase I, DPH was generally able to decrease the set up time during Phase II. Set up of the each NEHC was completed within hour to an hour and 15 minutes. The current plan for a two hour set up may be more than is needed; however, two hours should be maintained to allow for situational flexibility. For example, when DPH staff reported to the Stanton campus, it found that one of the rooms it intended to use (the cafeteria) was not available. The flow had to be reconfigured. If staff were told to report later, this may not have been accomplished.

Recommendation:
1. None

Activity 7: Operational Areas

Activity Descriptions: Maintain seven operational areas that include Greeting, Registration, Issues/Registration Confirmation, Staging, Vaccination Area, Post-Vaccination, and Documentation Area.

Operations Area 1 - Greeting Area

Conduct initial screening of individuals prior to entering the NEHC in order to prevent symptomatic individuals from contaminating NEHC patients and staff.

Issue 7.1.a: Greeting

Phase I

The Greeting Area was staffed with greeters and interpreters who would greet each patient and make a determination if the patient was sick. Staff were placed at the entrance and needed to dress appropriately as they were exposed to the elements. During the first appointment block and prior to clinic doors opening, lines did form at the door creating an initial bottleneck of approximately 75 patients. Since patients were told to be at the clinic 15 minutes early for their appointments. Consideration was given to opening early; however, it was decided that this would cause a loss of system integrity since operational briefings and set up were still occurring. It also would change public expectation for future events. Both the Greeters and the Incident Commander assured those in line that they would be taken shortly. This time could also be used to answer any medical questions. Once the doors opened, patients were processed very quickly.

Consideration should be made to ensure that patients are waiting inside the building for future events to account for inclement weather. The Owens Campus was large enough to move the registration tables further into the gym to create more space. A private vaccination area could also be set up close to registration to vaccinate those that cannot walk to dispensing. It is also possible to push all the tables in the hallway down towards the restrooms (e.g., place the greeter table where the registration table was and the registration table where the issues table was).

The Stanton Campus can also be rearranged to allow for patients to wait indoors. As patients enter, they can be routed through the cafeteria and the registration tables can be set up in the cafeteria. A private vaccination area with medical curtains could be set up to vaccinate those having difficulty walking to dispensing. The command post and eating area could be set up in the last classroom when school is out of session.

The Terry Campus was large enough to move the registration tables further into the gym to create more space. A private vaccination area could be set up close to registration to vaccinate those that cannot walk to dispensing.

Recommendations:
1. Provide safety vests and warm clothing to Greeter Area staff.
2. Consider fewer appointments in the first half hour of operations to prevent long lines outside.
3. Redesign facility layouts to allow patients to wait indoors.

Phase II
The changes in layout allowed for patients to wait indoors rather than outside.

Recommendation:
1. None

Issue 7.1.b: Management of people with physical limitations

Phase I
On a few occasions, patients with wheelchairs or those with walkers were unable to go through the process because of the floor covering at the Owens Campus. Some wheelchairs were too large to turn in hallways at the Stanton Campus because the area was so small. In these cases, vaccinators came to the Greeter Area; however, there was little privacy. On one occasion, a patient was vaccinated in their vehicle.

Recommendation:
1. Provide for more privacy for those receiving vaccination in the Greeter Area.

Phase II
DPH continued to serve clients with physical and cognitive disabilities. There was a considerable increase in group homes presenting. Private vaccination areas were arranged for those receiving vaccination in the Greeter Area. On some occasions, people responsible for groups of patient with disabilities did not know the answers to the medical questions on the patient form. Training on how best to understand, plan for, and serve this portion of the population is necessary.

Recommendations:
1. Offer special needs/cultural sensitivity training for all NEHC staff.
2. Plan for special needs patients arriving at the facility by arranging for a separate vaccination area for better control and privacy.
3. Ensure that those patients from group homes have their paperwork filled out prior to entering the clinic.

Operations Area 2 – Registration (Staff and Patient)
Ensure that patients that made appointments are registered and given the appropriate paperwork to receive their vaccine. Ensure staff use proper sign-in and sign-out procedures and volunteers are properly credentialed.

Issue 7.2.a: Patient Registration

Phase I
Four registration staff members were assigned; however, additional staff members were needed to direct patients to registration tables. This will also allow staff to rotate for breaks while maintaining efficiency. Personal identification was being checked to validate appointments. People that did not have identification ready slowed the registration process. Many patients arrived with consent forms printed and filled out, which helped to speed up the registration and staging processes. Patient with questions were directed to the Issues Table.

Recommendations:
1. Add a sign that states "Please have ID ready prior to reaching the registration table."
2. Registration needs to have, at minimum, six individuals to help direct patients to open registration tables and to provide for breaks.

Phase II
To bring patients inside the facility to wait, registration moved closer to the staging area, which caused bottlenecks as patients began to flow through staging. Registration had to be slowed in some cases so that staging could process all patients and get them seated. In addition, patients returning for the second shot for the child did not know that the consent forms had to be filled out again. This slowed the registration process since personnel had to explain the need for the forms.

Recommendation:
1. Ensure that call center associates advise clients that separate registration forms will be needed during both appointments.

Issue 7.2.b: Staff registration and credentialing

Phase I
Staff registration was set up at the Patient Registration Area. This was not practical and a make shift registration area was used and staffed. Staff signed in and received their vests; however, they did not sign out. Volunteers were not aware of where to report and some people reported without being credentialed or were not valid MRC or Interpreter Corps members. Once on-site, there was not way to validate membership if the persons name was not noted in the roster. Formal badges with pictures were not provided during the event. Hand-written nametags were used instead.

Recommendations:
1. Separate the staff registration area and assign a person to oversee the area and direct personnel to their assigned locations.
2. Staff registration area needs to have a laptop with an air card to access DMRC credentialing on ServDE.

Phase II
A formal staff registration area was set up with assigned personnel to account for staff

and credential volunteers. Two people are needed to staff the area. While it is ideal that staff registration be set up prior to staff arrival, this may not be possible due to logistical issues. Logistics carries much of the materials needed by the Staff Registration Area. Some DMRC members had badges already and displayed them appropriately. Interpreter Corps members had no badges and badges could not be created on site. The manager was prepared to credential DMRC volunteers that self-presented, if necessary, and had access to a computer and the internet. Once staff members were working within the facility, there was no place to put personal belongings. While it was suggested that important belongings be left in vehicles, space for jackets and other belongings is still needed. A lost and found area should also be established for both staff and patients and maintained by the Staff Registration Area.

Recommendations:

1. Expand staffing at staff registration to two people.
2. Provide a space for personal belongings in the logistics area.
3. Establish a lost and found area.

Operations Area 3 – Issues/Registration Confirmation Area

Receive patients from the registration section that have specific questions and concerns regarding clinic operations or medical questions and concerns.

Issue 7.3.a: Role and responsibility of the Issues/Registration Confirmation Area

Phase I

The Issues Area was responsible for answering medical questions and for assisting those without appointment or those that had problems with their appointments. Two people staffed this area. A Medical Consultation Area may be more efficient in the Staging Area. These medical counselors can rove the staging area to answer questions as patients fill out their forms. Registration sent patients to the issues table for the following reasons:

- An appointment could not be located. The Issues Area would attempt to find the appointment (sometimes names were misspelled). If the appointment could not be located, but the person had a confirmation code, the Issues Area would document the name of the person, the time, and their priority group; would place the appointment number on the consent form; and would allow the person to be entered into the line. If the person did not have a confirmation code, the issue table would place the person on standby and would document the consent form as Standby (SB). These codes were important to the staging person standing at the door so they knew where to direct the patient.
- A patient forgot the date, time, and/or location of their follow-up appointment. The Issues Area would locate the information using the appointment calendar and provide that information to the patient.
- A patient wanted to get the shot but did not have an appointment. If the person qualified in the CDC Tier 1 categories, the Issues Area would document the name

of the person, the time, and their priority group and place the person on standby by placing a "SB" at the bottom of the consent form.

- A patient wanted to change their appointment to that day. The Issues Area would document the name of the person, the time, and their priority group and place the person on standby by placing a "SB" at the bottom of the consent form.
- A patient was early for their appointment. The Issues Area would place the person on standby by placing a "SB" at the bottom of the consent form.
- A patient had a medical question. The Issues Area was staffed with a nurse or a doctor, who would provide the answer.

