

Preparing for Vaccination with Novel H1N1 Vaccine

Point of Contact: Pascale Wortley, MD, MPH
H1N1 Vaccine Implementation Team, CDC

Epidemiology

In the Northern hemisphere, novel H1N1 influenza virus is persisting, and is continuing to cause outbreaks and sporadic cases in numerous locales despite the onset of summer. Evidence to date suggests that population immunity to this virus is low, particularly among the young. Thus far, most cases of illness, hospitalization and death associated with novel H1N1 infection have occurred among persons less than 65 years of age. Groups at increased risk of influenza-related complications include pregnant women; those with asthma, chronic obstructive pulmonary disease, diabetes, or chronic cardiovascular disease; and immuno-compromised persons. These are the same groups as previously recognized to have an increased risk of severe illness from seasonal influenza. In addition, morbid obesity may represent an additional risk factor for severe illness. Unlike seasonal influenza where persons 65 years and older are most likely to be hospitalized or die from influenza-related complications, this age group has been substantially less affected by novel H1N1 virus than younger age groups.

Widespread susceptibility to this virus among young persons and the potential for large numbers of cases raises the possibility of more hospitalizations and deaths especially among younger age groups than would be expected for a typical routine seasonal influenza virus. The virus has also caused numerous outbreaks in schools and summer, institutions such as camps and correctional facilities, and led to disruptive interventions such as school dismissals that have substantial societal impact.

Vaccine manufacturing

Novel H1N1 vaccine is being procured by the U.S. government from five (5) vaccine manufacturers of currently U.S.-licensed seasonal influenza vaccines – inactivated subunit (4) and live, attenuated vaccines (1). Inactivated licensed novel H1N1 vaccine will be available in single-dose syringes, or in multi-dose vials. Live attenuated vaccine will be available in limited number in inhaler sprayers. Single-dose syringes will be thimerosal-free, which will address concerns about this additive, especially regarding pediatric and pregnant vaccine recipients (inhaler sprayer vaccine products will also be thimerosal-free). The availability of novel H1N1 vaccine is dependent on multiple factors including virus growth at commercial scale, regulatory review, availability of calibrated vaccine product potency assay reagents, overall production capacity, and availability to U.S. through HHS contracts.

Vaccine purchase and allocation

Novel H1N1 vaccine is being purchased by the U.S. government and will be made available for vaccinators at no cost. Syringes, needles, sharps containers, and alcohol swabs will also be provided. Vaccine will be allocated across states proportional to population. Public Health Emergency Preparedness awardees will direct their allocation to local health departments and other vaccination partners.

Planning assumptions

Given uncertainty around the amount and timing of vaccine availability, state and local public health planners have been asked to plan for vaccine becoming available mid-October under the following scenarios: 40 million, 80 million, or 160 million doses becoming available from the 5 manufacturers (total) over approximately a one month period, followed by weekly amounts of 10 million, 20 million or 30 million doses. At this point, the planning assumption is that the vaccine will require 15 µg of antigen for an immunizing dose, and that two doses spanning over 21 or more days will be needed for efficacy for most persons. Clinical trials will be conducted to determine which age groups, if any, require only one dose. The majority of vaccine will be packaged in multidose vials, but enough preloaded syringes will be manufactured for young children and pregnant women.

In addition, based on best available information to date, planners have been provided scenarios to serve as a basis for making venue-based plans to vaccinate specific populations. These populations include students and staff (all ages) associated with schools (K-12th grade) and children (age ≥6 months) and staff (all ages) in child care centers, pregnant women, children 6 months – 4 years of age, new parents and household contacts of children <6 months of age, non-elderly adults with medical conditions that increase the risk of complications of influenza, health care

workers, and emergency services personnel. Formal recommendations for the use of novel H1N1 vaccine will be made by the ACIP in August 2009 based on all available epidemiologic data to date.

Vaccine delivery system

Many state health departments are partnering with private sector partners to ensure the novel H1N1 vaccine is delivered to as many recommended persons as rapidly as possible. Vaccine will thus be available in a combination of settings including public health organized vaccination clinics, and in private sector settings such as provider offices (e.g. pediatricians, family physicians, obstetricians, internists), retail settings, pharmacies, workplaces, and through community vaccinators. Private providers who wish to administer the novel H1N1 vaccine will need to enter into relationships with their public health department so that vaccine can be directed to them.

