

# **H1N1 Vaccinations by Ohio EMS Personnel**

**Ohio Department of Public Safety, Division of EMS  
in conjunction with the  
Ohio Department of Health**



# Mission

The goal of this presentation is to provide a foundation of knowledge based upon the Ohio EMS scope of practice and the recommendations from our federal and state public health organizations. Despite the variations in local or regional protocols and standard operating procedures that may exist, the EMS Board recommends this program, which contains training elements provided by the Centers for Disease Control and Prevention (CDC), for the administration of the H1N1 vaccine by Ohio EMS personnel.



# Objectives

- Participant will understand the significance of the H1N1 pandemic
- Participant will be able to discuss methods by which EMS can participate in vaccinations to reduce the impact of the H1N1 pandemic
- Participant will be able to discuss legal authorization, limitations, and protections in place for H1N1 vaccination by EMS
- Participant will be able to demonstrate the process of administering immunizations to adults and children



# Objectives

- Participant will be knowledgeable about the response to anaphylactic shock following an immunization
- Participant will list data to be documented on each vaccination administered to a patient
- Participant will demonstrate the screening process, per local protocol, to be completed prior to administration of the vaccine



# Impact of **Seasonal** Influenza in USA

- 200,000 hospitalizations annually
- 36,000 deaths annually
  - More than 90% in adults >64 years

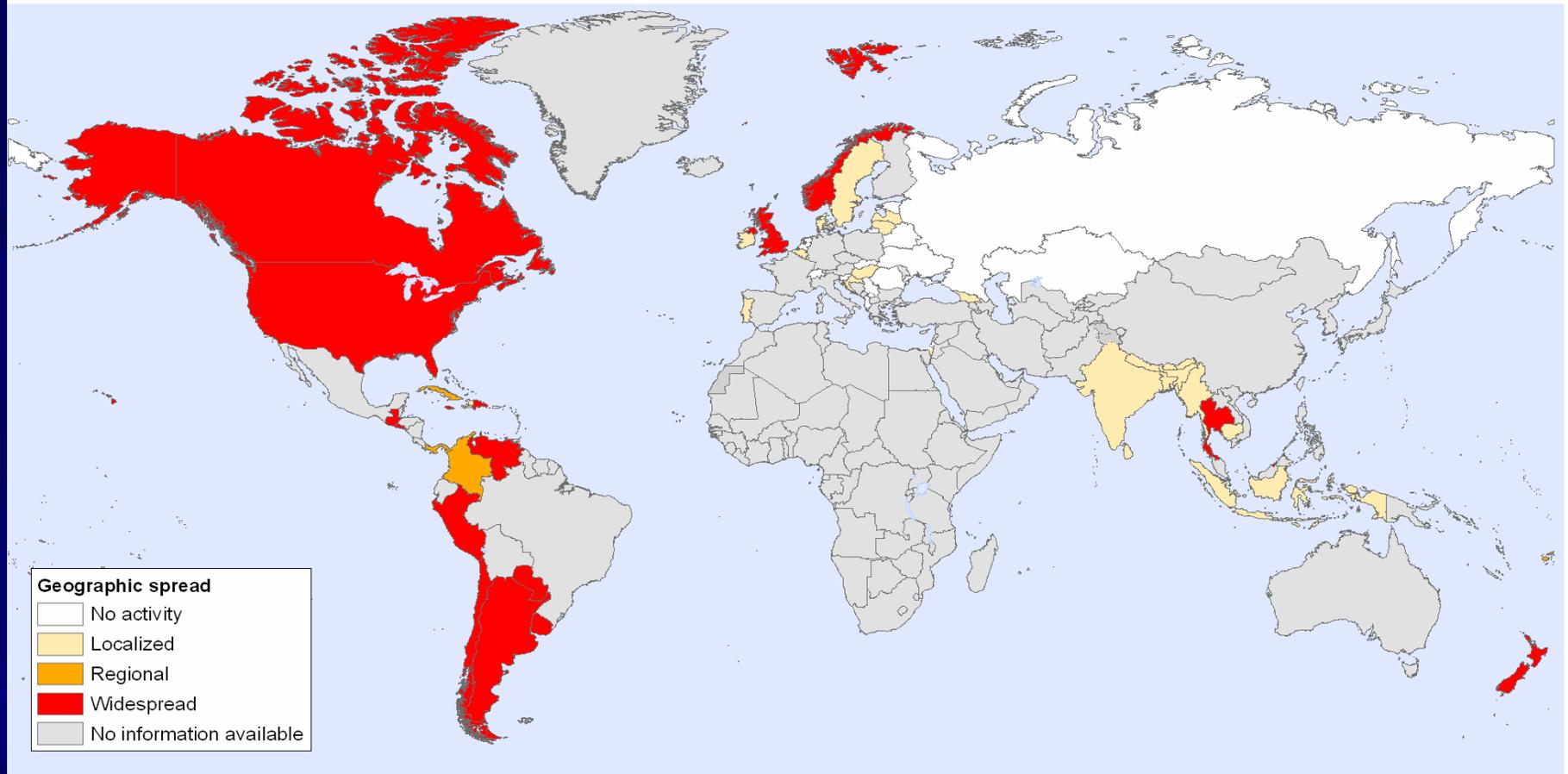


# Global H1N1 Geographic Spread-July 2009

## Geographic spread of influenza activity

(Geographic spread reflects the number and distribution of regions within a country reporting influenza activity.)

Status as of Week 30  
20 Jul - 26 Jul 2009



**August 6, 2009 totals (worldwide)**  
**177,457 cases, 1462 deaths**



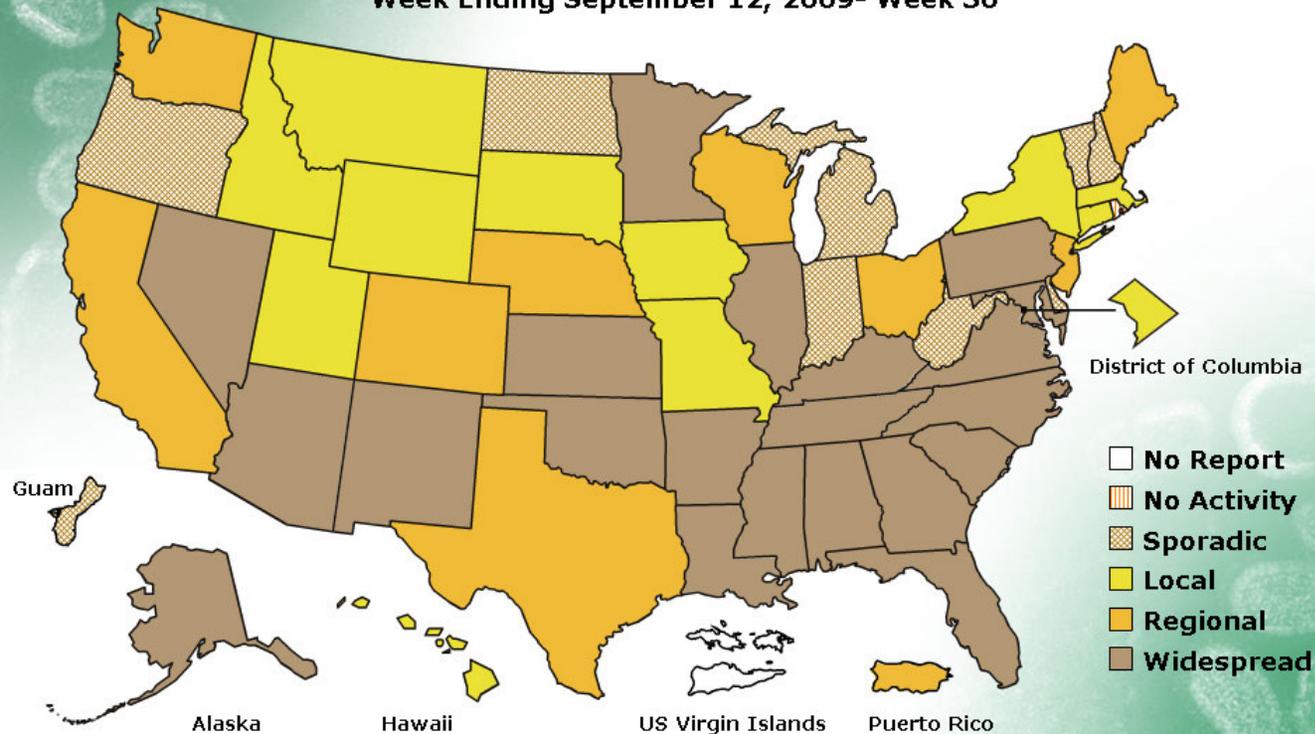
# H1N1 Spread in the United States-September 2009

## FLUVIEW



A Weekly Influenza Surveillance Report Prepared by the Influenza Division  
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists\*

Week Ending September 12, 2009- Week 36



\*This map indicates geographic spread and does not measure the severity of influenza activity.