Recommendation:

1. Use Medical Consultation Area concept and place that area in the Staging Area.

Phase II

The Issues Area was renamed to Registration Confirmation and was tasked with allowing additional patients without appointments to receive the vaccine. Over three days, the table saw approximately 550 patients. The process was efficient. If a patient wanted a vaccine, the name would be taken, their priority group documented, and the time was noted. The consent form and waiver form were provided to the patient and the patient was sent to the staging area for additional information. All medical questions were sent to the Medical Consultation Area in the Staging Area. The table was staffed with two people, which was adequate for high volume days (400 per day). If volume is expected to be low (less than 200 per day), only one person is needed with a runner that can assist for breaks or high periods of high volume. High volume was experienced during opening of the clinic as well as during normal rush hours.

Recommendation:

1. None

Issue 7.7.c: Medical Consultation

Phase I

Medical personnel were asked to provide medical answers to patients' questions at the Issues Area. There were a number of medical questions that arose that were very personal to the individual's healthcare and challenged the medical staff at the Issues Area as well as other medical staff in the clinic; however, the most common questions were related to:

- Thimerosol.
- Egg and other allergies.
- Whether the patient could take the vaccine if they were on other medications
- Whether the persons chronic illness was a qualifying illness
- The level of illness the person was experiencing that day

A thimerosal fact sheet was developed very quickly and available to patients by the end of the first clinic day; however, the fact sheet was very technical and some may not have understood it. It is also important to brief medical personnel staffing the Issues Area

prior to speaking to the public. DPH made certain policy decisions about who could get the vaccine that may differ with the medical opinion of the medical advisory staff. It is important they are clear of the policy decisions and why these decisions were made. In addition, some medical personnel are not experienced with the clinical aspects of vaccine administration and may not know the adverse reactions or other clinical aspects. Medical advisory personnel should also not be conducting screenings at the Issues Area, but should be referring these patients to triage and screening for a final determination. Lastly, when determining if a potential patient fits the criteria to receive the vaccine, Issues Area staff should explain more thoroughly what a chronic illness is by using examples.

Recommendations:

1. Re-draft the thimerosal fact sheet to an 8th grade reading level.
2. Ensure that medical advisory staff receives clear information from the medical director or one of his/her staff on how to appropriately advise people.
3. Better define the role and responsibility of the medical staff at the Issues Area and those at the screening area and develop a task book for medical advisory staff.
4. Ensure that DPH medical personnel are present at all three clinics to answer questions. Staff needs to have clinical experience and consult the physician's reference guide when unsure about chronic illnesses.
5. Ensure that the term chronic illnesses are described to patients clearly, using examples such as diabetes, asthma, and immuno-compromised.

Phase II

Prior to deploying in Phase II, the thimerosal fact sheet was updated to be clearer for the patients. The medical questions and advice was relocated from the Issues Area to the Staging Area. The roles and responsibilities of the medical staff were clarified and an NDMS physician was on site for all three days. Screens provide as much privacy as possible for the discussion between the medical consultation staff and clients. This change in location and operation worked very well and allowed the patients to discuss personal health issues with the medical consultation staff in private and without interruption. Medical consultation staff also had a physician's desk reference as a research tool.

Recommendation:

1. None

Operations Area 4 - Staging Area

Ensure smooth transfer of patients from Registration or Issues to Vaccination area and complete paperwork prior to vaccination.

Issue 7.4.a: Staging Area

Phase I

The Staging Area was developed to maintain, assist, and control the flow of patients' from the registration process through vaccination. Staging Areas at each site were

customized to better assist with processing of patients. Once patients left the Registration Area, they were directed to the Staging Area with seating, a clip board, and pens to fill out their forms. Once their forms were filled out, they would raise their hands, staff would check the quality of their forms, and they would be place in line for vaccination. A television with children's videos was set up in staging, which helped parents manage the children. The seating area was more than sufficient and could be downsized.

A number of questions were addressed in this area, which helped to deter questions when the patient reached the Vaccination Area. Questions most commonly asked were:

- Do we need to fill out the section that mentions, "Complete the next section and sign after you have talked to the clinician?"
- How much mercury is in the vaccine?
- Why are there so many forms?
- What are the side effects of the vaccine?
- How long do I have to wait receive my vaccine?
- Why are there so many police officers on site?
- Do I have to fill out these forms if I received them from my doctor's office?

At times, staging had four people working with limited personnel to verify completed patient forms. Staff directed patients to their seats with one staff at the door between registration and staging. Patients at registration were told to go to the staging staff member with the red vest at the door who would direct them from there. This caused some confusion for the patient because there were many staff members that had red vests. Once in the Staging Area, staff reviewed forms with patients. Not all forms were filled out appropriately, even as they went through the entire process although staff performed quality assurance of forms before the NDMS staff saw the patients.

Recommendations:

1. Seven people are needed to staff the Staging Area.
2. Ensure that the staging staff member at the entrance of staging wears a vest other than red.
3. Ensure that staging staff reiterate what sections of the form need to be filled out in a presentation like format.
4. Reduce seating in the Staging Area.

Phase II

Seating was reduced, which provided more space for patients to wait indoors as they entered the clinic. More staff was provided to the Staging Area and a different color vest was given to the staging staff member at the entrance of the area. Medical Consultation was also set up in the Staging Area, which reduced the number of medical questions to general staging staff.

Recommendation:

1. None

Operations Area 5 - Consent/Triage Area

Review patient screening documentation and available medical history to determine proper course of treatment.

Issue 7.5.a: Vaccination Transition

Phase I
NDMS had oversight of the screening area, although it was dual staffed by DPH nurses and NDMS. It was determined during the event, based on the site that a person needed to be placed between the Consent/Triage Area and Vaccination Area to direct patients to open vaccination tables. The Logistics Section Chief and the Operations Section Chief were directing patients all day at the Owen Campus. This should be assign to staging since that area is responsible for pushing patients through the process. A waiting area should be established between screening and vaccination so patients may be seated while waiting for an open vaccination table. No patients were turned away at screening due to medical concerns. The vaccine manufacturing lot number was placed on every Vaccine Administration Record (VAR) at the time screening was conducted.

Recommendation:
1. Assign a position between Consent/Triage Area and Vaccine Administration Area.

Phase II
Placing vaccine lot numbers on each VAR was time consuming so printed labels were created and placed on the VAR during clinic set up. The Triage/Consent staff found themselves applying these labels right up to clinic opening. However, it would be more efficient is this is done prior to clinic set up since the vaccine lot number is already known.

Recommendations:
1. Assign addition staff to help with placing the stickers with Lot Numbers on the VAR or place the information on the VARs prior to clinic set up.
2. Consider obtaining a sign to identify the Consent/Triage Area.

Operations Area 6 - Vaccination Area

Provide patients with appropriate prophylaxis and maintain inventory control.

Issue 7.6.a: Appointment Demographics

Phase I
The Issues Supervisor provided the Medical Team Lead, on a daily basis, the demographics of children from six months to three years and children from three years to four years that had appointments the following day so that the medical team could anticipate surge and arrange their stations appropriately to address surge. This information should be tallied and provided by the documentation staff.

Immunization reporting indicated that a total of 7% of those vaccinated were African

American, which indicates a disparity. 5% of the vaccinations were of Hispanic ethnicity, showing less of a disparity, and 5% were Asian, which was greater than expected. Additionally, 57% if those vaccinated were female.

Recommendation:
1. Documentation staff should provide statistical demographics of patients that require special attention (i.e. a different dosage) to medical team lead prior to the event if the data is available.
2. Reconsider clinic locations and outreach strategies to reach a broad demographic populations.

Phase II
As established in Phase I, the same demographic data was provided on a daily basis and stations were arranged according to expected numbers.

Recommendation:
1. None

Issue 7.6.b: Standing Medical Orders

Phase I
Overall, there was good coordination between DPH and NDMS regarding standing orders. However, since DPH and DMRC volunteers were vaccinating and answering medical questions during the mass vaccination clinics, the orders should be expanded to include these positions. DelTech student nurses also assisted with drawing the vaccine at the Terry campus as well. In order to operate, student nurses needed a supervisor on-site, which was easily accommodated.