While providers will receive the vaccine at no charge, information on reimbursement for administration is needed. CDC asked AHIP (America's Health Insurance Plans) whether insurance plans would reimburse private providers for administration and received the following answer: "Every year health plans contribute to the seasonal flu vaccination campaign in several ways: a) Health plans communicate directly with plan sponsors and members on the current ACIP recommendations and encourage immunization; they also provide information on where to get vaccinations, and who to contact with any questions; b) Just as health plans have provided extensive coverage for the administration of seasonal flu vaccines in the past, public health planners can make the assumption that health plans will provide reimbursement for the administration of a novel (A) H1N1 vaccine to their members by private sector providers in both traditional settings e.g., doctor's office, ambulatory clinics, health care facilities, and in non-traditional settings, where contracts with insurers have been established."

Providers participating in novel H1N1 vaccination will be expected to administer vaccine in accordance with national recommendations for use of the vaccine. In addition, if administering vaccine during the early weeks, they will be expected to report weekly on the number of doses administered and the ages of persons who were vaccinated. Such data are critical for assessing early uptake and for adverse event monitoring as they provide a means of calculating adverse events rates.

Monitoring coverage, safety, and effectiveness

Vaccine coverage will be monitored initially through weekly reports of doses administered, based on requirements set forth by CDC. Once the number of vaccinated persons is large enough to be detectable through population surveys, this information will be collected on an ongoing basis providing for monthly coverage estimates.

The Vaccine Adverse Event Reporting System (VAERS), a national vaccine safety surveillance program co-sponsored by the Centers for Disease Control and Prevention and the U.S. Food and Drug Administration (FDA) collects and analyzes information from reports of adverse events following immunization and will serve as the foundation for safety monitoring. VAERS accepts reports from patients, providers, public health officials and others (1-800-822-7967, <http://vaers.hhs.gov/contact.htm>). Signals that are detected through VAERS will be tested using a network of managed care organizations representing approximately 3% of the U.S. population, the Vaccine Safety Datalink (VSD). Vaccination information as well as individual outcome data are available through this network both to test signals on an ongoing basis and to monitor pre-specified adverse events. Additional strategies are being developed to actively monitor Guillain Barre Syndrome (GBS) incidence during the novel H1N1 influenza vaccination season with networks of providers set up for active case-finding.

CDC will utilize at least two primary means to assess vaccine effectiveness: the first will assess vaccine effectiveness for prevention of laboratory confirmed medically attended influenza at 4 community based sites; the second will assess vaccine effectiveness for prevention of influenza hospitalizations diagnosed by provider-ordered clinically available tests at 10 sites nationwide through the Emerging Infections Program. Additional assessments of influenza vaccine effectiveness will be conducted by the US Department of Defense which has the ability to conduct timely assessments of vaccine effectiveness in their active duty populations.

Seasonal vaccination

Seasonal vaccine will be available beginning in August or September 2009. The seasonal influenza vaccine is expected to be available earlier than the novel H1N1 vaccine, but the availability of the two vaccines is expected to overlap. The process for ordering seasonal vaccine is unchanged from previous years.

For planning purposes only. This information is subject to change.

Novel H1N1 Vaccination Planning Q&A as applicable for Illinois July 23, 2009

VACCINE PURCHASE

Q1: How will novel H1N1 vaccine be purchased?

A1: Planners should assume novel H1N1 vaccine will be procured and purchased by the federal government and made available for vaccinators at no cost.

VACCINE DISTRIBUTION

Q2: When will the decision to administer vaccine be made?

A2: For planning purposes, it should be assumed that vaccine will be administered beginning in the fall.

Q3: When will vaccine shipping begin?

A3: Actual dates cannot be provided at this time as they are affected by several factors including manufacturing time and time needed to conduct clinical trials. Planners should assume shipping of vaccine will begin mid-October.

Q4: How many manufacturers are producing vaccine?

A4: Five manufacturers are producing vaccine for the U.S.: Sanofi Pasteur, Novartis, GSK, Medimmune, and CSL.

Q5: How much vaccine can be expected to be available for shipping when shipping begins?

A5: Given uncertainties around vaccine yield and formulation, it is not possible to provide specific numbers at this time. Planners should use the following three hypothetical scenarios for planning purposes: the initial amounts manufactured by the five manufacturers considered together will total 40 million, 80 million, or 160 million doses of vaccine. For planning purposes, planners should assume that vaccine will become available for shipping from the five manufacturers over a one month period. The above assumptions are based on a 15µg/dose formulation which is subject to change based on clinical trials.

Q6: How much vaccine can be expected in subsequent shipments?

A6: The actual weekly production is unknown at this time. For planning purposes, planners should use the following three hypothetical scenarios: weekly production from the five manufacturers will total 10 million, 20 million, or 30 million doses. However, weekly production could be larger depending on manufacturing capacity. These amounts are less than the initial amount because the initial amount represents several weeks of production.

