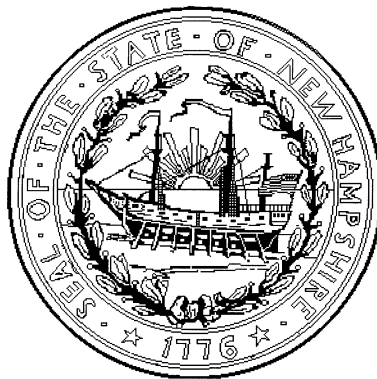


**New Hampshire
Department of Health and Human Services
And
Department of Safety**

**New Hampshire
July 1, 2009 - March 30, 2010
H1N1 Response**

**AFTER ACTION REPORT /
IMPROVEMENT PLAN**



Report Date: July 31, 2010

This page is intentionally blank.

Administrative Handling Instructions

1. The title of this document is the *New Hampshire July 1, 2009 - March 30, 2010 H1N1 Response After Action Report / Improvement Plan (AAR/IP)*.
2. The information gathered in this AAR/IP is classified as a public document and can be distributed as such.
3. Points of Contact:
 - Christine Adamski
Acting Chief
Bureau of Infectious Disease Control, NH Division of Public Health Services
Phone: 603.271.4586
E-mail: cadamski@dhhs.state.nh.us

Lead AAR Coordinator:

Amy Cullum
Community Health Institute/JSI
Phone: (603) 573-3316
E-mail: acullum@jsi.com

Table of Contents

Administrative Handling Instructions	i
Table of Contents	ii
Table of Figures and Tables	iii
Executive Summary	iv
Major Strengths	vi
Primary Areas for Improvement	vii
Section 1: Event Overview	1
Section 2: Event Summary	4
Section 3: Analysis of the Response	6
Capability: Planning.....	6
Capability: Epidemiological Surveillance and Investigation	8
Capability: Laboratory testing.....	12
Capability: Emergency Operations Center Management.....	15
Capability: Emergency Public Information and Warning	19
Capability: Medical Supplies Management and Distribution	32
Capability: Mass Prophylaxis	41
Section 4: Conclusion	56
Appendix A: Improvement Plan	A-1
Appendix B: Event Summary Table	B-1
Appendix C: Acronyms	C-1

Table of Figures and Tables

Figure 1: Surveillance systems used in H1N1 Response.....	5
Table 1: NH July 2009 - March 2010 H1N1 Response Phase Summary	5
Figure 2: Surveillance systems used in H1N1 Response.....	9
Figure 3: Laboratory-confirmed cases (n=731) of 2009 influenza A (H1N1) virus infection by report date – NH, April 2009-February 2010	12
Figure 4: UNH Survey- Flu prevention	20
Figure 5: UNH Survey- Risk groups	21
Figure 6: UNH Survey- Clinic information	22
Figure 7: Most Commonly Asked H1N1-Related Questions/Concerns to 211	23
Figure 8: DHHS H1N1 Nasal Flu Mist poster	24
Figure 9: Percent of 211 Calls Related to H1N1	26
Figure 10: Phase 1 Population and Doses Shipped as of 11/14	33
Table 2: Total and percent of total doses shipped by regional proportion of state population.....	34
Figure 11: Proportion of Total Doses Administered by Provider Type.....	42
Table 3: Regional H1N1 Vaccine Coverage Tertiles	44
Table 4: Proportion of Doses Administered by Tier and Provider Category	45
Figure 12: Distribution Channels by Tier	45
Figure 13: Proportion of Total Doses Administered by Provider Type- Tier 1	46
Figure 14: Proportion of Total Doses Administered by Provider Type- Tier 2	46
Figure 15: Proportion of Total Doses Administered by Provider Type- Tier 3	47
Figure 16: Average # of Registered Vaccine Providers per Region by H1N1 Vaccination Tier.....	48
Figure 17: Mean Number of AHHR-sponsored clinics and patients per clinic by Vaccination Rate Tiers	48
Figure 18: Population Means of AHHR Regions by H1N1 Vaccination Tier.....	49
Figure 19: Proportion of Doses Administered by Top 5 Vaccine Providers Within Tiers50	

Executive Summary

This After Action Report (AAR) contains an analysis of the State of NH's response to the Influenza A (H1N1) pandemic between July 2009 – March 2010. This response followed a spring wave of Influenza A (H1N1) that began circulating in the United States in April 2009, with peak activity in NH in early May 2009.¹ An AAR from that event was published in September 2009 and is referenced throughout this report.

The overarching goal of the response was to protect of the residents of the state of NH by controlling the spread of the Influenza A (H1N1) virus through the provision of public information and mass prophylaxis to the general public, issuing clinical guidance and recommendations, monitoring the spread of disease in NH and nationwide, and mitigating the consequences of infection through the provision of treatment to infected individuals. This AAR addresses the following Target Capabilities, which were integral to the State of NH's efforts to respond and to support response activities at the regional level:

- Planning
- Epidemiological Surveillance and Investigation
- Laboratory Testing
- Emergency Operations Center Management
- Emergency Public Information and Warning
- Medical Supplies Management and Distribution
- Mass Prophylaxis

The AAR identifies strengths in the State of NH's response which may be replicated or built upon in future responses, as well as areas for improvement which may be addressed through the recommendations contained in the Improvement Plan. **The suggested actions in this AAR should be viewed as recommendations only.** In some cases, NH agencies that were involved in the response may determine that the benefits of implementation are insufficient to outweigh the costs. In other cases, these agencies may identify alternative solutions that may be more effective or efficient. Management should review the applicable recommendations and determine the most appropriate course of action given the available resources (e.g., time, staff, funding) for implementation and sustainability.

Representatives from the following state agencies and organizations were involved in NH's July 2009 – March 2010 H1N1 Response:

State agencies:

- NH Office of the Governor
- NH Department of Health and Human Services (DHHS)
 - Office of the Commissioner, Emergency Services Unit (ESU)
 - Division of Public Health Services (DPHS)

¹ Bascom, Susan and John Dreisig. "Re: H1N1 AAR data: Follow up." E-mail to the author. June 29, 2010.

- NH Department of Safety (DOS)
 - Division of Homeland Security and Emergency Management (HSEM)
 - Division of State Police
 - Bureau of Emergency Medical Services (EMS)
- NH Department of Information Technology (DoIT)
- NH National Guard (NHNG)
- NH Department of Administrative Services
- NH Department of Education (DOE)

All Health Hazard Region (AHHR) Regional Coordinating Committees (RCCs):

- | | |
|----------------------|---------------------------|
| • Capital Area | • Greater Plymouth |
| • Carroll County | • Greater Portsmouth |
| • Franklin/Bristol | • Greater Sullivan County |
| • Greater Derry | • Laconia/Meredith |
| • Greater Exeter | • Northern NH |
| • Greater Manchester | • Strafford County |
| • Greater Monadnock | • Upper Valley |
| • Greater Nashua | |

NH Hospitals:

- | | |
|---------------------------------------|-------------------------------------|
| • Alice Peck Day Memorial Hospital | • Monadnock Community Hospital |
| • Androscoggin Valley Hospital | • NH Hospital |
| • Catholic Medical Center | • New London Hospital |
| • Concord Hospital | • Northeast Rehabilitation Hospital |
| • Cottage Hospital | • Parkland Medical Center |
| • Crotched Mountain Rehab Center | • Portsmouth Regional Hospital |
| • Elliot Hospital | • Southern NH Medical Center |
| • Exeter Hospital | • Speare Memorial Hospital |
| • Franklin Regional Hospital | • St Joseph Hospital |
| • Frisbie Memorial Hospital | • The Cheshire Medical Center |
| • Hampstead Hospital | • The Memorial Hospital |
| • Healthsouth Rehabilitation Hospital | • Upper Connecticut Valley Hospital |
| • Huggins Hospital | • Valley Regional Hospital |
| • Lakes Region General Hospital | • Veterans Affairs Medical Center |
| • Littleton Regional Hospital | • Weeks Medical Center |
| • Mary Hitchcock Memorial Hospital | • Wentworth-Douglass Hospital |
| | • NH Hospital Association (NHHA) |

Major Strengths

The major strengths identified during this response are as follows:

- Successful vaccination campaign: According to data reported in the CDC's Morbidity and Mortality Weekly Report, NH ran a successful H1N1 vaccination campaign. NH vaccinated 45.5% of children aged 6 months to 17 years (compared with a national median excluding territories of 36.8%). NH vaccinated 42.8% of persons in the initial target groups, (compared with a national median of 33.2%), and 33.2 % of persons aged 25 – 64 at high risk (compared with a national median of 25.2%).² A survey of NH adults conducted by the UNH Survey Center³ specifically for this H1N1 AAR found that 42% of all children under 10 from households surveyed received an H1N1 vaccination, and that 72% of these children who received a first dose received a second dose as well.
- Partnership and innovation: Throughout research for this AAR, partnership and innovation were repeatedly stressed as key to the effectiveness of NH's response, at both the state and regional levels. At all levels, responders built new and strengthened existing relationships to adjust plans to meet H1N1's unique circumstances. At the regional level, AHHR and hospital representatives worked together to develop new delivery strategies to reach sub-populations most at risk; at the state level, health care networks became distribution networks for H1N1 vaccine, while the DPHS staff became widely recognized as the expert resource for H1N1 information. New partnerships were often mentioned as one of the most beneficial results of this public health emergency response.
- Availability of information for responders: Responder notification, including the Health Alert Network (HAN) messages and conference calls, were repeatedly mentioned as "critical" and it was appreciated that the state was proactively pushing out any information it had. Focus group participants and survey respondents regularly cited the availability and knowledge of DPHS staff, and also highlighted the quick turnaround time for responses to questions as a major strength. As one focus group participant stated, "Anytime I called the Incident Command Center (ICC), Lab, Immunization Program—they were always there." Related procedural best practices implemented during this response included the reformatting of HAN messages so that new information and changes appeared at the top of the HAN, the implementation of Weekly Talking Points by DHHS PIO, and the reinstating of hospital conference calls.
- Surveillance systems: Throughout the H1N1 response, NH maintained and utilized a number of surveillance systems already in existence to monitor for influenza-like illness (ILI). These included the U.S. Outpatient Influenza Like Illness (ILI) Surveillance Network (ILI Net), pneumonia and influenza-related deaths, the Over-the-Counter Pharmaceutical Surveillance (OTC), Laboratory Surveillance, and Automated Hospital

² "Interim Results: Influenza A (H1N1) 2009 Monovalent and Seasonal Influenza Vaccination Coverage Among Health-Care Personnel - United States, August 2009-January 2010." *Centers for Disease Control and Prevention. MMWR*, 2 Apr. 2010. Web. 11 July 2010. <<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5912a1.htm>>.

³ Fowler, Tracy A., Andrew E. Smith, and Chad S. Novak. *Granite State Poll for the Community Health Institute*. Durham, NH: University of New Hampshire Survey Center, 2010.

Emergency Department Data (AHEDD). A major advantage to applying the above systems to the H1N1 response was that the Infectious Disease Investigation and Surveillance Sections (IDISS) were already familiar with their use, maintenance and technological support was already established, and no additional staff members were necessary for implementation. In addition to these, NH introduced two new systems which show promise for future use: the H1N1 Web-based School Surveillance Reporting system and the use by hospital partners of Healthcare (HC) Standard as a means of tracking pneumonia and influenza hospital admissions.

Primary Areas for Improvement

Throughout the response, there were several opportunities identified for improvement in NH's ability to respond to a Pandemic Influenza incident. The primary areas for improvement are:

- Clarity of the ICC role and function: Because the H1N1 event was not a State declared emergency, the organizational structures and relationships established in the response are not inconsistent with existing plans. However, a number of ambiguities in existing plans were highlighted as a result of the options selected for organizing the response including:
 - the structure and function of the DPHS ICC referred to in the Public Health Emergency Preparedness and Response Plan (PHEPRP) and its interaction with the DHHS ICC is not clear;
 - the relationship of the ICC to the State EOC is not clear to many response partners; and
 - expectations regarding use of WebEOC are not clear or consistent in the context of a non-routine event that is not a State-declared emergency, such as a public health incident.

Some of these ambiguities undoubtedly stem from the fact that the H1N1 event overall fell into a 'gray' area where a high level of sustained and coordinated effort was necessary outside of normal business routines, but it was not officially declared a state of emergency. However, the event did provide a useful picture of how the various response structures can work together in a higher-level public health emergency response and points to the need for clearer definition of roles, reporting relationships, and communication pathways in advance.

- Limited number of pre-trained surge staff at DPHS/DHHS: The IDISS, NHIP, and the DHHS PIO all experienced staff shortages during the July 2009 - March 2010 H1N1 response that either hindered H1N1 response activity or DPHS continuity of operations (COOP). This contributed to challenges with data management, accessing information technology, provision of public information, and facilitation and follow up of conference calls. Staff shortages were also raised as a concern in the *NH Spring 2009 H1N1 AAR/IP*.⁴ It is recommended that DHHS train staff identified as resources in the COOP plan to ensure readiness, and consider a role for the DHHS Emergency Services Unit (ESU) in coordinating an ongoing COOP training program.

⁴ URS Corporation/EG&G Technical Services. *2009 Spring H1N1 Response AAR/IP*. Rep. Concord, NH: NH DOS and DHHS, 2010, 8.

- Support regional variation in plans and procedures for implementing mass prophylaxis: Most mass prophylaxis planning to date has focused on implementation of large scale public clinics or points of dispensing (PODs). However, the 2009/2010 H1N1 response initially involved targeted vaccine administration and use of multiple channels including the traditional health care delivery system and numerous public clinics (or ‘mini-PODs’). As previously described, the NH vaccination campaign was successful as measured by vaccination rates relative to other states. Analysis of vaccine administration data demonstrates that there are key providers in each region and across the State, but that the key provider group is variable across regions. Within regions, high-volume providers include hospitals, physician groups, and AHHRs in most, but not all cases. Further development of plans and capacity for events similar to the 2009/2010 H1N1 pandemic will therefore involve region-specific work to further strengthen partnerships and solidify procedures for working with key providers/vaccine administration channels. This region-specific work should further develop vaccine distribution strategies and plans that expand beyond the current plans that assume distribution from a large cache to regions for large scale PODs (“SNS to region to POD” concept) to include planning for other mechanisms for vaccine distribution and dispensing that capitalize on the lessons learned from the 2009/2010 H1N1 event. Data analysis and focus group information suggest that regions are likely to work with specific key partners and to select different vaccine distribution strategies that reflect available infrastructure to best serve their populations. It is unlikely that there is a “one-size-fits all” solution for NH’s public health and health care systems with respect to vaccine distribution channels.
- Inadequate data collection systems: During this emergency, two parallel vaccine reporting systems were put in place, one based on the Centers for Disease Prevention and Control (CDC) Countermeasure Response Administration (CRA) requirements and another based on the NHIP day-to-day reporting system. There were two reporting forms, one for each system, each targeted to different subsets of registered vaccine providers. Yet, neither system collected information on pregnant women or children under 10 years of age who received a second dose. Moreover, because the data was collected via a paper based system, managing the data was time and staff intensive. At the height of the H1N1 response, staff did not have the time to reconcile vaccine that had been shipped with vaccine dispensed, wasted (expired, damaged, or spoiled), or transferred. It is recommended that response goals and information needs be determined prior to designing a vaccine reporting system, that DHHS evaluate benefits and barriers to implementing a web-based system for electronic data gathering, and that highly-trained staff be assigned to the data systems design and management in such an event.

Section 1: Event Overview

The NH July 2009 – March 2010 H1N1 Response was a real time response to the worldwide outbreak of H1N1. The response utilized the current state and regional public health emergency preparedness and response plans and capabilities.

The overarching goal of the response was to protect the residents of the state of NH by controlling the spread of the Influenza A (H1N1) virus through the provision of public information and mass prophylaxis to the general public, issuing clinical guidance and recommendations, monitoring the spread of disease in NH and nationwide, and mitigating the consequences of infection through the provision of treatment to infected individuals. Significant state resources were used to carry out these activities.

The NH July 2009 – March 2010 H1N1 response was statewide and involved representatives from the following state, federal and local entities:

State Entities

- NH Office of the Governor
- NH Department of Health and Human Services (DHHS)
 - Office of the Commissioner , Emergency Services Unit (ESU)
 - Division of Public Health Services (DPHS)
- NH Department of Safety (DOS)
 - Division of Homeland Security and Emergency Management (HSEM)
 - Division of State Police
 - Bureau of Emergency Medical Services (EMS)
- NH National Guard (NHNG)
- NH Department of Administrative Services
- NH Department of Education (DOE)

AHHR Regional Coordinating Committees (RCCs)

- Capital Area
- Carroll County
- Franklin/Bristol
- Greater Derry
- Greater Exeter
- Greater Manchester
- Greater Monadnock
- Greater Nashua
- Greater Plymouth
- Greater Portsmouth
- Greater Sullivan County
- Laconia/Meredith
- Northern NH
- Strafford County
- Upper Valley

NH Hospitals:

- Alice Peck Day Memorial Hospital
- Androscoggin Valley Hospital

- Catholic Medical Center
- Concord Hospital
- Cottage Hospital
- Crotched Mountain Rehab Center
- Elliot Hospital
- Exeter Hospital
- Franklin Regional Hospital
- Frisbie Memorial Hospital
- Hampstead Hospital
- Healthsouth Rehabilitation Hospital
- Huggins Hospital
- Lakes Region General Hospital
- Littleton Regional Hospital
- Mary Hitchcock Memorial Hospital
- Monadnock Community Hospital
- NH Hospital
- New London Hospital
- Northeast Rehabilitation Hospital
- Parkland Medical Center
- Portsmouth Regional Hospital
- Southern NH Medical Center
- Speare Memorial Hospital
- St Joseph Hospital
- The Cheshire Medical Center
- The Memorial Hospital
- Upper Connecticut Valley Hospital
- Valley Regional Hospital
- Veterans Affairs Medical Center
- Weeks Medical Center
- Wentworth-Douglass Hospital
- NH Hospital Association (NHHA)

Methodology

This H1N1 July 2009 – March 2010 After Action Report (AAR) is the result of several months of data gathering and data analysis, based on a March 2010 work plan developed with input from both DHHS and DOS representatives. These data sources are described here.

Community Health Institute (CHI) staff both facilitated and attended a number of regional After Action Conferences (AACs) and Regional Coordinating Committee (RCC) meetings where the second wave of the H1N1 response was reviewed and additional regional information was gathered for this AAR. The following regions were included:

- Great North Woods
- Greater Franklin/Bristol
- Greater Manchester
- Greater Monadnock
- Greater Nashua
- Greater Plymouth

CHI staff conducted focus groups to gather qualitative data about the H1N1 response with representatives from the following groups:

- AHHR Coordinators
- Hospital Emergency Preparedness Coordinators (2 sessions)
- DHHS and DOS (HSEM) representatives

More detailed key informant interviews of select representatives from DHHS, DOS, and 2-1-1 NH were also conducted.

Two separate surveys were developed for the AAR, and included the following:

- A general population survey conducted and analyzed by the University of New Hampshire (UNH) Survey Center in April 2010.

- A survey of registered H1N1 Vaccination Providers conducted through www.surveymonkey.com and analyzed in MS Excel and SPSS.

Other data sources analyzed and incorporated into this AAR include:

- 2-1-1 NH Summary, raw data
- NH DHHS and HSEM:
 - “The Role and Integration of Multiagency Coordination Entities During Public Health Emergencies in New Hampshire”
- NH DHHS PIO:
 - “H1N1 Response Timeline: Radio/TV/Newspaper Advertising”
 - Press Releases
- NH DoIT:
 - H1N1 website data
- NH DHHS, DPHS:
 - CDCS raw data- “Combined Surveillance Systems- NH: MMWR 35 2009 - 12 2010”
 - “H1N1 Report” raw data
 - “Vacc Distribution by AHHR” raw data
 - Health Alert Network (HAN) alerts
 - PHL H1N1 influenza testing data- “Specimens Submitted for H1N1 Testing 4/16/2009 - 4/9/2010. and 2009 Influenza A (H1N1) Virus Infections- NH, April 2009 - February 2010”
 - NHIP H1N1 vaccination distribution and dispensing data
 - Situation Updates
 - “H1N1 School Surveillance Tool Analysis” in draft
 - “Novel H1N1 Vaccine Distribution Plan”
 - “NH Antiviral Distribution Network Plan”
 - “Public Health Emergency Preparedness and Response Plan”
 - “Influenza Pandemic Public Health Preparedness and Response Plan”
- CDC:
 - “Interim Results: Influenza A (H1N1) 2009 Monovalent and Seasonal Influenza Vaccination Coverage Among Health-Care Personnel- United States, August 2009 - January 2010.”
 - “CDC Novel H1N1 Flu- The 2009 H1N1 Pandemic: Summary Highlights, April 2009 - April 2010.”

After the above information was compiled, it was categorized into the AAR following the Target Capabilities List and approved Homeland Security Exercise and Evaluation Program (HSEEP) format for AARs and Improvement Plans (IP).

Section 2: Event Summary

For the purposes of this report, the NH July 2009 – March 2010 H1N1 response began on July 1, 2009 and continued through March 30, 2010. This response followed a spring wave of Influenza A (H1N1) that began circulating in the United States in April 2009, with peak activity in NH in early May 2009.⁵

In anticipation of a second wave of H1N1 activity in the fall, DHHS focused on developing and maintaining surveillance systems, public information materials, a strategic vaccine distribution plan and accompanying data collection system, and NH-specific algorithms for triage, testing, and symptomatic health care workers. In addition, the DPHS Infectious Disease Investigation and Surveillance Sections (IDISS) responded to numerous outbreaks of H1N1 at summer camps.

The second wave of Influenza A (H1N1) activity began in the United States in late August 2009. Global surveillance systems did not find significant changes in the 2009 H1N1 influenza viruses circulating in the Southern Hemisphere, which increased the likelihood that vaccines under development would provide good protection against 2009-2010 H1N1 influenza. The first doses of 2009 H1N1 vaccine were administered outside of clinical trials on October 5, 2009.⁶

In NH, Influenza A (H1N1) activity became widespread in early October (week 39), with a peak in school absenteeism and acute respiratory emergency department discharges in early November (week 44) and a peak in hospitalizations for pneumonia and influenza and deaths from pneumonia and influenza later in November (week 46). By February 2010 (week 5), NH was again reporting ‘no activity’.⁷ See Figure 1.

NH began implementation of the Novel H1N1 Vaccination Distribution Plan on October 1, 2009 (week 38), using a phased approach which targeted populations most at risk for morbidity and mortality from H1N1. The black, vertical lines in Figure 2 plot the timing of Phase changes against the surveillance data from Influenza A (H1N1) activity.

⁵ Bascom, Susan and John Dreisig. “Re: H1N1 AAR data: Follow up.” E-mail to the author. June 29, 2010.

⁶ “CDC Novel H1N1 Flu | The 2009 H1N1 Pandemic: Summary Highlights, April 2009-April 2010.” *Centers for Disease Control and Prevention*. 16 June 2010. Web. 28 June 2010.
<<http://www.cdc.gov/h1n1flu/cdcresponse.htm>>.

⁷ NH DPHS IDISS. “Combined Surveillance Systems- NH: MMWR 35 2009 - 12 2010. 6 Mar. 2010.” Raw data, DPHS, Concord, NH.