Recommendation:
1. DPH should issue standing orders for the clinics for DPH nurses and volunteers.

Phase II
Several DMRC and DPH personnel were called upon to staff the clinics, which included vaccinating, syringe preparation, triaging consent forms, and answering medical questions. DPH Standing Medical Orders provided medical oversight for the DPH and DMRC medical personnel during this phase. DPH utilized existing Novel H1N1 Standing Orders that were utilized during the Novel H1N1 school and clinic vaccination campaign. If medical questions by staff arose during the clinics, DPH and DMRC medical staff would contact the DPH Medical Director or his backup by phone. DMRC and DPH personnel performing vaccinations were briefed on the appropriate procedures each day and were provided copies of the standing orders prior to the clinics opening. The DPH Medical Director and/or his backup were called upon twice at the Del Tech Stanton NEHC; once for a needle stick by a NDMS vaccinator and another time to see if a physician assistant was able to bring a syringe home to vaccinate her husband.

Recommendation:

1. Ensure a full discussion of standing orders during the planning process.

Issue 7.6.c: Vaccination Stations

Phase I
There were no dosing errors despite some complexity in administration. Since there was an insufficient supply of a single type of vaccine, two types were used (one for 6 months and older; the other for 4 years and older). There were two types of dosages required depending on the age. Those six to thirty five months of age needed a half dose (0.25ml); those three years and greater needed a full dose (0.50 ml). In order to ensure quality control and maintain throughput, six to forty-seven months were separated since the six to thirty-five months needed a different dose and those up to 47 months took more time to vaccinate. Another quality control measure was to color code the consent forms. These were color coded at the Registration Area based on this age range. At the Consent/Triage Area, the forms were again noted with the age range for quality control as an increased quality check. An added quality measure should be to mark all syringes that are pre-drawn so that adult and child doses are not confused. Vaccine temperature also needed to be monitored when vaccine was pre-drawn. The medical team lead acquired demographics on a daily basis based on the appointments and adjusted the stations each day to accommodate the number of anticipated patients based on age. This flexibility was critical to the success of the clinic.

There was also a need for the pediatric vaccination station to be more child-friendly with pictures and balloons. NDMS staffed worked well to make this happen with limited supplies. Dispensing candy was very helpful; however, sugar-free candy should also be provided.

Recommendations:
1. Mark all syringes that are pre-drawn to note the various doses and vaccine types.
2. Acquire different types of needles to accommodate administration to infants, children, and the morbidly obese.
3. Make the pediatric area more child friendly by using children posters and child friendly decorations.
4. Acquire sugar-free candy and snacks.

Phase II
Pre-drawn syringes based on required dosing amounts were identified through use of color-coded labels that matched the color-coded consent forms based on age and dosing requirements. This helped to ensure there were no dosing errors despite the continued complexity in administration.

A single vaccine formulary (multi-dose vials, $\geq$ 6 months) was used for all vaccination stations. This eliminated the possibility of dosing errors for pediatric patient based on the potency of the vaccine. However, proper dosing had to be carefully managed through vaccine administration engineering safety controls. A separated pediatric area was set up for six to 35 months of age and their families and a children's area for those 36 months

and greater in the vaccine area.

Vendors were contacted to purchase a 7/8" needle more suitable for vaccine administration to infants and small children. After further research, the only 7/8" needle commercially available at the time did not have adequate safety protection against needle stick (i.e. SAF ECLIP™). After coordination, the NDMS Medical Director made the decision to forgo the 7/8" needle due to lack of a safety device and erred on the side of safety. Vaccinators use the needles provided by the CDC in the vaccine ancillary kits.

Syringes used during the mass vaccination clinics are graduated (measured dosage) in the standard 1/10 ml. To fill the syringe for a 6 month – 35 month old patient (0.25 ml) the vaccine administrator had to estimate the dosage due to the graduated dosing marking on the syringe. This practice could lead to under or over dosing a patient. Pre-filling of syringes was closely monitored.

In addition to the variety of candy that was being provided to children, pretzels were also added for those diabetic patients.

Recommendations:

1. Follow-up with vendors to procure assorted sizes of needles with safety devices to vaccinate patients to include infants, small children, adults and obese patients (5/8" – 1 ½" needles) and to protect those administering vaccinations.
2. Follow-up with vendors to procure a syringe to allow for a 0.25ml precise dosing. (i.e. syringes graduated by 1/20 ml).

Issue 7.6.d: Adverse Events Monitoring

Phase I

A federal medical professional, paramedics (2), and ambulance were on-site to address any adverse events. There was one adverse reaction, where a patient (7 yr. old female) returned to the clinic with concerns of a reaction. The person was identified at the Greeter Area and brought back to the Issues Area, which contacted the Operations Section Chief and the appropriate medical personnel responded. The patient was later transferred to the adverse events monitoring area and the proper protocol was put into place. There were no adverse events monitoring forms available on-site and a form needed to be printed online. The NDMS Medical Director and paramedics cared for the patient who did not need treatment. The NDMS Medical Director reported incident to VAERS on-line.

Recommendations:

1. Ensure that VAERS forms are on-site.
2. Establish a Code Blue procedure to get assistance for a medical emergency.
3. When patients with adverse reactions report to the Greeter area, the greeter should lead them back to the medical issues area if they are able to walk.

Phase II
There were no adverse reactions encountered during this phase. Two needle sticks occurred during vaccination. One person went to the hospital. A report was filed.

Recommendation:
1. Ensure that needle stick protocols are clearly established, current, and available.

Operations Area 7 - Post-Vaccination Area and Documentation Area

To monitor patients and provide situational awareness during operations regarding how many patients were processed and to collect feedback data from both patients and staff.

Issue 7.7.a: Observation of Post-Vaccination Area

Phase I
The Forms Collection Area was responsible for overseeing the Post-Vaccination Area although the staff was not medically trained. At the Stanton and Owens Campuses, the Forms Collection Area was located too far away from the Post-Vaccination Area to provide adequate observation of individuals in the post-vaccination area and to help direct the traffic flow of individuals exiting the facility.

Recommendation:
1. Assign a nurse to oversee Post-Vaccination area.

Phase II
A Post-Vaccination Area was again established. A specific nurse to monitor this area was not assigned; however, the area was close enough to be observed by the NDMS staff and the Forms Collection area. This proved to be successful. Post vaccination waiting of 15 minutes was recommended to each individual; however, this wait was not mandatory or enforced. Subsequently, this area had very minimal usage.

Recommendation:
1. Determine in what situations enforcing a 15 minute post vaccination waiting period is required or only recommended.

Issue 7.7.b: Documentation Area

Phase I
The current NEHC plan generally assigns documentation to the Planning Section Chief. In this event, the Documentation Area was a stand-alone section and worked to report throughput by the half hour. Timestamps were placed on each form to gather the data. The Documentation Area also tried to identify the number of no shows each half hour, which proved to be challenging. A minimum of four people are needed to staff the section. This section also collected all of the consent forms at the end of the process before the patients left the facility and handed out stickers and candy to the children.

Staff receiving vaccination was not processed in the normal manner as the average patient. Staff forms should be noted as such so that documentation staff can account for these types of patients and so it does not skew that data.

Recommendations:
1. Clarify and expand upon the Documentation Section in the NEHC Plan, noting what type of data is important for collecting so that processes can be put into place prior to the event.
2. Begin entering consent forms at clinic operations on laptops if possible. Provide the Documentation Section with electronic data for processing data to ensure effective management of resources with timely results.
3. Mark staff patient forms as staff.

Phase II
Patient information was collected and throughput was reported to the Command Section every half hour. Based on the second recommendation form Phase I above, laptops were used to begin entering data into the database. Personnel resources were obtained from both the Registration area and the NDMS team; however, in order to provide real-time data entry, more staff is needed or an electronic system is needed.

Recommendation:
1. Research an electronic solution to performing efficient data entry on site.

Activity 8: Demobilization

Activity Description: Upon completion, demobilize POD operations, return site to normal operations, and release or redeploy staff.