Q7: How will vaccine be shipped to projects areas (CDC Public Health Emergency Preparedness (PHEP) awardees)?

A7: Plans are currently being developed. Two main options are being explored based on previous pandemic planning: shipping by manufacturers and their commercial distributors to project area-designated ship-to sites, and centralized distribution, which would likely allow vaccine shipments to a larger number of ship to sites. Both options would require an active role of the state immunization program in designating ship to sites and relative allocations. More information on this will be provided in the coming weeks. Centralized distribution is the method currently utilized by immunization grantees nationwide for distribution of VFC vaccine. CDC is currently in negotiations to address modifications of the existing contract necessary for H1N1 vaccine distribution.

Q8: Where will vaccine be shipped?

A8: The Division of Infectious Disease/Immunization Section will coordinate with Office of Preparedness and Response on a final list of ship-to sites depending on method of distribution selected in Illinois.

Q9: Will project areas (CDC PHEP awardees) be able to limit the amount of vaccine they receive?

A9: Yes, project areas will be able to state what proportion of their initial and weekly allocations they wish to receive.

Q10: How frequently will vaccine shipments arrive?

A10: The frequency of shipments will depend upon several factors, including the method of distribution used and the frequency of vaccine orders placed by the states. As details of distribution are finalized, CDC will communicate with states about the anticipated time period between placing vaccine orders and receiving shipments. CDC will provide for a minimum of weekly shipments should states choose to receive shipments weekly.

Q11: Can the number of ship-to sites currently designated by project areas in their pandemic plans be changed?

A11: Yes, there is some flexibility with respect to changing the number of ship-to sites; this will be especially true if centralized distribution is employed.

Q12: Will vaccine be in multi-dose vials?

A12: The majority of vaccine will be in multi-dose vials, the remainder in single dose vials or nasal sprayers. The aim is to have enough vaccine in single dose vials (i.e. preservative free) for young children and pregnant women.

VACCINE ALLOCATION

Q13: How will vaccine be allocated among project areas (the CDC PHEP awardees)?

A13: Vaccine will be allocated to each project area in proportion to its population (pro rata). Estimated allocations under the different planning scenarios have been sent to each project area.

Q14: Will there be a separate allocation for active duty Department of Defense (DoD)?

A14: Yes, there will be a separate allocation for active duty DoD. It is not included in the project area allocations.

Q15: Will there be a separate allocation for DoD dependants, retirees, and civilian employees?

A15: There is no separate allocation for these groups. Military facilities may be willing to vaccinate these groups, but will need to be allocated vaccine for these populations by the project areas.

Q16: Will there be a separate vaccine allocation for Indian Health Service (IHS)-served populations and other tribal communities?

A16: There will be no separate allocation. Project areas need to work with their tribal populations to ensure access to vaccine.

ANCILLARY SUPPLIES

Q17: Will syringes and needles be provided with vaccine?

A17: HHS plans to provide needles and syringes. Plans for ensuring the distribution of these products to ship-to sites are currently being developed.

Q18: Will any other ancillary supplies be provided?

A18: Plans are being made to also provide sharps containers and alcohol wipes.

VACCINE ADMINISTRATION

Q19: Will two doses of vaccine be required?

A19: This will not be known until the late summer- early fall, once clinical trials are completed. For planning purposes, planners should assume that two doses will be needed for person.

Q20: What will be the recommended interval between the first and second dose?

A20: This will not be known until clinical trials are complete. For planning purposes, planners should assume 21-28 days between the first and second vaccination.

Q21: How much thimerosal-free vaccine will be available?

A21: It is anticipated that enough thimerosal-free vaccine in pre-loaded syringes will be available for young children and pregnant women.

Q22: Will there be federal requirements to recall persons for their second dose, if a second dose is needed?

A22: We do not anticipate a federal requirement to send out recall notices. Providing information on second dose at the time of the first dose, as well as using the media to disseminate this message, will be the primary means of educating persons about who needs a second dose administered.

Q23: Will it be necessary for the first and second dose to be the same product?

A23: Ideally, first and second doses would be from the same product. However, practical considerations make this difficult to implement so it would be preferable if products could be used interchangeably. A definitive answer on this issue will not be available until late summer – early fall, once clinical trials are conducted.

Q24: Can seasonal vaccine and novel H1N1 vaccine be administered at the same time?

A24: This will not be known definitively until the clinical trials have been completed; however, planners should assume co-administration is possible.