Figure 1: Surveillance systems used in H1N1 Response⁸

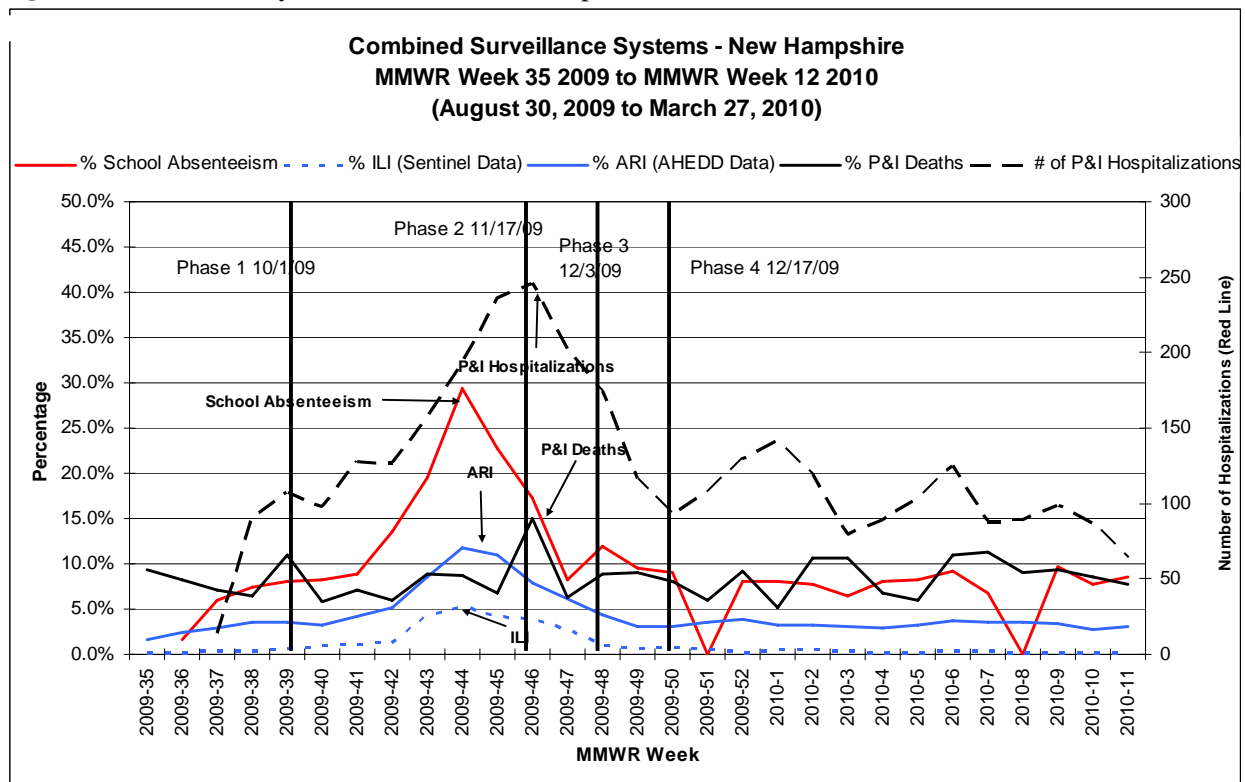


Table 1 provides an overview of the timing of phase implementation, target groups included in each phase, and flu activity present in NH at the beginning of each phase.

Table 1: NH July 2009 - March 2010 H1N1 Response Phase Summary⁹

Phase	Start Date	Target Groups	Flu Activity during this week
I	October 1 (Week 38)	<ul style="list-style-type: none"> • Pregnant women • Health care workers/EMS with direct patient contact • Children 6 months - 18 years old with medical conditions 	Regional
II	November 17 (Week 45)	In addition to the above: <ul style="list-style-type: none"> • All children 6 months - 4 years old • Persons caring for or living with infants < 6 months old (including partners of pregnant women) • All persons ages 18 - 24 with medical conditions 	Widespread
III	December 3 (Week 47)	In addition to the above: <ul style="list-style-type: none"> • All persons 5 - 24 years old • All persons ages 25 - 64 with medical conditions 	Widespread
IV	December 17 (Week 49)	In addition to the above: <ul style="list-style-type: none"> • All persons 	Widespread

⁸ NH DPHS IDISS. "Combined Surveillance Systems- NH: MMWR 35 2009 - 12 2010. 6 Mar. 2010."

⁹ NH DPHS. "H1N1 Influenza Clinical Guidance- Updated." *NH Health Alert Network*. 17 Dec. 2009.

Section 3: Analysis of the Response

CAPABILITY: PLANNING

Federal Target Capability Summary: Planning is the mechanism through which Federal, State, local and tribal government, non-governmental organizations (NGO), and the private sector develop, validate, and maintain plans, policies, and procedures describing how they will prioritize, coordinate, manage, and support personnel, information, equipment, and resources to prevent, protect and mitigate against, respond to, and recover from events. The focus of the planning capability is on successful achievement of a plan's concept of operations using target capabilities and not on the ability to plan as an end in itself.

Activity 1: Develop/Revise Operational Plans

Observation PL1.1: Limited number of pre-trained surge staff at DPHS/DHHS (Area for Improvement)

Analysis:

NH Department of Health and Human Services (DHHS) encountered staffing challenges in maintaining the necessary high level of response over a long duration during the July 2009 - March 2010 H1N1 response. These staffing challenges included both access to sufficient number of personnel and limitations in the competencies of staff that were available for re-assignment to the response effort. In particular, Infectious Disease Investigation and Surveillance Sections (IDISS), New Hampshire Immunization Program (NHIP), and DHHS Public Information Officer (PIO) all reported staff shortages that either hindered H1N1 response activity or DPHS Continuity of Operations (COOP). This contributed to challenges with data management, accessing information technology support, issuing press releases, and facilitation and follow up of conference calls. Staff shortages were also raised as a concern in the *NH Spring 2009 H1N1 AAR/IP*.¹⁰ The Emergency Services Unit (ESU) currently maintains a volunteer pool of approximately 200 Emergency Service Members with training in various areas of emergency response. Additional opportunities may exist for cross-training of these volunteers with public health staff in order to provide greater depth for supporting necessary functions internal to DHHS in a public health response.

Recommendation PL1.1.1: Review DHHS COOP plan to ensure that procedures are included that allow for reassignment of staff for emergency response and ensure that all parts of the organization are aware of and prepared to implement these procedures.

Recommendation PL1.1.2: Implement cross training programs to ensure readiness of DHHS staff identified as resources in the COOP plan. Consider working with the DHHS ESU to implement an ongoing COOP training program. The ESU currently offers courses that range

¹⁰ URS Corporation/EG&G Technical Services. *2009 Spring H1N1 Response AAR/IP*. Rep. Concord, NH: NH DOS and DHHS, 2010, 8.

from Customer Service, Communication, Reception Center Operations, Incident Command System/National Incident Management System (ICS/NIMS), and specialized HazMat classes, and has a just-in-time training process in place. While these training programs are targeted to volunteer ESU members, there is the potential to expand this function as a part of COOP planning for DHHS.

CAPABILITY: EPIDEMIOLOGICAL SURVEILLANCE AND INVESTIGATION

Federal Target Capability Summary: The Epidemiological Surveillance and Investigation capability is the capacity to rapidly conduct epidemiological investigations. It includes exposure and disease (both deliberate release 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.

Activity 1: Develop and Maintain Plans, Procedures, Programs, and Systems

Observation ESI 1.1: Maintenance of ongoing influenza surveillance systems (Strength)

Analysis:

Throughout the H1N1 response, NH maintained and utilized a number of surveillance systems already in existence to monitor for influenza-like illness (ILI). Among those systems were the following:

Automated Hospital Emergency Department Data (AHEDD): Through the second wave of the H1N1 response, the number of hospitals submitting data into AHEDD increased from 15 in July 2009 to 25 of 26 community hospitals by February 2010. Data collected from AHEDD showed that Emergency Department discharges of Acute Respiratory Infection (ARI) followed a similar curve to both school absenteeism, pneumonia and influenza-related hospitalizations, and data from the influenza sentinel providers (see Figure 2).¹¹ This information proved useful in tracking the epidemiology of influenza in NH. Also, because the system automatically collects electronic data from hospitals, the burden to hospitals is minimal. Hospital focus group participants felt that had all hospitals been using the system, it could have been a more effective method to report ILI data than the National Hospital Available Beds for Emergencies and Disasters (HAvBED) system, which was run by the federal Assistant Secretary for Preparedness and Response (ASPR).

U.S. Outpatient Influenza-Like Illness (ILI) Surveillance Network (ILI Net): During the H1N1 response, the number of NH's volunteer sentinel health care providers increased to 29 reporting providers, up from 14 reporting as of July 2009.

Pneumonia and influenza-related deaths: Death certificate data recorded by NH's Bureau of Vital Statistics was used to compare NH mortality rates due to influenza and pneumonia to national mortality rates, as well as to the other NH surveillance systems' reports.

¹¹ NH DPHS IDISS. "Combined Surveillance Systems- NH: MMWR 35 2009 - 12 2010. 6 Mar. 2010."

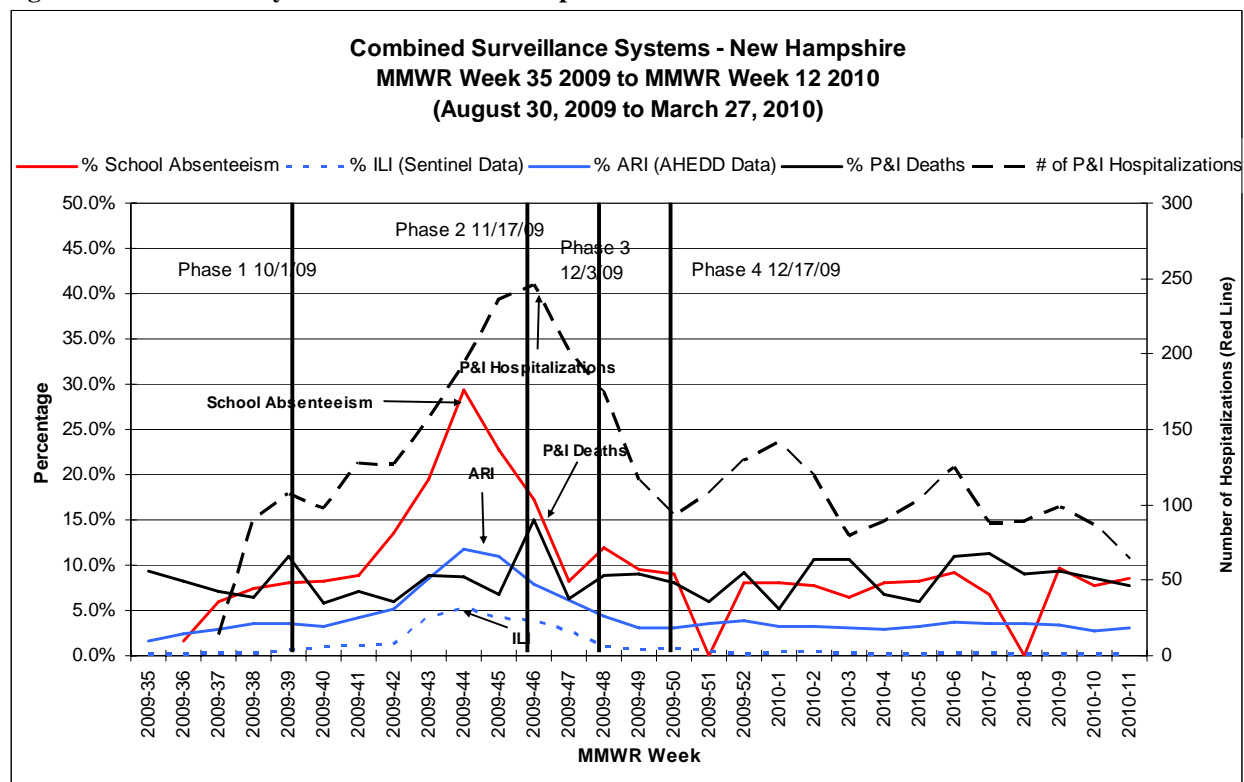
Over-the-Counter (OTC) Pharmaceutical Surveillance: Two OTC systems were used in parallel to track over the counter pharmaceutical sales activity occurring within the state.

Laboratory Surveillance: A key component to influenza surveillance is the data reporting the NH Public Health Laboratory (PHL) does on all influenza samples tested, indicating which strains of influenza are circulating through the state. During the H1N1 response, PHL added “reason for testing” to its report.

Syndromic Tracking Encounter Management System (STEMS): In addition to contributing to the OTC data, STEMS also collects, during the school year, syndromic data from schools within the Manchester, NH school district. This data was monitored throughout the response and evaluated for any increase in activity. This system augmented the newly developed H1N1 School Surveillance Tool.

Trauma & Emergency Medical Services Information System (TEMSIS): The TEMSIS system is managed by the Department of Safety (DOS), Bureau of EMS. DHHS has access to this system and used it for surveillance purposes. During the H1N1 response, flu-like symptoms were added to the system in order to aid with surveillance. However, use of the system was limited due to the possibility of variations in ‘chief complaint’ reported and a lack of exclusionary criteria.

Figure 2: Surveillance systems used in H1N1 Response¹²



¹² NH DPHS IDISS. “Combined Surveillance Systems- NH: MMWR 35 2009 - 12 2010. 6 Mar. 2010.”

A major advantage to applying the above systems to the H1N1 response was that IDISS was already familiar with their use, the maintenance and technological support was already established, and no additional staff members were necessary for implementation.

Recommendation ESI 1.1.1: Continue to maintain an ongoing spectrum of surveillance systems for use in routine public health surveillance and emergency response.

Observation ESI 1.2: Development and use of enhanced influenza surveillance systems (Strength and Area for Improvement)

Analysis:

While DHHS was able to use a number of existing systems for surveillance, enhancements to some of these existing systems, as well as the development of additional systems, were necessary to provide more complete situational awareness. This included the following:

Web-based reporting of ILI and absenteeism in schools: This rapidly developed system was used to track ILI and absenteeism in schools. Challenges in implementing the system included providing technological support for a newly developed system and increased demands on school nurses.¹³ Despite these challenges data on respiratory outbreaks from schools and other large institutions around the state correlated very closely with overall school absenteeism, implying that the system has the potential for use in future influenza seasons to predict the State's rate of respiratory outbreaks.

Countermeasure Response Administration (CRA): The CRA system is a Centers for Disease Control & Prevention (CDC) system that initially required states to report aggregated data related to H1N1 influenza vaccination. DHHS continued its collection and submission of this data even after the required time period. CRA was utilized at public clinics throughout NH. This involved a collaboration between DHHS and the NH Department of Information Technology (DoIT) to install the off-line version of this system on laptops, as well as other technological support issues. State personnel felt that the DoIT and CDC support for this system was more than adequate throughout the response.

Healthcare (HC) Standard, Pneumonia and Influenza Hospital Admissions (HC Standard): Both hospital and state focus group participants felt that the relationship with New Hampshire Hospital Association (NHHA) to use HC Standard for tracking pneumonia and influenza hospital admissions worked well. Hospital focus group participants did not feel that adding this admission data to the system was overly burdensome, and estimate 80% of the hospitals routinely entered data into the system. Challenging aspects of using HC Standard for this purpose were that DHHS owns a more recent version of the software, which is not fully compatible with the older version used by hospitals, and that the installation of the software was not complete until June 2009, meaning it could not be used to its full potential during the H1N1 response.

¹³ Lakevicius, Paul. *H1N1 School Surveillance Tool Analysis*. Concord, NH: NH IDISS, 2010. Draft.

Recommendation ESI 1.2.1: Use the 2010/2011 seasonal influenza period to further test improvements made to newer surveillance systems, such as the H1N1 School Surveillance System and CRA.

Recommendation ESI 1.2.2: Coordinate with DoIT to support newly established surveillance systems.

Recommendation ESI 1.2.3: Collaborate with the Department of Education (DOE) to expand the number of schools contributing to the web-based reporting system, and then to offer an introductory training to school personnel.

Recommendation ESI 1.2.4: Complete implementation of and training for HC Standard use within DHHS.

Activity 2: Develop and Maintain Training and Exercise Programs

Observation ESI 2.1: COOP Planning for IDISS (Area for Improvement)

Analysis:

While State focus group participants felt that the surveillance systems used adequately met the needs of the response, they also acknowledged that sustaining a long-term response with the small number of staff in the IDISS would likely require additional support. While IDISS did implement its COOP for the H1N1 response, back up personnel were often unable to dedicate an entire day to supporting the response and had not retained knowledge from pre-event training needed to efficiently function in assigned response roles. In addition, back up staff were not always able to log in and access the computer system used by the section.

Recommendation ESI 2.1.1: In future public health emergencies, consider activation of the State Emergency Operations Center (EOC) to utilize its DoIT desk to address technological support issues for back-up personnel activated as part of a COOP.

Recommendation ESI 2.1.2: Require bi-annual trainings and exercises for back-up personnel to better maintain knowledge of their possible duties.

CAPABILITY: LABORATORY TESTING

Federal Target Capability Summary: The Laboratory Testing capability is the ongoing surveillance, rapid detection, confirmatory testing, data reporting, investigative support, and laboratory networking to address potential exposure, or 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.

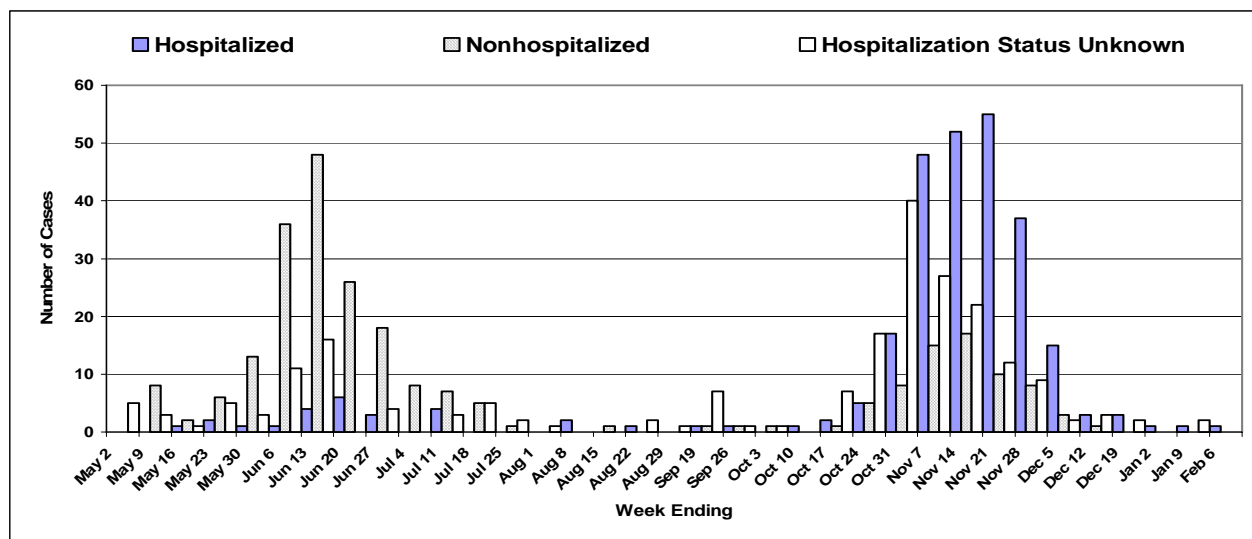
Activity 1: Support Public Health Epidemiological Investigations

Observation LT1.1: Adherence to testing recommendations (Area for Improvement)

Analysis:

DHHS sent 4 Health Alert Network (HAN) messages in the June to December 2009 time period that included information about H1N1 lab testing requirements. While some focus group participants found the lab testing guidance confusing, a survey of registered vaccination providers (who also provided treatment to patients) found that almost three-quarters (73%) (n=118) rated the sufficiency of the guidelines excellent to good.¹⁴

Figure 3: Laboratory-confirmed cases (n=731) of 2009 influenza A (H1N1) virus infection by report date – NH, April 2009-February 2010¹⁵



The PHL initially worked with the IDISS to follow-up on specimens sent for testing that did not meet testing criteria, but as the number of samples increased this practice was stopped. As a

¹⁴ CHI. Provider Survey 6/15-30/2010. NH.

¹⁵ NH DHHS PHL. 2009 Influenza A (H1N1) Virus Infections- NH, April 2009 - February 2010.

result, 1,989 tests (46% of 4328 total tests) performed by PHL between April 2009 and April 2010 had no reason for testing specified.¹⁶ Figure 3 shows that a large number of cases were tested but not hospitalized, but that this proportion diminished in the Fall – Winter H1N1 response. It is unclear if all of the specimens from non-hospitalized patients met the criteria contained in the DHHS guidance. However, to the extent that they did not, the need to test these specimens placed unnecessary strain on the system.

Recommendation LT1.1.1: Consider holding providers accountable by strictly enforcing a policy of testing only those submitted specimens that meet testing criteria. Explore the possibility of using the newly implemented Laboratory Information Management System (LIMS) to automatically notify providers when a sample sent in for testing does not meet testing criteria. Assess feasibility of testing only those samples meeting the specified criteria.

Activity 2: Report Results

Observation LT2.1: Timeliness of reporting test results (Area for Improvement)

Analysis:

Focus group participants and survey respondents acknowledged that the speed of the reporting system for providing influenza testing results was less than adequate throughout the H1N1 response. This was due to the lack of a system to electronically report results and inadequate number of staff to make calls to report results. The *NH Spring 2009 H1N1 AAR/IP* recommends that DHHS “[i]mplement a Laboratory Information Management System (LIMS) to provide timely reporting to submitters and providers.”¹⁷ DHHS has already implemented this recommendation, which should significantly reduce turn around time for reporting test results to providers.

Recommendation LT2.1.1: Assess effectiveness of newly implemented LIMS, and modify as appropriate.

Activity 3: Develop and Maintain Training and Exercise Programs

Observation LT3.1: COOP Planning for PHL staff (Strength)

Analysis:

In order to manage current staffing shortages and vacancy rates, the sections of the PHL continuously encourage cross-training. This practice proved to be advantageous throughout the H1N1 response, with state focus group participants reporting that PHL staffing was adequate.

¹⁶ NH DHHS PHL. *Specimens Submitted for H1N1 Testing 4/16/2009 - 4/9/2010*. Concord, NH: NH DHHS PHL, 2010.

¹⁷ URS Corporation/EG&G Technical Services. *2009 Spring H1N1 Response AAR/IP*.

Hospital focus group participants agreed that PHL staff was readily available to address questions related to testing and specimen collection throughout the response.

Recommendation LT3.1.1: Maintain cross-training programs for PHL staff.

CAPABILITY: EMERGENCY OPERATIONS CENTER MANAGEMENT

Federal Target Capability Summary: Emergency Operations Center (EOC) Management is the capability to provide multi-agency coordination for incident management by activating and operating an EOC for a pre-planned or no-notice event. 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 necessary for coordinating 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.

Activity 1: Develop and Maintain Plans, Procedures, Programs, and Systems

Observation EOC1.1: Clarity of the Incident Command Center (ICC) role and function including its relationship to the State EOC (Area for Improvement)

Analysis:

There are two State emergency plan references regarding command and control relevant to the H1N1 response. The Public Health Emergency Preparedness and Response Plan (PHEPRP), attachment to Emergency Service Function (ESF)-8 of the NH Emergency Operations Plan (EOP), states as follows:

“There are two levels of Incident Command Centers (ICC) that can be activated for a public health emergency. The first is an ICC internal to the Department of Public Health Services (DPHSICC) that would be activated in an emergency that is not declared a state emergency. The second is the State ICC (ICC) that is activated when a public health emergency is a State declared emergency. The DHHSICC can be made available for either scenario. To establish the command post the Bureau of Emergency Management (BEM) should be contacted as soon as ICS/UCS is initiated. The BEM will activate the State of NH Emergency Operations Center and will coordinate the incident response. In the case of a public health emergency, the Department of Health and Human Services (DHHS) will act as the lead state agency.”¹⁸

The second reference can be found in the Command and Control section of the State’s Influenza Pandemic Public Health Preparedness and Response Plan:

“The sustained, coordinated efforts required to control pandemic influenza lend themselves to the principles and structure of incident command and management systems. In the event of

¹⁸ NH DPHS IDISS. “Public Health Emergency Preparedness and Response Plan, Attachment to ESF-8 of The New Hampshire Emergency Operations Plan.” DPHS, Concord, NH. Updated March 8, 2006.

a pandemic, the Incident Command System (ICS) described in the PH EPRP will be utilized. To establish this command for a statewide response, HSEM should be contacted as soon as ICS is initiated. The HSEM will then activate the NH Emergency Operations Plan (EOP). When applicable, the DHHS Commissioner will recommend that HSEM activate the State of NH Emergency Operations Center (EOC), which will coordinate the incident response, utilizing the NH EOP described above. In the case of an influenza pandemic, the Department of Health and Human Services DHHS will act as the lead State agency, which may place the State Epidemiologist in the position of incident commander.”¹⁹

The 2009-2010 H1N1 pandemic was declared an emergency at the Federal level and was declared a Public Health Incident at the State level by the DHHS Commissioner. During the Summer of 2009, the DHHS ICC was at a Level 1 stage of activation (monitoring) and went to Level 2 (partial activation) to support the mass prophylaxis phase of the response. The State EOC was not activated during this period with respect to the H1N1 response beyond routine daily monitoring activities. However, NH Homeland Security and Emergency Management (HSEM) did support the DHHS response by physically relocating several key personnel at DHHS.