Issue 8a: Demobilization

Phase I
Demobilization occurred very quickly because all staff was used as a labor pool to assist. Labeled bankers boxes are critical when storing materials for the various areas for the next day.

Recommendations:
1. Provide bankers boxes to the various areas to store their materials.
2. Logistics staff should direct all other staff on what needs to be completed to demobilize.

Phase II
During this phase banker boxes were given to the various areas that needed additional storage. During demobilization, all assigned staff worked under the direction of the Logistics staff to ensure an efficient demobilization process. Demobilization times decreased with experience and averaged an estimated time of one hour.

Recommendation:
1. None

Activity 9: Public Affairs

Activity Description: Be available to the press and escort them appropriately when they arrive to the clinic.

Issue 9a: Press Events

Phase I
Public Affairs staff was present to greet press. A press event was held during the first day of operations, which included the Governor, the Secretary of Health and Social Services, HHS, and the DPH Director. At the Owens Campus, an individual identified himself as a reporter and requested permission to take pictures of people getting vaccines. This was not permitted without a signed consent form for the patient. The team should continue to be vigilant to anyone who arrives with a camera, as there are Health Insurance Portability and Accountability Act (HIPAA) violation concerns. Press was very limited during these events.

Recommendation:
1. Ensure that Public Affairs staff has media consent forms.

Phase II
For this second phase, it was determined that the additional staff assigned during Phase I were not needed to support the Public Affairs function in Phase II. One Public Affairs event did occur; however, Incident Command was not aware of this until media arrived.

Recommendation:
1. Incident Command Section should be made aware of all scheduled Public Affairs briefings.

Issue 9b: Press Releases

Phase I
On November 12, 2009, a press release was issued to inform the public that vaccination clinics would be held in each of the three counties. The releases stated that a team from the federal government would be traveling to the state to assist with vaccines, the types of eligible patients that can make appointments, the clinic schedule, and how to make an appointment. A follow-up press release was issued on November 18, 2009 to inform the public that 600 appointments were still available.

Recommendation:
1. None

Phase II
On December 3, 2009, a press release was issued to inform the public that appointments were available for the December clinics. On December 8, 2009, a follow-up press release was issued to inform the public that the categories of eligible patients would be expanded. Anyone in the CDC priority group would be eligible for an appointment.

Recommendation:
1. None

Activity 10: Volunteer Management

Activity Description: Ensure that volunteers are signed in, credentialed, and have a specific assignment while in response mode.

Issue 10a: MRC badges

Phase I
MRC members are provided badges pre-event. Not all members have badges. The MRC badge contains limited information, which includes a picture, name, title, and credential standards level (e.g. Level 3). Unless someone is familiar with the credential level codes, as is such for the Credentialing Unit Leader, she or he will have no way of determining a person's level of licensure or experience.

Recommendation:
1. Ensure that the person assigned as the Credentialing Unit Leader is well aware of the various credentialing levels.
2. Ensure DMRC members have badges.

Phase II
Prior to deployment for Phase II, the Credentialing Unit Leader verified all DMRC members' credentials and produced badges for both medical and non-medical members if photos were available. The badges were specifically designed with a photo ID, medical or non-medical credential status, and identified each member's type of medical license. This effort resulted in a smoother inclusion of the DMRC members into the NEHC operations.

Recommendation:
1. Ensure DMRC members have badges.

Issue 10b: Volunteer assistance

Phase I
Volunteers who are part of the DMRC assisted in several areas throughout the clinic and were extremely useful. Because the division has not used the MRC group in many real events, there is a lack of comfort and familiarization with their credentials, which may

result in underutilization of resources or placing volunteer in inappropriate settings. Some volunteers did not stay for their assigned shift. Once DMRC members were assigned to an area, they received just-in-time training on their responsibilities. One nurse self-reported. This individual worked under the supervision of Public Health personnel in the Issues area however, she should have been credentialed at the Staff Registration area prior to working in the clinic. Some nurses expressed concern about liability coverage.

Non-medical DMRC volunteers could have also been used in the clinics. This was not clear to volunteers and many non-medical volunteers thought they could not participate.

Recommendations:
1. Pre-credentialing should occur prior to the event but credentialing capabilities should be on-site in case it is needed.
2. Staffing supervisor needs to ensure that volunteers come in on time and verify that they can work the assigned shift.
3. Volunteer staff need to meet other credentialing requirements (i.e. work a certain number of exercises, attend a certain number of trainings, perform a certain number of outreach events, attend a certain number of meeting) before they can work in progressively more responsible positions within a clinic setting.
4. Reassure nursing staff that liability protection is in place.
5. Ensure utilization of non-medical DMRC volunteers.

Phase II
The DMRC Coordinator (also the Credentialing Unit Leader) was on-site to meet and greet volunteers, certify their credentials, and help them assimilate into the various areas of the NEHC. This improved the entire process as well as the overall experience for the DMRC volunteers. Nonetheless, volunteers specified that they need as much advanced notice as possible in order to respond. Volunteers were requested two days prior to activation.

Recommendation:
1. Develop a DMRC Deployment Plan.

Issue 10c: Interpreter Corps Services

Phase I
Volunteers from the Interpreter Corps were present at the greeter station on all three clinic days. On average, about 2-4 Spanish-speaking families came to the clinics each day, so the interpreters were very helpful in serving this population. At times, it was difficult to find an interpreter because they were traveling through the clinics assisting their patients.

Recommendations:
1. Develop a more robust relationship with Interpreters to ensure more participation.
2. Consider paid Interpreter services.

Phase II
Volunteers from the Interpreter Corps were again active on all three days of NEHC operations. Their many contributions were essential to the clinics' success. Radios were deployed with the interpreters to increase the availability of the team. Unfortunately, some Interpreter Corps team members were DHSS employees and had to volunteer to be part of the NEHC response because they were denied the opportunity to work in the clinic as a part of their duties as DHSS employees.

If the Interpreter on site could not speak the language of a patient, the Language Line, a toll-free switchboard that connected to an interpreter, was used. A greeter staff member had the opportunity to use the Language Line to translate for a Chinese couple. Without the Language Line, the Chinese couple would have been turned away as on site interpreters only spoke English and Spanish. The greeter was able to walk the couple through the entire NEHC process while maintaining contact with the interpreter via a cell phone.

Recommendations:
1. Assign Interpreter positions to the SHOC assignments.
2. Capture the contact information for the Language Line and formally incorporate this process into existing plans.
3. Provide badges to Interpreter Corps Members.

Activity 11: Call Center Services

Activity Description: Ensure that patients are able to receive appropriate information regarding clinics and can make appointments.

Issue 10a: Appointments

Phase I and II
During both phases of NEHC, Call Center Operators took appointments for patients. Patients expressed concern with the limitations of the appointment system. Times could not be chosen by the operator. Rather, the system chose the time for the patient. Patients that needed evening appointments were told to call back later. One client reported that it took 11 separate phone calls to the Call Center to schedule two appointments at night.

During both phases, many patients arrived with documentation to verify their status in the various target groups (i.e. chronic conditions). This documentation was not needed by clinic staff and patients went through great lengths to get the documentation from their physicians. It seemed that some of the language in the call center script implied that verification was necessary. In addition, some patients complained that the Call Center Operators did not tell them the exact building at each Del Tech campus the clinics would be held, only which campus. Just-in-time training should be maximized for Call Center Operators.

Recommendations:

1. Acquire a more efficient appointment system for the call center.
2. Provide Call Center Operators with the building names, addresses, and directions to each DelTech campus where the clinics will be held.
3. Provide just-in-time training prior to activating the call center.

SECTION 4: CONCLUSION

Overall, the Novel H1N1 Mass Vaccination Clinic was a success. DPH was able to vaccinate a large number of patients and both patients and staff found the experience to be pleasant and would participate in a mass vaccination campaign in the future. Based on lessons learned, DPH will work to improve its Call Center and NEHC Plans and will update position-specific task books and other associated protocols in order to better serve the public during a mass vaccination campaign.

