Maine Center for Disease Control and Prevention

An Office of the Department of Health and Human Services

Maine CDC 2009 H1N1 Pandemic Influenza Response

AFTER ACTION REPORT

February 2011

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EXECUTIVE SUMMARY

In late April 2009, a novel strain of Influenza A (H1N1), also known as 2009 H1N1 Influenza, emerged and was detected in the southern United States (US) and Mexico. Public health, emergency management, health care, and many partner agencies and organizations across the country quickly stood up to address this threat. The overall goals were to limit the burden of disease and to minimize social disruption.

Between April 2009 and February 2010, there were an estimated 59 million cases of H1N1 flu in the US. These cases resulted in approximately 265,000 hospitalizations and 12,000 deaths nationwide. About one-third of cases, one-third of hospitalizations, and about 10% of deaths nationwide occurred in children younger than 18 (compared with less than 1% of deaths during an average seasonal influenza year). About 90% of the deaths due to H1N1 were among those younger than 65, while about 90% of the deaths due to seasonal flu are among those 65 and older.

This novel strain of H1N1 influenza was first detected in Maine on April 29th in York and Kennebec Counties, resulting in the closure of an elementary school and two day care facilities. It was the week after school vacation, when a number of Mainers had traveled, including to the southern US and Mexico. This strain of H1N1 also spread extremely rapidly across the globe, likely because of its high transmissibility as well as widespread global travel, including during incubation periods.

Overall the Maine response to the H1N1 pandemic was extremely successful; through the collaboration of state, local, private, and public partnerships, as well as thousands of volunteers from across the state, Maine saw high vaccination rates, one of the mildest disease surges in the country, and no reported deaths among children.

Major Strengths

The major strengths identified during this incident are as follows:

- A strong vaccine campaign that resulted in Maine's vaccination rates being among the highest in the nation in all population groups.
- Demonstration of a strong partnership with health care providers, schools, and other public health entities, which contributed to the successful vaccination campaign.
- Vaccine was distributed to agencies serving vulnerable, high risk populations including pregnant women, tribal health centers, nursing homes, and uninsured/underinsured.
- An antiviral distribution effort that fundamentally proved that Maine CDC has partnered with the *right people for the job*; that is, Maine DOT, NNEPC, Hannaford, Independent

Pharmacies, and FQHCs are the right people to accomplish any medical supplies management and distribution effort geared towards vulnerable (i.e. uninsured and underinsured) populations.

- A successful collaboration between Federally Qualified Health Centers (FQHCs), Maine CDC, and Maine Attorney General's Office to ensure that sites could dispense antivirals with limited risk of liability; this effort went very smoothly and produced policy that will ensure the connection between the Maine CDC and FQHCs into the future.

- Monthly declarations of an emergency by the Governor was effective in allowing mobilizing of resources and providing immunity from liability for vaccinators and schools hosting clinics.

- Information line staff volunteers were pre-trained in phone response techniques and for handling difficult calls.

- Information line equipment was pre-tested, labeled and drilled for activation.

Primary Areas for Improvement

Throughout the incident, several opportunities for improvement in Maine CDC's ability to respond to the incident were identified. The primary areas for improvement, including recommendations, are as follows:

- The establishment of a nurse triage line was time consuming; there was not enough staff to keep it functioning for an extended period of time; the time it took to contract help was lengthy; the hotline was not available until the end of the disease surge.
    - Currently we have a contract in place with 211 for emergency coverage; this contract should be maintained.

- There was confusion at the vaccine distribution sites regarding the redistribution of the vaccine therefore causing a delay in vaccine distribution to the community.
    - Currently developing a plan for redistribution of vaccine from distribution sites.

- Staffing of the vaccine clinics in general was problematic. Maine Responds was not yet fully operational initially, therefore delaying the credentialing and participation at vaccination clinics; clinic volunteers were in short supply.
    - Maine Responds is now fully operational. Efforts are underway to proactively identify volunteers.

- Communications were challenging and at times confusing to recipients as priorities changed;

Recipients requested more unified, consistent, and concise and directive communications.
  - Refinements to the communications plan are underway.

- Hospitals had either impractical or outdated alternative care site plans.
  - Hospitals are currently updating the alternative care sites plan in collaboration with their community partners.

- The ICS was not fully implemented to maximize effectiveness.
  - Plans are under way to train all senior staff on ICS and to establish a Maine CDC EOC.

- The roles and responsibilities of components of the newly formed public health infrastructure were not clear.
  - The roles and responsibilities of the DLs and others are currently being clarified.

- ImmPact2 was not utilized at the immunizations clinics due to lack of user training and the need to complete system modifications.
  - Modifications have been made to ImmPact2 and providers are being trained.

- The vaccination clinics need to have standardized documentation.
  - Standardization documentation has been developed and is now available.

- There was a lack of capability to translate educations materials into many languages.
  - Staff will examine options and develop a plan for timely translation of documents into non-English languages

- Non health care based vaccine clinics lacked a method for sharps disposal.
  - Staff will explore options and develop a plan for sharps disposal at non health care facilities that host vaccination clinics.

- Have not clearly identified who in the critical infrastructure should be a priority for receiving vaccine.
  - A small group will be convened to consider and determine who in the critical infrastructure will be a priority for receiving vaccine.

- The tasks of the Recovery Period were not fully planned out.
  - The Recovery Period is being integrated in to the Pandemic Influenza Plan revision

- Although the Northern New England Poison Center (NNEPC) tracks Strategic National

Stockpile usage throughout the State, Maine CDC was forced at quickly devise an in-house strategy for tracking the State Cache antivirals. As such, although a protocol for reporting usage and a database for tracking were developed in a timely fashion; such systems only provide a week-old snapshot of antiviral usage in those who actually faxed in usage reports.

  - Purchase and/or develop an inventory tracking system with real-time reporting capacity.