Also during the summer of 2009, 6 core planning groups were formed to prepare for the fall response activities. These planning groups remained active throughout the response period and were described by DHHS staff as “like planning cells within an ICS planning section”. An ICS structure was not otherwise formally established during the response. Similarly, the DPHS ICC referred to in the PHEPRP was not formally activated, although the Bureau Chief for Infectious Disease Control was established as the leader of an outbreak management/public health operations team for the response and, in this capacity, coordinated the work of the 6 planning groups.

Because the H1N1 event was not a State declared emergency, the organizational structures and relationships established in the response are not inconsistent with existing plans. However, a number of ambiguities in existing plans were highlighted as a result of the options selected for organizing the response as follows:

1. The structure and function of the DPHS ICC referred to in the PHEPRP is not clear, nor is its relationship to the DHHS ICC. For example, although the ICC was activated, requests from DPHS for additional staff resources “when things got overwhelming” went through a Deputy Commissioner instead of through the ICC. DPHS staff noted that they “interacted at times” with the ICC, but it was “not standardized”.
2. The relationship of the ICC to the State EOC is also not clear. Representatives of CDCS, NHIP and the PIO all noted that shortages of trained staff hindered their ability to carry out certain functions in a timely manner. In addition to difficulties in accessing DHHS staff from other parts of the organization, accessing needed resources from other state agencies (e.g., DoIT) was also noted. Challenges were described in areas of data management,

¹⁹ State of NH. Influenza Pandemic Public Health Preparedness & Response Plan, DHHS, Concord, NH. Updated February 12, 2007. Page 33.

information technology support, issuing press releases, and facilitation and follow up of conference calls. It was noted that a more formal process for coordinating requests through the State EOC may have alleviated some of these challenges.

3. The relationship of the ICC to regional/local responders similarly needs clarification. Approximately half of all regions activated their Multi-Agency Coordination Entity (MACE) at some point during the response. While there were communications between the MACEs and the ICC, some regional/local responders found that this resulted in communications that were parallel and redundant to communication with DPHS personnel. Initially, the All Health Hazards Regions (AHHRs) Coordinators (the Coordinators of NH's public health emergency planning and response regions) had the understanding that all of their communications would come from the State ICC, but they report that they received the vast majority of their information from various individuals within DPHS and HSEM, rather than through the ICC, with the exception of registration of volunteers as agents of the State.
4. The inter-relationship between local/regional responders, the ICC, and the State EOC needs clarification. State guidance to AHHRs regarding MACE roles and functions states: "When a determination is made that state support is needed, communicate a request for support to the DHHS Incident Command Center (ICC). The ICC will analyze and prioritize the request. The ICC will coordinate with the State Emergency Operations Center (SEOC) to respond to the request."²⁰ During the H1N1 event, regional stakeholders described being unable to access resources from other agencies and believe that it would be more consistent with other emergency operations to coordinate requests for resources controlled by other state agencies through the State EOC.
5. Related to the latter area of ambiguity is the expectation regarding use of WebEOC in a non-State declared emergency/public health incident. During the H1N1 event, the ICC and some regions were using WebEOC to log resource requests and to provide situational assessments. However, its use was inconsistent over time and across response partners - and therefore of limited utility.

Some of these ambiguities undoubtedly stem from the fact that the H1N1 event overall fell into a 'gray' area where a high level of sustained and coordinated effort was necessary outside of normal business routines, but it was not declared to be an emergency. However, the event did provide a useful picture of how the various response structures might work together in a higher level public health emergency response and points to the need for clearer definition of roles, reporting relationships, and communication pathways in advance.

Recommendation EOC1.1.1: Review and update plans for command and control in a public health emergency including clarification of relationships between DHHS-based ICC(s) and the State EOC. Include as part of the review, the status of the EOC in non-State declared emergencies including review of activation triggers that may take into consideration the status of

²⁰ NH DHHS and HSEM. *The Role and Integration of Multiagency Coordination Entities During Public Health Emergencies in New Hampshire*. Concord, NH: NH DHHS and HSEM, 2007.

response partners in a non-routine event with respect to demands on existing human and other resources.

Recommendation EOC1.1.2: Continue to orient DHHS staff to the ESU capabilities, its role in supporting the ICC tactical operations, and the resources it can provide. Consider implementation of a public health emergency tabletop to solidify shared understanding of how these response entities within DHHS best synchronize to respond within an ICS framework.

Recommendation EOC1.1.3: Clarify policies and procedures regarding use of WebEOC in a non-emergency, public health incident type event. Consider thresholds and processes to trigger consistent and uniform use of WebEOC by response entities.

Activity 2: Direct Emergency Operation Center's Tactical Operations

Observation EOC2.1: Use of ICS to support response activities (Area for Improvement)

Analysis:

As noted under Activity 1 in this section, the DHHS/DPHS did not formally establish ICS during the event although the response required “sustained, coordinated efforts” that “lend themselves to the principles and structure of incident command and management systems.” Although the event was not a declared emergency, DPHS responders have noted in retrospect that it would have been beneficial to fill a number of roles under ICS. Such a structure was deployed in a later event (i.e., the anthrax event) and the difference in clarity of roles, responsibilities, and relationships during the response was notable to DPHS staff.

Recommendation EOC2.1.1: Initiate ICS to support public health responses to public health incidents, whether or not it is a declared emergency, requiring significant application of resources and sustained, coordinated efforts beyond normal business routines.

CAPABILITY: EMERGENCY PUBLIC INFORMATION AND WARNING

Federal Target 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.

(a) The term *public information* refers to any text, voice, video, or other information provided by an authorized official and includes both general information and crisis and emergency risk communication (CERC) activities. CERC incorporates the urgency of disaster communication with risk communication to influence behavior and adherence to directives.

(b) The term *alert* refers to any text, voice, video, or other information provided by an authorized official to provide situational awareness to the public and/or private sector about a potential or ongoing emergency situation that may require actions to protect life, health, and property. An alert does not necessarily require immediate actions to protect life, health, and property and is typically issued in connection with immediate danger.

(c) The term *warning* refers to any text, voice, video, or other information provided by an authorized official to provide direction to the public and/or private sector about an ongoing emergency situation that requires immediate actions to protect life, health, and property. A warning requires immediate actions to protect life, health, and property and is typically issued when there is a confirmed threat posing an immediate danger to the public.

(d) The term *notification* refers to any process in which Federal, State, local, tribal, or nongovernmental organization, department, and/or agency employees and/or associates are informed of an emergency situation that may require a response from those notified.

Activity 1: Issuing Public Information, Alerts/Warnings, and Notification

Observation PI 1.1: Reach of H1N1 materials and messaging (Strength)

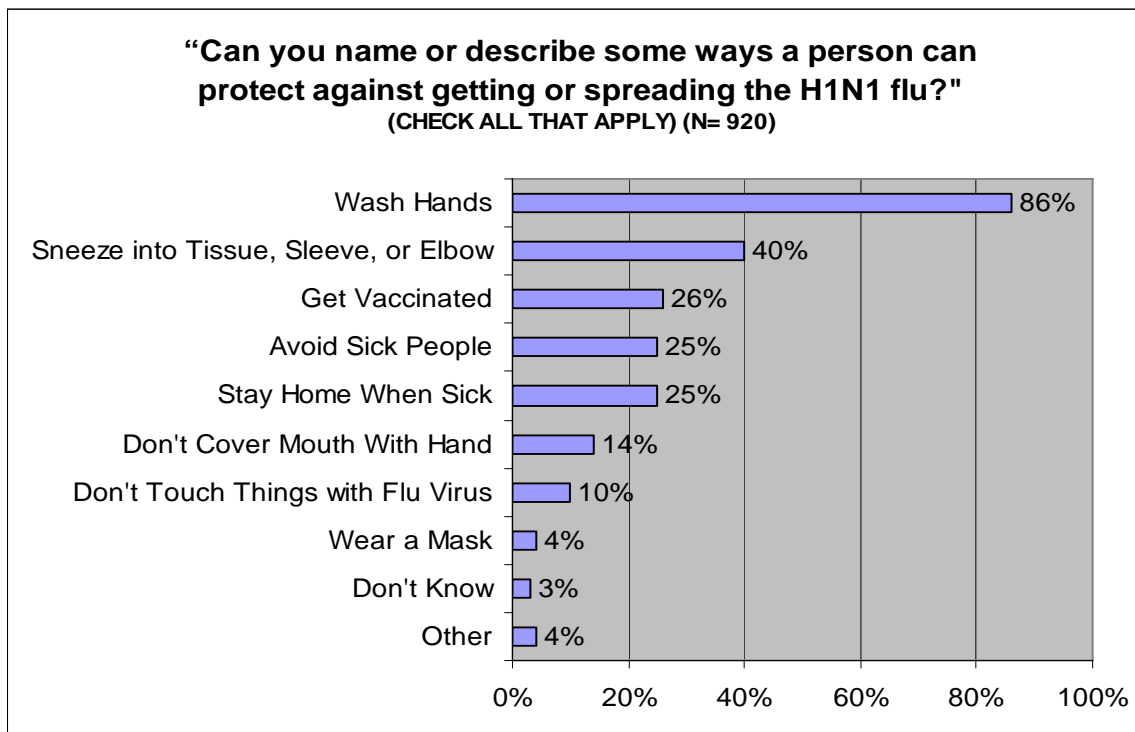
Analysis:

A critical component of public health emergency response is the ability to inform the public in a timely manner about threats to their health and how these threats can be mitigated.

In general, the NH public received and understood information about how they could protect themselves from the H1N1 threat. A survey of NH adults conducted by the University of New Hampshire (UNH) Survey Center specifically for this H1N1 After Action Report (AAR) showed that a great majority (91%) reported receiving information about how a person could protect themselves against getting or spreading the H1N1 flu. As seen in Figure 4, respondents accurately reported the most common infection control and prevention mechanisms encouraged

by DHHS, including washing hands, sneezing into a tissue, elbow, or sleeve, and getting vaccinated. In addition, a large proportion of NH adults (85%) felt the public information they received about the H1N1 flu emergency answered their questions or concerns well (48% “very” and 37% “somewhat”).²¹

Figure 4: UNH Survey- Flu prevention²²

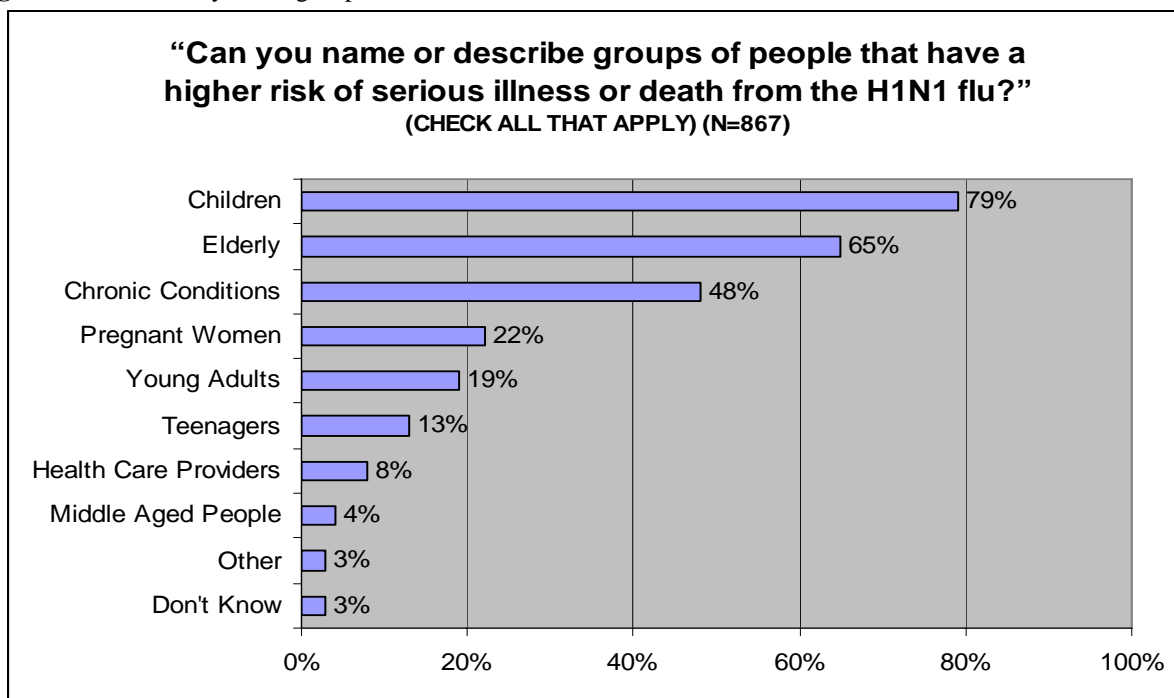


The UNH survey also found that the messages about which population groups were most at risk from H1N1 were well received and largely understood by the public (Figure 5). However, while messaging in NH and nationally stressed that the elderly were not a high risk group, 65% of NH adults reported that the elderly were a high risk group for H1N1. This result likely reflects public confusion about messaging related to seasonal versus the H1N1 influenza viruses.

²¹ Fowler, Tracy A., Andrew E. Smith, and Chad S. Novak. *Granite State Poll for the Community Health Institute*. Durham, NH: University of New Hampshire Survey Center, 2010.

²² Fowler et al.

Figure 5: UNH Survey- Risk groups²³

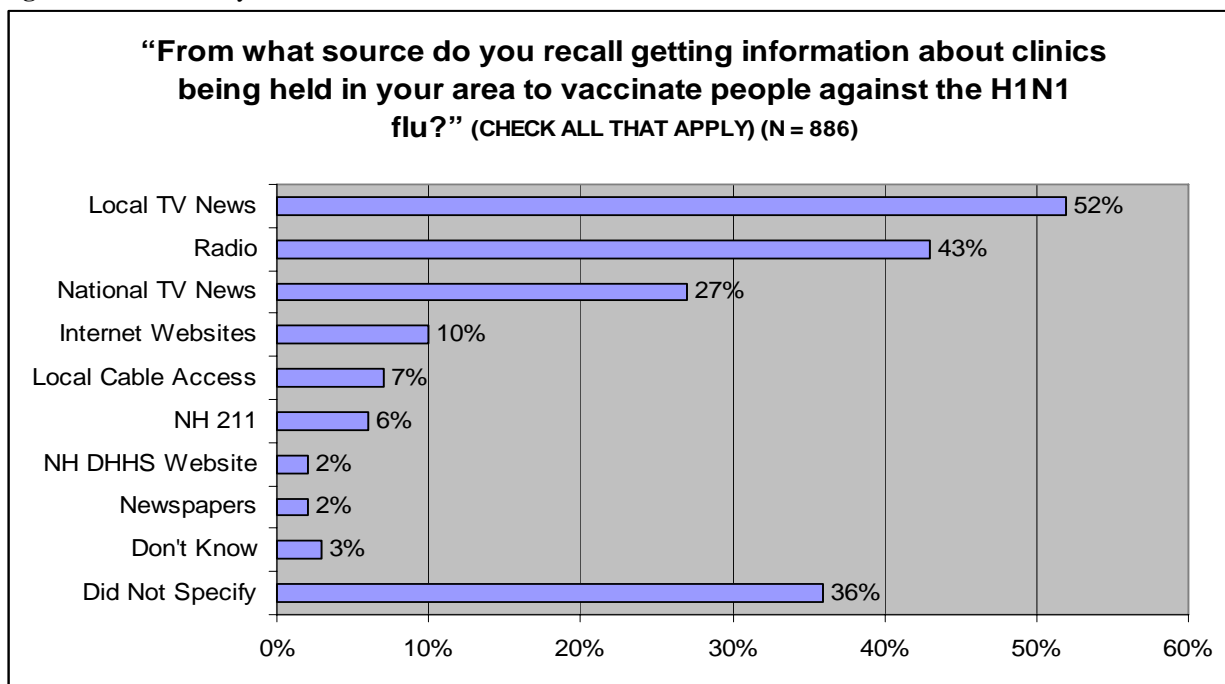


Most NH adults (88%) reported hearing about clinics being held near where they live or work to vaccinate people against the H1N1 flu. As shown in Figure 6, of those responding (n=886), sources for clinic information largely included local TV news and radio (43%).²⁴

²³ Fowler et al.

²⁴ Fowler et al.

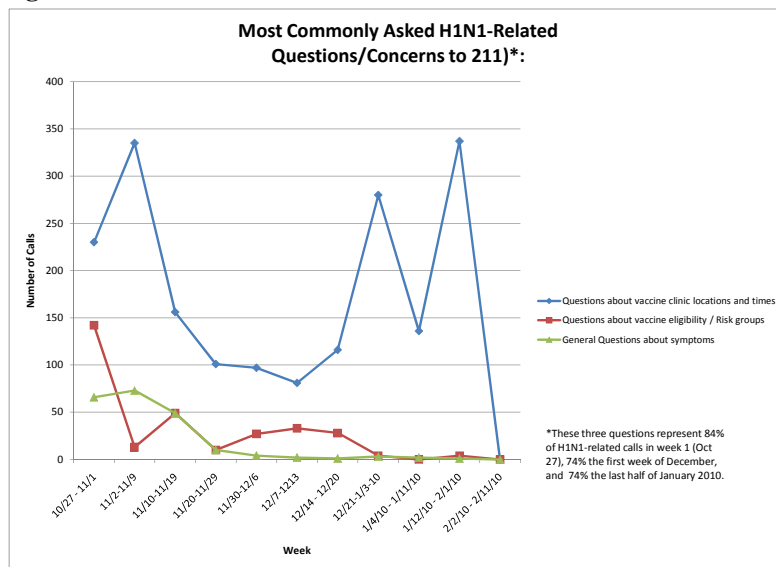
Figure 6: UNH Survey- Clinic information ²⁵



The questions most frequently fielded by 2-1-1 NH were related to clinic location, followed by questions about vaccine eligibility/risk groups, and then questions about general symptoms (Figure 7).²⁶

²⁵ Fowler et al.

²⁶ 2-1-1 NH Summary. Raw data. Manchester, NH.

Figure 7²⁷

Recommendation PI 1.1.1: Continue to utilize local television and radio media outlets for release of public information, while expanding online communication efforts.

Recommendation PI 1.1.2: Maintain a partnership with 2-1-1 NH for use in public health emergencies and incidents, and activate it early in the response to each. When applicable, consider offering an automated listing of clinic sites and locations.

Observation PI 1.2: Public information support to regional level (Area for Improvement)

Analysis:

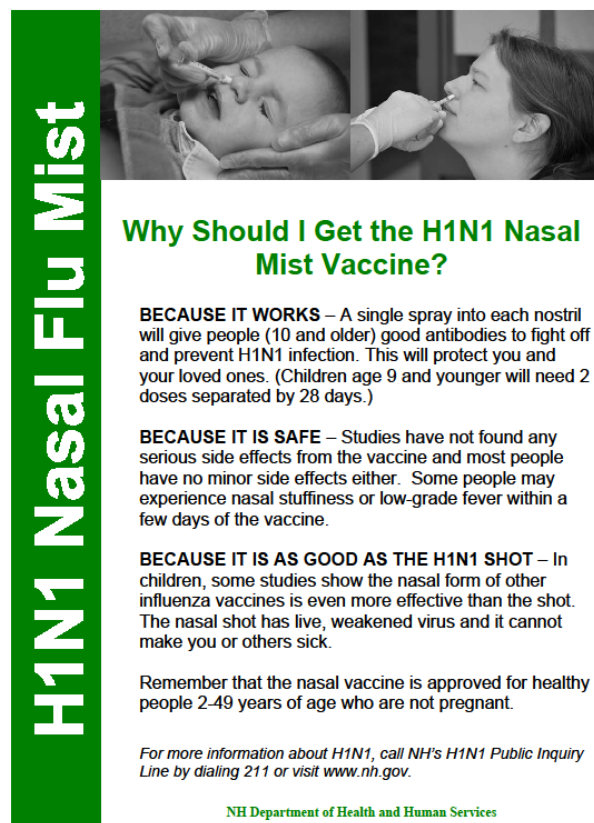
While the UNH survey center population-based survey showed good penetration of general prevention and risk messaging, there was a consensus among regional and hospital focus group participants that the materials provided by the state were not provided early enough, and that not all messaging needs were met. Regional responders felt that although the H1N1 Public Information Workgroup was started in July 2009, materials for use at the regional level were not forthcoming until the vaccination campaign was already underway. Focus group participants cited several instances in which public information materials (e.g., print ad templates and parent letters for school based clinics) needed by the AHHRs to advertise DHHS-requested clinics

²⁷ 2-1-1 NH Summary.

requested were held up in the review or development process at DHHS. These materials, which were developed by an external marketing group, were not editable and needed to be re-created by the DHHS PIO, causing delays. In spite of this, focus group participants highlighted the templates as particular strengths in the area of public information; they added the caveat that in the future, the PDF format be changed to allow for editing and column size changes to meet the requirements of different newspapers.

Focus group participants also described needs for additional messaging and materials on complex topics, such as vaccine safety, the need for vaccination, and rationale for priority groups. One specific topic area identified by focus group participants was the messaging and materials related to the live attenuated intranasal vaccine (LAIV). Focus group participants were not satisfied that public (and health care provider) concerns about shedding, the fact that the vaccine was “live”, or the many advantages of the vaccine (e.g., immunity within 2 days that can last up to a year) were made clear. Participants highlighted concerns about particular messages:

Figure 8: DHHS H1N1 Nasal Flu Mist poster



H1N1 Nasal Flu Mist

Why Should I Get the H1N1 Nasal Mist Vaccine?

BECAUSE IT WORKS – A single spray into each nostril will give people (10 and older) good antibodies to fight off and prevent H1N1 infection. This will protect you and your loved ones. (Children age 9 and younger will need 2 doses separated by 28 days.)

BECAUSE IT IS SAFE – Studies have not found any serious side effects from the vaccine and most people have no minor side effects either. Some people may experience nasal stuffiness or low-grade fever within a few days of the vaccine.

BECAUSE IT IS AS GOOD AS THE H1N1 SHOT – In children, some studies show the nasal form of other influenza vaccines is even more effective than the shot. The nasal shot has live, weakened virus and it cannot make you or others sick.

Remember that the nasal vaccine is approved for healthy people 2-49 years of age who are not pregnant.

For more information about H1N1, call NH's H1N1 Public Inquiry Line by dialing 211 or visit www.nh.gov.

NH Department of Health and Human Services

an example was the message, “The nasal shot has live, weakened virus and it cannot make you or others sick.” contained in the “H1N1 Nasal Flu Mist” poster (see Figure 8) which was misinterpreted as saying that the Flu Mist had “no risk”. In spite of these concerns, only 19% of registered H1N1 vaccination providers surveyed as part of this H1N1 AAR (n=139) agreed that their clients/patients had additional concerns related to H1N1 that were not addressed by DHHS guidance.²⁸

Recommendation PI 1.2.1: Develop mechanisms to collect situational updates from regional partners throughout the response to ensure that messages and materials are meeting needs on the ground. Understand regional public information needs during events by asking for feedback on public information needs from regional responders as a way to monitor public opinion and tailor messages.

Recommendation PI 1.2.2: Ensure

that templates produced for regional and local use are easily modifiable. Develop templates as early in the response as possible.

Observation PI 1.3: Channels for public information (Strength and Area for Improvement)

²⁸ CHI. Provider Survey 6/15-30/2010.

Analysis:

The State of NH utilized a variety of channels to disseminate public information. Among these channels were the following:

DHHS website: Focus group participants who were directly involved in the response effort appreciated the DHHS website as a central location to post public information materials.

A nh.gov website dedicated to H1N1 influenza was activated in October 2009. From that time to June 30, 2010, it received 45,475 hits, with usage peaking around mid-November 2009 when it received 16,405 hits (36.07% of all hits for the 7/1/09 – 6/30/10 time period).²⁹ This peak is consistent with the use of 2-1-1 NH, which also peaked in November 2009 (see below).³⁰ The UNH Survey shows that of all NH adults responding (n=1004), 16% reported the internet as their primary source of regular news, third only to local and national television news (33% and 21%, respectively).³¹ For this reason, DHHS should consider expanding its future efforts of online communications.