Major Strengths:

- Unified Operations: DPH was able to seamlessly employ personnel resources from a variety of sources, to include NDMS, DMRC, and student nurses, to address staffing shortfalls within the state as a result of the school vaccination campaign.
- Flexibility: To minimize crowds and long lines, plans were quickly adjusted by employing appointments for the public and ensuring that the flow during operations was efficient based on populations for that day, especially when pediatric populations are being served.
- Throughput: During Phase I, a total of 2,587 patients were vaccinated with an average processing time of 13 minutes and 53 seconds from registration through vaccination. During Phase II, a total of 2,713 patients were vaccinated with an average processing time of 14 minutes and 20 seconds.

Areas for Improvement:

- Medical Consultation: Provide training to medical consultants regarding issues surrounding thimerosal, chronic diseases, and DPH policy on priority groups prior to the event.
- Appointments: Acquire appointment software and provide training to call center associates prior to the event to minimize errors.

Appendix A: Improvement Plan

This Improvement Plan has been developed specifically for DPH. These recommendations came from participants in the event preparation and planning and from opportunities that presented during the actual event. These recommendations are drawn from the After Action Report.

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Mass Prophylaxis	Direct Mass Prophylaxis Tactical Operations	Review and adjust plans to include all lesson learned from the NDMS clinics.						
Mass Prophylaxis	Direct Mass Prophylaxis Tactical Operations	Ensure contracts specify specific rooms needed.						
Mass Prophylaxis	Direct Mass Prophylaxis Tactical Operations	Explore other potential NEHC sites in the Stanton area with special attention given to open areas such as gymnasiums or large open conference areas.						
Mass Prophylaxis	Direct Mass Prophylaxis Tactical Operations	Clearly establish a Point of Contact for each facility and ensure it is noted in the contract.						
Mass Prophylaxis	Direct Mass Prophylaxis Tactical Operations	Schedule a site visit prior to the signing of any contracts to meet with facility staff and clarify facility utilization issues.						
Mass Prophylaxis	Direct Mass Prophylaxis Tactical Operations	Revisit the current DelTech Memorandums of Understanding to incorporate the use of the gymnasium at Stanton.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Mass Prophylaxis	Direct Mass Prophylaxis Tactical Operations	Research additional options to protect the gym floor, such as cleaning and buffing the floor as opposed to laying down a floor covering.						
Mass Prophylaxis	Communications	Issue radios (2) to NDMS staff.	Provide radios.	Communications	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Communications	Issue radios to Interpreter staff.	Provide radios.	Communications	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Communications	Issue a radio to law enforcement lead.	Provide radios.	Communications	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Communications	Standardize all briefings and include site and event specific hazards in the safety briefing.	Standardize briefings.	Communications	SHOC	Safety Officer	15-Dec-09	17-Dec-09
Mass Prophylaxis	Security	Evaluate numbers of law enforcement personnel needed in different situations (with/without appointments; demand on vaccine; etc.) and determine various stations based on the layout of facilities.	Evaluate the number of personnel	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Security	Implement a radio call code to request law enforcement support.	Implement code.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Security	Update appropriate plans to denote a code or utilize Code Delta for law enforcement assistance.						
Mass Prophylaxis	Safety	Inspect the facility for safety hazards and include potential safety hazards in the safety briefing.	Perform inspection and briefing.	Planning	SHOC	Safety Officer	15-Dec-09	17-Dec-09
Mass Prophylaxis	Safety	Develop accident reporting procedures and protocols and communicate procedures to staff.	Develop procedures.	Planning	SHOC	Safety Officer	15-Dec-09	17-Dec-09
Mass Prophylaxis	Safety	Ensure that the Safety Officer conducts a routine hourly safety	Conduct walkthrough.	Planning	SHOC	Safety Officer	15-Dec-09	17-Dec-09

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
		walk-through and mitigates safety threats.						
Mass Prophylaxis	Safety	Tape down the Owens Campus floor covering.	Tape down covering.	Planning	SHOC	Safety Officer	15-Dec-09	17-Dec-09
Mass Prophylaxis	Safety	Establish a universal language concerning codes/assistance needed to include a Code Card to attach to staff identification badges as a reminder to staff.						
Mass Prophylaxis	Safety	Create a lost child procedure.						
Mass Prophylaxis	Staffing	Ensure adequate staffing requirements are met.						
Mass Prophylaxis	Staffing	Ensure that a policy is in place for compensating DPH staff.						
Mass Prophylaxis	Staffing	Ensure policy for compensation is very clear for future events and train SHOC employees on the policy.						
Mass Prophylaxis	Staffing	Establish a SHOC assignment for interpreters that are DHSS staff.			PHPS	Section Chief		
Mass Prophylaxis	Staffing	Ensure staffing requirements are met.	Ensure staffing levels.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Staffing	Ensure that a policy is in place for compensating DPH staff.	Ensure policy.	Planning	SHOC	Finance and Admin Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Staffing	Ensure policy for compensation is very clear for future events and train SHOC employees on the policy.						
Mass Prophylaxis	Staffing	Establish a SHOC assignment for interpreters that are DHSS staff.						
Mass Prophylaxis	Logistics	Develop procedures to address liability issues when PREP Act is not			PHPS	Principal Planner		

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
		in place.						
Mass Prophylaxis	Logistics	Consider placing outdoor and road signs directing patients to clinics.	Arrange for signs.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Logistics	Ensure weights for signs are available and all signage is waterproofed.	Prepare signs.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Logistics	Investigate the possibility of purchasing roadside signs.						
Mass Prophylaxis	Logistics	Ensure that the Operations or Logistics Section performs an outside walk-thru prior to the NEHC opening.						
Mass Prophylaxis	Logistics	Consider developing a “Ramp” sign.						
Mass Prophylaxis	Logistics	Develop signage that is more appropriate to Mass Vaccination NEHC operations.						
Mass Prophylaxis	Logistics	Ensure that meal times are stated at the operations briefing each morning so that managers can plan shift changes.	Provide meals times.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Logistics	Ensure that the menus accommodate dietary restrictions and healthy choices.	Make accommodations.	Planning	SHOC	Finance and Admin Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Logistics	Investigate the possibility of amending the DelTech Memorandum of Agreement to allow other catering options.						
Mass Prophylaxis	Logistics	Set up a Logistics staging area at all campuses to allow more room for the Logistics Section to set up.	Set up area.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Mass Prophylaxis	Logistics	Review the existing NEHC supply inventory and adjusted as needed.	Inventory supplies.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Logistics	Consider developing specialized carts for each NEHC area.	Develop carts.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Greeting Area	Provide safety vests and warm clothing to Greeter Area staff.	Provide clothing.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Greeting Area	Consider fewer appointments in the first half hour of operations to prevent long lines outside.	Adjust appointments.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Greeting Area	Redesign facility layouts to allow patients to wait indoors.	Redesign layout.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Greeting Area	Provide for more privacy for those receiving vaccination in the Greeter Area.	Provide privacy.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Greeting Area	Offer special needs/cultural sensitivity training for all NEHC staff.						
Mass Prophylaxis	Greeting Area	Plan for special needs patients arriving at the facility by arranging for a separate vaccination area for better control and privacy.						
Mass Prophylaxis	Greeting Area	Ensure that those patients from group homes have their paperwork filled out prior to entering the clinic.						
Mass Prophylaxis	Registration Area	Add a sign that states "Please have ID ready prior to reaching the registration table."	Develop sign.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Registration Area	Registration needs to have, at minimum, six individuals to help direct patients to open registration tables and to provide for breaks.	Add staff.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Registration Area	Ensure that call center associates advise clients that separate						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
		registration forms will be needed during both appointments.						
Mass Prophylaxis	Registration Area	Separate the staff registration area and assign a person to oversee the area and direct personnel to their assigned locations.	Redesign area.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Registration Area	Staff registration area needs to have a laptop with an air card to access DMRC credentialing on ServDE.	Provide support.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Registration Area	Expand staffing at staff registration to two people.			PHPS	Principal Planner		
Mass Prophylaxis	Registration Area	Provide a space for personal belongings in the logistics area.			PHPS	Principal Planner		
Mass Prophylaxis	Registration Area	Establish a lost and found area.			PHPS	Principal Planner		
Mass Prophylaxis	Issues/Registration Confirmation Area	Use Medical Consultation Area concept and place that area in the Staging Area.	Implement medical consultation area.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Issues/Registration Confirmation Area	Re-draft the thimerosal fact sheet to an 8th grade reading level.	Redraft fact sheet.	Public Affairs	SHOC	Public Affairs	15-Dec-09	17-Dec-09
Mass Prophylaxis	Issues/Registration Confirmation Area	Ensure that medical advisory staff receives clear information from the medical director or one of his/her staff on how to appropriately advise people.	Train staff.	Planning	SHOC	Medical Director	15-Dec-09	17-Dec-09
Mass Prophylaxis	Issues/Registration Confirmation Area	Better define the role and responsibility of the medical staff at the Issues Area and those at the screening area and develop a task book for medical advisory staff.	Train staff.	Planning	SHOC	Medical Director	15-Dec-09	17-Dec-09
Mass Prophylaxis	Issues/Registration Confirmation Area	Ensure that DPH medical personnel are present at all three clinics to	Acquire personnel.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
		answer questions. Staff needs to have clinical experience and consult the physician's reference guide when unsure about chronic illnesses.						
Mass Prophylaxis	Issues/Registration Confirmation Area	Ensure that the term chronic illnesses are described to patients clearly, using examples such as diabetes, asthma, and immuno-compromised.	Train staff.	Training	SHOC	Issues/Registration Confirmation Manager	15-Dec-09	17-Dec-09
Mass Prophylaxis	Staging Area	Seven people are needed to staff the Staging Area.	Provide staff.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Staging Area	Ensure that the staging staff member at the entrance of staging wears a vest other than red.	Provide vest.	Planning	SHOC	Staging Manager	15-Dec-09	17-Dec-09
Mass Prophylaxis	Staging Area	Ensure that staging staff reiterate what sections of the form need to be filled out in a presentation like format.	Provide information.	Planning	SHOC	Staging Manager	15-Dec-09	17-Dec-09
Mass Prophylaxis	Staging Area	Reduce seating in the Staging Area.	Update layout.	Planning	SHOC	Staging Manager	15-Dec-09	17-Dec-09
Mass Prophylaxis	Consent/Triage Area	Assign a position between Consent/Triage Area and Vaccine Administration Area.	Update layout.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Consent/Triage Area	Assign additional staff to help with placing the stickers with Lot Numbers on the VAR or place the information on the VARs prior to clinic set up.						
Mass Prophylaxis	Consent/Triage Area	Consider obtaining a sign to identify the Consent/Triage Area						
Mass Prophylaxis	Vaccination Area	Documentation staff should provide statistical demographics of patients that require special attention (i.e. a different dosage) to medical team lead prior to the event if the data is	Provide information.	Planning	SHOC	Documentation Manager	15-Dec-09	17-Dec-09