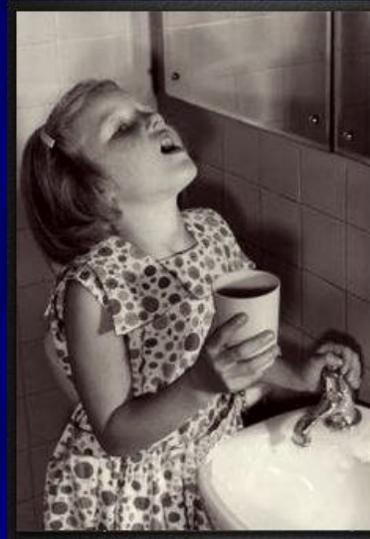
September 13, 2009 totals (worldwide)  
296,471 confirmed cases, 3,486 deaths



# Flu Pandemics 20<sup>th</sup> Century



**1918:**  
**“Spanish Flu”**  
**A(H1N1)**



**1957:**  
**“Asian Flu”**  
**A(H2N2)**



**1968:**  
**“Hong Kong Flu”**  
**A(H3N2)**



# Pandemics of the 20<sup>th</sup> Century

## United States Mortality

- 1918
  - 500,000+ deaths
- 1957
  - 69,800 deaths
- 1968
  - 33,800 deaths



# H1N1 Influenza

- Declared to be at pandemic level by World Health Organization (**WHO**)
- Public health emergency declared in the United States
- Vaccine developed
  - Clinical trials are being completed
  - Projected initial shipment: October 15



# 2009 H1N1 Influenza Outbreak

- WHO Phase 6
- International: 177,457 cases, 1462 deaths
- US: 7511 hospitalizations, 477 deaths



# H1N1 Vaccine

- May require one injection for adults and two injections for children
  - Approximately 21 to 28 days apart
  - First vaccination will provide little immunity for children due to lack of previous exposure to the H1N1 virus
  - Requires two-shot series to fully activate the immune systems of most children



# H1N1 Vaccine

- H1N1 vaccine does not replace the seasonal influenza vaccine
  - All healthcare workers (**HCW**), **including EMS personnel**, are strongly advised to be vaccinated against both:
    - Seasonal influenza
    - H1N1
  - Children under the age of 9 years need 3-4 injected doses of vaccine
    - Two against seasonal influenza (*children who have previously been immunized for seasonal influenza will only require one dose of vaccine*)
    - Two against H1N1



# EMS Issues & Potential Involvement – H1N1 Vaccine

***GET VACCINATED!***



# EMS Issues & Potential Involvement – H1N1 Vaccine

- Ohio Administrative Code (**OAC**) Section 4765-6-03 authorizes EMS personnel at all four provider levels to perform immunizations (i.e., vaccinations)
- Requires a declaration of emergency that threatens the public's health from the governor to be in effect



# EMS Issues & Potential Involvement – H1N1 Vaccine

- Notification when a declaration of emergency is promulgated:
  - EMS agencies via the Ohio Department of Public Safety, Division of EMS listserve
  - Local health departments (**LHDs**) via the Ohio Department of Health (**ODH**)
- OAC 4765-6-03 also requires:
  - EMS personnel to have received appropriate training regarding specified immunizations prior to participating in their administration
  - Be under physician medical direction



# EMS Issues & Potential Involvement – H1N1 Vaccine

- EMS and fire/EMS agencies
  - Have asked what they can do to help
  - Have asked if they can vaccinate their own personnel against H1N1
- LHDs have asked for EMS personnel to assist in the H1N1 vaccination program



# EMS Issues & Potential Involvement – H1N1 Vaccine

- **If a declaration is declared by the governor to protect the public health for H1N1:**
  - EMS personnel who have completed the appropriate training and are under physician medical direction may administer the H1N1 vaccinations to adults and children
  - Any declaration of emergency issued by the governor would pertain to the novel **H1N1** virus (*not to the seasonal influenza*)



# EMS Issues & Potential Involvement – H1N1 Vaccine

## ■ **OAC 4765-6-03 following declaration of emergency:**

-Permits immunizations by all Ohio EMS provider levels (First Responder, EMT-Basic, EMT-Intermediate, and EMT-Paramedic)

-On August 19, 2009, the EMS Board recommended that the H1N1 immunizations be performed only by EMT- Paramedics and EMT-Intermediates

- First Responders and EMT-Basics have no prior training in IM or SC injections



# Liability Issues – H1N1 Vaccine

- The United States Department of Health and Human Services (**HHS**) Public Readiness and Emergency Preparedness Act (**PREP**) provides immunity for all persons engaged in planning, distribution, or administration of the H1N1 vaccine with the exception of reckless or wanton behavior
- No legal tort claim can be pursued in court
  - Federal or state



# Liability Issues - H1N1 Vaccine

- The federal Volunteer Act provides liability protection for the members of the Medical Reserve Corps (**MRC**) with the exception of reckless or wanton behavior
- Members of the MRC, including EMS personnel, are protected under the Volunteer Act only if the MRC has been officially requested and activated, and the individual is responding as a member of the MRC



# EMS Agencies

- Should discuss vaccination issues with LHD
- Should ensure both seasonal and H1N1 immunizations are made available to all clinical personnel
- Should ensure all personnel utilize appropriate personal protective equipment (**PPE**) **on EMS runs** in addition to respiratory and hand hygiene
- May offer to assist with a vaccination campaign if a gubernatorial declaration is put in place



# Priority Groups Recommended to Receive H1N1 Influenza Vaccine

## ■ Pregnant women

-Higher risk of complications from H1N1 influenza and can potentially provide protection to infants who cannot be vaccinated



# Priority Groups Recommended to Receive H1N1 Influenza Vaccine

- **Household contacts and caregivers for children younger than 6 months of age**
  - Younger infants are at higher risk of influenza-related complications and cannot be vaccinated
  - Vaccination of those in close contact with infants less than 6 months old might help protect infants by “cocooning” them from the virus



# Priority Groups Recommended to Receive H1N1 Influenza Vaccine

## ■ Healthcare and emergency medical services personnel

-Infections among healthcare workers have been reported and this can be a potential source of infection for vulnerable patients

-Increased absenteeism in this population could reduce healthcare system capacity

-Law enforcement or public safety personnel are not a priority group unless they provide direct patient care



# Priority Groups Recommended to Receive H1N1 Influenza Vaccine

- **All people from 6 months through 24 years of age**
- ***Children from 6 months through 18 years of age***
  - There have been many cases of novel H1N1 influenza in children from 6 months through 18 years of age
  - This population is in close contact with each other in school and day care settings increasing the likelihood of spread of the disease



# Priority Groups Recommended to Receive H1N1 Influenza Vaccine

- **All people from 6 months through 24 years of age**
- ***Young adults 19 through 24 years of age***
  - There have been many cases of novel H1N1 influenza in healthy young adults
  - This population often live, work, and study in close proximity
  - This is a frequently mobile population



# Priority Groups Recommended to Receive H1N1 Influenza Vaccine

- **Persons aged 25 through 64 years who have health conditions associated with higher risk of medical complications from influenza**
  - Those with chronic health disorders (pulmonary disease, cardiovascular disease, diabetes, etc.) or compromised immune systems



# The Elderly

- Persons greater than 64 years of age are currently not classified as a priority group for H1N1 vaccination as the mortality and morbidity from the H1N1 influenza virus has not been significant in this population and many already have some immunity to the H1N1 virus
- Persons in this age range may be eligible to receive the H1N1 vaccine as it becomes more readily available
- Persons in this age range should still be encouraged to obtain the seasonal influenza vaccine



# Influenza Prevention

- Wash hands frequently with soap and water, or alcohol hand gel
- Cover the nose and mouth while coughing or sneezing
- Avoid touching your face
- Stay home when ill