- Although a large amount of antivirals were distributed throughout the entire State, uptake of said antivirals was less than expected; that is, Maine CDC and its partners could have done a better job of making the public and physicians aware of the presence of the antivirals and of the protocol for their use.
  - Devise a better method of communication with medical community, to include HAN.
  - Devise a method of ensuring that the most current information is posted online.

- The identification of Points of Contact (POCs) at each of the receiving hospitals and facilities was insufficient and resulted in inadequate knowledge regarding the redistribution effort. Furthermore, POCs identified did not posses the SNS training necessary to assure proper inventory management.
  - Primary and secondary POCs have been identified for SNS at all hospitals in Maine.
  - Work with the Regional Resource Centers (RRCs) and NNEPC to educate, train, and exercise SNS POCs at all hospitals in Maine.

Overall the Maine response to the H1N1 pandemic was extremely successful; through the collaboration of state, local, private, and public partnerships, as well as thousands of volunteers from across the state, Maine saw high vaccination rates, one of the mildest disease surges in the country, and no reported deaths among children.

SECTION 1: INCIDENT OVERVIEW

Incident Details

Incident Name
Maine CDC 2009 H1N1 Pandemic Influenza Response

Incident Start Date
April, 2009

Incident End Date
Ongoing

Duration
Ongoing

Location
Maine

Mission
Response

Capabilities
Public Health Laboratory Testing

Epidemiological Surveillance and Investigation

Mass Prophylaxis

Medical Supplies Management and Distribution

Intelligence/Information Gathering and Dissemination

Emergency Public Information and Warning

Lead Agency
Maine Center for Disease Control and Prevention (Maine CDC)

Type of Incident
Pandemic Influenza

Response Organizations

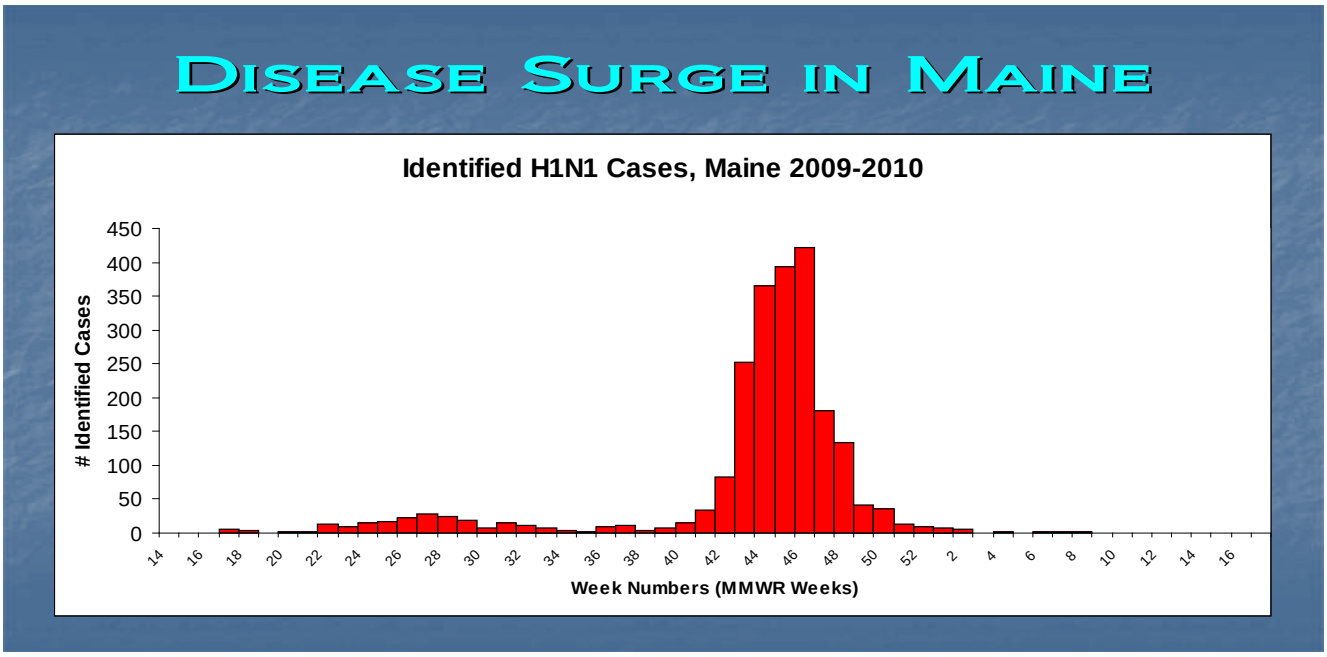
Maine Center for Disease Control and Prevention (Maine CDC)
United States Centers for Disease Control and Prevention (U.S. CDC)
Maine Department of Transportation (Maine DOT)
Maine Primary Care Association (MPCA)
Regional Resource Centers (Southern Maine, Central Maine, and Northeastern Maine)

Northern New England Poison Center (NNEPC)
Independent Pharmacies
Hannaford Pharmacies
Maine Attorney General's Office

SECTION 2: INCIDENT SUMMARY

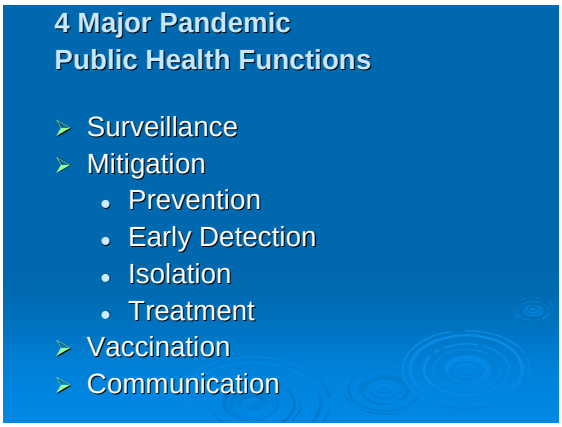
Timeline of Events

Eventually, thousands of Maine people became ill with symptoms of H1N1; 40 summer residential camps experienced outbreaks, some of them reporting repeated outbreaks when new camp sessions started; about 200 schools experienced outbreaks with high absentee rates (>15%) during the fall of 2009; almost 250 Mainers were hospitalized with the infection, the majority of them being children and young adults; and 21 adults died from the infection (August through January, though most were in November and December). Although the impact of this primarily pediatric and young adult pandemic was severe for a number of people, Maine was extremely fortunate to have experienced one of the mildest disease surges in the country. Maine was one of few states that did not report any H1N1-related deaths among children. The disease surge in Maine started in late October and lasted about 10 weeks to the end of December, with a peak during the days around Thanksgiving (see diagram).