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
		available.						
Mass Prophylaxis	Vaccination Area	Reconsider clinic locations and outreach strategies to reach a broad demographic populations.						
Mass Prophylaxis	Vaccination Area	DPH should issue standing orders for the clinics for DPH nurses and volunteers.	Issue standing orders.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Ensure a full discussion of standing orders during the planning process.	Issue standing orders.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Mark all syringes that are pre-drawn to note the various doses and vaccine types.	Mark syringes.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Acquire different types of needles to accommodate administration to infants, children, and the morbidly obese.	Acquire needles.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Make the pediatric area more child friendly by using children posters and child friendly decorations.	Acquire children's decorations.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Acquire sugar-free candy and snacks.	Acquire candy/snacks.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Follow-up with vendors to procure assorted sizes of needles with safety devices to vaccinate patients to include infants, small children, adults and obese patients (5/8" – 1 ½" needles) and to protect those administering vaccinations.	Acquire needles.					
Mass Prophylaxis	Vaccination Area	Follow-up with vendors to procure a syringe to allow for a 0.25ml precise dosing. (i.e. syringes graduated by 1/20 ml).	Acquire needles.					

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Mass Prophylaxis	Vaccination Area	Ensure that VAERS forms are on-site.	Acquire forms.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Establish a Code Blue procedure to get assistance for a medical emergency.	Establish codes.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	When patients with adverse reactions report to the Greeter area, the greeter should lead them back to the medical issues area if they are able to walk.	Implement procedure.	Planning	SHOC	Greeter Manager	15-Dec-09	17-Dec-09
Mass Prophylaxis	Vaccination Area	Ensure that needle stick protocols are clearly established, current, and available.						
Mass Prophylaxis	Post Vaccination and Documentation Area	Assign a nurse to oversee Post-Vaccination area.	Assign staff.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Post Vaccination and Documentation Area	Determine in what situations enforcing a 15 minute post vaccination waiting period is required or only recommended.						
Mass Prophylaxis	Post Vaccination and Documentation Area	Clarify and expand upon the Documentation Section in the NEHC Plan, noting what type of data is important for collecting so that processes can be put into place prior to the event.	Clarify data elements.	Planning	SHOC	Documentation Manager	15-Dec-09	17-Dec-09
Mass Prophylaxis	Post Vaccination and Documentation Area	Begin entering consent forms at clinic operations on laptops if possible. Provide the Documentation Section with electronic data for processing data to ensure effective management of resources with timely results.	Enter data.	Planning	SHOC	Documentation Manager	15-Dec-09	17-Dec-09

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Mass Prophylaxis	Post Vaccination and Documentation Area	Mark staff patient forms as staff.	Mark forms.	Planning	SHOC	Registration Manager	15-Dec-09	17-Dec-09
Mass Prophylaxis	Post Vaccination and Documentation Area	Research an electronic solution to performing efficient data entry on site.						
Mass Prophylaxis	Post Vaccination and Documentation Area	Provide bankers boxes to the various areas to store their materials.	Provide boxes.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Post Vaccination and Documentation Area	Logistics staff should direct all other staff on what needs to be completed to demobilize.	Direct staff.	Planning	SHOC	Logistics Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Public Affairs	Ensure that Public Affairs staff has media consent forms.	Provide forms.	Public Affairs	SHOC	Public Affairs	15-Dec-09	17-Dec-09
Mass Prophylaxis	Public Affairs	Incident Command Section should be made aware of all scheduled Public Affairs briefings.						
Mass Prophylaxis	Volunteer Management	Ensure that the person assigned as the Credentialing Unit Leader is well aware of the various credentialing levels.	Ensure appropriate staffing.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Volunteer Management	Ensure DMRC members have badges.	Provide badges.	Planning	SHOC	Credentialing Unit Leader	15-Dec-09	17-Dec-09
Mass Prophylaxis	Volunteer Management	Pre-credentialing should occur prior to the event but credentialing capabilities should be on-site in case it is needed.	Conduct credentialing.	Planning	SHOC	Credentialing Unit Leader	15-Dec-09	17-Dec-09
Mass Prophylaxis	Volunteer Management	Staffing supervisor needs to ensure that volunteers come in on time and verify that they can work the	Verify schedules.	Planning	SHOC	Credentialing Unit Leader	15-Dec-09	17-Dec-09

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
		assigned shift.						
Mass Prophylaxis	Volunteer Management	Volunteer staff need to meet other credentialing requirements (i.e. work a certain number of exercises, attend a certain number of trainings, perform a certain number of outreach events, attend a certain number of meeting) before they can work in progressively more responsible positions within a clinic setting.						
Mass Prophylaxis	Volunteer Management	Reassure nursing staff that liability protection is in place.	Communicate protection.	Planning	SHOC	Credentialing Unit Leader	15-Dec-09	17-Dec-09
Mass Prophylaxis	Volunteer Management	Ensure utilization of non-medical DMRC volunteers.						
Mass Prophylaxis	Volunteer Management	Develop a DMRC Deployment Plan.						
Mass Prophylaxis	Volunteer Management	Develop a more robust relationship with Interpreters to ensure more participation.	Develop relationship.	Planning	SHOC	Credentialing Unit Leader	15-Dec-09	17-Dec-09
Mass Prophylaxis	Volunteer Management	Consider paid Interpreter services.	Acquire language line services.	Planning	SHOC	Operations Section Chief	15-Dec-09	17-Dec-09
Mass Prophylaxis	Volunteer Management	Assign Interpreter positions to the SHOC assignments.						
Mass Prophylaxis	Volunteer Management	Capture the contact information for the Language Line and formally incorporate this process into existing plans.						
Mass Prophylaxis	Volunteer Management	Provide badges to Interpreter Corps Members.						
Mass Prophylaxis	Call Center Services	Acquire a more efficient appointment system for the call center.						