# Potential EMS Involvement: H1N1 Vaccine

- Activities in which EMS may be asked to assist:
  - Administration of vaccine to EMS personnel
  - Administration of vaccine at “Closed” Points of Dispensing (**PODs**)
    - Locations where specified personnel will be immunized (e.g., schools, senior centers, daycare centers)
    - Provide mobile units to provide vaccine at specified locales
    - Assist at “Open” PODs
      - Open to general public



# Potential EMS Involvement: H1N1 Vaccine

- Specific participation must be determined jointly with the LHD and local EMS
- LHD may seek the expertise of physicians from various specialties and organizations (i.e., pediatrics, obstetrics, internal medicine, family practice, infectious disease, immunology, emergency medicine, EMS medical directors or Regional Physician Advisory Boards) as they create the policies, procedures, and protocols for the H1N1 immunization of at-risk populations



# **Vaccine Administration**

## **Guidelines**

# Vaccine Administration

- Appropriate vaccine administration is critical to vaccine effectiveness
- The guidelines should be used in conjunction with professional standards for medication administration, vaccine manufacturers' product guidelines, CDC's Advisory Committee on Immunization Practices (**ACIP**) General Recommendations on Immunization, and state/agency-related policies and procedures



# Vaccine Administration

- An education plan that includes competency-based training on vaccine administration is required for all EMS personnel who administer vaccines
- Completion of this program, combined with skills verification by the medical director, LHD, or persons designated by the medical director or LHD, meets this requirement



# H1N1 Vaccine Administration Recommended Routes

- Intramuscular

- Intranasal



# Patient Counseling

- Inform the vaccine recipients that the intramuscular H1N1 vaccine is an inactivated vaccine that cannot cause influenza and acts by stimulating the immune system to produce antibodies to prevent infection from the H1N1 virus
- Instruct the vaccine recipients to report any severe or unusual adverse reactions to their healthcare provider
- Inform vaccine recipients that there are two influenza vaccine formulations for this influenza season (H1N1 and seasonal influenza) and that receiving the H1N1 vaccine does not replace the need for obtaining the seasonal influenza vaccine



# Patient Preparation

## ■ Patient Preparation

- Prepare patients for vaccination, considering age and stage of development

- Parents/guardians and patients should be encouraged to take an active role

## ■ Screening

- All patients should be screened for contraindications and precautions using materials provided by ODH

## ■ Vaccine Safety & Risk Communication

- Be prepared to discuss the benefits and risks of the vaccine



# H1N1 Intramuscular Vaccine



# Patient Preparation

## ■ Atraumatic Care

- Minimize the stress and discomfort associated with receiving injections

## ■ Positioning & Comforting Restraint

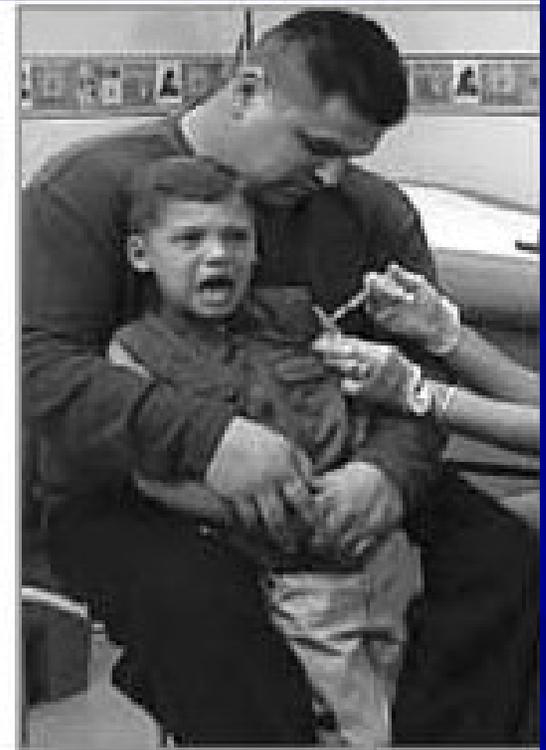
- Accommodate patient's comfort, safety, age, activity level, and the site of administration when considering patient positioning and restraint.

- For a child, the parent/guardian should be encouraged to hold the child during administration or another person may assist

- Patient may be positioned on examination table







# Preparation

## ■ Pain Control

- Pain is influenced by multiple factors, including age, anxiety level, previous healthcare experiences, and culture
- Topical Anesthetics** or a vapocoolant spray may be applied to decrease pain at the injection site (only for ages recommended by the manufacturer)
- Analgesic Agents** - A non-aspirin pain reliever may be considered to decrease discomfort and fever following vaccination in age-appropriate doses
- Diversionary Techniques** - Age-appropriate distraction from pain



# Infection Control

## ■ Follow Standard Precautions

**-Handwashing** - Thoroughly with soap and water or cleansed with an alcohol-based waterless antiseptic between patients, before vaccine preparation or any time hands become soiled

**-Gloving** - Gloves are not required to be worn when administering vaccines unless the person administering the vaccine is likely to come into contact with potentially infectious body fluids or has open lesions on the hands



# Infection Control

## ■ Follow Standard Precautions

**-Gloves** - Individuals who elect to wear gloves must change them for each patient contact.

**-Handwashing procedures** - Must be completed with each patient contact whether or not the HCW elects to wear gloves



# Infection Control

## ■ Needlestick Injuries

- Should be reported immediately to the site supervisor, with appropriate care and follow-up
- Safety needles or needle-free injection devices should be used if available

## ■ Equipment Disposal

- Do not recap or cut before disposal
- All used syringes and needles should be placed in puncture-proof containers
- Empty or expired vaccine vials are should be disposed of properly



# Vaccine Preparation

- Proper vaccine handling and preparation is critical
- HHS will provide needles, syringes, sharps containers, and alcohol swabs



# Vaccine Preparation

## ■ Equipment Selection

### -Syringe Selection

- A separate needle and syringe should be used for each injection
- Parenteral vaccine is delivered in a 1 ml or 3 ml syringe
- Use sharps-protective devices when available

### -Needle Selection

- Based upon prescribed route, size of the individual, volume and viscosity of the vaccine, and injection technique
- Typically, a fine gauge needle (22-25 gauge) can be used



# Vaccine Preparation

## ■ Inspection of the Vaccine

- Inspect each vial visually for contamination or damage and discard vial if either are present
- Inspect the vaccine for particulate matter or discoloration and discard if either are present



# Vaccine Preparation

## ■ Inspection of the Vaccine

- Check the expiration date
- Vaccine can be used through the last day of the month indicated by the expiration date unless otherwise stated on package labeling
- Expired vaccine should never be used



# Vaccine Preparation

## ■ Prefilling Syringes

- Do not fill syringes in advance due to the increased risk of administration and other errors
- Medication administration guidelines state that the individual who administers a medication should be the one to draw up and prepare it
- In certain circumstances, such as a large influenza clinic, more than one syringe can be filled. One person should prefill only a few syringes at a time and the same person should administer them. Any syringes left at the end of the clinic day should be discarded



# Vaccine Preparation

## ■ Single-dose syringe

-Shake the syringe thoroughly and administer the dose immediately

## ■ Multi-dose vial

-Shake the vial thoroughly before withdrawing each dose, and administer the dose immediately



# Vaccine Preparation

## ■ Labeling

-Once a vaccine is drawn into a syringe, the content should be indicated on the syringe unless it is administered immediately to the patient



# Vaccine Preparation

## ■ Storage Considerations

-When not actively administering or measuring doses, the single dose syringes and the multi-dose vials of vaccine must be stored at all times maintaining the temperature at 2° to 8° Celsius (36° to 46° Fahrenheit)



# Vaccine Preparation

## ■ Storage Considerations

- The vaccine should never be frozen
- Once the stopper has been pierced, the vial must be discarded within 28 days



# Intramuscular H1N1 Vaccine Administration

## Contraindications

- Persons who are already moderately or severely ill
- Severe allergic reaction or systemic hypersensitivity to a previous dose of H1N1 vaccine or previous influenza vaccine
- Known allergy or previous systemic hypersensitivity to egg or chicken protein, neomycin or polymyxin



# Intramuscular H1N1 Vaccine Administration

## Warnings and Precautions

- If Guillain-Barré syndrome has occurred within 6 weeks of receipt of a prior influenza vaccine, the decision to give the H1N1 vaccine should be based on careful consideration of the potential benefits and risks and discussed with the patient's primary healthcare provider
- Immunocompromised persons may have a reduced immune response to the H1N1 vaccine