This slide indicates that the peak weeks in Maine for identified (tested) cases of H1N1 were MMWR weeks 42 – 52, which were the last 10 weeks of the calendar year, from October 26 until December 31. The peak appeared to be week 47, which was Thanksgiving week. It should be noted that the vast majority of people with H1N1 did not require testing and therefore were not counted as part of this graph. However, other H1N1 data such as hospitalizations and office visits also indicate the peak was in this timeframe.

Early on, the U.S. CDC identified four pillars for public health to organize around: disease surveillance; mitigation; vaccination, and communication. Starting in late April, Maine CDC used a modified incident command structure organized around these four major topic areas. Although all four were important and are addressed in this report, the vaccine effort was the major focus of after action feedback, likely in part because that was the activity most stakeholders had been directly engaged in and/or were affected by.



During the summer of 2009, U.S. Centers for Disease Control and Prevention (US CDC) released its priority populations for vaccine along with information about the vaccine and when it would be available. Representatives from the Department of Education and Maine Center for Disease Control and Prevention within the Maine Department of Health and Human Services (Maine CDC) had already been planning to pilot school-based vaccine clinics for seasonal flu prior to the emergence of this pandemic. Because children were among those at high risk for complications from this novel strain of H1N1, the pilot was quickly expanded to include all willing K-12 schools and to focus on vaccinating children against both H1N1 and seasonal flu. Virtually all schools in Maine offered free vaccine to all children, thanks to the thousands of school administrators and staff, volunteer health care providers, parents, and other volunteers.

By fall 2009, Maine was experiencing its disease surge when national delays in vaccine production meant little or no vaccine was available. Initial H1N1 vaccine shipments arrived in early October in the nasal spray form, which could not be administered to many people in the highly publicized prioritized groups, which were: pregnant women, all people ages six months through 24 years, people ages 25 through 64 with chronic health conditions, caregivers and close contacts of infants <6 months old, and health care workers, including emergency medical services personnel.

Priorities were realigned based on vaccine supply and vaccine formulation available, which were often unpredictable and significantly less than the estimates previously provided by US CDC. This was also complicated by the fact that there were nine formulations available, and almost all had restrictions on to whom they could be administered. Often these restrictions did not match

the populations' most needing vaccine.

The first goal of the vaccine effort was to protect those at highest risk of severe disease, which was defined by US CDC as being pregnant women, very young children (6 mos-4 years old), and older children and young adults (<25 years old) with chronic conditions. However, since almost the entire supply of vaccine available the first few weeks (late September – October) was nasal spray, which was only indicated for otherwise healthy non-pregnant people ages 2 – 49, the vaccine available did not fully match the groups at highest risk for severe disease. As a result, in order to provide optimal protection for those at highest risk, the initial doses of vaccine (all nasal spray) were distributed to hospitals for health care workers caring for highest risk patients – those working on maternity or pediatric wards, intensive care units, and emergency departments.

Vaccine (again, all nasal spray) was then distributed to pediatric health care providers for their preschool age eligible children as well as to schools. As injectible vaccine became available that was appropriate for others (late October and early November), it was distributed preferentially to health care providers (including hospitals) caring for pregnant women as well as schools and pediatric health care providers for all children 6 months and older.

Vaccine for maternity wards and obstetrical providers was also designated for household members and caregivers of newborns and infants <6 months old. A number of vaccine clinics opened up in day care settings or in public settings for preschool aged children. In some cases school clinics also allowed preschool aged children to be vaccinated. No matter what the setting and defined target audience, if injectible vaccine was available, pregnant women were encouraged to be vaccinated.

As more formulations of the vaccine became available and as more children and pregnant women were vaccinated, vaccine supplies were then distributed to others in US CDC's high priority groups (mainly adults with underlying conditions and other health care workers). Specialists caring for those with high risk conditions were some of the first sites for vaccine distribution for those with chronic conditions, starting in early-mid November. This included pulmonologists, oncology practices, renal dialysis centers, cardiologists, and neurologists. Increasingly, public clinics became more available.

Priority Groups During Limited Supply Maine October – December 2009

	Oct. 29	Nov. 5	Nov. 12	Dec. 4	Dec. 11	Dec. 17
Pregnant Women	X	X	X	X	X	X
6mos-18yr	X	X	X	X	X	X
HCW (inpatient)	X	X	X	X	X	x
Highest Risk Adults		X	X	X	X	X
18-64yr Underlying Conditions			X	X	X	X
Caregivers of <6mos			X	X	X	X
18-25yr				X	X	X
HCW (any patient contact)					X	X
All						X

Summarized from health alerts on maineflu.gov

The second goal of the vaccine effort was to offer and promote vaccine to all Mainers. In mid-December, there was sufficient vaccine available to offer it to anyone who wanted it in most areas of the state, especially through public clinics and at private provider offices. By this time it also became widely distributed through worksites that had capacity to administer it or host a clinic.