Capability	Observation Title	Recommendation(s)	Corrective Action Description	Capability Element	Primary Responsible Agency	Agency POC	Start Date	Completion Date
Mass Prophylaxis	Call Center Services	Provide Call Center Operators with the building names, addresses, and directions to each DelTech campus where the clinics will be held.						
Mass Prophylaxis	Call Center Services	Provide just-in-time training to activating the call center.						

Appendix B: Summary of Patient Evaluation Comments

The following information was obtained from patient comment forms provided at each of the six clinics. Patient comments are being used to improve preparedness planning when appropriate.

Quantitative Patient Comments

All quantitative feedback was ranked from 1-5 with 1 being the lowest rating and 5 being the highest rating.

Was the call center registration method easy to use?

- Rank 1 = 34
- Rank 2 = 44
- Rank 3 = 184
- Rank 4 = 549
- Rank 5 = 2419

How was your experience with the call center?

- Rank 1 = 37
- Rank 2 = 48
- Rank 3 = 168
- Rank 4 = 585
- Rank 5 = 2377

How was your experience today at the Novel H1N1 clinic?

- Rank 1 = 8
- Rank 2 = 22
- Rank 3 = 146
- Rank 4 = 634
- Rank 5 = 2477

Did you have sufficient opportunity to ask questions?

- Rank 1 = 18
- Rank 2 = 25
- Rank 3 = 162
- Rank 4 = 620
- Rank 5 = 2428

Would you participate in this type of event again?

- Rank 1 = 10
- Rank 2 = 16
- Rank 3 = 117
- Rank 4 = 487
- Rank 5 = 2659

What is the primary reason you decided to come to the clinic to get vaccinated?

- My primary care physician did not have vaccine = 1916
- This process is more convenient than at a physician's office = 391
- I do not have a primary care physician = 96
- The vaccination is free at this clinic = 583

Qualitative Patient Comments

Del Tech Terry Campus
November 20, 2009

Overall Comments:

- Signs at entrance to campus were needed.
- Poor directions
- Need more handicap parking spaces
- High risk children should have been accommodated via school clinics. If vaccines are administered by medical professionals there is no reason they should have been excluded as long as they had physician's approval.
- More organized than the pediatrician's office usually is.

Call Center Comments:

- Needed more people to man the phones
- Call Center stated that signs to vaccine area would be at Del Tech. entrances, they weren't. If I hadn't been familiar with the campus, the building would not have been hard to find.
- Call Center personnel told patient that their 5 year old only needed one shot. This was not correct and we had to call again to schedule the 2nd appointment.
- Computer system's was not user friendly and Call Center could not look up information concerning appointments for patients.
- Patient had to convince Call Center Operator that her 7 year old needed a second shot.
- Scheduling system is ridiculous. My scheduler couldn't tell me what time the appointment was because they navigated past the screen on her computer and couldn't get back. Had to wait for a call back the next day very inconvenient. Then I asked for directions and was told once I got at the campus I would find it. Patient had to stop 3 times on campus before someone could tell them which building. Need more information on website.
- Hard to get through to Call Center.
- Call Center messed up patient's appointment 2 times and it was still wrong when they arrived at the clinic.

Del Tech. Stanton Campus
November 21, 2009

Overall Comments:

- The schools did not have an alternative shot for the "at risk" children, those with asthma.
- Only problem was finding the address of the clinic. Wound up at the Wilmington Campus.
- All clinics should be run like this one and be free.
- This type of clinic should be offered more often.
- Would like to get the regular flu shot this way.
- The people have been very helpful throughout the process

Call Center Comments:

- Took one hour, calling every 5 minutes to get though to make an appointment.
- Only problem was computer issues.
- Got busy signal and hand to re-dial many times to get though.
- Would have liked more flexibility in appointment times.
- Needed more flexibility in scheduling around children nap times.
- Call Center staff was very friendly, but had computer system problems during the call.
- Was given the wrong time by the Call Center staff.
- Patient who was pregnant was given very little concern with the trace amount of mercury in the shot. They were not told about that when they called in to make the appointment.
- Called over 10 times before getting a live operator, but process was very easy once patient got though.
- Call Center did not explain that two shots were needed for children 10 years old and younger.

Del Tech Owens Campus
November 22, 2009

Overall Comments:

- Very difficult to find location, no phone number to verify appointment or check hours of operation. Very far for patient to drive.
- Why were there some many appointments at the same time?
- Had to travel over 2 hours.

- Patients lived in Newark, but could not get appointment at Stanton Campus. Love the clinic idea, need more convenient locations in Newark.
- Very quick and well organized!
- Great idea for those who can't afford the shot.
- Great clinic to allow people without insurance to have their needs taken care of. Thank you.
- Having weekend hours was a great service to families.
- Excellent way to run an operation. Very smooth and easy.
- Dr. Silverman was extremely friendly, pleasant, and helpful as well as all of the staff.
- Wow! Great organization of the center.
- Was refused vaccine at primary card doctor's office though they had vaccine and son was 14 years old with type 1 diabetes and school cancelled clinic, not sure when he would have been able to get shot.
- Patient has Crohn's Disease and needed to receive the shot and couldn't get it at their doctor's office. This service today was really great. Thank you.

Call Center Comments:

- Wonderful customer service. Process was easy and very child friendly.
- First person they talked with had no idea what they were talking about. Called back and second person was wonderful.
- Needed a specific appointment time due to work schedule and was told that appointment time was generated by computer and could not be altered.
- Once patient got through on the phone (which took 3 days) the rest was fine.

Appendix C: Patient Throughput (DSNS Drill Requirement)

Drill Information

Date of drill	17-Dec-09
Day of the week of drill	Thursday
Drill start time	13:00
Drill end time	20:00
Location of drill	Stanton Campus
Number of players	72
Number of evaluators	3
Number of patient actors	1526
Number of patient types	1

Number of patients of type 1	Green Line	Describe patient type 1	Clients designated as not sick

Patient Flow Plan Information

Name of step and description of task(s) performed at the step	Number of stations at this step	Number of evaluators positioned at this step
Registration	4	0
Staging	4	0
Vaccination	8	0

Describe the rules that dictate the routing of patients through the POD.
(Ex: Symptomatic patients are directed from "Screening" to "Emergency Care.")

Patients enter the front of the facility and are greeted. The first station the patients reached is the Registration Area. Then they moved to the Staging Area and their paperwork was checked and patients were asked if they were sick or not. They then moved to the Vaccination Area, the third station, for their Novel H1N1 Influenza Vaccine. Timestamps were placed on the patients' forms when they reached the Registration Area and after they received their vaccination.

Patient Time Stamps

Do not include time spent by the patient waiting in line before entering the station or waiting to exit the station.