# Thimerosal

- Vaccines that are packaged in multi-dose vials use thimerosal, a preservative to prevent contamination
- The vast majority of research conducted in the United States on thimerosal does not support an association between thimerosal in vaccines and autism



# Thimerosal

- Due to concerns that remain in the public, your LHD may prefer to use thimerosal-free vaccine (i.e., single-dose syringes rather than the multi-dose vial) for pregnant women and children under six years of age
- If thimerosal-free vaccine is not available, individuals who do not have contraindications to the H1N1 vaccine may elect to receive an H1N1 vaccine formulation that contains thimerosal



# Administration of Vaccines: Injection Site and Needle Size for Intramuscular Injections

## ■ Infants (1-12 months)

-Needle size: 22-25 gauge

-Angle: 90°

-Needle length: 1 inch

-Site: Anterolateral thigh muscle

-Route: Intramuscular (IM)



# Administration of Vaccines: Injection Site and Needle Size for Intramuscular Injections

## ■ **Toddlers (1-2 years)**

-Needle size: 22-25 gauge

-Angle: 90°

-Needle length: 1 inch to 1¼ inch

-Site: Anterolateral thigh muscle or deltoid muscle of arm

-Route: Intramuscular (IM)



# Administration of Vaccines: Injection Site and Needle Size for Intramuscular Injections

## ■ Children (3-18 years)

-Needle size: 22-25 gauge

-Angle: 90°

-Needle length: 1 inch to 1¼ inch

-Site: Deltoid muscle of arm

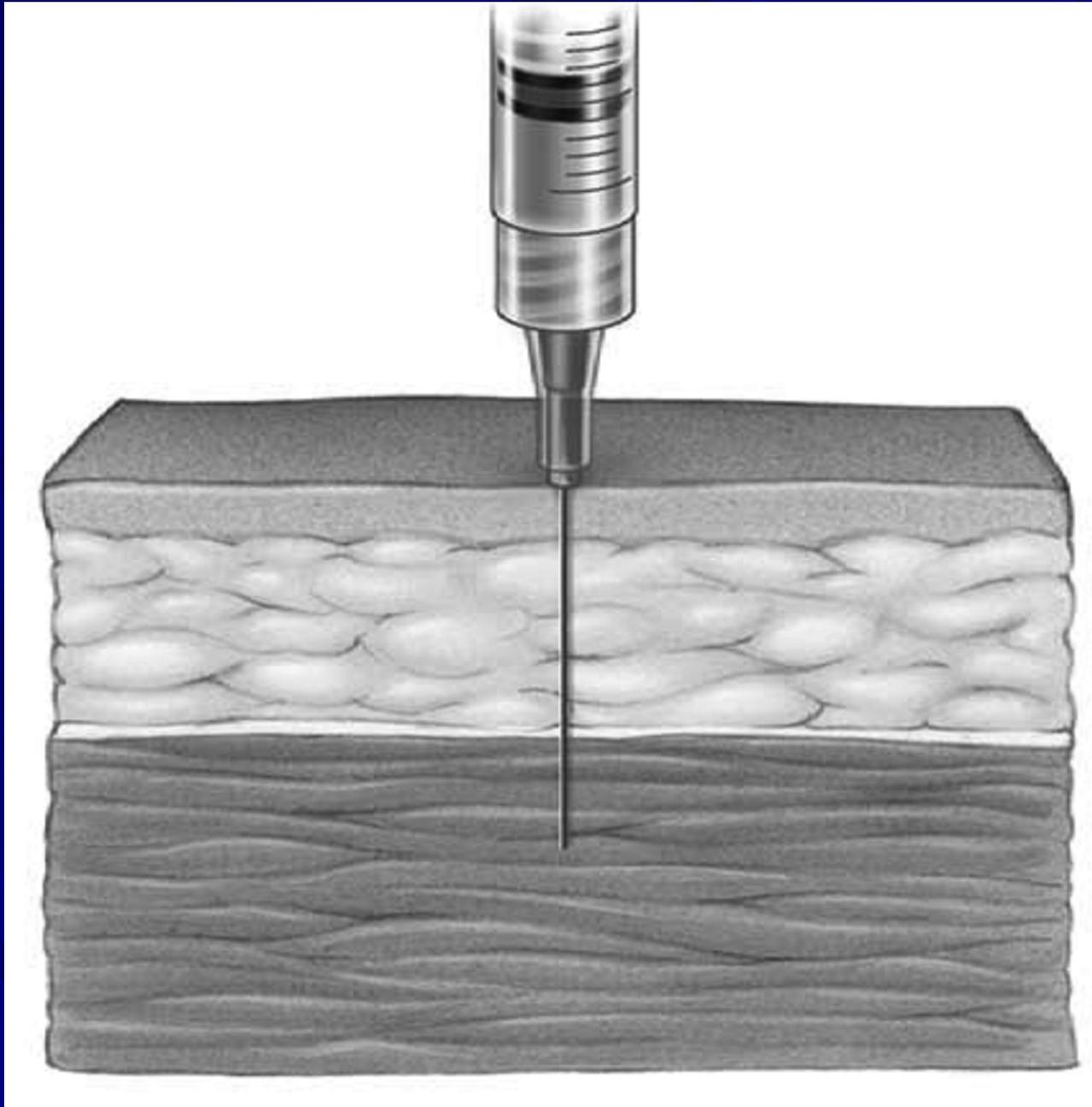
-Route: Intramuscular (IM)



## Administration of Vaccines: Injection Site and Needle Size for Intramuscular Injections

- **Adults: 19 years of age and older**
  - Needle Size: 22-25 gauge
  - Angle: 90°
  - Site: Deltoid muscle of arm
- **Male or female < 130 pounds**
  - Needle length: 1 inch
- **Female 130-200 pounds or Male 130-260 pounds**
  - Needle length: 1 inch to 1½ inch
- **Female > 200 pounds or Male > 260 pounds**
  - Needle length: 1½ inch