Besides the school located vaccine clinics, there were many examples of very successful vaccine efforts. A few are named here. Maine's large employers, such as Bath Iron Works and L.L. Bean's, offered the vaccine, at first to those employees at high risk, and as supplies became more plentiful, to their entire workforce and their family members. BIW and L.L. Bean each vaccinated 5,000 – 10,000 Mainers. Visiting nurses associations in some areas of the state provided ongoing clinics in numerous settings, especially for those populations that are hard to reach, such as people who are disabled or living in low income housing projects. Some of these agencies vaccinated 20,000 people in just a few short weeks. Several health centers (one example being the Penobscot Community Health Center) and hospitals (one example being Franklin Memorial Hospital) advertised and opened their doors for anyone to receive vaccine during normal business hours. Bangor's immunization coalition and Portland's Maine Medical Center each held large one-day vaccine clinics, with 3,000 – 10,000 receiving vaccine at each of these clinics each day. The two municipal health departments (Bangor and Portland) worked with many partners to offer vaccine and focused on making sure very vulnerable populations such as people who are homeless, immigrants, and disabled received vaccine. Many clinics across the state included volunteer staff, many of whom were local EMS providers, retired nurses and physicians, and non-health care providers.

By late December and into early January, the vaccine supplies were finally sufficient in most areas of the state to meet the demand. By this time the disease surge had subsided and demand also immediately declined. Outreach and promotion became more challenging. But, again, Maine's health community and many partners rose to the challenge. Vaccine was increasingly offered where people congregate, such as pharmacies, basketball tournaments (February school vacation high school tournaments), hockey games (Portland Pirate games), churches, shopping malls, and busy diners. Immediately before and after Christmas, vaccine was distributed to pharmacies, including those located in grocery stores, and vaccine clinics that could located in malls in order to capture holiday shoppers.

Incident Objectives, Capabilities, and Activities

The capabilities listed below form the foundation for the organization of all objectives and observations in this incident. Additionally, each capability is linked to several corresponding activities and tasks to provide additional detail.

SECTION 3: ANALYSIS OF CAPABILITIES

This section of the report reviews the performance of identified capabilities, activities, and tasks. In this section, observations are organized by capability and associated activities. The capabilities linked to the objectives of Maine CDC 2009 H1N1 Pandemic Influenza Response are listed below, followed by corresponding activities. Each activity is followed by related observations, which include references, analysis, and recommendations.

Capability 1: Public Health Laboratory Testing

Capability Summary: The Public Health Laboratory Testing capability is the ongoing surveillance, rapid detection, confirmatory testing, data reporting, investigative support, and laboratory networking to address potential exposure, or known exposure, to all-hazards which include chemical, radiochemical, and biological agents in all matrices including clinical specimens, food and environmental samples, (e.g., water, air, soil). 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.

Areas for Improvement:

1. Maine CDC's Health and Environmental Testing Laboratory (HETL) experienced a record surge in terms of test requests for influenza PCR concomitant with the 2009-2010 H1N1 Influenza pandemic
    a. Increase laboratory testing capacity for RT-PCR based influenza testing
        i. Acquisition of Roche MagnaPure LC nucleic acid extraction platform and extraction kits. Acquisition of a second and third ABI 750DX Fast Thermocycler instrument, November, 2010

2. Experienced record surge in influenza tests due to H1N1 resulting in need to increase number of laboratory workers
    a. Increase number of laboratory workers to test influenza specimens
        i. Implemented COOP and reassigned staff to assist in phone calls and testing, November 2010

Capability 2: Epidemiological Surveillance and Investigation

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

Areas for Improvement:

1. Need to increase the number of hospitals in Maine that are participating in the EARS system.
    a. Increase number of Maine hospitals reporting via EARS,
        i. Assign staff that are dedicated to advancing the MOU and Data Use Agreements in non-reporting hospitals

2. Development of surveillance data for situation reports
    a. Ensure operations sections understand how epidemiological data is collected, analyzed, and disseminated
        i. Disseminate influenza surveillance reports to public health partners

3. Epidemiological Dashboard
    a. Increase knowledge and understanding of public health informatics and it's role in epidemiological data among CDC staff
        i. Conduct more training with Senior Management Team on Public Health Informatics and how influenza surveillance can be presented

4. Promote reporting of persons with lab-confirmed H1N1, persons hospitalized, persons diagnosed with H1N1 who died, and clusters or outbreaks of influenza-like illness
    a. Broadly disseminate surveillance reports to public health officials
        i. Utilize the Maine Health Alert Network to disseminate reports to clinicians. Conduct statewide conference calls with key partners

5. Lab Requisition form
    a. Revise laboratory requisition form and specimen intake process
        i. Work with Health and Environmental Testing Laboratory on streamlining form to collect patient demographics and risk factors required for specimens

6. Partnerships with non-state labs to coordinate influenza testing
    a. Maine CDC needs to work with two in-state reference laboratories to coordinate influenza testing

i. Develop MOUs or other formal support agreements

7. Educate community stakeholders regarding the two purposes of public health surveillance: clinical management and populations-based surveillance of disease spread
    a. Develop and distribute information gathering and reporting programs
        i. Staff will prepare and distribute materials to educate community stakeholders to ensure understanding of the purpose of public surveillance.

Capability 3: Mass Prophylaxis

Capability Summary: Mass Prophylaxis is the capability to protect the health of the population through administration of critical interventions (e.g., antibiotics, vaccinations, antivirals) to prevent the development of disease among those who are exposed or 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.

Areas for Improvement:

1. Infrastructure improvement for cold chain management in school settings
    a. Need to increase the capacity for schools to store influenza vaccine
        i. Maine CDC purchased cold chain kits consisting of a 40qt cooler, panel mount thermometer, and large and small ice packs with pan flu supplemental funds. Vaccine refrigerators were also purchased

2. Recruit contract vaccinators to work in school clinics
    a. Contract with third party healthcare organizations to administer influenza vaccine in school clinics
        i. Develop contracts prior to influenza season for services

3. Enhance statewide immunization information system
    a. Maine's Impact2 system was not configured to track vaccine through the life cycle of ordering, distribution, and administration
        i. Work with Impact2 vendor to build additional functionality

4. Standardizing forms and work processes
    a. Streamline consent and screening forms and make available via school clinic toolkit
        i. Work with Maine Immunization Program and Public Health Nursing to identify critical information and remove non-critical information

5. School clinic planning
    a. School nurses are not familiar with planning vaccine clinics
        i. Assign an existing Public Health Nurse as a Public Health School Clinic Resource Nurse to help school nurses plan and implement influenza clinics