Station #	Patient #	Time Patient Began Receiving Services (HH:MM:SS)	Time Patient Finished Receiving Services (HH:MM:SS)	Comments (e.g., # in party, reasons for delay)	Station Time	Station Time (minutes)
1-3	1	15:37	15:55		0:18	18.00
1-3	2	16:00	16:07		0:07	7.00
1-3	3	15:44	16:00		0:16	16.00
1-3	4	15:43	16:00		0:17	17.00
1-3	5	15:44	16:04	6 month old infant	0:20	20.00
1-3	6	16:08	16:16		0:08	8.00
1-3	7	15:58	16:08		0:10	10.00
1-3	8	16:06	16:12		0:06	6.00
1-3	9	15:53	16:15	8 year old child	0:22	22.00
1-3	10	15:55	16:15	10 year old child	0:20	20.00
1-3	11	16:02	16:15		0:13	13.00
1-3	12	16:02	16:15		0:13	13.00
1-3	13	16:05	16:18		0:13	13.00

1-3	14	15:50	16:05		0:15	15.00
1-3	15	15:37	15:55	18 month old infant	0:18	18.00
1-3	16	15:49	16:03		0:14	14.00
1-3	17	15:49	16:02		0:13	13.00
1-3	18	15:59	16:14		0:15	15.00
1-3	19	16:04	16:13		0:09	9.00
1-3	20	15:56	16:14		0:18	18.00
1-3	21	15:38	16:05	6 year old child	0:27	27.00
1-3	22	15:49	16:10	24 month old infant	0:21	21.00
1-3	23	15:57	16:07		0:10	10.00
1-3	24	15:59	16:03		0:04	4.00
1-3	25	16:13	16:24		0:11	11.00
1-3	26	15:37	15:55	4 year old child	0:18	18.00
1-3	27	15:57	16:06		0:09	9.00
1-3	28	15:57	16:06		0:09	9.00
1-3	29	15:49	16:05		0:16	16.00
1-3	30	15:49	16:05		0:16	16.00
1-3	31	16:03	16:17		0:14	14.00
1-3	32	15:56	16:10		0:14	14.00
1-3	33	15:42	15:58		0:16	16.00
1-3	34	15:40	15:57		0:17	17.00
1-3	35	15:54	16:03		0:09	9.00
1-3	36	16:03	16:14		0:11	11.00
1-3	37	16:01	16:14		0:13	13.00
1-3	38	16:13	16:23		0:10	10.00
1-3	39	15:44	16:03	36 month old infant	0:19	19.00
1-3	40	15:44	16:02	5 year old child	0:18	18.00
1-3	41	15:45	16:00		0:15	15.00
1-3	42	15:43	16:00		0:17	17.00
1-3	43	16:08	16:18		0:10	10.00
1-3	44	16:06	16:15		0:09	9.00
1-3	45	15:51	16:07		0:16	16.00
1-3	46	15:43	15:58		0:15	15.00
1-3	47	16:00	16:05		0:05	5.00
1-3	48	15:44	16:08	special needs patient	0:24	24.00

1-3	49	15:40	16:01	special needs patient	0:21	21.00
1-3	50	16:01	16:12		0:11	11.00

Appendix D: Operations Briefings

Delaware Division of Public Health
Novel H1N1 Vaccination Clinic Brief
NDMS December 14 – 16:30
December 15 (Terry), 16 (Owens), & 17 (Stanton) - 12:30 pm

☐ **Welcome & Introduction (Operations Chief)**

- **Command, CMO, NDMS Team Leader, Chiefs, Supervisors, & Special Guests**
- **Purpose, Priority Groups (Tier), Number of Patients, Medical Orders**

☐ **Clinic Process Flow & Form (Operations Chief)**

☐ *Map Handout*

Process Flow:

- **Greeters**
  - Vaccine Information Sheet (VIS) – English/Spanish
  - CDC Thimerosal Fact Sheet – English/Spanish
  - Ask ILI questions. Stop Form (ILI) – English/Spanish
  - Id out for registration
  - Offer Assistance
- **Registration**
  - Id out for registration
  - Consent form – Color Coded (Pink = Peds) & Time Stamped
  - Thimerosal Exemption Form – English/Spanish
  - Second Shot
- **Registration/Confirmation**
  - Assist those without an appointment
  - Consent form – Color Coded (Pink = Peds) & Time Stamped
  - Thimerosal Exemption Form
  - VIS Form – English/Spanish, Stop Form (ILI) – English/Spanish
- **Staging Area**
  - Handout patient feedback form
  - Patient fills out forms & DPH reviews for completeness
  - Medical Consultation (Medical & Thimerosal Questions) - **NDMS**
  - Multi Staging (Before & After Triaging) & Monitoring flow
- **Triage & Screening Area (NDMS)**
  - 2 Tables, Pediatrics & Their Families (6 months to 35 months) & Adults 3yrs and up.
  - Reviews consent form for contra-indications or issues
  - Staging (Peds)
- **Vaccination (NDMS)**
  - Labels – Pink = Peds (.25 ml 6 to 35 mo.), White = Adult (.5 ml 36 mo & up)
  - Review & fill out consent form – (table & time)

    - Patient Vaccination Record Card
- **Post Vaccination (NDMS)**
    - Vaccine Adverse Event Reporting System (VAERS)
- **Documentation**
    - Patient turns in consent form & feedback form
    - Reports through-put
- **800 MHz**
    - Supervisors – Pick up radio immediately after briefing
    - Code Blue (Medical)
    - Code Delta (Security)
- **Medical Issues**
    - DSP Paramedic
    - Prime Care Transport
    - NDMS Medical Team – CMO, RN, & Paramedic
- **Security**
    - DSP/Del Tech/Georgetown

☐ **Q & A**

☐ **Safety Brief (Safety Officer)**

- Report Injuries & Falls

☐ **Final Remarks (Incident Command)**

Appendix E: Site Set-Up (DSNS Drill Requirement)

Drill Information

Date of Drill (mm/dd/yyyy)	11/20/2009
Location of Drill	Terry Campus
Number of Players	66
Number of Evaluators	3
Set-Up Start Time	10:30am
Set-Up End Time	11:30am

Drill Assumptions

Extent of Notice of Drill: none, partial (please specify), full	Full
Predetermined Amount of Time From Start of Drill Within Which a Facility Set Up Must be Complete (HH:MM)	2:00
Time of Operational Facility (HH:MM, real or hypothetical)	12:00
Service Area (real or hypothetical)	Real

Walk-Through Checklist

Material flow

Step	*Checklist item*	
Arrival of medication	Signage to direct trucks to unloading site	x
	Barriers/cones present to ensure path for truck	
	Locations where security will be posted have been identified	x
Material handling	Material handling equipment (pallet jack, dock, etc.) is present and operational	x
	Workers have tested material handling equipment to ensure items can be moved from truck to POD	x
Inventory storage	Ample storage space	x

	Area is secured	x
	Proper temperature can be maintained. Refrigerator present and operational (if needed)	x
	Necessary equipment for managing inventory (paper, computer, communication equipment, software, etc.) has been set up.	x
	Necessary equipment for managing inventory is operational: Turn on computer and start inventory management software. (if applicable)	

Patient flow

Step	*Checklist item*	
Parking	Signage to direct people to entrance of POD parking	x
	Ample parking for staff and patients	x
	Barriers/cones have been set up	x
	Locations where security will be posted have been identified	x
	Signage to direct patients to entrance of POD	x
Greeting/entry	PA System present and operational	x
Forms distribution	Forms, clipboards, supplies, etc.	x
	Space provided for patients to sit or stand while filling out forms	x
	Signage to direct patients to the next step	x
Briefing (if used)	Appropriate equipment (PA system, VCR, audio player, etc.) is present and operational	x
	Signage to direct patients to the next step	x
Registration or entry of form information	Furniture set up for staff and patients	x
	Computer equipment (if used) has been set up	x
	Computer equipment (if used) has been tested: turn on computer, start up software, print sample form	x
	Signage to next step	x
Interview of patients to determine proper drug	Furniture set up for staff and patients	x
	Computer equipment (if used) has been set up	
	Computer equipment (if used) has been tested: turn on computer, start up software, print sample form	
	Signage to next step	x

Dispensing	Furniture set up for staff and patients	x
	Sufficient space for supply of medication	x
	Computer equipment (if used) has been set up	
	Computer equipment (if used) has been tested: turn on computer, start up software, print sample form	
	Signage to next step (or exit)	x
Exit	Exit clearly marked	x
	Additional instructions for patients posted	x

Patient care

Step	*Checklist item*	
Mental health/counseling (if applicable)	Necessary furniture	x
	Able to offer patients privacy	x
	Communication equipment present and operational	x
Medical evaluation for symptomatic patients (if applicable)	Necessary furniture	x
	Able to offer patients privacy	x
	Communication equipment present and operational	x
Healthcare-center transport	Patient transport equipment present (wheelchair, gurney, etc.)	x
	EMS has a clear, unobstructed path to evacuate patients	x

Command and Support Staff

Step	*Is equipment present?*	
Command Post	Communication equipment present and operational	x
Office	Ability to make copies, print, fax, call, communications	x
Security	Locations where security will be posted have been identified	x
	POD access list (sign-in area for staff intake?)	x

	Badge-making supplies	
	Necessary signage	x