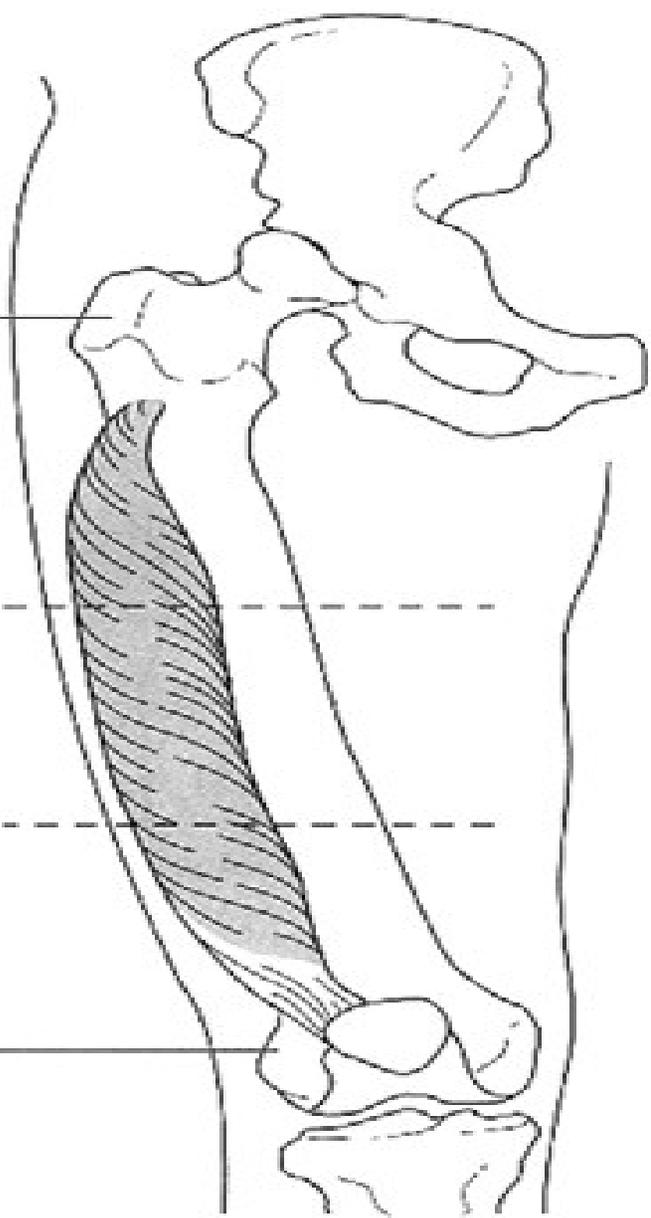




Greater trochanter  
of femur

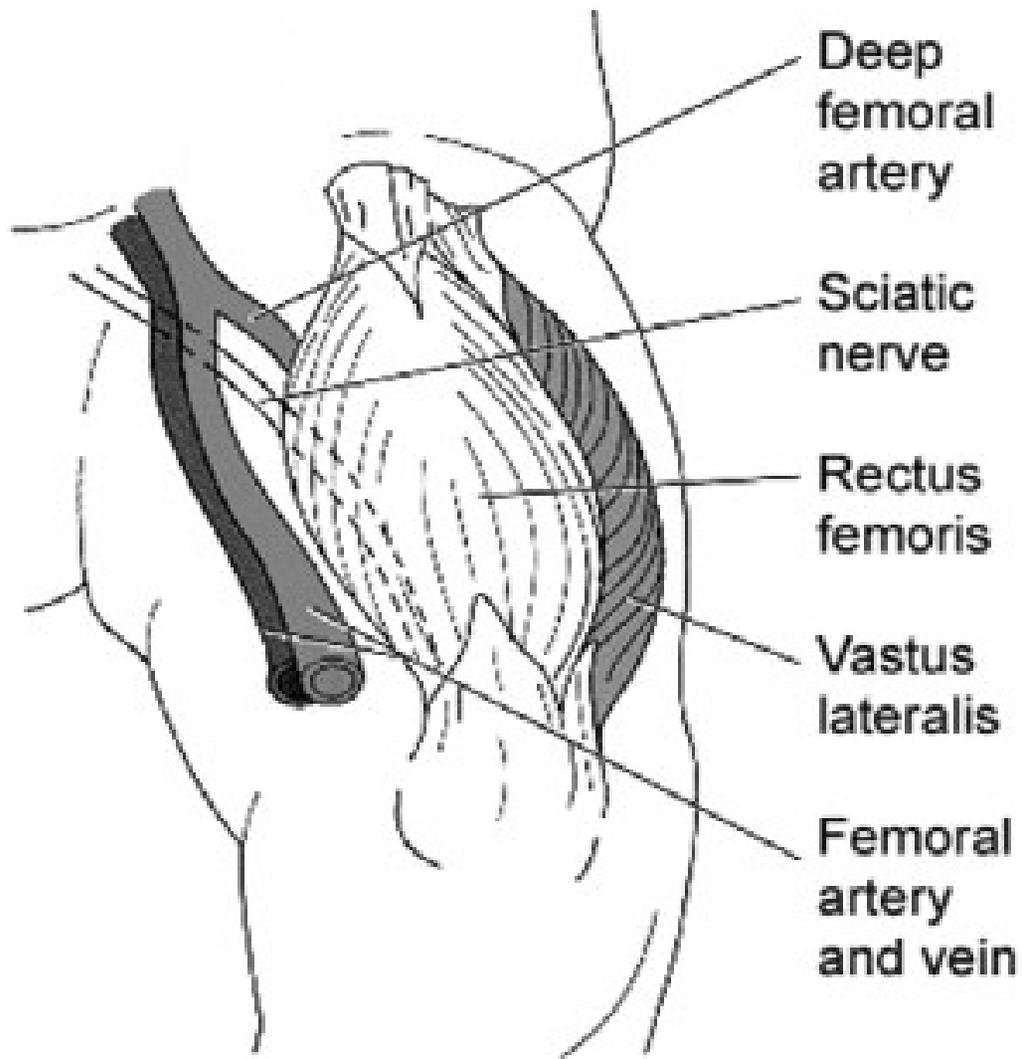
Vastus lateralis  
(middle third)

Lateral femoral  
condyle



The vastus lateralis site of the right thigh, used for an intramuscular injection.

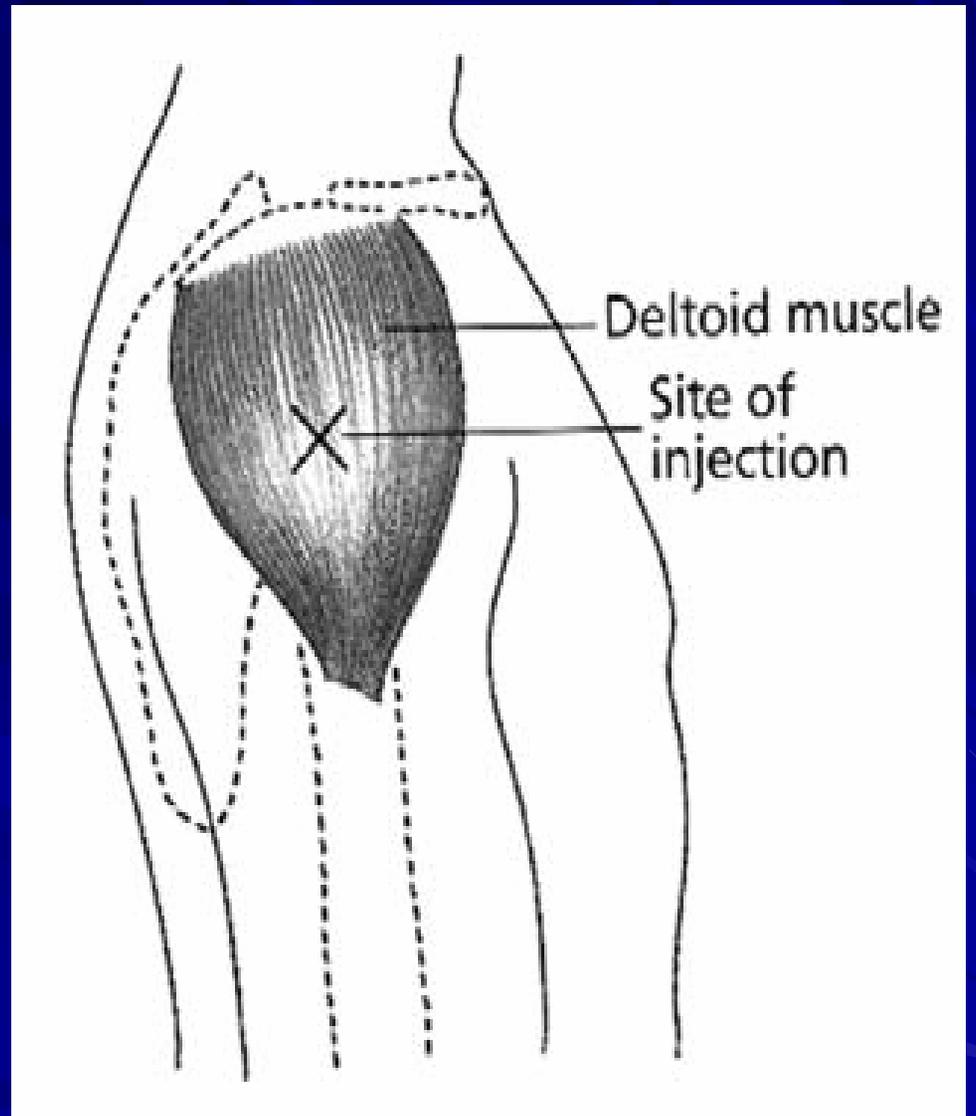
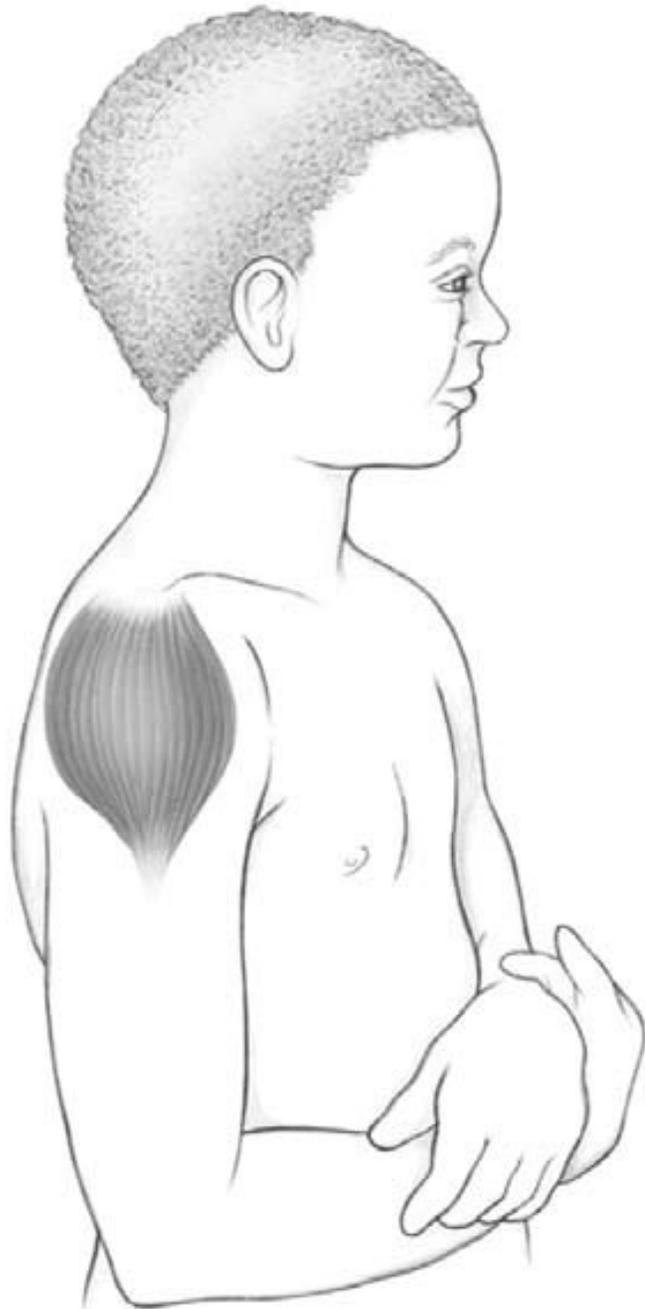