2-1-1-NH: HSEM currently has an MOU with 2-1-1 NH to act as the Public Inquiry Line on behalf of HSEM during incidents, disasters, or emergencies. During this public health incident, 2-1-1 NH was utilized, and there is overall consensus among both state and regional focus group participants, as well as 2-1-1 NH key informants that using 2-1-1 NH as a Public Inquiry Line went smoothly. Focus group participants commented on its staff having good customer service skills in addition to serving as a beneficial source of information for the general public. Six percent of NH adults reported that they received information about H1N1 from NH 211; similarly, six percent reported that they received information about vaccination clinics being held near where they live or work from NH 211.³² In all, 2-1-1 NH fielded over 3500 calls related to H1N1 throughout the response (10/27/09 to 2/11/10). These calls accounted for 23% of all the calls received by 2-1-1 NH during the same time period. As shown in Figure 9, the bulk of 2-1-1 NH calls related to H1N1 occurred early in this second wave of the response, making up almost half of all 2-1-1 NH calls (49%) the week it was activated versus 5% the week of 2/2/10.³³ Of those individuals surveyed who recalled getting information about H1N1 from sources including 2-1-1 NH (N=62), 53% felt the information received answered their questions or concerns very well, 32% somewhat well, 13% not too well, and 2% not well at all.

There was consensus among focus group participants that 2-1-1 NH was a valuable resource that should be activated early in public health emergency responses. Focus group participants did highlight a need to assess additional training needs of 2-1-1 NH staff for future response efforts.

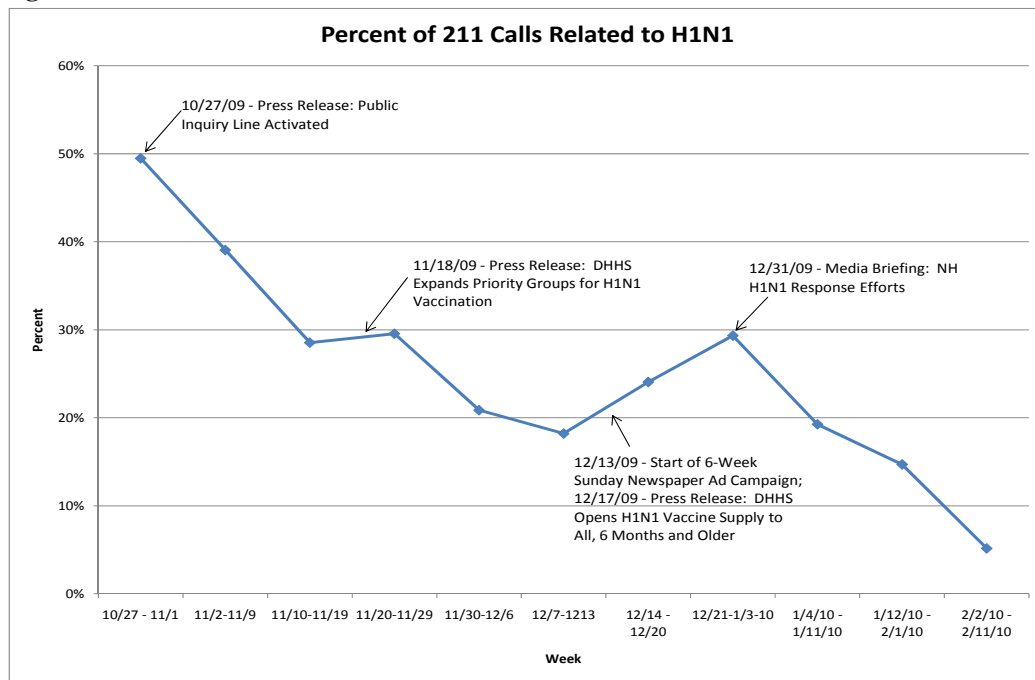
²⁹ NH DoIT. *H1N1_Visits*. Concord, NH: NH DoIT, 2010.

³⁰ 2-1-1 NH Summary.

³¹ Fowler, et al.

³² Fowler, et al.

³³ 2-1-1 NH Summary.

Figure 9³⁴

Radio coverage: DHHS initiated 3 radio advertising campaigns and had officials participate in 6 radio call-in shows from October 2009 to April 2010.³⁵ UNH Survey Center data shows that 43% of the general population received information about H1N1 vaccination clinics through the radio.³⁶ However, focus group participants felt radio coverage was disproportionate throughout the state, reaching only some regions and cities. One region stated that none of its Regional Coordinating Council (RCC) members heard any radio ads related to the campaign. The significant penetration of Boston-based media, especially in southern areas, was reflected by participants who reported they more readily heard the ads posted by Boston's Public Health Commission than those posted by DHHS. There was also a sense that radio messaging did not start soon enough, with little to no radio messaging when anxiety around H1N1 was peaking.

Television: The UNH Survey Center data shows that a vast majority of the general population surveyed recalled getting information about H1N1 through local and national television news (76% and 69%, respectively).³⁷ NH DHHS used one television promotion campaign through local cable access beginning 12/2/09, and one 4-week television buy on WMUR as well as local cable access channels beginning 1/11/10. The primary messages for these campaigns were: the vaccine is here, get vaccinated, call 2-1-1 NH or go to nh.gov to find clinic locations. DHHS

³⁴ 2-1-1 NH Summary.

³⁵ NH DHHS PIO. *H1N1 Response Timeline: Radio/TV/Newspaper Advertising*.

³⁶ Fowler, et al.

³⁷ Fowler, et al.

officials also provided at least six television interviews, including one call-in show where residents could call and ask officials their H1N1-related questions.³⁸ Focus group participants felt that this WMUR telethon was effective in getting H1N1 related information out to the public.

Newspapers: DHHS implemented two newspaper advertising campaigns, one on November 15 and 18, 2009 to recruit Medical Reserve Corps (MRC) members, and then a 6-Week Sunday Newspaper Campaign that featured a new ad each week beginning on 12/13/09.³⁹ The primary message for this campaign was, “Don’t wait, Vaccinate.” The campaign targeted subpopulations eligible for vaccination at the time the ads were running. The UNH Survey Center data shows that 58% of the general population surveyed (n=1016) recalled getting information about H1N1 through a newspaper source.⁴⁰

In addition to the above-mentioned channels, DHHS also hosted conference calls with media personnel, in which they invited 2-1-1 NH and AHHR Coordinators to participate. Also, hospital focus group participants report that some of their institutions set up public information lines to address H1N1 questions and concerns. Hospital participants cite the talking points received from the NHHA, as crucial to their campaigns; NHHA is on the DHHS public information distribution list.

Recommendation PI 1.3.1: Continue to establish and utilize topic-specific websites for long-term public health emergencies and/or incidents, and expand efforts by increased utilization of the internet, more specifically by using social networking sites, such as Twitter and Facebook.

Recommendation PI 1.3.2: Increase television and radio messaging, and begin each earlier in response campaigns, ensuring that stations chosen can collectively reach all regions of the state.

Recommendation PI 1.3.3: Continue to centralize information through 2-1-1- NH, and promote the use of 2-1-1 NH during times of emergencies and non-emergencies.

Activity 2: Developing and Maintaining Plans, Procedures, Programs, and Systems

Observation PI 2.1: Effectiveness of responder notification (Strength and Area for Improvement)

Analysis:

State efforts to provide guidance to responders on all aspects of the response were generally identified as a strength. Focus group participants felt that the information and subject matter expertise they needed was available to them or became available to them over the course of the Fall-Winter H1N1 response. They appreciated the accessibility of the subject matter experts at the

“They did a good job considering it was a new shot. Everything they knew, we knew.”
~ Primary care provider

³⁸ NH DHHS PIO. *H1N1 Response Timeline: Radio/TV/Newspaper Advertising.*

³⁹ NH DHHS PIO. *H1N1 Response Timeline: Radio/TV/Newspaper Advertising.*

⁴⁰ Fowler, et al.

State, especially as it related to referring media calls and questions, and the majority of registered vaccine providers agreed or agreed strongly that the “NH DHHS staff was accessible (83%, n=140) and informative (89%, n=141) when (they) had questions about H1N1”.⁴¹

Focus group participants appreciated the centralized channels utilized by the state for information and saw them as a good way to ensure consistency of information. They had commented on these systems as follows:

HAN Messages: Partners who received the HAN messages appreciated them, and felt it was beneficial to be able to forward them to their local partners. In the survey of registered vaccine providers, 92% (n=141) of respondents strongly agreed or agreed that the HAN is “an effective vehicle for communicating information to (their) organization(s).”⁴² A common theme in focus groups was that the HANs contained too much redundant information, with some participants stating that they condensed HANs before forwarding them to local partners. Focus group participants were appreciative of DPHS’s efforts to reformat HAN messages so that new information and changes were described at the top of the HAN.

While many hospital and regional partner focus group participants felt that the HAN messages came too often, DHHS records indicate that a total of only 11 HANs related to H1N1 were sent in the time period from July 1, 2009 through March 30, 2010. Focus group participant comments about the frequency of HAN messages may reflect that some users are on more than one distribution list.

Weekly Conference Calls: Focus group participants felt that hosting weekly conference calls with partners was a strength and a sufficient means of two-way communications with State officials, offering a good overview of statewide response efforts. Regional coordinators used these calls to gather up-to-date information that could then be relayed to regional partners, and appreciated the effort the state made to use these calls as a way to share promising practice strategies from region to region. Hospital partners felt that these calls were “critical” and an

“If you were on the call, you would have been aware of the comment , ‘don’t miss an opportunity to vaccinate’ ...it was said, but not recorded...so the challenge is...it is coming directly from DHHS leadership...but will be implemented differently depending on who was on the call”

~ Hospital representative

important strength from the spring response that were delayed in the fall-winter H1N1 response. They are thankful for the effort the NHHA to ensure that the calls were re-initiated, and stressed the importance of initiating calls with hospital representatives at the onset of a public health emergency.

A widely shared frustration occurred due to perceived inconsistencies in information shared on calls hosted for different groups. Focus group participants agreed that clinical information such as confirmed cases and deaths were shared on hospital calls but not on other

calls facilitated by DPHS. Participants felt that the topics discussed on some calls warranted broader audiences for the sake of consistent messaging, such as when the decision to use

⁴¹ CHI. Provider Survey 6/15-30/2010.

⁴² CHI. Provider Survey 6/15-30/2010.

hospitals for vaccine distribution was announced. The main mechanism for insuring consistency on the calls was having the same representatives from DPHS and HSEM on each call.

Participants in focus groups also noted that the calls seemed, at times, disorganized, with decisions announced on the calls that did not seem to be supported by all DHHS/HSEM staff on the call. Participants specifically noted that it did not seem appropriate for staff at DHHS/HSEM to be disagreeing to proposed policy decisions on the call. However, the opportunity to have “two-way communication” regarding pending policy changes on the call was valued by participants on all sides. DPHS representatives appreciated the opportunity these “spirited and interesting” discussions provided for rumor control.

A further challenge related to the calls was when new policy was agreed upon or announcements were made on the call. Participants noted that when this occurred there was no record of the policy change or announcement as no minutes were taken. Responders who were not on the calls would not have this information.

Talking Points and Press Releases: AHHR Coordinators reported that the Weekly Talking Points disseminated by DHHS PIO were a major strength of the response. The Talking Points facilitated the transfer of consistent public information to local partners, simplifying the process of updating local responders with new guidance and information. However, hospital representatives reported not being aware of talking points disseminated by the DHHS PIO, despite taking a lot of calls from the general public. Instead, they reported getting information from the NHHA rather than DHHS; NHHA is on the DHHS public information distribution list. Focus group participants appreciated being sent press releases directly, as they could then forward them to their local partners.

DHHS website: As mentioned above, those involved in the response effort appreciated the DHHS website as a central location to post information for responders and for the public. Specifically beneficial was posting the HAN messages and press releases. Focus group participants agreed that the DHHS website could be updated to be more user friendly, particularly regarding its search function.

Google flu clinic locator: Responders stated that while they appreciated being able to advertise clinics through this site, there was some reluctance in posting “closed” clinics, out of fear that populations not in the vaccine priority group would attend. Focus group participants cited school clinics as an example, where there was concern that adults would show up while the school was in session and locked to outside personnel.

Recommendation PI2.1.1: Continue to format HAN messages so that new information and changes are at the top (similar to the HAN that was issued on September 25, 2010 that included a more detailed “Key Points” section).⁴³ Consider a clearer numbering process for HANs so that recipients can more easily recognize duplicate HANs when they are included as recipients on multiple HAN lists.

⁴³ NH DPHS. "H1N1 Update." *NH Health Alert Network*. 25 Sept. 2009.

Recommendation PI2.1.2: Consider holding summary conference calls geared to sharing the big picture, initially including all responder types and then subcategorizing call participants as needed. Utilize a more efficient structure for calls, such as the model used by HSEM during the anthrax incident, which included maintaining a checklist of action and follow up items reviewed at the outset of the following call, and posting summaries of each of the calls.

Recommendation PI2.1.3: Continue to utilize the successful talking points approach. Explore the possibility of increasing the visibility of the talking points utilizing a new format that makes it stand out and look different from a press release. Consider sending talking points from different email account, such as “joint_information_center@dhhs.state.nh.us and including a stand-out common phrase such as “talking point update #” in the subject line. Like the HANs, ensure that new additions to talking points are listed first. Broaden distribution list for talking points to ensure that all regional responders involved in response receive them.

Recommendation PI2.1.4: Continue to utilize internet for centralization of responder information, but improve capability of sites. Improve search function on DHHS website.

Observation PI2.2: Support to regional responders on communicating NH guidance differences (Strength and Area for Improvement)

Analysis:

While focus group participants were generally happy with the state’s effort and methods used to communicate during the H1N1 response, they did identify a need for additional guidance and support in areas in which the NH guidance differed from the guidance issued by the CDC or bordering states’ response strategies. Regional responders of all types had difficulty reconciling differences in NH and surrounding states’ response strategies for patients, for example Maine’s school-based immunization approach. Although they agreed with NH’s policy, hospitals faced challenges in communicating differences in policy regarding Personal Protective Equipment (PPE); this occurred both vis-à-vis employees and patients who had read the CDC’s guidance. Focus group participants felt that more messaging to the public and to their employees was called for on these specific topics. Participants who had experience with a DHHS official speaking to constituents in their regions felt that this was hugely beneficial.

Recommendation PI2.2.1: Expand public information efforts on clinical guidance differences. Gather feedback from response partners on additional public information needs when clinical guidance is complex or varies from guidance at federal level or from that of surrounding states. Develop and implement expanded public information plan, as needed.

Observation PI2.3: Communication to regional responders on new response strategies (Area for Improvement)

Analysis:

AHHR Coordinators operating as de facto PIOs for their regions, reported that the timeliness of messaging coming from the state was an issue in the fall response. They highlighted several instances in which public announcements were made by DHHS before the regions aware of the announcements. These include the “300K by Valentine’s Day” Initiative, which regional

coordinators became aware of because of media inquiries. There were several instances in which public information materials (e.g. print ad templates and parent letters for school based clinics) needed by the regions to advertise clinics requested by DHHS were held up in the review or development process at the state level. As a result, regions often developed their own clinic marketing materials. Hospital representatives also shared instances in which they were told that there would be a shift in strategy or phase in several days, only to have the shift happen just hours after they were told. This meant that some hospitals were not able to inform employees and PIOs, and led to inconsistent implementation across the state. DHHS staff noted that lack of PIO staff was a factor that may have led to this situation.

Recommendation PI 2.3.1: Review the JIC plan developed based on a recommendation from the NH Spring 2009 H1N1 AAR/IP.⁴⁴ It is recommended that the review focus on protocols for communicating public information releases to region-based PIOs with adequate lead time to ensure consistency of implementation.

⁴⁴ ⁴⁴ URS Corporation/EG&G Technical Services 12.

CAPABILITY: MEDICAL SUPPLIES MANAGEMENT AND DISTRIBUTION

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

Activity 1: Developing and Maintaining Plans, Procedures, Programs, and Systems

Observation MS1.1: Implementation of population and phase-based vaccine distribution: (Area for Improvement)

Analysis:

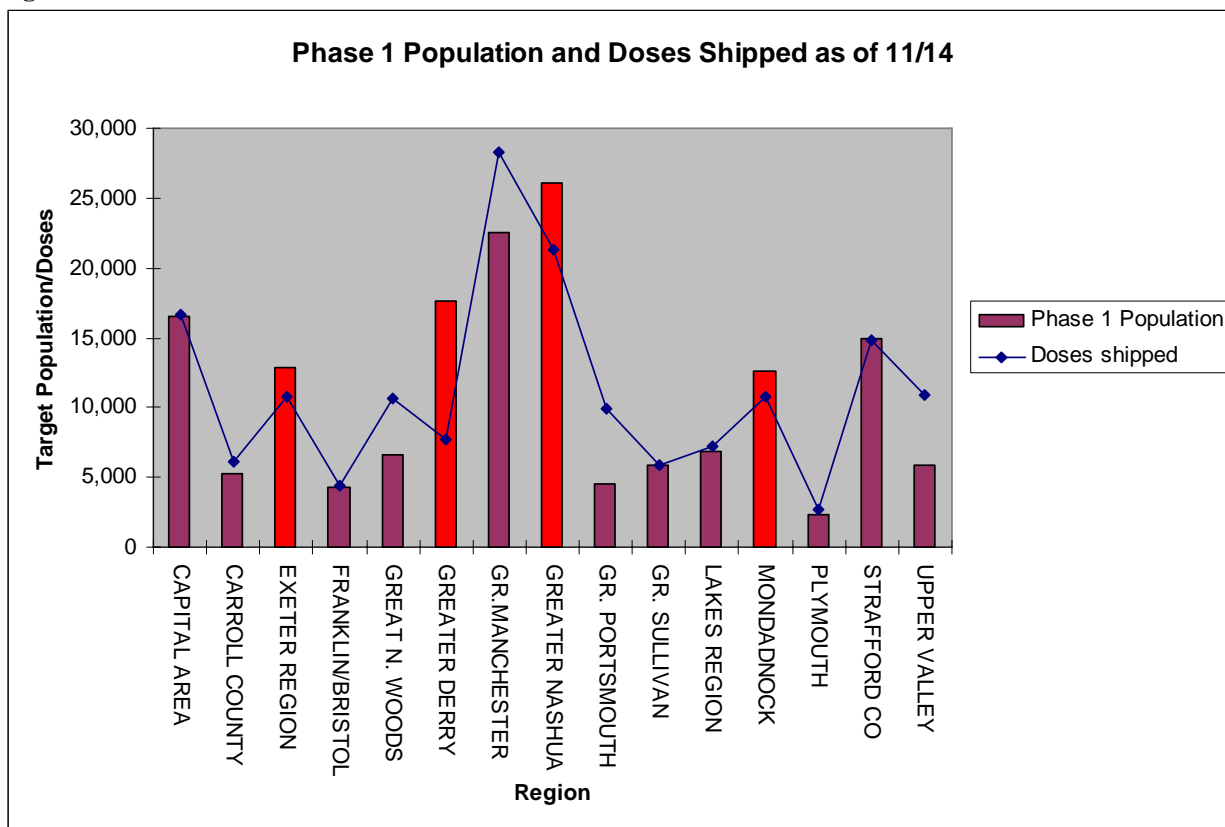
A key tenet of NH's *Novel H1N1 Vaccine Distribution Plan* was that available vaccine would be distributed to regions based on the size of the regional population.⁴⁵ There is a consensus that the vaccine distribution by regional population and by phases was a sensible strategy aimed at ensuring that those most at risk were vaccinated first. In practice, there were some challenges in implementing this approach, mainly due to delays in availability of the H1N1 vaccine and, later, due to variations in the demand for vaccine among the registered vaccine providers.

Vaccine shipment data provided by DPHS (Figure 10) show that as of November 14, 2009 (the last date at which Phase 1 data was reported before the beginning of Phase 2), the amount of vaccine shipped did not align with the size of the regions' phase 1 populations. As of this date, 4 regions had not received enough vaccine to vaccinate their Phase 1 populations (red bars), while 4 regions had received substantially more.⁴⁶ Focus group participants from some regions reported not having enough vaccine to vaccinate health care workers with direct patient contact and pregnant women while others had providers vaccinating non-priority populations.

⁴⁵ NH DHHS DPHS. *Novel H1N1 Vaccine Distribution Plan*. Concord, NH: NH DHHS, 2009.

⁴⁶ NH DHHS DPHS. *Novel H1N1 Vaccine Distribution Plan*.

Figure 10⁴⁷



As shown in Table 2, by April 13, 2010, the percentage of vaccine shipped to each region was approximately proportional to the region’s percentage of the state’s population in all but three instances (Upper Valley, Greater Derry and Greater Portsmouth).⁴⁸ These discrepancies are likely due to the uptake of vaccine in these regions. Overall, the vaccine distribution strategies adopted by DPHS met the vaccine supply needs of registered vaccine providers: a majority of respondents to registered vaccine provider survey (85% or 117/138) agreed or strongly agreed that their organizations were “able to obtain sufficient supply of vaccine to cover the priority groups within (their) patient/client population(s).”⁴⁹

⁴⁷ NH DHHS DPHS. *Novel H1N1 Vaccine Distribution Plan.*

⁴⁸ NH DHHS DPHS. *Novel H1N1 Vaccine Distribution Plan.*

⁴⁹ CHI. Provider Survey 6/15-30/2010.

Table 2: Total and percent of total doses shipped by regional proportion of state population⁵⁰

Region	Total Shipped as of 4/13/2010	% of total doses shipped by 4/13/10	% of NH population in region
CAPITAL AREA	48,115	9.7	10.1
CARROLL COUNTY	16,575	3.3	3.2
EXETER REGION	34,335	6.9	7.8
FRANKLIN/BRISTOL	10,085	2.0	2.6
GREAT NORTH WOODS	26,109	5.2	4.0
GREATER DERRY	28,710	5.8	10.7
GREATER MANCHESTER	76,420	15.4	13.7
GREATER NASHUA	71,916	14.4	15.9
GREATER PORTSMOUTH	42,780	8.6	2.8
GREATER SULLIVAN	14,215	2.9	3.6
LAKES REGION	16,975	3.4	4.2
MONDADNOCK REGION	30,105	6.0	7.7
PLYMOUTH REGION	8,945	1.8	1.5
STRAFFORD COUNTY	37,365	7.5	9.1
UPPER VALLEY REGION	35,145	7.1	3.6
Total	497,795	100.0	100

Recommendation MS1.1.1: Routinely track and report progress against vaccine distribution goals so that policy shifts (such as phase changes) are data driven, expected and transparent to responders at all levels. For example, consider posting this data weekly on website.

Observation MS1.2: *NH Antiviral Distribution Network Plan* activation and implementation (Strength and Area for Improvement)

Analysis:

During the July 2009 - March 2010 H1N1 response, NH activated the *NH Antiviral Distribution Network Plan* for the first time. During early November, DPHS substantially revised the existing annex to the 2007 State Pandemic Influenza Plan regarding antiviral (AV) distribution, incorporating a description of the primary purpose of AV distribution as well as mechanisms of distribution and standard procedures for distribution.⁵¹ Antivirals from the state cache were prepositioned in some clinical and pharmacy settings, with the goal of providing antivirals free of charge to individuals who were uninsured or underinsured. While demand for state cache AVs was low during fall winter 2009-2010, this activation highlighted several strengths as well as logistical issues to be addressed in plan revision going forward. These include the following:

While the initial plan made assumptions about the ability of hospital Emergency Departments (EDs) to prescribe full courses of AVs, dispensing regulations prohibited full courses to be provided. Fast action on the part of DPHS and the Board of Pharmacy resulted in a waiver of pharmacy rules to allow this practice. Hospital focus group participants also noted that hospital

⁵⁰ NH DHHS DPHS. *Novel H1N1 Vaccine Distribution Plan*.

⁵¹ NH DHHS DPHS. *NH Antiviral Distribution Network Plan*. Rep. Concord, NH: NH DHHS DPHS, 2010.

clinicians are prohibited from asking insurance status of patients in their care, making it impossible to implement the *NH Antiviral Distribution Network Plan* stipulation that AVs from the state cache be provided only to those individuals who are uninsured or underinsured.

NH was able to capitalize on an existing relationship between the State of Maine and Hannaford pharmacies to ensure access of the uninsured and underinsured to the state cache of AVs through their statewide network of pharmacies.

Focus group participants identified that the novelty of the plan and the speed with which it was made operational was a barrier to effective implementation. Assumptions were made about the readiness of partners to assist with implementation of the plan: some focus group participants reported having AVs delivered to their hospitals although they had not had input into the plan. Among registered vaccine providers who also provided treatment to suspect or confirmed cases of H1N1, 58% (11/19 responding) agreed or agreed strongly with the statement, “My organization was able to refer patients who needed free AVs to pharmacies distributing them from the state antiviral cache.” Two survey respondents, both clinicians from private medical practices, commented that they did not know about the availability of free AV from pharmacies for uninsured or underinsured individuals.⁵²

Recommendation MS1.2.1: DHHS is currently revising the plan, considering such issues as how to dispose of expired AVs. It will also be critical to recruit partners for the AV distribution network that are able to meet the requirements of the plan, including the ability to identify individuals who are uninsured and underinsured and not charge dispensing fees.