6. Recruit school nurses as vaccine administrators
    a. Use school nurses as vaccine administrators
        i. Provide training for school nurses to administer influenza vaccine

7. Because of their vulnerability to influenza, vaccination of children will continue to be a priority, therefore planning for and supporting streamlined school based vaccination clinics is a priority.
    a. Develop plans, procedures, and protocols for mass prophylaxis dispensing operations
        i. Staff will continue to focus on Maine schools to provide support and assist with streamlining their plans to implement school based vaccination clinics

8. It is important to proactively determine who in the critical infrastructure is a priority to receive vaccine; inherent in this process is the need to define the critical infrastructure.
    a. Develop processes to ensure that first responders, public health responses, critical infrastructure personnel, and their families receive prophylaxis prior to POD opening
        i. Staff, in collaboration with external partners, will proactively identify the critical infrastructure and develop a protocol regarding who in the critical infrastructure is a priority to receive vaccine.

9. Mass vaccination clinics located in non health care facilities need a plan in place for the disposal of large amounts of medical waste e.g. sharps containers.
    a. Provide logistics support for mass prophylaxis
    b. Dispose of waste materials generated by mass prophylaxis operations
        i. Staff will work with non-healthcare facilities and medical waste management entities to develop a plan that is safe and effective to ensure the proper disposal of sharps.

10. Develop a process that expedites contracting and the hiring process during an emergency
    a. Implement emergency credentialing and privileging procedures.
        i. Staff will work with the proper government officials to create a streamlined process that can be initiated in an emergency situation that will expedite contracting and hiring. Emergency contract arrangements should be proactively established and maintained if possible.

11. Planners should proactively determine how best to distribute federal funds to finance mass vaccine clinics.
    a. Establish procedures for billing and reimbursement of the medication/equipment/supplies that are dispensed
        i. Staff will proactively examine and determine the preferred method for funding vaccine clinics and establish policies and protocols to that end.

12. Nurses participating in the nurse triage hotline lacked the ability to dispense antiviral prescriptions under protocol.
    a. Identify and address legal issues regarding authorizations for mass prophylaxis practitioners
        i. Staff will initiate discussions regarding the suggested expanded scope of practice for nurses participating in a call center during a disaster situation. Legal advice will be sought. Issues include: Should the scope be expanded in a crisis or not? If so, would that happen with a Governor's declaration? Or should there be legislation introduced?

Capability 4: Medical Supplies Management and Distribution

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

Areas for Improvement:

1. Not all of Maine's designated warehouses for SNS materials were notified of SNS deployment.
    a. Notify all Receipt, Staging, and Storage sites in preparation for possible SNS deployment.
        i. Follow SNS Communication Plan, June, 2010

2. Review the SNS plan and RSS roles.
    a. Develop an RSS work group that will meet two times a year to review the SNS plan and RSS roles
        i. Develop an RSS work group that will meet two times a year to review the SNS plan and RSS roles, June, 2010

3. Maine CDC's lack of understanding in warehouse operations was evident regarding the bill of lading process.
    a. Trust in the capability of the warehouse to develop the pick lists and bills of lading.
        i. Exercise the capability of the warehouse to develop bills of lading and pick lists, June, 2010.

4. The SNS security plan was not followed.
    a. Utilize a badge system
        i. Collaborate with Portland Public Health (PPH) and other partners to develop and test a badge system, October, 2010. Ongoing with ESAR-VHP
    b. Park all vehicles behind the building (out of public view).
        i. Incorporate RSS parking plan into SNS security plan. September, 2010

5. Activate warehouse operations for receipt of medical asset
    a. Consider moving assets to Maine DOT warehouse space to facilitate more efficient use of resources and time
        i. Keep updated on availability of DOT storage space
        ii. Move asset over when available
        iii. This measure was closed due to Maine DOT needing the proposed space for building a sand blasting chamber. Other space was acquired for this capability.

6. As soon as the necessary information was provided to the Maine Army National Guard (MEANG), they successfully adapted the SNS distribution plan to incorporate distribution to the regional distribution sites.
    a. Account for hospital distribution in the SNS distribution plan.
        i. Develop a protocol for hospital distribution in the Maine SNS distribution plan., Ongoing
    b. Define individual SNS POCs from all 42 hospitals in Maine.
        i. Working in collaboration with the RRCs, define SNS POCs, Ongoing

7. The roles of Maine CDC and the warehouse were unclear.
    c. Review the SNS plan and RSS roles.
        i. Develop an RSS work group that will meet two times a year to review the SNS plan and RSS roles. RSS Work group has met once and will be ongoing

8. The protocol for breaking the seal on the SNS asset was unclear.
    d. Define a protocol for the breaking of the seal on the SNS asset.
        i. Develop a protocol for breaking the seal on the SNS asset and Inco prate into the Maine SNS Plan, Ongoing
    e. Plan for the possibility of a change in the ETA and have staff prepared to respond to those changes.
        i. Follow the RSS activation process, Ongoing
        ii. Incorporate a back-up strategy for alternate arrival times, Ongoing

9. The SNS security plan was not followed.
    f. Follow the SNS security plan.

i. Secure all entrances and exits to the warehouse with security staff.
ii. Exercise the SNS security plan, Ongoing

g. Utilize a badge system.
i. Collaborate with PPH and other partners to develop and test a badge system, Ongoing with ESAR-VHP

10. Multiple issues were encountered in developing the pick lists, resulting in confusion and time delay the day of the event. Further, it was unclear as to how the pick lists were to be followed and how assistance in understanding the pick lists could be requested.
h. Allow the warehouse to develop the pick lists and proper bills of lading.
i. Exercise warehouse inventory tracking capability, Ongoing

11. Establish medical supplies warehouse management structure
i. Develop an Antiviral Management Plan
i. Locate examples of comparable plans
ii. Develop plan and include as annex to SNS Plan/Pan Flu Plan