The vastus lateralis muscle of the upper thigh used for intramuscular injections.







# Intramuscular (IM) Injection Technique

- To avoid injection into subcutaneous tissue, spread the skin of the selected vaccine administration site taut between the thumb and forefinger, isolating the muscle
  - Another technique, acceptable mostly for pediatric and geriatric patients, is to grasp the tissue and "bunch up" the muscle
- Insert the needle fully into the muscle at a 90° angle and inject the vaccine into the tissue



# Intramuscular (IM) Injection Technique

- Withdraw the needle and apply light pressure to the injection site for several seconds with a dry cotton ball or gauze
- **Aspiration is not required**
  - No large blood vessels exist at the recommended injection sites





# H1N1 Intramuscular Vaccine: Recommended Doses

- Recommended doses for the intramuscular H1N1 vaccine vary by manufacturer
- The major manufacturers of the H1N1 vaccine for intramuscular administration include:
  - CSL Limited®
  - Novartis Vaccines and Diagnostics Limited®
  - Sanofi Pasteur, Inc.®



# CSL® H1N1 Vaccine Manufactured Preparations

- Pre-filled 0.5 ml syringe
  - Single dose
  - Preservative-free
- Multi-dose 5 ml vial
  - Contains enough vaccine for ten (10) doses
  - Contains thimerosal as a preservative



# CSL® H1N1 Vaccine Recommended Dose

## ■ Adults 18 years of age and older

- Single dose of 0.5 ml IM
- Second dose is not indicated

## ■ Children

- Do not administer to children under the age of 18 years of age



# Novartis® H1N1 Vaccine Manufactured Preparations

- Pre-filled 0.5 ml syringe
  - Single dose
  - The thimerosal used during manufacturing of the vaccine is removed by purification to a trace amount
- Multi-dose 5 ml vial
  - Contains enough vaccine for ten (10) doses
  - Thimerosal is added as a preservative



# Novartis® H1N1 Vaccine

## Recommended Dose

<b>Age Group</b>	<b>Initial Dose</b>	<b>Second Dose</b> <i>(Approximately 30 days after first dose)</i>
<b>4 - 9 years</b>	<b>0.5 ml IM</b>	<b>0.5 ml IM</b>
<b>10 - 17 years</b>	<b>0.5 ml IM</b>	<b>Second dose not indicated</b>
<b>18 years or older</b>	<b>0.5 ml IM</b>	<b>Second dose not indicated</b>



# Sanofi Pasteur® H1N1 Vaccine

## Manufactured Preparations

- Pre-filled 0.25 ml syringe
  - Single dose
  - Distinguished by a **pink** syringe plunger rod
  - Contains no preservatives
- Pre-filled 0.5 ml syringe 0.5ml
  - Single dose
  - Contains no preservatives
- Single dose 0.5 ml vial
  - Contains no preservatives
- Multi-dose 5 ml vial
  - Contains enough vaccine for ten (10) doses
  - Contains thimerosal as a preservative



# Sanofi Pasteur® H1N1 Vaccine

## Recommended Dose

<b>Age Group</b>	<b>Initial Dose</b>	<b>Second Dose</b> <i>(Approximately 30 days after first dose)</i>
<b>6-35 months</b>	<b>0.25 ml IM</b>	<b>0.25 ml IM</b>
<b>36 months to 9 years</b>	<b>0.5 ml IM</b>	<b>0.5 ml IM</b>
<b>Children 10 years and older</b>	<b>0.5 ml IM</b>	<b>Second dose not indicated</b>
<b>Adults</b>	<b>0.5 ml IM</b>	<b>Second dose not indicated</b>



# Multiple Vaccinations

- When administering the H1N1 vaccine to a patient who is receiving multiple vaccines, **never** mix the vaccines in the same syringe unless approved for mixing by the FDA
- Location of each injection should be documented in the patient's medical record



# Multiple Vaccinations

- If more than one vaccine must be administered in the same limb, the injection sites should be separated by 1 to 2 inches so that localized reactions can be easily differentiated
- Administration of two vaccines IM into the same muscle should not exceed any suggested volume ranges for either the vastus lateralis or the deltoid muscle in any age group



# Multiple Vaccinations

- Although patients may request the seasonal influenza vaccine and the H1N1 vaccine, **EMS personnel may only administer the H1N1 vaccine as the novel H1N1 virus would be the reason for the declaration of emergency**



# Critical Vaccination Safety Precautions

- Never use the same syringe to administer medication to more than one patient even if the needle was changed
- Never access a shared medication vial with a syringe that has already been used to administer medication to a patient
- The H1N1 vaccine must be maintained at the recommended temperature at all times to maintain its clinical effectiveness



# Special Situations

## ■ Bleeding Disorders

- Individuals with a bleeding disorder or who are receiving anticoagulant therapy may develop hematomas in IM injection sites
- Prior to administration of IM vaccines, the patient or family should be instructed about that risk
- A physician familiar with the patient's bleeding disorder or therapy should be consulted
- A 23-gauge or finer needle should be used and firm pressure applied to the site for at least 2 minutes
- The site should not be rubbed or massaged



# Special Situations

## ■ Latex Allergy

- Vaccine supplied in a vial or syringe that contains natural rubber should not be administered to an individual with a history of a severe (anaphylactic) allergy to latex
- Medical consultation and direction should be sought regarding vaccination
- A local or contact sensitivity to latex is not a contraindication to vaccination



# H1N1 Intramuscular Vaccine

## Adverse Reactions

- The most common ( $\geq 10\%$ ) **local** (injection-site) adverse reactions were tenderness, pain, redness, and swelling
- The most common ( $\geq 10\%$ ) **systemic** adverse reactions were headache, malaise, and muscle aches, rash, and influenza-like symptoms.