Recommendation MS1.2.2: The *NH Antiviral Distribution Network Plan* was developed to address AV needs in times of shortage. Consider revising the plan to include a menu of distribution options that could also be workable in non-shortage situations in which ability to pay is the only factor being addressed by plan activation.

Activity 2: Direct Medical Supplies Management and Distribution Tactical Operations

Observation MS2.1: Shifting of vaccine distribution strategy (Area for Improvement)

Analysis:

The State was faced with a vaccination challenge that did not align with existing plans for vaccine distribution. To the state’s credit, a plan based upon its existing health care and immunization infrastructure was quickly developed. The original vaccine distribution strategy called for approximately 500 registered vaccine providers to receive vaccine directly from McKesson, a nationwide medical supply company contracted by the CDC for this purpose, after approval from NHIP. Early in the implementation of the strategy, the State made a policy decision to shift from this strategy to dispersing vaccine to a large degree through hospitals (with hospitals being the point of regional coordination). In addition to hospital-based distribution, the

⁵² CHI. Provider Survey 6/15-30/2010.

NHIP continued to direct ship vaccine orders to providers for amounts of less than 100 doses. Reaction to this shift in strategy was mixed, with multiple pros and cons identified for each approach.

AHHR Coordinators felt that there would have been more accountability on the use of vaccine and a more effective targeting of the priority groups if this approach had been used from the beginning of the vaccination campaign. However, others pointed out that the original system of working through approximately 500 registered vaccine providers allowed the NHIP to make use of its strong relationships with these providers and to build upon the distribution and reporting system already in use for day-to-day childhood immunization program activity. Still others pointed out that the H1N1 response required expansion beyond the network used for pediatric immunizations because of the target populations, and that the NHIP does not have the necessary staff to be able to manage such a large push. It was also pointed out that distributing vaccine through 26 hospital hubs essentially added another step to each end of the vaccine ordering process. *“It seemed like adding another layer, adding complexity to an already strained system.”*

Hospital and AHHR focus group participants also noted that the new strategy did not fully take into account the variation that exists in hospital capacity to identify independent vaccine providers and to ship vaccine to providers. For example, one hospital requested that a AHHR Coordinator call all non-hospital-affiliated providers in the region to take vaccine orders, and another sent vaccine received for regional distribution back to the state. Focus group participants stressed the need to work with the response infrastructure that has been built in the state to implement shifts in response strategy.

It was great for the physician practices we owned...but the physician practices we didn't own didn't get the message....we used a lot of manpower trying to identify them and get the vaccine out to them.

~ Hospital representative

Recommendation MS2.1.1: Support region-level planning regarding vaccine distribution that expands beyond the current plans that assume distribution from a large cache to regions for large scale Points of Dispensing (PODs) ('SNS to region to POD' concept) to include other mechanisms for vaccine distribution and dispensing. In all, the shift to hospitals as hubs was motivated by a desire to increase the amount of vaccine being dispensed in the regions while providing for better targeting and reporting. Because of the low demand for vaccine on the part of the public and the early implementation of the shift, it is not clear whether this strategy shift was more successful than the original distribution approach. However, it is clear from focus groups that regions are likely to select different vaccine distribution strategies to best serve their populations. It is recommended that the state encourage regional planners to consider a variety of vaccine distribution approaches for inclusion in regional plans; planning considerations would include how to reach specific target populations both through PODs and through other channels, in both times of vaccine shortage and times of vaccine availability. It is unlikely that there is a universal solution for NH's regions due to variations in regional health care systems and capacity.

Recommendation MS2.1.1: Utilize existing hospital emergency response channels to quickly and effectively engage hospitals in public health response.

Observation MS2.2: Design of vaccine data collection system (Area for Improvement)**Analysis:**

During this emergency, two parallel vaccine reporting systems were put in place, one based on CRA for AHHR distributed vaccine requirements and another based on the NHIP day-to-day reporting system for registered provider offices. There were two reporting forms, one for each system, each targeted to different subsets of registered vaccine providers. The CRA-based form was aimed at gathering AHHR-run public clinics (PODs), and included data entry fields to track type of vaccine administered (intranasal vs. injected). The NHIP form was also used by AHHRs, as well as to gather information from other registered vaccine providers, and did not include a field for type of vaccine administered. While both forms were set up to collect information on the age of the vaccine recipient, neither form tracked children under 10 years of age who received a second dose. Also, neither form included fields to indicate the number of vaccine recipients who were pregnant. The data collected using the CRA-based form allowed for aggregate reports of doses given to be sent to the CDC on a weekly basis. CDC no longer required these reports after 7 weeks into the fall 2009 response (November), but DHHS continued to voluntarily submit.

In addition to tracking progress against vaccination goals, a goal of the vaccine reporting system was to reconcile vaccine shipped versus vaccine dispensed, wasted (expired, damaged or spoiled), or transferred by each provider. This was a particular area of weakness in the system, as transfers were often not reported by providers and hospitals and the multiplicity of reports left room for confusion and duplication. The analysis of doses administered described in the Mass Prophylaxis Section, Observation MP1.1 was complicated by the likelihood of duplication in at least 2 regions where the number of pediatric doses administered equaled or exceeded the pediatric population. At least one focus group participant cited an example where a school nurse and a AHHR Coordinator reported the same numbers. Participants also felt the State was not fully prepared to receive their reports, and the numbers received back by the Coordinators were not consistent with the numbers they had originally sent. Participants would have appreciated receiving timely information regarding how much of their region's population had been vaccinated.

Recommendation MS2.2.1: Review the data elements to be requested from data reporters in advance to ensure that it will result in information of sufficient quality to enable performance measurement during the event, and post-event evaluation.

Recommendation MS2.2.2: Wasted and transferred fields should be included along with vaccine dispensed fields on reporting forms for vaccine providers if a goal of the reporting system is to reconcile doses shipped versus doses dispensed, transferred, or wasted by providers.

Recommendation MS2.2.3: It is preferable to pre-define vaccine provider categories on the vaccine provider registration sheet and eliminate the "other" category if a goal of the system is to understand which vaccine provider types were most efficient at vaccinating the target population. There are currently 25 non-mutually exclusive provider types included in the vaccine provider database, which makes it difficult to analyze.

Recommendation MS2.2.4: Ensure that adequate staff are assigned to developing the data management system. Make use of available lead time.

Observation MS2.3.4: Vaccine ordering and reporting procedure (Area for Improvement)

Analysis:

Ordering: Overall, the majority of respondents to a survey (81% or 110/135) of registered vaccine providers agreed or strongly agreed that, “ordering vaccine through DHHS was a simple and efficient process.”⁵³ However, participants in focus groups expressed frustration, echoed by a survey respondent, with vaccine ordering and reporting forms that were continuously changing due to changes in formularies that were added to or deleted based on vaccine availability.

Transferring vaccine: In the H1N1 response, providers were able to transfer vaccine in order to assure most efficient use and were required to fill out a paper vaccine transfer form. NHIP staff indicated that they expected to receive these forms. However, it was not clear to vaccine providers that the transfer form should be submitted to NHIP. In fact, the form states that the main purpose is to track vaccine lot numbers at the provider level; the form does not state that a copy of the form should be submitted to the state. In the field, it was unclear to providers who should be reporting when transferred vaccine is administered to the patient. There were instances in which providers who transferred vaccine reported its administration when that vaccine was actually administered by the entity that received the transfer. Meanwhile, from DHHS’s perspective, some providers were showing that they had dispensed more than 100% of the vaccine shipped to them, likely because of poor reporting of transfers.

Reporting vaccine wastage: By contrast, the Novel Influenza A H1N1 Vaccine Wastage Reporting Form clearly indicated that the form must be submitted to the NHIP. However, as was the case with the transfer form, the manual reporting system made it difficult to reconcile vaccine shipped with vaccine dispensed/transferred/wasted numbers.

Paper-based system: The system was particularly time consuming and the data it collected inaccurate because it was a paper-based system. At the height of the H1N1 response, staff did not have the time to reconcile vaccine that had been shipped with vaccine dispensed, wasted, or transferred. This was due to extreme volume demands on NHIP staff and systems simultaneously tracking H1N1, seasonal influenza, and childhood vaccines, with approximately 900,000 doses distributed in six months. As a result, it was not possible to give an accurate snapshot of vaccine disposition until the data had been thoroughly reviewed and cleaned by DPHS staff, a process which was completed on April 28, 2010. Focus group participants felt that reporting electronically would have been a more efficient process than the multiple reports they were asked to submit to multiple individuals. In the survey of registered vaccine providers, 60% “agreed” or “agreed strongly” that their organizations would have had

“The ordering of vaccine, although straightforward, would have been much more efficient thru an online tool.”

~ Registered vaccine provider

⁵³ CHI. Provider Survey 6/15-30/2010.

the capacity to report electronically, while 20% “disagreed” or “disagreed strongly” and 21% did not know (n=136).⁵⁴

Recommendation MS2.3.1: Evaluate benefits and barriers to implementing a web-based system that addresses local providers’ ability to utilize such a system.

Recommendation MS2.3.2: Clearly mark revision dates on forms. Include a date in the title of ordering and reporting forms, to allow users to easily identify which is most recent.

Recommendation MS2.3.3: Cross train NHIP and DHHS staff identified in the COOP plan on the use of the day-to-day vaccine management system so that they are more familiar with the forms and processes that will likely be used in an emergency event requiring vaccine. Utilize lead time prior to arrival of vaccine to provide just-in-time training to staff.

Observation MS2.4: Adequacy of resources (other than vaccine) to support campaign (Area for Improvement)

Analysis:

Focus group participants noted that some of the supplies and resources supplied by CDC to support regional vaccination campaigns were not appropriate to the vaccine they received: examples included 5-gallon sharps containers, wrong needles, and improperly sized syringes. Some supplies, such as the syringes, were unfamiliar to health care workers administering the vaccine and required just-in-time (JIT) training for proper use. Focus group participants concurred that there were several injuries resulting from sharps becoming detached from the syringe. Some regions opted to use supplies they had remaining from Cities Readiness Initiative (CRI) exercises, rather than use the supplies provided by the CDC and McKesson.

AHHRs received small refrigerators from DHHS, but many reported that they did not have adequate storage space to house the refrigerator or an individual to monitor temperature. Participants also noted that the refrigerator temperatures fluctuated and that, in many instances, the refrigerators were used for supplies other than vaccine.

Hospitals needed a wide range of supplies to act as the vaccine distribution hubs. They specifically reported needing manpower in the pharmacy and for transport, as well as storage space. One hospital reported using federal hospital preparedness funds to purchase another refrigerator to store vaccine.

Recommendation MS2.4.2: Provide JIT training materials on supplies such as syringes.

Observation MS2.5: Management of unused, expired, and recalled vaccine (Strength and Area for Improvement)

⁵⁴ CHI. Provider Survey 6/15-30/2010.

Analysis:

In spite of the confusion on the use of the vaccine transfer forms (noted above), focus group participants reported that the process for actually transferring unused vaccine during the response was simple and easy. However, registered vaccine providers are still awaiting guidance on how to dispose of expired doses and how to handle recalled vaccine. A nationwide process has recently been instituted by the CDC for this purpose.

Recommendation MS2.5.1: Ensure readiness to implement a federal program to manage expired and recalled vaccine.

CAPABILITY: MASS PROPHYLAXIS

Federal Target 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.

Activity 1: Developing and Maintaining Plans, Procedures, Programs, and Systems

Observation MP1.1: Adequacy of existing plans, procedures, and partnerships for mass prophylaxis dispensing operations (Strength and Area for Improvement)

Analysis:

The 2009/2010 H1N1 event provided an important test of NH's efforts in recent years to strengthen the regional public health infrastructure including the establishment of the 15 AHHRs across the state that have engaged in a systems-based, public-private partnership approach to public health emergency planning and response. The charts and discussion on the following pages demonstrate that these efforts have been largely successful as evidenced by: 1) the high level of response activity, including the achievement of good vaccination coverage rates relative to other states and 2) the broad participation of many response partners and channels for implementing mass prophylaxis.

In addition to this evidence of overall success in implementing mass prophylaxis plans and procedures, a number of important observations can be made regarding opportunities for improvement or strengths to expand upon including:

- 1) Hospitals and primary care provider groups are key partners in implementing mass prophylaxis activities.
- 2) Apparent variation in vaccine coverage rates at the regional level are not explained by differences in demographics, health care and public health infrastructure, or level of effort in terms of AHHR-sponsored clinic activity.
- 3) At the overall state and regional levels, there is apparently a finite set of key partners that contributed the majority of mass prophylaxis results in terms of doses administered.
- 4) While there are common channels across regions that are essential for an effective mass prophylaxis response, the specific channels and associated systems/partners, as well as procedures and relationships for working with these systems/partners, vary substantially across regions such that each region should develop a more detailed and specific plan for mass prophylaxis in collaboration with regional partners and the State that goes beyond existing plans for large-scale, public PODs.

According to DHHS records, a total of 345,080 doses of H1N1 vaccine were administered as of April 13, 2010. Figure 11 shows the breakdown of the proportion of these doses administered by

major provider type. Hospitals and primary care provider groups provided about two-thirds of doses administered, while AHHR-sponsored clinic activities accounted for about 18% of all doses administered. As indicated by the red bars on the chart depicting the regional minimums and maximums within each provider category, there was significant variation across regions regarding the relative importance of each channel or provider category.⁵⁵

Figure 11⁵⁶

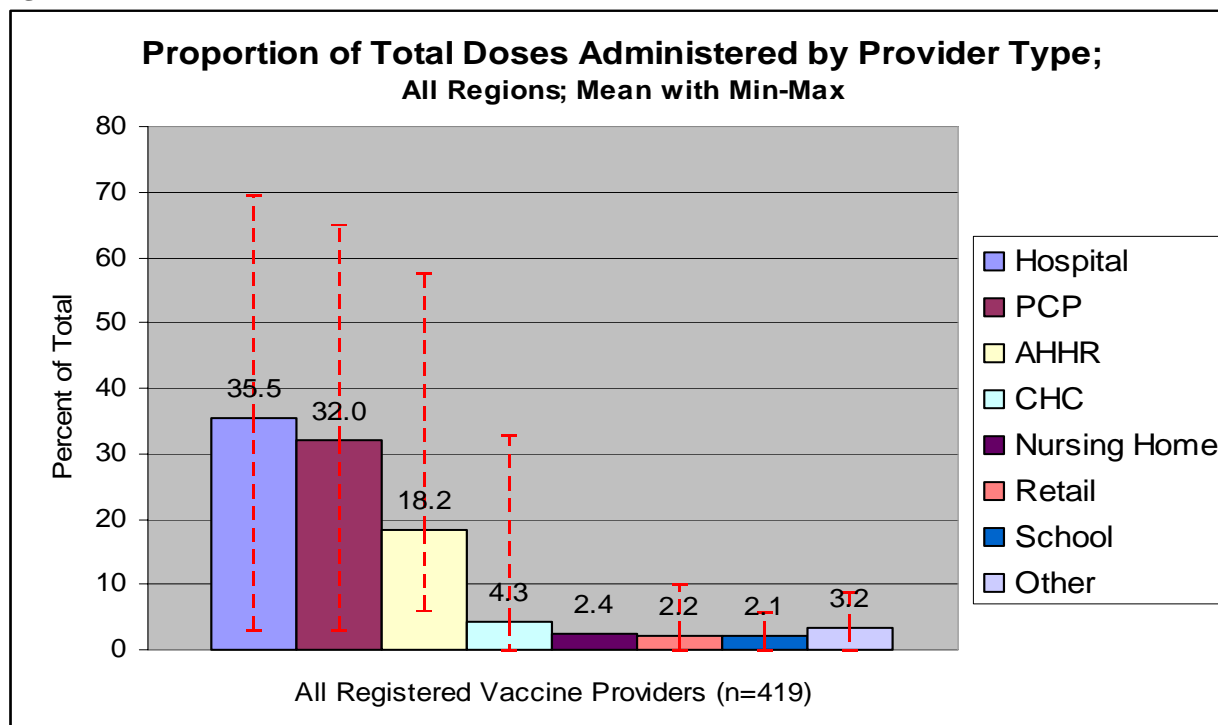


Chart notes and caveats:

- a) It is likely that some of the variation (i.e., large min-max range between regions) across categories is the result of differences in self-classification and record-keeping procedures of registered vaccine providers. For example, one hospital may have reported the activity of affiliated multi-specialty or primary care provider groups as “hospital”, while another hospital may have recorded similar activity under the name of the affiliated physician group. There are also instances of providers ordering vaccine for affiliates in other regions.
- b) The “PCP” (Primary Care Physician) category includes multi-specialty groups that include primary care physicians. Specialties within primary care included family practice, pediatrics, general internal medicine and OB/GYN. Physician groups that include only sub-specialists were categorized as “Specialty” and are included in the chart above with “Other”.
- c) The “AHHR” category includes local health departments and is comprised of AHHR-sponsored activity through many different channels or settings including school-based

⁵⁵ Miles, Joanne. H1N1 Report Excel Spreadsheet. 13 Apr. 2010. NH DHHS DPHS, Concord, NH.

⁵⁶ Miles, Joanne.

- clinics, first-responder and dental/eye care staff, large scale PODs and “mini-PODs” or closed clinics in a variety of community and business settings.
- d) The “School” setting includes activity for vaccine providers that self-identified as a school and is predominantly comprised of private and post-secondary education organizations. Most public elementary and secondary school activity is included within the AHHR category.
 - e) The “Other” category includes a variety of provider types including Home Health, Corrections, Family Planning, Dental, Ambulance/Fire, Occupational Health, Business, Developmental Disability, Rehabilitation, and Sub-specialty type organizations.

Because of the apparent variation in vaccination coverage rates across regions, NH’s mass prophylaxis response was further analyzed at the regional level. It is important to note that there are limitations to analyses relying on reported vaccine dose data including the possibility of some misreporting and double counting of doses administered (see observation 1.3 in this section). Another important confounding factor is that this data reflects the region where individuals received vaccine which may be a different region than where they live. The extent of the effect of this difference is unknown across all regions, and may be of particular importance in regions bordering other states. Given the uncertain accuracy of specific coverage rates, this analysis grouped the 15 regions into three tiers describing low, intermediate, and high coverage rates. The tiers were derived by examining coverage rates for each region for all ages, for the population under 5 years of age (preschool), and for the population 5 to 24 years of age (school-age including post-secondary). Table 3 on the next page shows the regional groupings that resulted from this analysis including the vaccine coverage ranges within each tier and population category.

Table 3⁵⁷

AHR	REGIONAL H1N1 VACCINE COVERAGE TERTILES WHERE 1=Lowest Percentile Group and 3=Highest		
	OVERALL (includes unknown age)	Under 5 yrs	5 to 24 pop
	1=10.2% to 18.2%; 2=20.5% to 24.1%; 3=27.1% to 57.8%; avg=23.1%	1=22.8% to 35.0%; 2=41.4% to 54.6%; 3=60.9% to 138.2%; avg=46.9%	1=11.6% to 21.0%; 2=26.2% to 30.9%; 3=39.3% to 64.6%; avg=31.0%
Tier 1			
GREATER DERRY	1	1	1
CAPITAL AREA	1	1	1
STRAFFORD COUNTY	1	2	1
GREATER SULLIVAN	1	1	2
MONDADNOCK REGION	2	1	1
Tier 2			
FRANKLIN/BRISTOL	1	3	2
EXETER REGION	2	2	2
CARROLL COUNTY	2	2	2
GREATER NASHUA	2	1	3
PLYMOUTH REGION	2	2	2
Tier 3			
LAKES REGION	2	3	2
GREAT NORTH WOODS	3	2	3
GREATER MANCHESTER	3	3	3
GREATER PORTSMOUTH	3	3	3
UPPER VALLEY	3	3	3

Chart Note: Coverage rates were determined by reported doses administered as a proportion of the estimated 2009 population for each region and age category. For the population under 10 years of age, dosage rates were adjusted using an assumption of a 50% rate for second dose.

⁵⁷ Anderson, Ludmilla. Vacc Distribution by AHR, Excel Spreadsheet. June 2010. NH DHHS DPHS, Concord, NH.

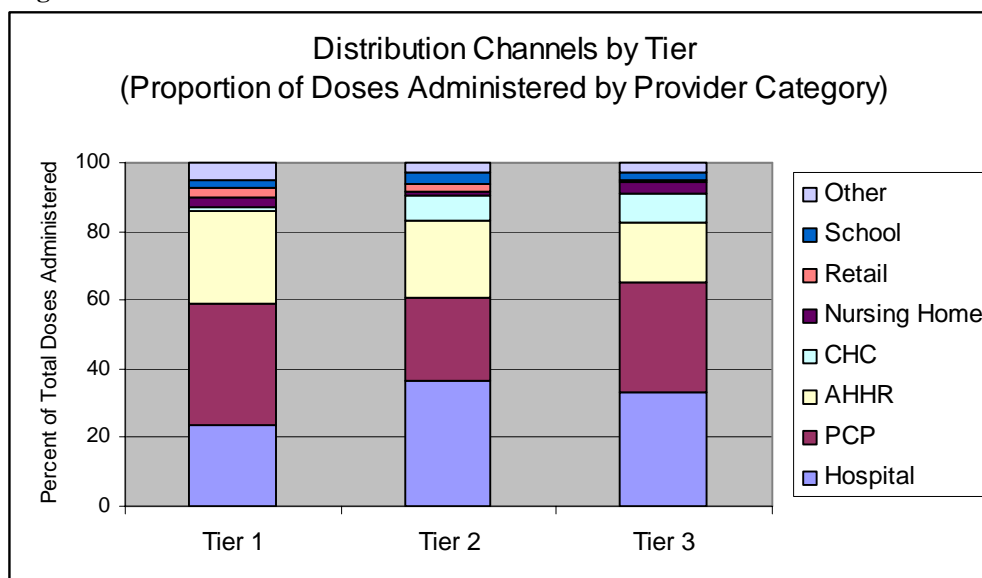
Further analysis of the key provider categories within the three H1N1 Vaccine Coverage Tiers shows that there is no clear pattern or difference across Tiers. The Table below shows that within each Tier there is substantial variation in the relative importance or contribution of a particular provider category. For example, within each Tier there are regions with both high and low contributions by hospitals, primary care provider groups, or AHHRs.

Table 4: Proportion of Doses Administered by Tier and Provider Category⁵⁸

	Tier 1		Tier 2		Tier 3	
	Mean	Min-Max	Mean	Min-Max	Mean	Min-Max
Hospital	23.7	3.2-39.9	36.3	13.0-69.6	33.2	3.2-64.6
PCP	35.5	4.5-64.6	24.3	10.5-48.1	31.9	3.2-65.0
AHHR	26.5	14.7-57.8	22.6	10.6-32.1	17.5	6.0-29.2
CHC	1.4	0.0-7.0	7.1	1.3-19.3	8.4	0.0-33.1
Nursing Home	2.5	1.1-5.3	1.2	0.0-3.1	3.5	2.0-6.7
Retail	3.2	0.0-10.1	2.3	0.0-4.1	0.6	0.0-0.9
School	1.8	0.0-4.9	3.4	0.0-5.8	2.1	0.0-4.7
Other	5.2	3.2-7.6	2.9	0.0-8.8	2.7	0.9-8.3

Figure 12 displays this same information on the relative contribution by provider category side by side for each Tier. In each case, hospitals and PCPs combine to contribute about 60% of doses administered. The AHHR contribution (as a proportion of doses provided within the Tier) appears somewhat higher in Tier 1, while the CHC (Community Health Center) contribution is higher in Tiers 2 and 3 (Note: the Tier 1 regions tended to be regions without CHCs, but the PCP contribution is somewhat higher in Tier 1).⁵⁹

Figure 12⁶⁰



⁵⁸ Anderson, Ludmilla.

⁵⁹ Anderson, Ludmilla.

⁶⁰ Anderson, Ludmilla.

Figure 13, Figure 14, and Figure 15 display this information for each Tier separately with minimums and maximums depicted by the red bars. A conclusion from viewing these charts could be that there is substantial variation within Tiers and that the observed variation in vaccination rates across regions is not explained by differential patterns of participation by provider types/vaccine distribution channels.