12. Lack of adequate communication with U.S. CDC trucks during distribution led to confusion regarding the warehouse location and the ETA.
b. Contact DSNS Logistics and exchange contact information.
ii. Acquire contact information for the federal transportation vendors, via DSNS logistics, and provide them with the necessary contact information for Maine CDC., Ongoing

13. The ability of the warehouse staff was under-utilized for completing the appropriate paperwork and with picking because the task was assigned to non-warehouse personnel.
c. Identify and coordinate the electronic inventory tracking systems of all identified RSS sites.
iii. Establish an RSS management workgroup that meets quarterly.
iv. Review current RSS inventory tracking systems.
v. Define which inventory tracking system each RSS is using, Ongoing

14. There were issues around the bill of lading process.
d. All bills of lading provided must be legible.
vi. Verify that bills of lading are present and legible. Ongoing

15. The regional distribution hospitals did not complete inventory tracking requests for well over a week following the receipt of the SNS asset.
a. Develop, educate (i.e. regional distribution sites), and follow a protocol for inventory management.
i. Provide ongoing education to all possible regional distribution sites.
ii. Exercise the protocols for inventory management, Ongoing
b. Improve inventory tracking.

i. Develop a more detailed apportionment of materials, which includes an even distribution of sized materials and medications (specifically adult and pediatric dosing).
ii. Establish POCs at receiving sites to track inventory.
iii. Educate, train, and exercise receiving sites regarding inventory tracking,
iv. Ongoing

c. Monitor supply usage and stockpile levels of health facilities
   i. Work to purchase/develop an inventory management infrastructure at the State level
   ii. Explore opportunities to purchase an inventory management system
   iii. Participate in meetings involving patient tracking, Ongoing
d. Monitor supply usage and stockpile levels of health facilities
   i. Purchase and/or develop an inventory tracking system
   ii. Pursue options for purchasing an appropriate system
   iii. Attend Maine HAN meetings
   iv. Participate U.S. CDC work group

16. There continues to be a challenge with federal stockpile of PPEs including adequate availability, differing brands with different fitting and use requirements, variation in quality, conflicting guidelines for use and lack of access by some.
    a. Coordinate and obtain external resources for sustained operations of medical supplies management and distribution
       i. Staff will obtain and replenish State cache of PPEs. Staff will offer feedback to our Federal partners re: the challenges encountered surrounding the Federal stockpile of PPEs.

Capability 5: Intelligence/Information Sharing and Dissemination

Capability Summary: The Intelligence/Information Sharing and Dissemination capability is the multi-jurisdictional, multidisciplinary exchange and dissemination of information and intelligence among the Federal, State, local, and Tribal layers of government, the private sector and citizens. The goal of sharing and dissemination is to facilitate the distribution of relevant, actionable, timely, and preferably declassified or unclassified information and/or intelligence that is updated frequently to the consumers who need it. More simply, the goal is to get the right information to the right people at the right time. An effective intelligence/information sharing and dissemination system will provide durable, reliable, and effective information exchanges (both horizontally and vertically) between those responsible for gathering information and the analysts and consumers of threat-related information. It will also allow for feedback and other necessary communications in addition to the regular flow of information and intelligence.

Areas for Improvement:

7. Breaches of privacy surrounding the identity of the warehouse occurred.

a. Bills of lading should not include identifiable information about the warehouse.
    i. Develop the bills of lading to include Maine CDC's name, address, phone number, and logo, excluding any information regarding the warehouse's identity.

8. Maine CDC, along with the SNS response partners, did not anticipate the leaking of sensitive information regarding SNS operations.
    a. Improve the understanding of the senior management team regarding SNS protocol.
        i. Develop a multi-pronged educational approach for senior management, including DHHS PIO and Governor's Office PIO.
        ii. Ensure all key partners have a copy of the SNS plan.
        iii. Work to develop talking points for addressing the media, which should be followed by all.

9. The potential threat of media coverage was not adequately anticipated.
    a. Improve risk communication plan.
        i. Refine and exercise the SNS risk communication plan.
    b. Define an improved hospital SNS request process.
        ii. 1. Educate SNS POCs at each regional distribution site.
        iii. Exercise hospital requests of SNS asset
    c. Utilize Regional Resource Center functions to assist in developing SNS communication protocols for the hospitals.
        iv. Define RRC roles and responsibilities, Ongoing

10. Intelligence and/or information passed from State entities to local authorities is sent and received in a timely manner
    a. Assure that local authorities are adequately training in the use of Maine HAN.
        i. Identify and train local authorities on HAN as necessary
    b. Utilize Maine HAN to provide status updates
        ii. Add hospital SNS POCs to call-down when appropriate

11. Intelligence and/or information passed from local authorities to State entities is sent and received in a timely manner
    a. Develop a communication protocol that fosters better communication across the board, to include the potential designation of a "central dispatch" for all assets to report to
        i. Refine communication components in SNS Plan
        ii. Explore designation of central dispatch

12. Intelligence and/or information passed from local authorities to State entities is relevant and in a usable format
    a. Provide a protocol for distribution that includes duplicate inventory sheets for each delivery, along with communication instructions

i. Refine distribution component of SNS Plan to reflect DOT's involvement
ii. Finalize an inventory sheet and include in SNS Plan appendix

13. Dissemination and information sharing mechanisms are structured so that private sector entities receive accurate, timely, and unclassified information that is consistent with intelligence requirements
    a. Establish primary and secondary hospital SNS POCs at every hospital in Maine, utilizing RRCs
        i. Communicate with RRCs to assign task of finding POCs
    b. Educate, train, and exercise hospital SNS POCs, utilizing NNEPC
        ii. Collaborate with NNEPC to design training and exercise for hospital POCs

14. Intelligence and/or information passed from local authorities to State entities is sent and received in a timely manner
    a. When purchasing/developing an inventory management system, consider the least invasive system for reporting
        i. When exploring systems, keep in mind who will be reporting into the system

15. There are adequate numbers of trained personnel at all levels to process and disseminate information
    a. Utilize site liaisons to educate and train dispensing site personnel
        i. Incorporate "site liaisons" into management plan
        ii. Involve liaisons in training opportunities
        iii. Provide training documents for liaisons to use