# Adverse Reactions Requiring Intervention

- Localized
- Psychological fright and syncope (fainting)
- Anaphylaxis



# Adverse Reactions Requiring Acute Intervention

## ■ Localized

- Soreness, redness, itching, swelling, or bleeding at the injection site
- Apply cold compresses, and if necessary to control bleeding, manual pressure or a pressure dressing
- Consider administration of an analgesic for pain relief or an antipruritic medication to prevent itching



# Adverse Reactions Requiring Acute Intervention

## ■ Syncopal or Vasovagal Response

- Fainting may occur during vaccine administration
- To prevent injury, the provider should have the patient sit during injection(s)
- If syncope develops, the provider should observe and administer supportive care until the patient is recovered



# Adverse Reactions Requiring Acute Intervention

- **Anaphylaxis** (a life-threatening acute allergic reaction)
  - Although both fainting and allergic reactions are rare, vaccine providers should strongly consider observing patients for 15 minutes after they are vaccinated



# Symptoms of Anaphylaxis

*Symptoms develop rapidly, often within seconds or minutes. Symptoms may include:*

*Difficulty breathing*

*Wheezing*

*Abdominal pain or cramping*

*Diarrhea*

*Confusion*

*Slurred speech*

*Rapid or weak pulse*

*Fainting, light-headedness,  
dizziness*

*Hives and generalized itching*

*Anxiety*

*Skin redness*

*Sensation of feeling the heart  
beat (palpitations)*

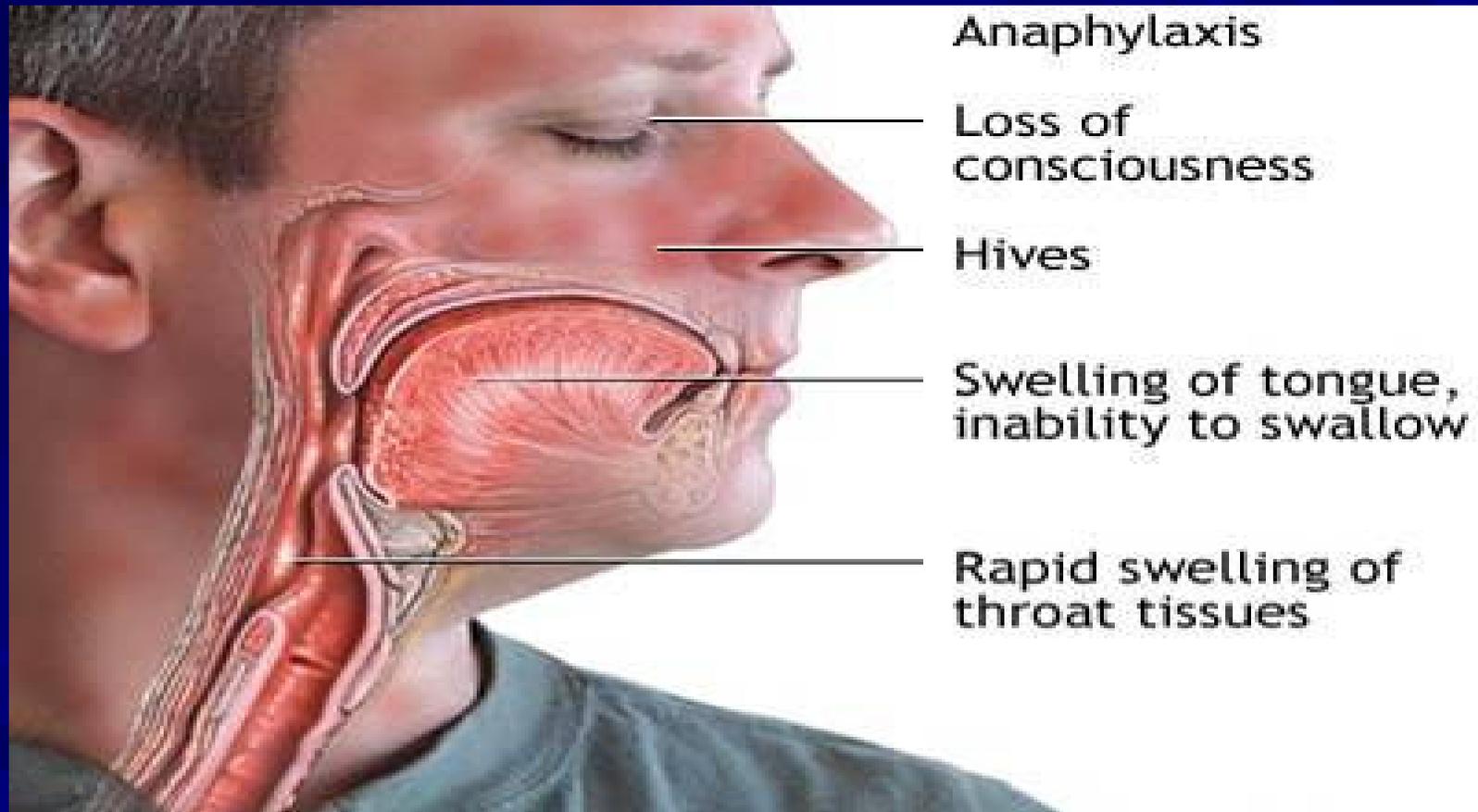
*Abnormal (high-pitched)  
breathing sounds*

*Blueness of the skin (cyanosis),  
including the lips or nail beds*



# Symptoms of Anaphylaxis

*Signs and symptoms develop rapidly, often within seconds or minutes. Signs and symptoms may include:*



Nasal congestion  
Cough  
Nausea, vomiting



# Anaphylaxis

***An emergency condition requiring immediate professional medical attention***

- If itching or swelling are *confined to injection site*, observe client closely for development of generalized symptoms
- If primary symptom is wheezing and/or urticaria (hives) without signs of anaphylaxis, place the patient in a sitting or semi-recumbent position of comfort



# Anaphylaxis

*An emergency condition requiring immediate professional medical attention*

-If flushing, facial edema, urticaria (hives), itching, swelling of the mouth or throat, wheezing, difficulty breathing, or other signs of anaphylaxis occur, the patient should be placed in a recumbent position with the legs elevated



# Anaphylaxis

*An emergency condition requiring immediate professional medical attention*

Instruct someone to **CALL 911** while you:

- Assess the **ABC's** (airway, breathing, and circulation)
- Initiate **CPR** if needed
- EPINEPHRINE** should be given by injection without delay

- Place the victim in shock position
- Keep the person warm and comfortable
- Turn the victim's head to one side if neck injury is not suspected



\*\*signs of shock: pale, cool and clammy skin, weak and rapid pulse, shallow breathing, confusion, anxiety



# Administration of Epinephrine

***Someone has already called 911***

- Retrieve ampule of epinephrine (*1:1000 dilution*)
- Using cotton ball, tissue, or alcohol wipe, break the epinephrine ampule holding the container away from you
- Administer epinephrine (*1:1000 dilution*) IM or SC

***Epinephrine can be repeated in 10 minutes if EMS has not arrived***



# Administration of Epinephrine

- Administer epinephrine per your local EMS protocol or the LHD protocol

**OR**

- Draw up dose appropriate to patient age or weight:
  - Child <5 years 0.1 ml
  - Child 5-10 years 0.2 ml
  - Child > 10 years 0.2 ml to 0.5 ml



# Treatment of Anaphylaxis: Suggested Dosing Regimen

Age Group	Weight in kg	Weight in lbs	<u>Epinephrine</u> 1 mg/ml injectable (1:1000 dilution) intramuscular	<u>Diphenhydramine</u> (Benadryl®) 12.5 mg/5ml liquid 25 and 50 mg capsules or tabs 50 mg/ml injectable
1-6 mos	4-7 kg	9-15 lbs	0.05 mg (0.05 ml)	5 mg
7-18 mos	7-11 kg	15-24 lbs	0.1 mg (0.1 ml)	10 mg
19-36 mos	11-14 kg	24-31 lbs	0.15 mg (0.15 ml)	15 mg
37-48 mos	14-17 kg	31-37 lbs	0.15 mg (0.15 ml)	20 mg
49-59 mos	17-19 kg	37-42 lbs	0.2 mg (0.2 ml)	20 mg



# Treatment of Anaphylaxis: Suggested Dosing Regimen

Age Group	Weight in kg	Weight in lbs	<u>Epinephrine</u> 1 mg/ml injectable (1:1000 dilution) intramuscular	<u>Diphenhydramine</u> (Benadryl®) 12.5 mg/5ml liquid 25 and 50 mg capsules or tabs 50 mg/ml injectable
5-7 yrs	19-23 kg	42-51 lbs	0.2 mg (0.2 ml)	30 mg
8-10 yrs	23-35 kg	51-77 lbs	0.3 mg (0.3 ml)	30mg
11-12 yrs	35-45 kg	77-99 lbs	0.4 mg (0.4 ml)	40 mg
13 yrs & older	> 45 kg	> 99 lbs	0.5 mg (0.5 ml)	50-100 mg



# **Intranasal H1N1 Vaccine**

# Intranasal H1N1 Vaccine

- The intranasal H1N1 vaccine is a **live** vaccine (the intramuscular form of the vaccine is inactivated)
- Indicated for the active immunization of healthy individuals who are 2 to 49 years of age against H1N1 influenza
- May be preferable in small children because of their fears of injection