Figure 13⁶¹

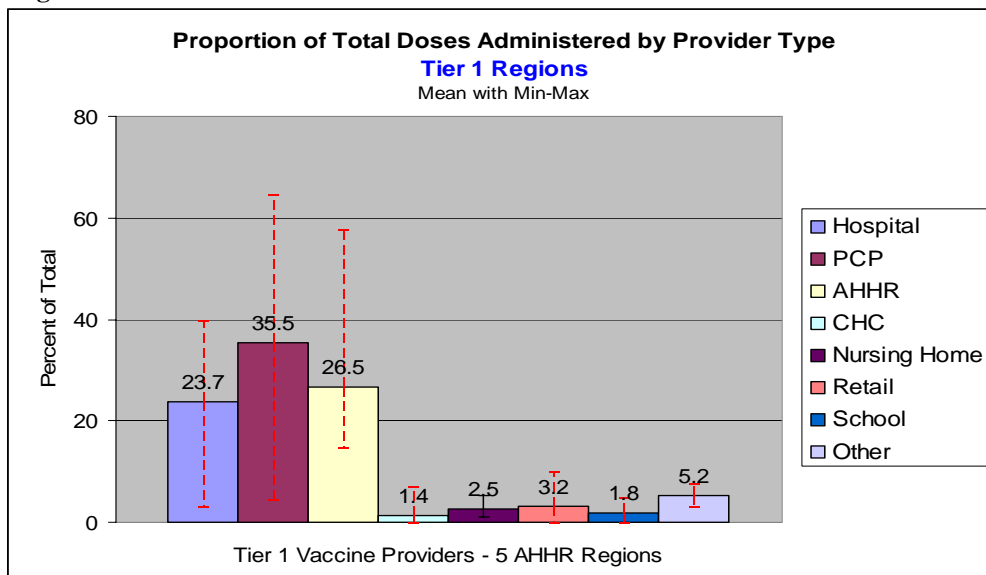
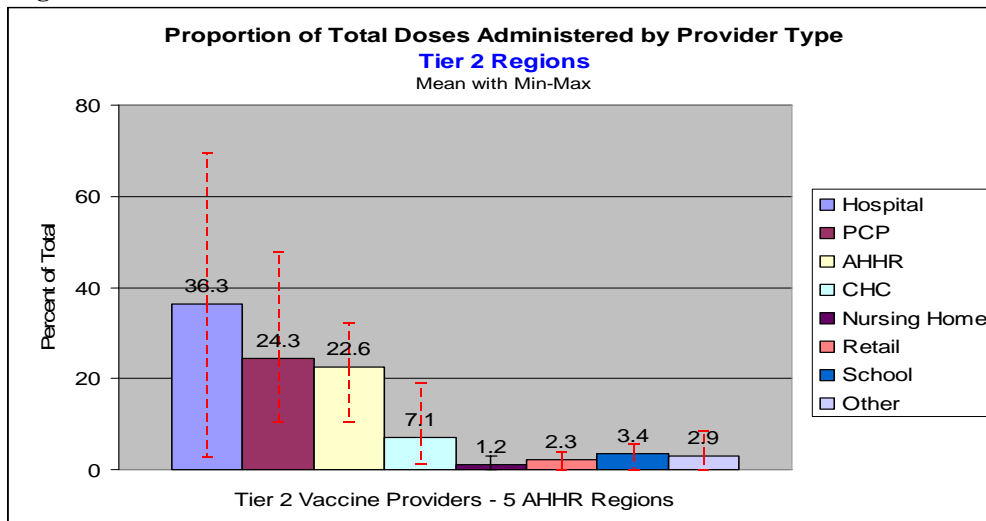


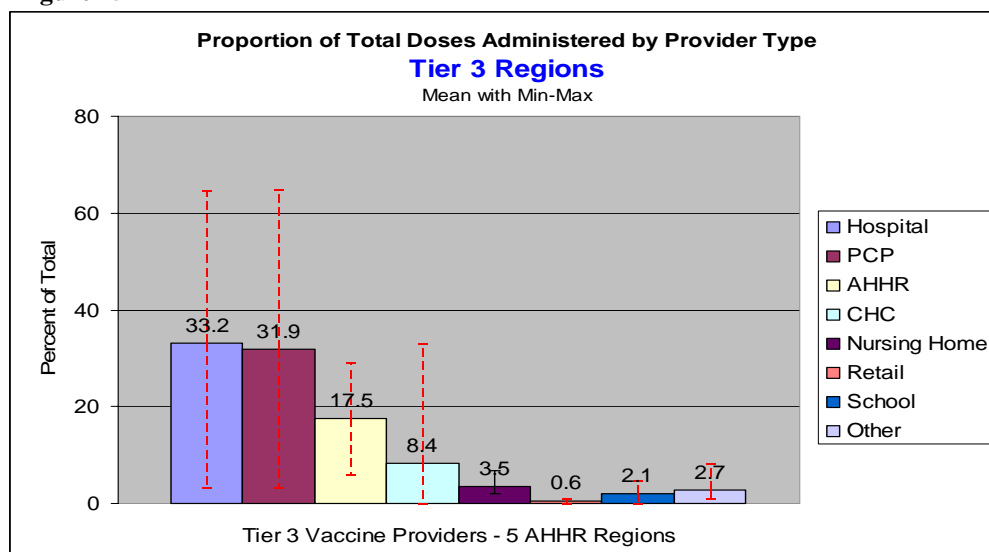
Figure 14⁶²



⁶¹ Anderson, Ludmilla.

⁶² Anderson, Ludmilla.

Figure 15⁶³

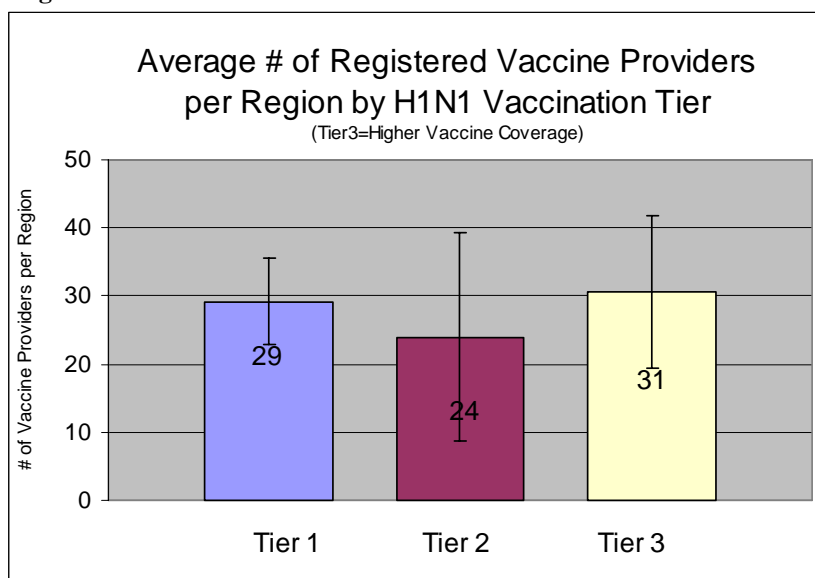


According to DHHS records, there were 419 registered vaccine providers across the state. Among the 15 regions, there was a substantial range, from 8 to 52, in the total number of registered vaccine providers. A point of inquiry therefore could be whether it appears to have been more advantageous to work with a small number or a large number of vaccine providers. However, as displayed by Figure 16, this variation also did not account for the observed differences in vaccination coverage. The average number of registered vaccine providers within tiers is comparable across the 3 tiers (the bars on the chart display 95% confidence intervals, not min-max as on other charts in this section).⁶⁴ Thus, the observed regional differences in vaccination rates are not accounted for by too few or too many vaccine providers.

⁶³ Anderson, Ludmilla.

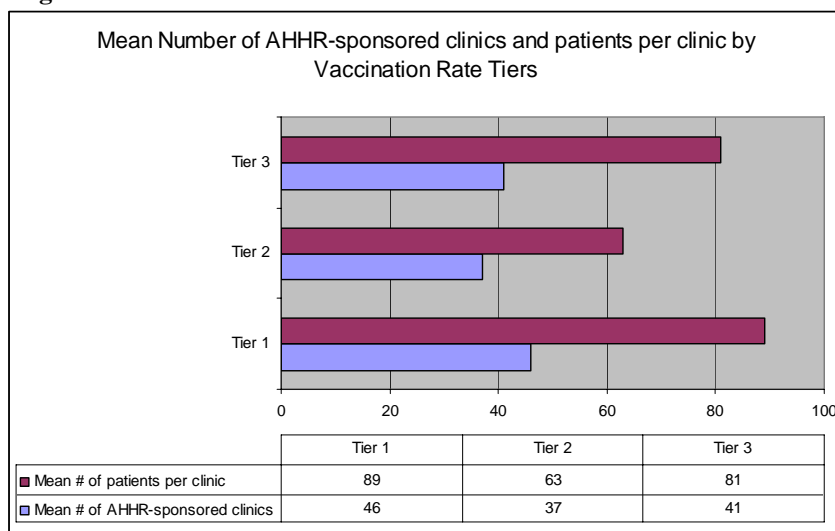
⁶⁴ Anderson, Ludmilla.

Figure 16⁶⁵



In addition to working with the traditional health care delivery system, AHHR staff and associated personnel sponsored or directly provided numerous H1N1 clinics in school and community settings through the course of the fall and winter of 2009/2010. According to DHHS records, a total of 617 such clinics were held.⁶⁶ Figure 17 shows that there were not substantial differences across tiers in the number of clinics or patients per clinic on average across tiers.

Figure 17⁶⁷



With respect to demographics and infrastructure, a qualitative assessment of the regions within each Tier suggests that there are also not clear patterns in terms of population size or rural/urban

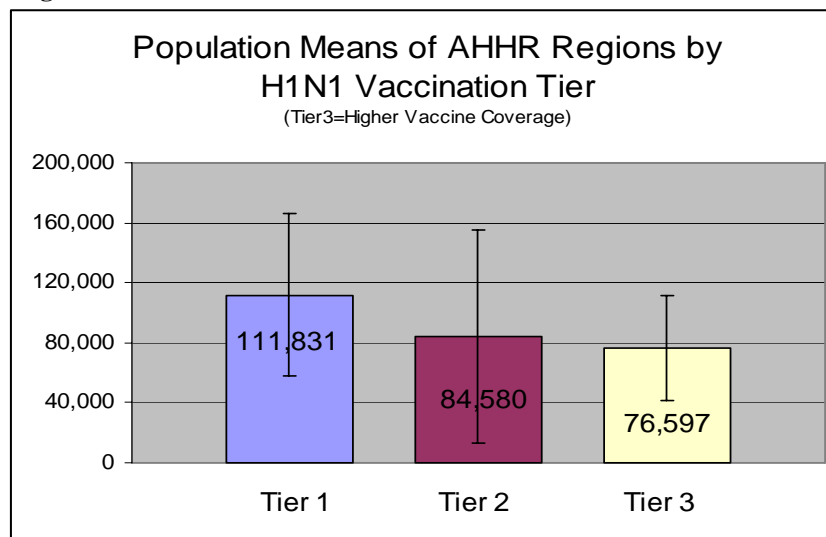
⁶⁵ Anderson, Ludmilla.

⁶⁶ Anderson, Ludmilla.

⁶⁷ Anderson, Ludmilla.

mix, large or small hospitals/hospital systems, presence of a local health department, or years of participation in the PHN development initiative. The chart below shows an apparent association between regional population and vaccine coverage rates, however the overlapping confidence intervals indicate again that there is substantial intra-Tier variation on this potential factor for explaining the observed inter-Tier variation in vaccination rates (the bars on the chart display 95% confidence intervals).

Figure 18⁶⁸



Finally, an important overall observation is that across the State and within regions there were a finite number of key partners in the response efforts. As previously mentioned, DHHS records show that there were 419 registered vaccine providers. However, the 20 providers that administered the highest volume of vaccine doses (or about 5% of registered providers) accounted for 56% of the doses administered overall. Among the top 20 providers were 9 hospitals, 6 AHHRs, and 5 PCP/Multi-Specialty groups. It is again important to note that some providers ordered vaccine on behalf of a larger system or set of affiliates, while other providers in similar systems in other areas may have been registered separately.⁶⁹ Further review in this area reveals the following related observations:

- For the population under 5 years of age, the top 20 providers accounted for 69% of doses administered. Among the top 20 providers were 8 hospitals, 10 PCP/Multi-Specialty groups, 1 CHC and 1 School. Ten of the top providers in this category were also top 20 providers overall, while 10 were not.⁷⁰
- For the population between 5 and 24 years of age, the top 20 providers accounted for 64% of doses administered. Among the top 20 providers were 8 hospitals, 7 AHHRs, 4 PCP/Multi-Specialty groups, and 1 CHC. Seventeen of the top providers in this category were also top 20 providers overall, while 3 were not.⁷¹

⁶⁸ Anderson, Ludmilla.

⁶⁹ Anderson, Ludmilla.

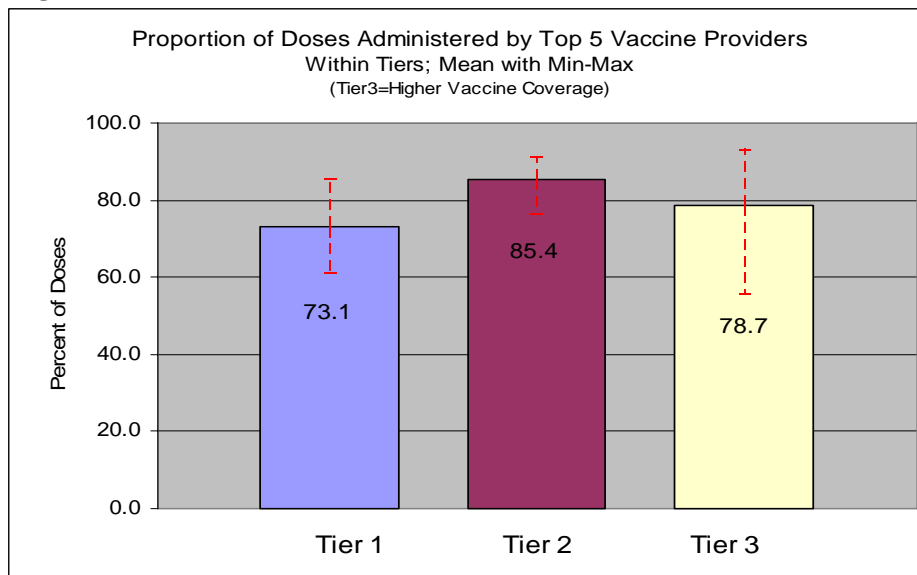
⁷⁰ Anderson, Ludmilla.

⁷¹ Anderson, Ludmilla.

At the regional level, a similar observation can be made as follows. While each region included about 28 vaccine providers on average, the top 5 vaccine providers in each region accounted for a large majority of the doses administered.

Figure 19 shows that this observation is true across Vaccination Coverage Tiers in that the top five providers in each region account for about three-fourths or more of the doses administered on average (range across the 15 regions was from 56% to 94%; both the minimum and maximum were Tier 3 regions).⁷²

Figure 19⁷³



Perhaps the most important point to be made from this information is that, while there are key providers in each region and across the State, the key provider group is diverse and variable across regions. Within regions, top providers include hospitals, PCPs, and AHHRs in most, but not all, cases. In some regions, key providers also included CHCs, schools, rehabilitation facilities, and retail outlets. Further development of plans and capacity for mass prophylaxis in NH for events similar to the 2009/2010 H1N1 event will therefore involve region-specific work to improve partnerships and procedures for working with key providers/vaccine administration channels, as well as identifying strategies for working more effectively with other existing or potential providers/vaccine administration channels.

Recommendation MP1.1.1: Work in partnership with region-level planners to further develop vaccine distribution strategies and plans that expand beyond the “SNS to region to POD” concept to include other mechanisms for vaccine distribution and dispensing in similar scenarios that capitalize on the lessons learned from the 2009/2010 H1N1 event regarding key providers and administration channels that are region specific. It is clear from both the focus groups and the preceding data analysis that regions are likely to work with key partners and to select different vaccine distribution strategies that reflect available infrastructure to best serve

⁷² Anderson, Ludmilla.

⁷³ Anderson, Ludmilla.

their populations. It is unlikely that there is a “one-size-fits all” solution for NH’s regions with respect to vaccine distribution channels.

Observation MP1.2: Understanding of capacity, systems, and business practices of non-public health organizations, such as hospitals, medical practices, and schools, to support public health mass prophylaxis goals (Strength and Area for Improvement)

Analysis:

The preceding analysis demonstrated the importance of a number of organizations whose primary mission is related to, but not directly public health (such as public education and health care delivery) in accomplishing the State’s public health goals including mass prophylaxis, future planning, and partnership development activities should explicitly consider the capacity of such providers to assist in mass vaccination campaigns. Included in this area of activity is the need to develop a clearer understanding and dialogue with key decision-makers, such as superintendents, principals, and hospital and practice managers regarding activities that can be undertaken by public health to support alignment of systems and business practices in support of public health goals.

“It was frustrating to have such a large supply and not be permitted to vaccinate groups that were at risk, for example, older children with risk factors, or sibling of children with risk factors. It was also frustrating to our patients and some families left our practice as a result of misinformation in the community.”

~ Survey response from vaccine provider

Focus group participants identified the need for increased understanding and two-way dialogue along these lines. Some specific observations included:

“With smaller practices, the release of immunizations to all our patients would have been easier on our practice. The restrictions put on us, made it somewhat difficult with scheduling and a lot of our patients went to other states for the H1N1 vaccine due to this.”

~ Survey response from vaccine provider

- The importance of balancing policy choices with the need to maintain positive patient relationships
- Confusion about billing and reimbursement
- Limited staff capacity and scheduling concerns among school nurses and physician practices
- Whether or not regions were able to contract nurses to assist with clinics sponsored by hospitals and private physician offices
- Limitations on what vaccination locations could be listed/advertised on public websites

Recommendation MP1.2.1: Increase dialogue as part of planning processes to improve mutual understanding of factors influencing the alignment of private and public health business practices to support public health goals during outbreaks and emergencies.

Activity 2: Direct Mass Prophylaxis Tactical Operations

This area of activity involves providing overall management and coordination of mass prophylaxis operations. Considering the variety of channels utilized, the importance of non-

governmental and non-public health stakeholders, and the significant variation in regional partnerships and infrastructure, accomplishment of this activity at the State level requires a balance between support and management roles.

Observation MP2.1: Efficiency of pre-registration (Area for Improvement)

Analysis:

The majority of AHHR focus group participants did not feel that the pre-registration process was necessary or efficient, as many regions did not have adequate resources (e.g., phone banks) to implement it based on the State's requested timeframe. The majority of participants felt it did not add any benefit to their region's response and all would prefer greater flexibility in decision-making that reflects differences in local needs, resources and priorities. However, participants appreciated that DHHS employees from the ESU were sent to assist in the process.

In contrast, some participants did think it was helpful because it offered an opportunity for pre-screening and better use of their clinical staff. Participants identified the Phases 2 and 3 pre-registration scripts as a strength. Some also felt pre-registration was a good way to support public messaging and make the best use of provider time, but that it would be difficult to maintain that capacity over a longer term. One region employed a wave scheduling approach to ensure that clinical staff would not be sitting idle. Another region that used pre-registration noted that it allowed them to determine when there was little to no demand for the vaccine, thus facilitating decisions about clinic plans and staff logistics. Participant consensus was that pre-registration would not be feasible in larger-scale emergencies. Generally, participants believed that this type of decision would benefit from two-way dialogue and greater flexibility for regions to determine the best fit for their circumstances.

Recommendation MP2.1.1: Build the capacity to better allow for local clinic pre-registration including developing software to use as add-ons to local websites.

Recommendation MP2.1.1: In the absence of such capacity uniformly across the state, allow for flexibility in approach based on local differences and variation in capacity.

Observation MP2.2: Implementation of priority group phase changes (Area for Improvement)

Analysis:

Focus group participants felt that public communications about the tiered vaccination strategy was insufficient and contributed to some public confusion and anxiety regarding priority group designations. Some AHHR staff placed in the role of PIO for their region found it difficult, without a medical background, to explain the rationale for priority groups to the general public. Other registered vaccine providers felt strained by the need to take the time to explain the rationale for the tiered strategy to patients in their offices and to try to adhere to the guidance.

The rationale for the timing of the transitions from one phase to the next in the vaccine strategy was not always clear to providers/responders. Participants noted that the transition between phases came at inopportune times, such as around holidays, and either interfered with or delayed

already planned clinic and local public communication activities. Phase transitions also did not occur at times that made sense for more populous regions that had not yet completed vaccinations of priority groups from the previous phase due to unavailability of vaccine. As one focus group participant noted, “The more complex the system, the more variation in implementation.”

Recommendation MP2.2.1: Incorporate perspective and advice when possible from community-based practitioners/responders more systematically to inform policy decisions impacting their activities. Similarly, provide more in-depth rationale to regional responders for major policy decisions, especially when they differ from federal and border state responses. Routinely track and report progress against mission goals so that policy shifts (such as phase changes) are data driven, expected and transparent to responders at all levels.

Observation MP2.3: Clinical guidance (Strength and Area for Improvement)

Analysis:

Focus group participants felt that the accessibility of the Director of DPHS (Dr. Montero) and the Medical Advisor to DPHS (Dr. Gougelet) was a strength and very much appreciated. Participants also noted the helpfulness of standing orders from Dr. Gougelet in support of the community-based clinic activities.

Some participants did however report frustration with their inability to get direct answers when calling the State to inquire about specific issues related to the vaccine and anti-viral medications such as guidelines for receiving the vaccine in conjunction with other vaccines and contraindications for the intranasal vaccine.

Participants also noted that when clinical guidance differed from national guidance, such as with use of PPE, rationale should be better explained to responders. They experienced varying policies and practices between professions volunteering and working at clinics, such as between the Metropolitan Medical Response System (MMRS) who did not use gloves to administer vaccines versus nurses who did, which created confusion.

Recommendation MP2.3.1: Increase access to clinical experts at DHHS to answer inquiries from responders during an event and more widely disseminate contact information for these experts.

Recommendation MP2.3.1: When State policy and guidance differs from national guidance, provide clear rationale to responders in writing, allowing for their dissemination of the information further, if appropriate.

Activity 3: Activate Mass Prophylaxis Dispensing Operations

Observation MP3.1: Volunteer registration (Area for Improvement)

Analysis:

On December 4, 2009, the Commissioner of DHHS declared a Public Health Incident under RSA 508:17a enabling the Department to seek outside assistance in its response efforts; specifically by providing liability protection for registered volunteers. In order to make use of this coverage, regions offering public clinics were required to register volunteers with DHHS, and to receive official designation by way of DHHS signature that each volunteer had been designated to act as an agent of DHHS in responding to the public health incident.⁷⁴

Focus group participants felt the requirements for volunteer registration process included unrealistic expectations, such as having the volunteer identified by position a minimum of twenty-four hours prior to the start of a clinic, registering volunteers for every clinic despite repeated volunteering presence by the same individuals, and sending separate forms for every volunteer while coping with State “spam” filter restrictions. They felt that the specific requirements set for registering volunteers based on interpretation of state statute were “pragmatic, just not user-friendly.” Some regions elected to forego registering volunteers and use the HCA contract vaccinators instead. Regions who had hired a volunteer coordinator felt the registration process was manageable, but that they could not maintain it in future events without ongoing budgetary support and training for these positions. Participants also reported that the turnaround time on processing forms by the DHHS ICC was too lengthy.

NH RSA 508:17a states that “written acknowledgment shall identify the person, indicate the department of the state for which the person will be acting as an agent, *indicate the duration* for which the person will be acting as an agent, *indicate the functions* that the person will be performing for the appropriate department, and specifically indicate that the provisions of this section apply to the person's status as an agent to the appropriate department.”⁷⁵

Recommendation MP3.1.1: Review the procedures developed to implement RSA 508:17a for possible simplification of the volunteer registration process. Specifically, review the possibility of allowing for one registration per volunteer throughout a response (i.e., longer duration and more general clinic functions) and letting a sign-in sheet at the clinic provide proof of a volunteer’s presence.

Observation MP3.2: Strategies to augment human resources available for response (Strength and Area for Improvement)

Analysis:

Focus group participants identified the contract with the NH Home Care Association (HCA) as one of the biggest successes in the response. They specifically felt the accessibility of HCA staff (Chloe Roe) was exceptional, as well as the HCA management of timesheets and any issues related to the contract.