16. Intelligence and/or information is shared across disciplines in a timely and effective manner
    a. Utilize Maine HAN to increase antiviral awareness and usage
        i. Send antiviral usage protocol and availability out on HAN to providers
    b. Inform and educate officials to ensure that awareness and usage are pushed down from the top
        ii. Develop a basic information document to push out and post on the website
        iii. Explore the possibility of a dedicated OPHEP webpage
            1. Pursue development of website

Capability 6: Emergency Public Information and Warning

Capability Summary: Develop, coordinate, and disseminate accurate alerts and emergency information to the media and the public prior to an impending emergency and activate warning

systems to notify those most at-risk in the event of an emergency. By refining its ability to disseminate accurate, consistent, timely, and easy-to understand information about emergency response and recovery processes, a jurisdiction can contribute to the well-being of the community during and after an emergency.

Areas for Improvement:

1. Activate plans, procedures, and policies for coordinating, managing, and disseminating public information and warnings.
    a. Anticipate the provision of a computer to each responder
        i. Identify resource for laptops to be used, including those with laptops currently.
    b. Training and exercises should continue in order to keep all Information Line responders knowledgeable and confident.
        i. Develop, review, and drill components for training, and update initial training for new staff/untrained.
    c. Preliminary team leader training including accessing translators, use of Nextalk, and identification of key partnerships.
        i. Implement refined team leader training

2. Activate key personnel, facilities, and procedures.
    a. Follow developed protocols.
        ii. Review protocols and update/change as needed.
        iii. Make protocols available to Information Line responders ahead of time or at least annually.
    b. Utilize volunteer staff before requiring other staff to participate.

3. Upon activation, track inquiries for rumors.
    a. Develop universal format for tracking form that is adaptable to a variety of situations and tracks desirable data.
    b. Review information and resource formats for consistency and efficiency of access, Ongoing

4. Within the context of the ICS structure, a Joint Information Center (JIC) should be implemented as the one source of reliable, accurate, timely and consistent information.
    a. Develop plans, procedures, and policies for coordinating, managing, and disseminating public information effectively under all hazards and conditions
    b. Coordinate and integrate the resources and operations of external affairs organizations to provide accurate, consistent, and timely information through the Joint Information Center (JIC)
        i. Plans are underway to more fully develop the ICS at ME CDC including the development of policies and procedures. Appropriate stall will receive additional training, testing and exercising on ICS which will include the

formation of a Joint Information Center, implementation of a PIO, and coordination of information through a JIS.

ii. Critical messages will be delivered within the context of a press conference to control messaging.

5. Communications from the ME CDC should be more directive when possible and appropriate.
    a. Plan and coordinate warnings, instructions, and information updates
        i. Senior staff will be trained on effective risk communications as a function of the communications components of the EOC. Templates will be developed proactively when possible.

6. Communications issued by contracted partners and other state agencies must be consistent with the Maine CDC's communications to prevent public confusion.
    a. Develop communication plans, policies, procedures, and systems that support required information sharing and communications across stakeholders to support public information, alert/warning, and notification
        i. Communication plans, policies and procedures will be developed in collaboration with community partners to ensure that all communications to the public are clear and consistent.

7. Planners should review the Governor's declarations and make any revisions to have ready for future use. Declarations should be made very early on in any future pandemic.
    a. Develop and maintain emergency declaration protocols and templates
        i. The Governors declarations will be examined and revised as indicated.

8. Capacity should be established and maintained (211 contract) to initiate a treatment hotline quickly with adequate resources and infrastructure to support the hotline for an extended period of time.
    a. Establish adequate numbers of trained personnel at dispatch or communications centers to process and disseminate information
        i. A contract has been established and will be maintained with 211 for emergency surge call center capacity.

9. State and local triage lines need to be closely coordinated.
    a. Develop plans, procedures, and policies for coordinating, managing, and disseminating public information effectively under all hazards and conditions
        i. The call center policies and protocols are currently under development; planning will include discussions with those facilities implementing local call

centers to ensure close coordination with the state sponsored call centers relative to operations and consistent public messaging.

10. Additional health care providers and pharmacists need to be enrolled into the HAN to facilitate communications to those stakeholders.
    a. Identify all pertinent stakeholders across all disciplines and incorporate them into the information flow through a clearly defined information sharing system
        i. Staff will continue to register appropriate persons in to the HAN; a focused effort to outreach to additional health care providers and pharmacists is underway.

Capability 7: Planning

Capability Summary: Planning is the mechanism through which Federal, State, local and tribal governments, non-governmental organizations (NGOs), 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 Catastrophic events. Preparedness plans are drafted by a litany of organizations, agencies, and/or departments at all levels of government and within the private sector. Preparedness plans are not limited to those plans drafted by emergency management planners. The planning capability sets forth many of the activities and tasks undertaken by an Emergency Management planner when drafting (or updating) emergency management (preparedness) plans.

Unlike the other target capabilities, the attributes of planning are difficult to quantify, as individual planners may have considerably varied education and experience and still produce plans that lead to the successful implementation of a target capability. The focus of the Planning Capability is on successful achievement of a plan's concept of operations using target capabilities and not the ability to plan as an end unto itself. Plans should be updated following major incidents and exercises to include lessons learned. The plans should form the basis of training and should be exercised periodically to ensure that responders are familiar with the plan and able to execute their assigned role. Thus, it is essential that plans reflect the preparedness cycle of plan, train, exercise, and incorporation of after action reviews and lessons learned.

Areas for Improvement:

1. Planning partners need to participate in joint training and exercising of the plans.
    a. Develop regional and State/local level exercises of sufficient intensity to challenge management and operations and test knowledge, skill and abilities of individuals and organizations

i. Once emergency plans are revised and in place, staff will orchestrate joint training exercises with community partners to test portions of the plans.