# Intranasal H1N1 Vaccine

## Contraindications

- Hypersensitivity to eggs, egg proteins, gentamicin, gelatin, or arginine
- Life-threatening or systemic hypersensitivity reaction to a previous influenza vaccination
- Concomitant aspirin therapy in children and adolescents



# Intranasal H1N1 Vaccine

## Warnings and Precautions

- Do not administer to children less than 24 months of age because of increased risk of hospitalization and wheezing
- Should not be administered to individuals with asthma of any age or to children less than 5 years of age with recurrent wheezing due to the potential for increased risk of wheezing following vaccination administration



# Intranasal H1N1 Vaccine

## Warnings and Precautions

- Due to the fact that the intranasal form of the vaccine is a live virus vaccine, the administration of the intranasal H1N1 vaccine should not be administered to persons who are receiving or have recently received other live vaccines
- Persons who are not immunocompromised and are receiving or have recently received other live vaccine may receive the intramuscular H1N1 vaccine, which is an inactivated vaccine, unless other contraindications exist



# Intranasal H1N1 Vaccine

## Warnings and Precautions

- Due to the fact that this form of vaccine is a live virus vaccine, administration of the intranasal H1N1 vaccine to immunocompromised persons should be based on careful consideration of potential benefits and risks
- If Guillain-Barré syndrome has occurred with any prior influenza vaccination, the decision to give the H1N1 vaccine should be based on careful consideration of the potential benefits and risks and discussed with the patient's primary healthcare provider



# Intranasal H1N1 Vaccine

## Adverse Reactions

- Rhinorrhea (runny nose)
- Nasal congestion
- Fever greater than 100° Fahrenheit in children 2 to 6 years of age
- Sore throat in adults



# Intranasal H1N1 Vaccine

## Drug Interactions

- The intranasal H1N1 vaccine should not be administered in persons taking antiviral agents that are active against influenza A and/or influenza B until at least 48 hours after the cessation of the antiviral agent administration
- Antiviral agents should not be administration for at least 2 weeks following the administration of the H1N1 intranasal vaccine until deemed medically necessary



# Intranasal H1N1 Vaccine Manufactured Preparation

- Manufactured by MedImmune LLC® as a pre-filled single-dose intranasal sprayer containing 0.2 ml suspension
- Each 0.2 ml dose should be administered as 0.1 ml intranasal (IN) into each nostril



# MedImmune® Intranasal H1N1 Vaccine Recommended Doses

## ■ Persons of age 2 to 9 years

One 0.2 ml intranasal dose followed by a second 0.2 ml intranasal dose approximately one month after administration of the first dose

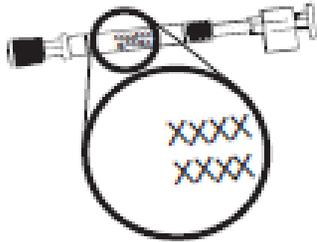
## ■ Persons of age 10 to 49 years

One 0.2 ml intranasal dose



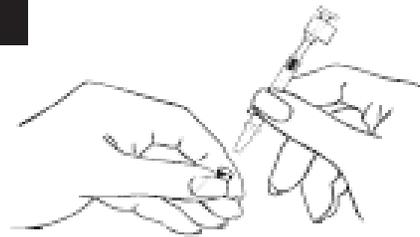
# Intranasal H1N1 Vaccine Administration

1



**Check expiration date.**  
Product must be used before the date on sprayer label.

2



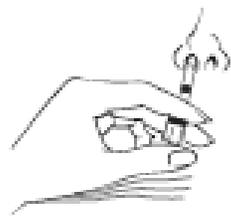
Remove rubber tip protector. Do not remove dose-divider clip at the other end of the sprayer.

3



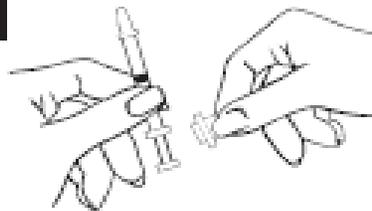
With the patient in an upright position, place the tip just inside the nostril to ensure the vaccine is delivered into the nose.

4



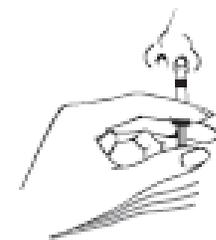
With a single motion, depress plunger **as rapidly as possible** until the dose-divider clip prevents you from going further.

5



Pinch and remove the dose-divider clip from plunger.

6



Place the tip just inside the other nostril and with a single motion, depress plunger **as rapidly as possible** to deliver remaining vaccine.



**DO NOT INJECT. DO NOT USE A NEEDLE.**

**Note:** Active inhalation (i.e., sniffing) is not required by the patient during vaccine administration

# Documentation

- All vaccines administered should be fully documented in the patient's permanent medical record
- Documentation should include:
  - 1. Date of administration
  - 2. Name or common abbreviation of vaccine
  - 3. Vaccine lot number
  - 4. Vaccine manufacturer
  - 5. Administration site
  - 6. Vaccine Information Statement (**VIS**) edition date (found in the lower right corner of the back of the VIS).
  - 7. Name and address of vaccine administrator with storage of the records at this address



# Documentation

- The patient interview and screening process, including the acquisition of informed consent, to receive the H1N1 vaccination is determined by the local public health authorities
- All patient allergies, including allergies to medications and foods, must be obtained and documented
- The H1N1 vaccine is contraindicated in patients who are allergic to eggs or chicken protein



# Documentation

- Facilities that administer vaccines are encouraged to participate in state/local immunization information systems
- The patient or parent should be provided with an immunization record that includes the vaccines administered with dates of administration



# Vaccination Information Statement (VIS)

- If your LHD elects to utilize a VIS as part of their documentation process, provide a current VIS to each individual or legal guardian
- After the VIS is read by and/or reviewed with the individual or guardian, answer any and all of their questions **before** vaccine administration
- If the LHD provides them, give an immunization record card to the vaccine recipient to provide them with a record of the vaccination administration



# Highlights of the Expanded Ohio EMS Scope of Practice in a Declared Emergency

- In the event that OAC 4765-6-03 is triggered by the governor declaring an emergency that affects the public's health, the expansion of the Ohio EMS scope of practice applies **only to the H1N1 immunization**



# Highlights of the Expanded Ohio EMS Scope of Practice in a Declared Emergency

- Although the enactment of OAC 4765-6-03 applies to all certified Ohio EMS providers, the EMS Board has recommended that the H1N1 immunizations be performed by EMT-Intermediates and EMT-Paramedics as they have had prior training in the administration of medications via the intramuscular route



# Highlights of the Expanded Ohio EMS Scope of Practice in a Declared Emergency

- The treatment of adverse effects following an immunization provided by an EMS provider must remain within the Ohio EMS scope of practice
- Unless a patient possesses an epinephrine auto-injector, the EMS Board's recommendation to limit the administration of H1N1 immunizations to EMT-Intermediates and EMT-Paramedics is also supported by the inability of First Responders and EMT-Basics to administer the medications required to treat anaphylaxis from the H1N1 immunization



# Skills Checklist for Immunization

- All EMS personnel, prior to administration of the H1N1 Vaccine, are to complete the **Skills Checklist for Immunization**
- Successful completion of the Skills Checklist for Immunization by EMS personnel may be verified by their medical director, LHD, or persons designated by the medical director or LHD



# Skills Checklist for Immunization

- The Skills Checklist for Immunization is available on the Ohio Department of Public Safety (ODPS), Division of EMS website and also online at:

<http://www.cdc.gov/vaccines/Pubs/pinkbook/downloads/appendices/appdx-full-d.pdf>

– Pages D-16 & D-17



# Reference and Suggested Handout

- *Epidemiology and Prevention of Vaccine-Preventable Diseases*  
*The Pink Book: Course Textbook*  
11th Edition (May 2009)  
Appendix D
- Available on the ODPS, Division of EMS website and online at:  
<http://www.cdc.gov/vaccines/Pubs/pinkbook/downloads/appendices/appdx-full-d.pdf>



# **H1N1 Vaccinations by Ohio EMS Personnel**

**This program qualifies for Ohio EMS continuing education hours when presented in compliance with OAC 4765-7-11, 4765-18-02, and 4765-19**