Participants felt that the implementation of the contract strategy worked best when there could be consistency in using the same agency for multiple clinics. There were some instances where

⁷⁴ Volunteers’ Non-profit Organizations; Liability Limited. NH RSA 508:17-a.

⁷⁵ Volunteers’ Non-profit Organizations; Liability Limited. NH RSA 508:17-a.

participants felt training of the staff provided through the contract was inadequate. Examples included nurses who had not administered vaccinations before, did not know how to draw up vaccine, had no experience with administering nasal mist, and had no experience working with pediatric populations. These circumstances required regions to expand their allotted time for just-in-time training, which subsequently affected clinic start time and flow. However, participants did state that the training levels varied across agencies.

Regional representatives also cited the use of EMTs, student nurses, and the availability of MMRS volunteers as highly beneficial resources in the response. H1N1 was the first activation of NH's Emergency System for Advance Registration of Volunteer Healthcare Professionals (ESAR-VHP). About 50 medical professionals responded to the activation and were referred to their AHHR Coordinator to assist with clinics. In addition, the 16 Medical Reserve Corps (MRC) regions in NH put in over 3,500 volunteer hours preparing and staffing vaccination clinics.

Recommendation MP3.2.1: Clearly communicate workforce competencies in advance to contracted agencies to better ensure pre-trained contractors are present at clinics.

Recommendation MP3.2.1: Improve training procedures by allowing regional responders more flexibility in determining the amount of time necessary for on-site just-in-time training, by supplementing online training with in-person training opportunities, and by offering on-site State assistance to regional responders who may not have a medical background to address the training needs of contracted clinical personnel.

Activity 4: Conduct Medical Screening

Observation MP4.1: Consent forms (Area for Improvement)

Analysis:

The State provided consent forms to the AHHRs for use at AHHR-sponsored H1N1 influenza vaccination clinics. Focus group participants reported concerns with the consent forms provided and not all regions utilized those provided by the State, while others adapted the forms before use. Responders also expressed frustration in the number of times the form was changed, the lack of warning that an update was coming, and the instructions that would accompany the updated form, such as discarding all old forms because they would "no longer be accepted."

Recommendation MP4.1.1: Improve procedures for supporting regional clinical activities with consent (and other) forms by creating a standard consent form during the pre-mass prophylaxis planning phase to the extent possible. When form changes are necessary, include feedback from responder representatives prior to making forms final and give adequate lead time to responders receiving updated forms to avoid wasting time and other resources.

Section 4: Conclusion

The New Hampshire July 2009 - March 2010 H1N1 Response was a real time response to the worldwide outbreak of H1N1. This second wave of Influenza A (H1N1) activity began in the United States in late August 2009, following on a spring wave of Influenza A (H1N1) that began circulating in the United States in April 2009. The July 2009 - March 2010 H1N1 Response utilized the current state and regional public health emergency preparedness and response plans. Response activities included developing and maintaining surveillance systems, monitoring the spread of disease in NH and nationwide, developing and disseminating public information materials, issuing clinical guidance and recommendations developing a vaccine distribution plan and accompanying data collection system, implementing an antiviral distribution network plan, implementing mass prophylaxis activities, and mitigating the consequences of infection through the provision of treatment to infected individuals.

This AAR addresses the following Target Capabilities, which were integral to the State of NH's efforts to respond and to support response activities at the regional level:

- Planning
- Epidemiological Surveillance and Investigation
- Laboratory Testing
- Emergency Operations Center Management
- Emergency Public Information and Warning
- Medical Supplies Management and Distribution
- Mass Prophylaxis

Among the strengths of NH's response were the strengths of the partnerships at all levels which allowed for flexibility and innovation in the implementation of plans written for more acute events, the availability of response-related information for responders, and NH's surveillance systems. All contributed to a successful vaccination campaign as recognized in MMWR 33. NH vaccinated 45.5% of children aged 6 months - 17 years (compared with a national median, excluding territories, of 36.8%). NH vaccinated 42.8% of persons in the initial target groups (compared with a national median of 33.2%), and 33.2 % of persons ages 25 – 64 at high risk (compared with a national median of 25.2%).⁷⁶ A survey of NH adults conducted by the UNH Survey Center⁷⁷ specifically for this H1N1 AAR found that 42% of all children under 10 from households surveyed received an H1N1 vaccination, and that 72% of these children who received a first dose received a second dose as well.

NH has identified 3 primary areas for improvement including strengthening of COOP plans through an emphasis on training staff identified in the plan; clarifying emergency response roles between DHHS, DPHS, and DOS; and working with public health response regions to build greater flexibility into plan design based on what was learned from the H1N1 response.

⁷⁶ "Interim Results: Influenza A (H1N1) 2009 Monovalent and Seasonal Influenza Vaccination Coverage Among Health-Care Personnel - United States, August 2009-January 2010."

⁷⁷ Fowler, Tracy A., Andrew E. Smith, and Chad S. Novak. *Granite State Poll for the Community Health Institute*. Durham, NH: University of New Hampshire Survey Center, 2010.

Going forward, it is recommended that DHHS train staff identified as resources in the COOP plan to ensure readiness, and consider a role for the DHHS ESU in coordinating an ongoing COOP training program. It is also recommended that DPHS, the DHHS ICC, and HSEM review and update plans for command and control in a public health emergency, and consider implementation of a public health emergency tabletop to solidify shared understanding of how these entities best synchronize to respond within an ICS framework. Finally, this AAR recommends that NH support region-level planning regarding vaccine distribution and dispensing that allows for more regional variation in plans and expands beyond the “SNS to region to POD” concept.

Appendix A: Improvement Plan

This Improvement Plan (IP) has been developed specifically for the participating agencies as a result of the NH July 2009 – March 2010 H1N1 Response.

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
CAPABILITY: PLANNING				
PL1.1: Shallow bench at DPHS/DHHS	PL1.1.1 Review DHHS Continuity Of Operations Plan	<ul style="list-style-type: none"> Ensure that procedures are included that allow for reassignment of staff for emergency response, and ensure that all parts of the organization are aware of and prepared to implement these procedures. <p style="text-align: center;"><i>Capability element: Planning</i></p>	DHHS, ESU	November 2010
	PL1.1.2 Implement cross training program	<ul style="list-style-type: none"> Expand available training programs beyond ESU members; revise to meet critical human resource needs identified in DHHS COOP plan <p style="text-align: center;"><i>Capability element: Training</i></p>	ESU, DHHS, DPHS, DPHS Education and Training Coordinator	November 2010

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
CAPABILITY: EPIDEMIOLOGICAL SURVEILLANCE AND INVESTIGATION				
ESI1.1: Maintenance of ongoing influenza surveillance systems	ESI1.1.1. Continue to maintain an ongoing spectrum of surveillance systems for use in public health emergency response.	<ul style="list-style-type: none"> Continue to train surveillance staff on monitoring various surveillance systems. Continue to provide technical support for existing surveillance systems. <p><i>Capability element: Equipment and systems; Training</i></p>	NH DHHS, DPHS, Communicable Disease Surveillance Section (CDCS) Chief	Ongoing
ESI1.2: Development and use of enhanced influenza surveillance systems	ESI1.2.1. Use the seasonal influenza period to further test improvements made to newer surveillance systems, such as the H1N1 School Surveillance System and CRA.	<ul style="list-style-type: none"> Re-initiate web-based School Surveillance System for seasonal influenza beginning in September 2010, asking for voluntary data submissions from NH schools via multiple mechanisms (i.e., HAN, superintendents of schools, NH DOE list serves). Collaborate with NH DOE on this initiative in the areas of participant recruiting and training for schools' data entry personnel <p><i>Capability element: Equipment and systems; Training</i></p>	NH DHHS, DPHS, CDCS Chiefs; NH DOE School Health Liaison; NH Department of Information Technology (DoIT)	October 2010 - May 2011
	ESI1.2.2. Coordinate with DoIT to support newly established surveillance systems.	<ul style="list-style-type: none"> Write and disseminate a guidance document for new and existing participants in the school surveillance system. 	NH DHHS, DPHS, CDCS Chiefs; NH DOE School Health Liaison; NH DoIT	September 1, 2010 (guidance/info on school reporting)

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
		<i>Capability element: Planning</i>		
	ESI1.2.3. Collaborate with the NH DOE to expand the number of schools contributing to the web-based reporting system, and then to offer an introductory training to school personnel.	<ul style="list-style-type: none"> Utilize CRA at seasonal influenza clinics, testing improvements made to the system following the 2009-2010 H1N1 response. <i>Capability element: Exercises, evaluations, and corrective actions</i>	NH DHHS, DPHS, CDCS Chiefs; NH DOE School Health Liaison; NH DoIT	September 2010-ongoing
	ES 1.2.4 Complete implementation of and training for HC Standard use within DHHS.	<ul style="list-style-type: none"> Address compatibility of HC standard software used by DHHS and hospitals Train DHHS staff on the use of HC Standard 	DPHS; NH DoIT	

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
ESI2.1: Continuity of Operations (COOP) Planning for the Infectious Disease Investigation and Surveillance Sections	ESI2.1.1. In future public health emergencies, consider activation of the State EOC to utilize its DoIT desk to address technological support issues for back-up personnel activated as part of a COOP.	<ul style="list-style-type: none"> Thoroughly evaluate DHHS COOP both at all levels: department, division, bureau, and section. Identify potential needs for technical support of back-up personnel. Once identified, establish a means to offer such technical support, either through existing channels or new MOUs with the NH Department of Information Technology. <p style="text-align: center;"><i>Capability element: Planning; Training</i></p>	NH DHHS Commissioner; ESU Division directors; bureau and section chiefs	November 2010 - ongoing
	ESI 2.1.2. Require bi-annual trainings and exercises for back-up personnel to better maintain knowledge of their possible duties.	<ul style="list-style-type: none"> Develop a basic training program for back-up personnel for key sections Exercise their knowledge base by requiring attendance at quarterly training exercises <p style="text-align: center;"><i>Capability element: Planning; Training</i></p>		November 2010 - ongoing
CAPABILITY: PUBLIC HEALTH LABORATORY TESTING				
LT1.1: Adherence to testing recommendations	LT1.1.1. Consider more strictly enforcing a policy of testing only those submitted	<ul style="list-style-type: none"> Explore the possibility of using the newly implemented LIMS to automatically notify providers when 	Director of NH PHL	October 15, 2011

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
	specimens that meet testing criteria. Create an automated system where providers are notified of invalid testing criteria.	a sample sent in for testing does not meet testing criteria. • Assess feasibility of testing only those samples meeting the specified criteria. <i>Capability element: Equipment and systems</i>		
LT2.1: Timeliness of reporting test results	LT2.1.1. Assess effectiveness of newly implemented LIMS, and modify as appropriate.	• Thoroughly evaluate the effectiveness of LIMS through multiple methods, including a comparison of before and after implementation turn-around-times. <i>Capability element: Exercises, evaluations, and corrective actions</i>	Director of NH PHL	June 15, 2012
LT3.1: Continuity of Operations Planning for NH PHL staff	LT3.1.1. Maintain cross-training programs for NH PHL staff.	Continue to train staff on multiple testing methods in all sections of the NH PHL. <i>Capability element: Personnel; Training</i>	Director of NH PHL; section chiefs	Ongoing
CAPABILITY: EMERGENCY OPERATIONS CENTER MANAGEMENT				
EOC1.1: Clarity of the Incident Command Center (ICC) role and function including its relationship to the State Emergency Operations Center (EOC)	EOC1.1.1: Review and update plans for command and control in a public health emergency including clarification of relationships between DHHS-based ICC(s) and the State EOC.	• Review and update Command and Control sections of the PHEPRP and PanFlu plans as needed • Review current plans and procedures regarding the status of the EOC in non-declared, but non-routine incidents where	HSEM DHHS - DPHS	December 2010

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
		<p>response partners are experiencing high demand levels on existing human and other resources.</p> <ul style="list-style-type: none"> Develop and disseminate additional guidance for response partners clarifying the command, control, coordination, support and communication relationships between HSEM, DHHS and regional/local response partners in a public health emergency <p><i>Capability element: Planning; Organization and Leadership</i></p>		
	<p>EOC1.1.2: Orient DHHS staff to the ESU capabilities, its role in supporting the ICC tactical operations, and the resources it can provide.</p>	<ul style="list-style-type: none"> Develop and disseminate guidance describing the roles, capabilities of the ESU and its relationship to other organization units within DHHS Implement a public health emergency tabletop focusing on the command, control, coordination and support relationships within DHHS <p><i>Capability element: Organization and Leadership; Exercises, Evaluations and Corrective Actions</i></p>	<p>DHHS ESU</p>	

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
	EOC1.1.3: Clarify policies and procedures regarding use of WebEOC in a non-emergency, public health incident type event.	<ul style="list-style-type: none"> • Develop and disseminate guidance regarding WebEOC usage expectations • Develop a process for regular use/access to maintain familiarity • Continue to develop WebEOC user competencies through training and communication with response partners <p><i>Capability element: Equipment and Systems; Training</i></p>	HSEM DHHS - ICC	
EOC2.1: Use of ICS to support response activities	EOC2.1.1: Initiate ICS to support public health responses to public health incidents requiring significant application of resources and sustained, coordinated efforts beyond normal business routines	<ul style="list-style-type: none"> • Review and update Command and Control sections of the PHEPRP and PanFlu plans as needed • Consider developing metrics for better determining when a non-emergency, but non-routine incident has reached a resource and coordination demand level indicating the need for ICS activation • Provide additional exercise-based training for DPHS staff on ICS for incident management <p><i>Capability element: Planning; Organization and Leadership; Training</i></p>	DPHS	November 2010

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
CAPABILITY: EMERGENCY PUBLIC INFORMATION AND WARNING				
PI1.1: Reach of H1N1 materials and messaging	PI1.1.1. Continue to utilize local television and radio media outlets for release of public information, while expanding online communications efforts.	<ul style="list-style-type: none"> • Pre-identify local cable access and radio stations that offer wide coverage across the state • Open a DHHS account on social networking sites, such as Twitter and Facebook <p style="text-align: center;"><i>Capability element: Planning; Equipment and Systems</i></p>	NH DHHS PIO	October 30, 2010
	PI 1.1.2. Maintain a partnership with 2-1-1 NH for use in public health emergencies and incidents, and activate it early in the response to each.	<ul style="list-style-type: none"> • Update as necessary the MOU established between 2-1-1 NH and HSEM • Work with 2-1-1 NH to set up automated listing of clinic locations, making their call response more efficient. • Establish an activation protocol with 2-1-1 NH that clearly indicates activation early in a response. <p style="text-align: center;"><i>Capability element: Planning; Equipment and Systems</i></p>	NH DHHS & HSEM PIOs; Director of 2-1-1 NH	Pilot program in progress. Ongoing

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
PI1.2 Public Information support to regional level	PI1.2.1. Develop mechanisms to collect situational updates from regional partners throughout the response to ensure that messages and materials are meeting needs on the ground	<ul style="list-style-type: none"> Understand regional public information needs during events by asking for feedback on public information needs from regional responders as a way to monitor public opinion and tailor messages. <i>Capability element: Equipment and Systems</i> 	NH DHHS PIO	Ongoing.
	PI1.2.2 Ensure that templates produced for regional and local use are easily modifiable.	<ul style="list-style-type: none"> Create templates for regions in file formats that are easy to modify, rather than PDF. Develop templates as early in the response as possible. <i>Capability element: Equipment and Systems</i> 	NH DHHS, DPHS Director & PIO	Ongoing.
PI1.3 Channels for Public Information	PI1.3.1. Continue to establish and utilize topic-specific websites for long-term public health emergencies and/or incidents, and expand efforts by increased utilization of the internet, more specifically by using social networking sites, such as Twitter and Facebook.	<ul style="list-style-type: none"> As described in PI 1.1.1., open and utilize a DHHS account on social networking sites, such as Twitter and Facebook, to post ongoing updates regarding public health issues. <i>Capability element: Equipment and Systems</i> 	NH DHHS PIO	In progress and ongoing.
	PI1.3.2. Increase television and radio messaging, and begin each earlier in response campaigns, ensuring that stations chosen can	<ul style="list-style-type: none"> As described in PI 1.1.1., pre-identify stations to use for television and radio spots during public health incidents and 	NH DHHS PIO	

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
	collectively reach all regions of the state.	<p>emergencies. Ensure increased state coverage by collecting situational updates from regional partners throughout the response to assess whether messages are being heard in their communities.</p> <p><i>Capability element: Planning; Equipment and Systems</i></p>		
	PI1.3.3. Continue to centralize information through 2-1-1 NH, and promote the use of 2-1-1 NH during times of emergencies and non-emergencies.	<ul style="list-style-type: none"> Establish protocol for submitting information to 2-1-1 NH for their use when responding to calls during public health events. Activate 2-1-1 NH, at least at a minimal level, as the Public Inquiry Line as soon as ICS is implemented for the event. Encourage calls to 2-1-1 NH through reminders in press releases, HAN messages, websites, and other public messaging methods. <p><i>Capability element: Planning; Equipment and Systems</i></p>	NH DHHS PIO	
PI2.1 Effectiveness of responder notification	PI2.1.1 Reformat Health Alert Network messages	<ul style="list-style-type: none"> Continue to format Health Alert Network messages so that new information and changes are listed first. Consider a clearer numbering system for HANs. <p><i>Capability element: Planning; Equipment and Systems</i></p>	DPHS – HAN Coordinator DHHS PIO	August 2010

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
	PI2.1.2 Redesign conference call procedure, modeling after recent anthrax event.	<ul style="list-style-type: none"> • Hold summary conference calls with broad audience to share high level situational awareness as feasible. • Adopt NH HSEM call model, which includes maintaining a checklist of action and follow up items, reviewed at the outset of each call, and posting call summaries. • Utilize conference calls to support published HANs, rather than to announce new policy. <p><i>Capability element: Equipment and Systems</i></p>	DPHS and HSEM	October 2010
	PI2.1.3: Continue to utilize the successful talking points approach.	<ul style="list-style-type: none"> • Explore options to increase the visibility of the talking points so that they are more easily recognized by responders in the field Possibilities include using a new format and sending talking points from different email account, such as "joint_information_center@dhhs.state.nh.us with a stand-out common phrase in the subject line. Ensure that new additions to talking points are listed first. • Broaden distribution list for talking points to ensure that all regional 	DHHS PIO	

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
		partners involved in response receive them. <i>Capability element: Equipment and Systems</i>		
	PI2.1.4: Improve search function on DHHS website.	<ul style="list-style-type: none"> Continue to utilize internet for centralization of responder information, but improve capability of sites. Improve search function on DHHS website. <i>Capability element: Equipment and Systems</i> 	DoIT	
PI2.2. Support to regional responders on communicating NH guidance differences.	PI2.2.1 Expand public information efforts on clinical guidance differences	<ul style="list-style-type: none"> Gather feedback from response partners on additional public information needs when clinical guidance is complex or varies from guidance at federal level or from that of surrounding states. Develop and implement expanded public information plan, as needed <i>Capability element: Equipment and Systems; Planning</i> 	DHHS PIO	
PI2.3. Communication to regional responders on new response strategies	PI2.3.1 Review the Joint Information Center plan developed based on a recommendation from the Spring 2009 H1N1 Response After Action Report and Improvement Plan	Focus review on: <ul style="list-style-type: none"> Protocols for communicating public information releases to regional level PIOs with adequate lead time to ensure consistency of implementation. <i>Capability element: Planning</i> 	DHHS and HSEM PIOs	

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
CAPABILITY: MEDICAL SUPPLIES MANAGEMENT AND DISTRIBUTION				
MS1.1 Implementation of Population and Phase-based Vaccine Distribution	MS1.1.1 Routinely track and report progress against vaccine distribution goals so that policy shifts (such as phase changes) are data driven, expected and transparent to responders at all levels.	<ul style="list-style-type: none"> • Develop a web-based reporting system for use by NHIP registered vaccine providers. • Review in advance the data elements to be requested from data reporters to assure that it will result in information of a sufficient quality to enable performance measurement and post-event evaluation • Add incident-specific data elements to reporting system • Track and report track vaccine distribution progress and report out data to regional responders <p style="text-align: center;"><i>Capability element: Equipment and Systems</i></p>	DPHS; ICC Planning Section	October 2010 - May 2011; ongoing
MS1.2 NH Antiviral distribution plan activation and implementation	MS1.2.1 Establish network of partners for antiviral distribution	<ul style="list-style-type: none"> • Recruit partners for the AV distribution network that agree to not charge dispensing fees. • Explore possibilities for engaging state contracted agencies as AV distribution sites in the contract renewal process. <p style="text-align: center;"><i>Capability element: Planning</i></p>	DPHS and HSEM	Ongoing

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
	MS1.2.2 Ensure flexibility in revised plan	<ul style="list-style-type: none"> • Include plans for a scalable network to address non-shortage situations in which ability to pay is the only factor being addressed by plan activation. <i>Capability element: Planning</i> 	DPHS and HSEM	September 2010
MS2.1: Shifting Vaccine Distribution Strategy	MS2.1.1 Support region-level planning regarding vaccine distribution that expands beyond the SNS to region to POD concept.	<ul style="list-style-type: none"> • Encourage regional planners to devise region-specific plans to reach to reach target populations both through PODs and other channels, considering times of vaccine shortage and availability. <i>Capability element: Planning</i> 	DPHS and HSEM	Ongoing
MS2.2 Design of vaccine data collection system	MS2.2.1 Identify response information needs, and design reporting system to gather data to meet these needs.	<ul style="list-style-type: none"> • Develop a web-based reporting system for use by NHIP registered vaccine providers. • Review in advance the data elements to be requested from data reporters to assure that it will result in information of a sufficient quality to enable performance measurement and post-event evaluation • Ensure capability exists to add incident-specific data elements to reporting system <i>Capability element: Equipment and Systems</i> 	DPHS; ICC Planning Section	In process September 2010 - ongoing

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
	MS2.2.2: Include vaccine wasted and transferred fields on vaccine providers.	<ul style="list-style-type: none"> Include wasted and transferred fields along with vaccine dispensed fields on reporting forms for vaccine providers if a goal of the reporting system is to reconcile doses shipped versus doses dispensed, transferred, or wasted by providers. <p><i>Capability element: Equipment and Systems</i></p>	DPHS	September 2010
	MS2.2.3: Pre-define vaccine provider categories on the vaccine provider registration sheet.	<ul style="list-style-type: none"> Pre-define vaccine provider categories on the vaccine provider registration sheet and eliminate the "other" category if a goal of the system is to understand which vaccine provider types were most efficient at vaccinating the target population. <p><i>Capability element: Equipment and Systems</i></p>	DPHS	October 2010
	MS2.2.4: Ensure that adequate staff are assigned to developing the data management system.	<ul style="list-style-type: none"> Assign adequate staff to designing reporting systems. Capitalize on pre-event lead time to design and implement system. <p><i>Capability element: Personnel, Planning</i></p>		

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
Observation MS2.3. Vaccine Ordering and Reporting Procedure	MS2.3.1 Evaluate benefits and barriers to implementing a web-based system that addresses local providers' ability to utilize such a system.	<ul style="list-style-type: none"> Evaluate benefits and barriers to implementing a web-based system that addresses local providers' ability to utilize such a system. <i>Capability element: Equipment and Systems</i> 	DPHS	May 2011
	MS2.3.2 Clearly mark revision dates on forms.	<ul style="list-style-type: none"> Include a date in the name of ordering and reporting forms, to allow users to easily identify which is most recent. <i>Capability element: Equipment and Systems</i> 	DPHS	September 2010
	MS2.3.3 Cross train NHIP and DHHS staff	<ul style="list-style-type: none"> Cross train NHIP and DHHS staff identified in the COOP Plan on the use of the day to day vaccine management system Utilize lead time prior to arrival of vaccine to provide just-in-time training to staff <i>Capability element: Training</i> 	NHIP	November 2010

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
<p>Observation MS2.4 Adequacy of resources (other than vaccine) to support campaign</p>	<p>MS2.4.1 Provide just in time training materials with supplies such as syringes.</p>	<ul style="list-style-type: none"> Provide just in time training materials with supplies such as syringes. <i>Capability element: Equipment and Systems; Training</i> 	<p>DPHS</p>	<p>Ongoing</p>
<p>MS2.5: Management of unused, expired, and recalled vaccine</p>	<p>MS2.5.1: Ensure readiness to implement a federal program to manage expired and recalled vaccine.</p>	<p>Ensure that staff are assigned and trained and systems in place to implement program.</p>	<p>DPHS</p>	