2. Roles and responsibilities of various components of the newly formed public health infrastructure need to be defined and clarified.
    a. Define responsibilities of agencies and departments
    b. Develop emergency operations/response plans that describe how personnel, equipment, and other governmental, nongovernmental, and private resources will support and sustain incident management requirements
        i. Work is currently underway to clarify the roles and responsibilities of the District Liaisons, and to define how they will interface with county officials during a disaster situation.

3. There is a need for enhanced mechanisms to support public health messaging at the local level.
    a. Define responsibilities of agencies and departments
        i. Work is currently underway to clarify the roles and responsibilities of the District Liaisons (DLs) and to define how they will interface with county officials during a disaster situation. The responsibilities of the DLs will include facilitating public health messaging at the local level.

4. Need plan for expanding public health capacity in response to surge.
    a. Develop scalable strategic plans, based on normal response plans, to prevent, protect against, respond to, and recover from natural and man-made disasters, as well as acts of terrorism
        i. As the role of the District Liaisons is developed, disaster plans will define a method for identifying public health back-up, or a method to increase public health capacity in a surge situation.

5. Need a plan for completing the tasks of the Recovery Period including debriefings, lessons learned, and preparing an After Action Report, systematically resuming functions and services, and providing responder support and recognition.
    a. Define and implement the responsibilities for standardized emergency management system planning
        i. As the pandemic Influenza Plan is revised, the stakeholders will be asked to develop plans for the Recovery Period.

6. Hospitals and their community partners must proactively collaborate on the development of plans for establishing community Alternative Care Sites; issues to consider include location,

access, special populations, resources, (equipment, supplies, and staffing), educating the public, communications, and levels of clinical care.

a. Identify, develop, and convene local preparedness planning organization(s)
b. Develop plans to identify staff, and equipment and resources to operate alternate care facilities
    i. The Regional Resource Centers (RRCs) will continue their efforts to facilitate and support collaboration between hospitals and the community partners in their regions to develop plans for implementing alternative care sites.

Capability 8: Community Preparedness and Participation

Capability Definition: The Community Preparedness and Participation capability provides that everyone in America is fully aware, trained, and practiced on how to prevent, protect/mitigate, prepare for, and respond to all threats and hazards. This requires a role for citizens in personal preparedness, exercises, ongoing volunteer programs, and surge capacity response. Specific capabilities for UNIVERSAL preparedness, including knowledge of all-hazards (technological, natural, and terrorist incidents) and related protective measures, skills, and supplies, will be determined through a collaborative process with emergency responders.

Areas for Improvement:

1. An annual flu "refresher" campaign should be implemented proactively encouraging annual seasonal flu vaccine for those over 6 months, and emphasizing hygiene measures and staying home when ill.
    a. Provide continuing education and training for the public on: prevention, protection and mitigation measures, community emergency response plans, alerts and warnings (including threat levels), evacuation/in-place protection plans and exercises, participating in government sponsored emergency exercises, volunteer opportunities and training for year round volunteer role or surge capacity role in response and recovery.
        i. Plans will be developed for the implementation of an annual "refresher" flu campaign to educate the public on the importance of obtaining an annual flu shot for those over 6 months, implementing proper hygiene measures, and staying if ill.

2. There is a lack of capability to translate technical vaccine documents into many languages quickly which inhibits the servicing of sub-populations.
    a. Develop and provide community preparedness public education program and materials for non-English speaking communities and special needs populations

i. Staff will explore options and implement a method to translate health related informational documents into non-English languages for distribution to minority populations in Maine in a timely manner.

3. Guidance for staying home when sick was not clear, was inconsistent, and interfered with sick leave policies.
    a. Provide continuing education and training for the public on: prevention, protection and mitigation measures, community emergency response plans, alerts and warnings (including threat levels), evacuation/in-place protection plans and exercises, participating in government sponsored emergency exercises, volunteer opportunities and training for year round volunteer role or surge capacity role in response and recovery
        i. Staff will develop a plan to communicate with Maine businesses to encourage the development of Continuity of Operations Plans (COOPs) including HR policies that allow employees to stay home if sick. Concurrently, staff will continue to educate the public to stay home if sick.

Capability 9: Emergency Operations Center Management

Capability Definition: Emergency Operations Center (EOC) Management is the capability to provide multi-agency coordination (MAC) 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 public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities.

Areas for Improvement:

1. The NIMS / ICS structure must be used as the organizational framework to manage the response to an influenza pandemic, and to clarify roles and responsibilities.

2. Maine CDC senior staff and stakeholders need to receive regular training.
    a. Develop plans, policies, and procedures for EOC management
    b. Develop standard operating procedures for activation, operation, and deactivation of EOC
        i. Plans are underway to more fully develop the ICS at ME CDC including the development of policies and procedures. Appropriate staff will receive additional training, testing and exercising.

SECTION 4: CONCLUSION

The result of these many and varied efforts that brought together thousands of partners and volunteers were exemplary. Maine's H1N1 vaccination rates were among the highest in the nation in all population groups, as presented in the table below:

Population	Maine Rate and National Ranking	US Rate
US CDC priority groups	51% (tied for 1st)	33%
Children 6 months to 17 years	60% (tied for 2nd)	37%
People age 65 and older	40% (tied for 1st)	22%
All people age 6 months and older	37% (tied for 1st)	24%

These successes were due to numerous factors, the most important of which were the dedication and hard work by hospitals, health centers, visiting nursing organizations, EMS, other health care practices and providers, other state agencies, municipal health departments, emergency management agencies (county, state, and local), employers and businesses, numerous other agencies and organizations, as well as thousands of volunteers from across Maine communities. Everyone in Maine should be very proud of these tremendous efforts that exemplify our state's motto, Dirigo, or "I lead".

Even with an extremely successful response to H1N1, as exemplified by Maine's disease burden and vaccine data, there are always lessons to be learned. Indeed, we at Maine CDC learned many lessons. However, the biggest was the importance of our partners. We continue to be deeply impressed and appreciative of the dedication of Maine people to come together to address a challenge as posed to us by the 2009 H1N1 pandemic.