Q25: Will vaccine be adjuvanted?

A25: This may not be known until early fall, once clinical trials are completed.

Q26: If vaccine is adjuvanted, how will it be formulated?

A26: Formulation will vary by provider. For Novartis, vaccine may be pre-formulated with adjuvant. For CSL, GSK, and Sanofi Pasteur, mixing of vaccine and adjuvant at the site of administration will be necessary. Specific information on storage requirements and procedures for mixing vaccine and adjuvant will be provided by CDC. Medimmune vaccine will not be adjuvanted.

Q27: Will the vaccine be administered under EUA (Emergency Use Authorization), and if so, what are the implications?

A27: Every effort will be made to avoid the need for administering the vaccine under EUA, however the need for EUA will not be known until late summer – early fall. CDC will provide information on EUA requirements so that planners can plan for that contingency.

Q28: Can public health clinics charge for vaccine administration?

A28: If federal funds are provided to project areas to cover vaccine administration costs, it is likely that public health clinics would not be allowed to charge for vaccine administration. Decisions are pending and will be communicated as they are made.

PRIORITY GROUPS

Q29: When will a decision be made about priority groups for H1N1 vaccine?

A29: The Advisory Committee on Immunization Practices (ACIP) and other federal advisory bodies will be reviewing available data over the summer, considering available epidemiologic data from this spring's experience in the Northern hemisphere and from the upcoming Southern hemisphere influenza season, as well as other relevant data including serologic studies. Recommendations from ACIP will be issued before fall.

Q30: Will there be flexibility in how project areas implement prioritization?

A30: Project areas are strongly encouraged to adhere to national guidelines on vaccine prioritization. Uniformity in prioritizing vaccine is considered a significant national interest. There may be instances where specific local needs should be taken into consideration when implementing prioritization, but deviation from national guidelines should be minimized.

Q31: Given the potential for large amounts of vaccine available during the first month of vaccine shipments, are priority groups needed?

A31: These issues will be discussed as additional information on vaccine production and possible vaccine demand become available. Decisions will be communicated as they are made.

Q32: Will there be requirements regarding documentation of priority group membership?

A32: For priority groups based on risk status, planners should assume there will be no federal requirements for vaccinators to require documentation of priority group status such as a doctor's note documenting pregnancy or risk status. If vaccination is recommended for critical infrastructure personnel, systems will need to be put in place to ensure persons presenting for vaccination have been identified by their employer as critical personnel.

Q33: Based on information currently available, for what populations should planners develop vaccination plans?

A33: For planning purposes, CDC recommends that planners focus on the following populations: Students and staff (all ages) associated with schools (K-12) and children (age ≥ 6 m) and staff (all ages) in child care centers; Pregnant women, children 6m-4yrs, household contacts of children < 6 months of age; Nonelderly adults (age < 65) with medical conditions that increase risk of influenza; Health care workers and emergency services personnel. Complete information on planning scenarios for state and local vaccine program planning is available at. <http://www.cdc.gov/h1n1flu/guidance/>

DOSES ADMINISTERED MONITORING

Q34: What are the minimum data elements required by CDC?

A34: Minimum data requirements include age group, 1st or 2nd dose, date of vaccination, and state. To assist in record keeping, local health departments in Illinois will be able to capture this information within either Cornerstone or ICARE immunization information systems. Appropriate requests for coding have already been made within both systems to allow for this data entry. IDPH will submit required tracking reports to CDC.

PNEUMOCOCCAL VACCINATION

Q35: Are there any changes in recommendations for pneumococcal vaccines?

A35: The ACIP recommends that persons recommended for pneumococcal vaccine receive it in light of the potential for increased risk of pneumococcal disease associated with influenza. There are at present no recommendations to give pneumococcal vaccine to groups for whom it is not currently recommended. ACIP will revisit this question over the summer as epidemiologic data from the Southern hemisphere influenza season and from the U.S. become available.

PRIVATE SECTOR ADMINISTRATION

Q36: Will insurance plans reimburse private providers for administration?

A36: CDC asked America's Health Insurance Plans (AHIP) and on behalf of its members, AHIP provided this response: "Every year health plans contribute to the seasonal flu vaccination campaign in several ways: a) Health plans communicate directly with plan sponsors and members on the current ACIP recommendations and encourage immunization; they also provide information on where to get vaccinations, and who to contact with any questions. b) Just as health plans have provided extensive coverage for the administration of seasonal flu vaccines in the past, public health planners can make the assumption that health plans will provide reimbursement for the administration of a novel (A) H1N1 vaccine to their members by private sector providers in both.