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
CAPABILITY: MASS PROPHYLAXIS				
<p>MP1.1: Adequacy of existing plans, procedures, and partnerships for mass prophylaxis dispensing operations</p>	<p>MP1.1.1 Support region-level planning regarding vaccine dispensing that expands beyond the SNS to region to POD concept.</p>	<ul style="list-style-type: none"> • Provide support and technical assistance to regional planners to devise plans for mass prophylaxis through PODs and other channels that reflect region-specific infrastructure, capacity and provider relationships • Provide support and technical assistance to regional response partners in developing MOUs describing regional partner roles, relationships and commitments in public health emergency response <p><i>Capability element: Planning</i></p>	<p>DPHS-CPHD</p>	
<p>MP1.2: Understanding of capacity, systems and business practices of non-public health organizations, such as hospitals, medical practices and schools, to support public health mass prophylaxis goals</p>	<p>MP1.2.1 Increase dialogue as part of planning processes to improve mutual understanding of factors influencing the alignment of private and public health business practices to support public health goals during outbreaks and emergencies.</p>	<ul style="list-style-type: none"> • Review feedback from vaccine provider survey • Continue to work with hospital prep-reps and AHHR planning partners, including primary care providers and schools, on plan improvement • Develop improved mechanisms for advice and consent from ‘front-line’ providers on policies and procedures <p><i>Capability element: Planning</i></p>	<p>DPHS</p>	<p>October 2010</p>

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
MP2.1: Efficiency of Pre-registration	MP2.1.1: Build systems to support regional clinic preregistration capacity.	<ul style="list-style-type: none"> • Determine options, such as enhanced website applications, and resource requirements for improved capacity for regional clinic pre-registration • In the absence of such capacity uniformly across the state, respect local differences and variation in capacity by allowing for flexibility in approaches. <i>Capability element: Equipment and Systems</i> 	DPHS	January 2011
MP2.2: Implementation of Priority Group Phase Changes	MP2.2.1 Incorporate regional provider/responder perspectives in major policy decisions as possible and provide more in-depth rationale to regional responders for major policy decisions.	<ul style="list-style-type: none"> • Develop improved mechanisms for systematically receiving advice from ‘front-line’ practitioners on policies and procedures including: <ul style="list-style-type: none"> ○ Increased representation of practicing, community-based providers on advisory groups ○ Report out of data on mission progress to regional responders ○ Greater use of technology to obtain rapid feedback on specific issues <p><i>Capability element: Planning; Equipment and Systems</i></p>	DPHS	October 2010

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
MP2.3: Clinical Guidance	MP2.3.1 Increase access to clinical experts at DHHS to answer inquiries from responders during an event	<ul style="list-style-type: none"> Develop improved mechanisms for just-in-time training of DHHS clinical personnel (e.g. nurses) to address frequently asked, event specific questions and to triage important new questions to higher level clinical/medical personnel (e.g. State Epidemiologist, DPHS Medical Advisor). <i>Capability element: Training</i> 	DPHS	Ongoing
	MP2.3.2 When State policy and guidance differs from national guidance, provide clear rationale to responders in writing, allowing for their disseminating the information further if appropriate	<ul style="list-style-type: none"> Implement improved processes for information and communication of policy decisions. <i>Capability element: Planning; Equipment and Systems</i> 	DPHS	October 2010
MP3.1: Volunteer Registration	MP3.1.1 Review the rules and procedures promulgated from RSA 508:17a for possible simplification of the volunteer registration process.	<ul style="list-style-type: none"> Review and modify procedure for registering volunteers for longer duration and broader duties during a prolonged event Review and simplify the procedure for documenting proof of volunteer participation. <i>Capability element: Planning; Equipment and Systems</i> 	DHHS-ESU, ICC, DPHS	November 2010

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
<p>MP 3.2 Strategies to augment human resources available for response</p>	<p>MP3.2.1: Clearly communicate workforce competencies in advance to contracted agencies to better ensure pre-trained contractors are present at clinics.</p>	<ul style="list-style-type: none"> • Provide feedback to participating agencies from the H1N1 event • Involve participating agencies in plan improvement activities <p><i>Capability element: Planning; Exercises, Evaluations, and Corrective Actions</i></p>	<p>DPHS</p>	<p>November 2010</p>
	<p>MP3.2.2: Improve and expand upon training programs available for just-in-time training. to address the training needs of contracted clinical personnel.</p>	<ul style="list-style-type: none"> • Improve the Bureau of EMS online training program by incorporating slides with voice over, incorporating a user evaluation system, and increasing promotion of the program. • Explore the possibility of developing other online JIT programs using the Bureau of EMS strategy. • Allow local responders more flexibility in determining the amount of time necessary for on-site, in person just-in-time training. • Supplement online training with in-person training opportunities • Provide on-site, just-in-time clinical training assistance to supplement regional response 	<p>DPHS; HSEM, Bureau of EMS</p>	

Observation	Recommendation	Corrective Action Description	Responsible Party/Agency And Agency Point of Contact	Completion Date
		coordinators non-clinical backgrounds • Create competencies checklist for backup personnel <i>Capability element: Training</i>		
MP4.1. Consent Forms	MP4.1.1 Create a standard consent form during the pre-mass prophylaxis planning phase to the extent possible. When form, gather feedback from responder representatives prior to making forms final.	• Assign task to SME early in event. • Implement improved processes for gathering partner feedback on policy and procedure changes. <i>Capability element: Equipment and Systems</i>	DPHS-CDCS; NHIP	October 2010

Appendix B: Event Summary Table

Jul-09							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 26		Public Information Vaccine Distribution Antivirals Lab & Surveillance Clinical Guidance Government		1	2	3	4
MMWR Week 27	5	6	7	8 CDC issues guidance for state & local public health department to assist in planning for H1N1 vaccination campaign.	9 US HHS, DHS, ED, & White House host influenza preparedness summit for federal, state, local, & tribal officials.	10	11
MMWR Week 28	12	13 WHO SAGE releases recommendations on H1N1 vaccination campaign, including a suggested tiered approach & monitoring of vaccine safety.	14 Standardized letter for camps with public health recommendations finalized.	15 HAN- "CDC Reports of Oseltamivir Resistant Novel Influenza A (H1N1) Viruses/Review for NH Clinical Guidance".	16	17	18
MMWR Week 29	19	20	21	22 NIH announces start of a series of clinical trials to test pilot lots of 2 H1N1 vaccines.	23 Press Release- "DHHS Advises Residents to Prepare for Fall Flu Season".	24	25
MMWR Week 30	26	27	28 School Nurse Workshop held to provide updates on H1N1.	29 The national ACIP identifies 5 target groups for initial immunization: pregnant women, household contacts of babies under 6 months, healthcare & EMS workers, individuals 6 months to 24 years old, & individuals 25 to 64 years old with chronic medical conditions.	30	31 School Nurse Workshop held to provide updates on H1N1.	1
US: Overall influenza activity is decreasing. NH Flu Activity: Sporadic							

Aug-09							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 31	2	3	4	5	6	7	8 Clusters of ILI reported in 11 summer camps.
NH Flu Activity: Sporadic							
MMWR Week 32	9	10	11	12	13	14	15
NH Flu Activity: Sporadic							
MMWR Week 33	16	17 Press Release- "DPHS-DHHS Reports First H1N1-Related Death in New Hampshire".	18	19	20 HAN- "Guidance on H1N1 for Elementary & Secondary Schools". DPHS gives guidance to schools including identifying ill students & staff early on & sending them home & encouraging good hygiene. Statewide conference call conducted with DOE & schools.	21 Conference call on seasonal & H1N1 vaccine planning held with CHCs & Planned Parenthood representatives.	22
NH: School guidance & "Tool Kit" of resources for school nurses released & posted on DHHS's website.							
NH Flu Activity: No Activity							
MMWR Week 34	23	24 HAN- "Pre-registration as H1N1 Vaccine Provider in NH". "H1N1 Influenza Fact Sheet" Produced.	25	26	27 Statewide conference call conducted with local & regional public safety officials.	28 Conference call/meeting on seasonal & H1N1 vaccine planning with State & County corrections facilities representatives.	29
NH Flu Activity: Sporadic							

Sep-09							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 35	30	31	1	2 First of weekly conference calls with AHHR partners held for vaccination clinic planning.	3	4	5
	US: Current visits to doctors for ILI down from April, but are higher than what is expected for the time of year & have increased over the past 2 weeks. NH: Web-based reporting system for schools released. NH Flu Activity: No Activity						
MMWR Week 36	6	7	8	9	10	11	12
	NH: Draft of State H1N1 Vaccination Plan released. NH Flu Activity: Sporadic						
MMWR Week 37	13	14 "Influenza Vaccines Fact Sheet" produced.	15 FAQs produced on H1N1 Vaccine, Testing, Patient Care, Personal Protection & Masks, H1N1 & Parents, H1N1 & Pregnant Women, H1N1 & Infant Feeding, H1N1 & Schools, H1N1 & Child Care Centers, H1N1 & HIV/AIDS, & H1N1 Antiviral Use. FDA announces approval of 4 H1N1 vaccines.	16 HAN- "H1N1 Influenza Guidance Update". Vaccine expected 10/5/09. DPHS updates clinical guidance through HAN; key changes include antiviral recommendations, vaccine guidance, & algorithms for patient triage & testing, & exposed & ill healthcare workers.	17	18 Statewide conference call with clinicians to review clinical guidance & discuss vaccination strategies.	19
	NH: School web-based tool implemented to report on daily absenteeism among students & staff as well as school nurse visits for ILI. Two confirmed H1N1 clusters reported in schools. NH: NH DHHS website clinicians information page completed. NH: State H1N1 Vaccination Plan posted on DHHS website. NH Flu Activity: Regional						
MMWR Week 38	20	21 Surveillance system for monitoring hospitalizations for pneumonia & influenza weekly established.	22	23	24	25 HAN- "H1N1 Influenza Guidance Update".	26
	US: Visits to doctors for ILI higher than what is expected for time of year & have increased for 6 consecutive weeks. 26 states are reporting widespread influenza activity. NH: Emergency Services Unit began to deliver PPE from SNS to AHHRs, to be completed by 9/30/09. NH: Patient education & guidance documents for NH Med Surge Plan developed & in review. NH Flu Activity: Regional						

Oct-09

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 39	27	28	29	30 Stables able to place 1st order for H1N1 vaccine	1 Phase 1	2	3
NH: Emergency Services Unit delivered PPE to PHNs							
NH Flu Activity: Widespread							
MMWR Week 40	4	5 Media Availability, Photo Opportunity, & Press Release- "CDCS-State to Begin Receiving First Shipments of H1N1 Vaccine This Week, Initial Supply of Intranasal Doses Will Be Available for At-Risk Individuals". Revised vaccination plan posted on DHHS website. First dose of 2009 H1N1 vaccine administered outside of clinical trials.	6 Meeting with AHHR & hospital preparedness coordinators in partnership with NHHA to discuss hospital's role in regional medical surge & medical direction & control.	7	8 H1N1 Vaccine Info Sheet produced.	9 HAN- "H1N1 Influenza Guidance Update". 2-week radio advertising campaign begins. DPHS updates clinical guidance through HAN; key changes include newborn nursery infection control, narrowing of pediatric age range for treatment, vaccine timing chart, algorithms for management of persons with ILI & healthcare workers with/exposed to ILI	10
NH: 7,700 doses of intranasal vaccine expected this week.							
New flu testing algorithms finalized & implemented by PHL; began using new spreadsheet to report flu testing results.							
NH Flu Activity: Widespread							
MMWR Week 41	11	12	13	14	15	16	17
US: Widespread flu activity in 46 states.							
NH: Web-based surveillance tools for schools implemented. Laboratory testing is recommended only for hospitalized patients, health care workers, patients who may be part of a cluster or outbreak in consultation with DPHS, & selected outpatients through th							
NH Flu Activity: Widespread							
MMWR Week 42	18	19	20	21	22	23 President Obama signs Emergency Declaration for H1N1 flu. FDS issues an EUA for antiviral Peramivir IV to be held in SNS.	24
US: Visits to doctors for ILI increased steeply & were higher than what is seen at the peak of many regular flu seasons.							
NH: NH DHHS website enhance & updated clinical guidance & vaccine distribution information was posted.							
NH Flu Activity: Widespread							
MMWR Week 43	25	26	27 Media Availability & Press Release- "CDCS-DHHS Announces Activation of H1N1 Flu Public Inquiry Line".	28	29 First conference call with hospitals.	30 H1N1 Vaccine Distribution FAQ produced.	31
US: Flu-related hospitalizations & deaths continue to go up & are above what is expected for the time of year.							
NH Flu Activity: Widespread							

Nov-09						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 44	1	2 Conference call & webinar with school officials held.	3	4	5	6
International: 79.1% of influenza specimens reported to WHO were 2009 H1N1 viruses. NH: DHHS H1N1 information could be found at http://www.nh.gov/ . Peak number of 211 calls regarding H1N1. School absenteeism analysis tool developed. ILI reported from Sentinel Data, school absenteeism, & ARI from AHEDD data all peaked. NH Flu Activity: Widespread						
MMWR Week 45	8 MRC ad in 12 newspapers.	9 2-week radio advertising campaign begins.	10 HAN- "H1N1 Influenza Guidance Update". DPHS updates clinical guidance through HAN; key changes include H1N1 clinical presentation, reporting for critically ill pregnant women with H1N1, Peramivir, NH DHHS H1N1 Vaccination Plan, & table of aerosol generating procedures. Media Availability- "DHHS Launches New H1N1 Website".	11	12	13
US: National influenza activity decreased across all key indicators, but overall remained high for the time of year. NH Flu Activity: Widespread						
MMWR Week 46	15	16	17 Phase 2 Need identified for a Point of Contact at the Board of Pharmacy to support pharmaceutical issues arising as antivirals are pre-positioned.	18 HAN- "H1N1 Influenza Guidance Update". Media Availability & Press Release- "CDCS-DHHS Expands Priority Groups for H1N1 Vaccination".	19 Targeted Info Sheets/ Printed Handouts on H1N1 (General Public), H1N1 & Pregnant Women, & H1N1 & Healthcare Workers produced.	20
International: More than 93% of influenza specimens reported to WHO were 2009 H1N1 viruses. US: National influenza activity decreased across all key indicators, but overall remained high for the time of year. NH: Preliminary influenza- and pneumonia-related deaths above epidemic threshold. P&I Hospitalizations & Deaths both peaked. NH Flu Activity: Widespread						
MMWR Week 47	22	23 Media Availability- H1N1 Vaccine Clinics for Priority Groups.	24	25	26	27
US: Number of states reporting widespread flu decreased from 25 to 14. Visits to doctors for ILI & flu-associated hospitalizations declined; however, flu-associated deaths increased. NH Flu Activity: Widespread						

DECEMBER 2009

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 48	29	30	1	2 Talking Points on Clinics for High-Risk Groups released. Local Cable Access TV- 2009-2010 Flu Season Update.	3 Vaccination priority groups expanded to Phase III. Conference call with Governor, Directors Pope & Montero, Commissioner Barry, & schools to discuss Phase III implementation & school based-clinics.	4 Press Release & Media Availability- "DHHS Expands H1N1 Vaccination for Additional Priority Groups" announcing expansion to Phase 3 & school-based clinics beginning 12/14/09. Public Health Incident declared.	5
	US: Number of states reporting widespread flu activity decreased from 32 to 25 & visits to doctors for ILI & flu-related hospitalizations/deaths declined but remain high for the time of year. NH: 128,266 doses of the H1N1 vaccine administered & reported as of 12/5/2009. NH Flu Activity: Widespread						
	Phase 3						
MMWR Week 49	6	7 Media Update Article- Vaccinate Before the Holidays for H1N1 Flu. Radio Call-in Show on WZID with Dr. Laurie Forlano.	8 HAN- "H1N1 Influenza Guidance Update". DPHS updates clinical guidance through HAN; key changes include testing criteria & state cache of antivirals.	9 Radio Call-in Show on WOKQ with Dr. Rob Gougelet.	10 DPHS began enrolling pharmacies not represented by Hannaford to receive antivirals.	11 Media Availability- H1N1 Update in New Hampshire. AHRs request immediate, on-site support for preregistration of clinics	12 MMRS deployed to assist with clinic in Lebanon. Radio Call-in Show on WFEA with Dr. Laurie Forlano.
	International: 90.8% of influenza specimens reported to WHO were 2009 H1N1 viruses. US: Flu activity continue to decline. The number of states reporting widespread flu activity decreased from 14 to 11. NH: Preliminary influenza- & pneumonia-related deaths above epidemic threshold. NH Flu Activity: Widespread						
	Phase 4						
MMWR Week 50	13 Six-week Sunday Newspaper Advertising Campaign begins with a new ad each week.	14	15 Capital Area PHN requested staff to assist with preregistration. Sanofi Pasteur issued a voluntary, non-safety related recall of prefilled syringes of H1N1 vaccine.	16	17 HAN- "H1N1 Influenza Guidance Update". Press Release & Media Availability- "DHHS Opens H1N1 Vaccine Supply to All Granite Staters 6 Months & Older". Four-week radio campaign begins.	18 Radio Call-in Show on WKNE with Dr. Rob Gougelet. Press Release- Healthy Tips for Winter Holidays.	19 MMRS provided 4 individuals to staff Capital Region clinic.
	US: Number of states reporting widespread flu activity decreased from 11 to 7 & visits to doctors for ILI & flu-related hospitalizations/deaths all declined. NH: 2/15 hospitals reported an increased demand for patient care services in their HAVBED data. NH Flu Activity: Regional						
	Phase 4						
MMWR Week 51	20 MMRS provided 4 individuals to staff Capital Region clinic.	21	22 CDC announces voluntary non-safety related recall of LAIV.	23 Media Availability- H1N1 Update/Voluntary Recall of H1N1 Nasal Spray Vaccine HAN announcing voluntary, limited non-safety related recall.	24	25	26
	NH: Public & school-based clinics conducted statewide. NH Flu Activity: Sporadic						
	Phase 4						
MMWR Week 52	27	28	29	30	31 Media Availability- NH H1N1 Response Efforts.	1	2
	US: Overall flu activity decreased slightly, 1 state continues to report widespread influenza activity & 12 state continue to report regional influenza activity. NH: Public clinics, school-based clinics, & retail pharmacy clinics conducted statewide. NH: Preliminary influenza- & pneumonia-related deaths above epidemic threshold. NH Flu Activity: Regional						
	Phase 4						

Jan-10							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 1	3	4	5	6	7	8 Media Update Article- "Vaccinate Now Against H1N1 Flu".	9
	US: Overall flu activity decreased. NH Flu Activity: Local						
MMWR Week 2	10	11 Press Release & Media Availability- DHHS Recognized National Influenza Immunization Week. 4-week TV buy- Dr. Lynch commercial.	12	13	14	15	16
	National Influenza Vaccination Week International: 64.4% of influenza specimens reported to WHO were 2009 H1N1 viruses. US: Flu illness indicators show a decrease in activity. NH: Preliminary influenza- and pneumonia-related deaths above epidemic threshold. NH Flu Activity: Sporadic						
MMWR Week 3	17	18	19	20	21	22	23
	US: Most key flu indicators remained about the same as the previous week. No states reported widespread influenza activity & only 5 states reported regional activity. NH: Preliminary influenza- and pneumonia-related deaths above epidemic threshold. NH Flu Activity: Sporadic						
MMWR Week 4	24	25	26	27	28	29	30
	NH Flu Activity: Sporadic						

Feb-10							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 5	31	1 Press Release, Media Availability, & Web-video Update- "New Hampshire Sets H1N1 Vaccination Goal of 300K by Valentine's Day, Announces Widespread Vaccine Availability Through Pharmacies & Healthcare Providers".	2	3	4	5	6
	NH Flu Activity: No Activity						
MMWR Week 6	7	8	9	10	11	12	13
	NH Flu Activity: No Activity						
MMWR Week 7	14	15	16	17	18 Press Release & Media Availability- "New Hampshire Meets H1N1 Vaccination Goal of 300K By Valentine's Day".	19	20
	NH Flu Activity: No Activity						
MMWR Week 8	21	22 Web-video Update- "H1N1 Update, NH Meets H1N1 Vaccination Goal of 300K By Valentine's Day".	23	24	25	26	27
	NH Flu Activity: Sporadic						

Mar-10

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MMWR Week 9	28	1	2	3	4	5	6
NH Flu Activity: No Activity							
MMWR Week 10	7	8	9	10 HAN with "H1N1 Update". DPHS recommends considering influenza as a differential diagnosis.	11	12	13
NH Flu Activity: No Activity							
MMWR Week 11	14	15	16	17	18	19	20
NH Flu Activity: No Activity							
MMWR Week 12	21	22	23	24	25	26	27
NH Flu Activity: No Activity							
MMWR Week 13	28	29	30	31			
NH Flu Activity: No Activity							

Appendix C: Acronyms

AAC	After Action Conference
AAR	After Action Report
ACIP	Advisory Committee on Immunization Practices
AHEDD	Automated Hospital Emergency Department Data
AHHR	All Health Hazards Regions
ARI	Acute Respiratory Infection
ASPR	Assistant Secretary for Preparedness and Response
AV	Antiviral
BEM	NH Bureau of Emergency Management
CDC	Centers for Disease Control and Prevention
CEO	Chief Executive Officer
CERC	Crisis and Emergency Risk Communication
CHC	Community Health Center
CHI	Community Health Institute
COOP	Continuity of Operations
CRA	Countermeasure Response Administration
CRI	Cities Readiness Initiative
DHHS	New Hampshire Department of Health and Human Services
DHS	United States Department of Homeland Security
DPHS	New Hampshire Division of Public Health Services
DPHSICC	New Hampshire Division of Public Health Services Incident Command Center
DOE	New Hampshire Department of Education
DoIT	New Hampshire Department of Information Technology
DOS	New Hampshire Department of Safety
ED	Emergency Department
ED	United States Department of Education
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
EOP	Emergency Operations Plans
ESF	Emergency Support Function
ESU	Emergency Services Unit
ESAR-VHP	New Hampshire Emergency System for Advance Registration of Volunteer Healthcare Professionals
EUA	Emergency Use Authorization
HAN	Health Alert Network
HAvBED	National Hospital Available Beds for Emergencies and Disasters
HCA	New Hampshire Home Care Association
HHS	United States Department of Health and Human Services

HSEEP	Homeland Security Exercise and Evaluation Program
HSEM	Homeland Security and Emergency Management
ICC	Incident Command Center
ICS	Incident Command System
IDISS	New Hampshire Infectious Disease Investigation and Surveillance Sections
ILI	Influenza-Like Illness
ILI Net	US Outpatient ILI Surveillance Network
IOF	Initial Operating Facility
IP	Improvement Plan
JFO	Joint Field Offices
JIC	Joint Information Center
JIT	Just-in-Time
JOC	Joint Operations Center
LAIV	Live attenuated intranasal vaccine
LIMS	Laboratory Information Management System
MACC	Multi-Agency Coordination Center
MACE	Multi-Agency Coordination Entity
MMRS	Metropolitan Medical Response System
MMWR	Morbidity and Mortality Weekly Report
MRC	Medical Reserve Corps
MOU	Memorandum of Understanding
MS	Microsoft
NGO	Non-Governmental Organization
NHHA	New Hampshire Hospital Association
NHIP	New Hampshire Immunization Program
NH NG	New Hampshire National Guard
NHSP	New Hampshire Division of State Police
NIH	National Institutes of Health
NIMS	National Incident Management System
NOC	National Operating Center
NRCC	National Response Coordination Center
OTC	Over the Counter
PCP	Primary Care Physician
PHEP	Public Health Emergency Preparedness
PHEPRP	Public Health Emergency Response Plan
PHL	New Hampshire Public Health Lab
PHN	Public Health Network
PIO	Public Information Officer
POD	Points of Dispensing

PPE	Personal Protective Equipment
RCC	Regional Coordinating Committee
RRCC	Regional Response Coordination Center
RSA	Revised Statutes Annotated
SAGE	WHO Strategic Advisory Group of Experts on Immunizations
SEOC	State Emergency Operations Center
SLE	Shelf Life Extension
SNS	Strategic National Stockpile
SPSS	Statistical Product and Service Solutions
STEMS	Syndromic Tracking Encounter Management System
TEMSIS	Trauma and Emergency Medical Services Information System
UCS	Unified Command System
UNH	University of New Hampshire
WHO	World Health Organization