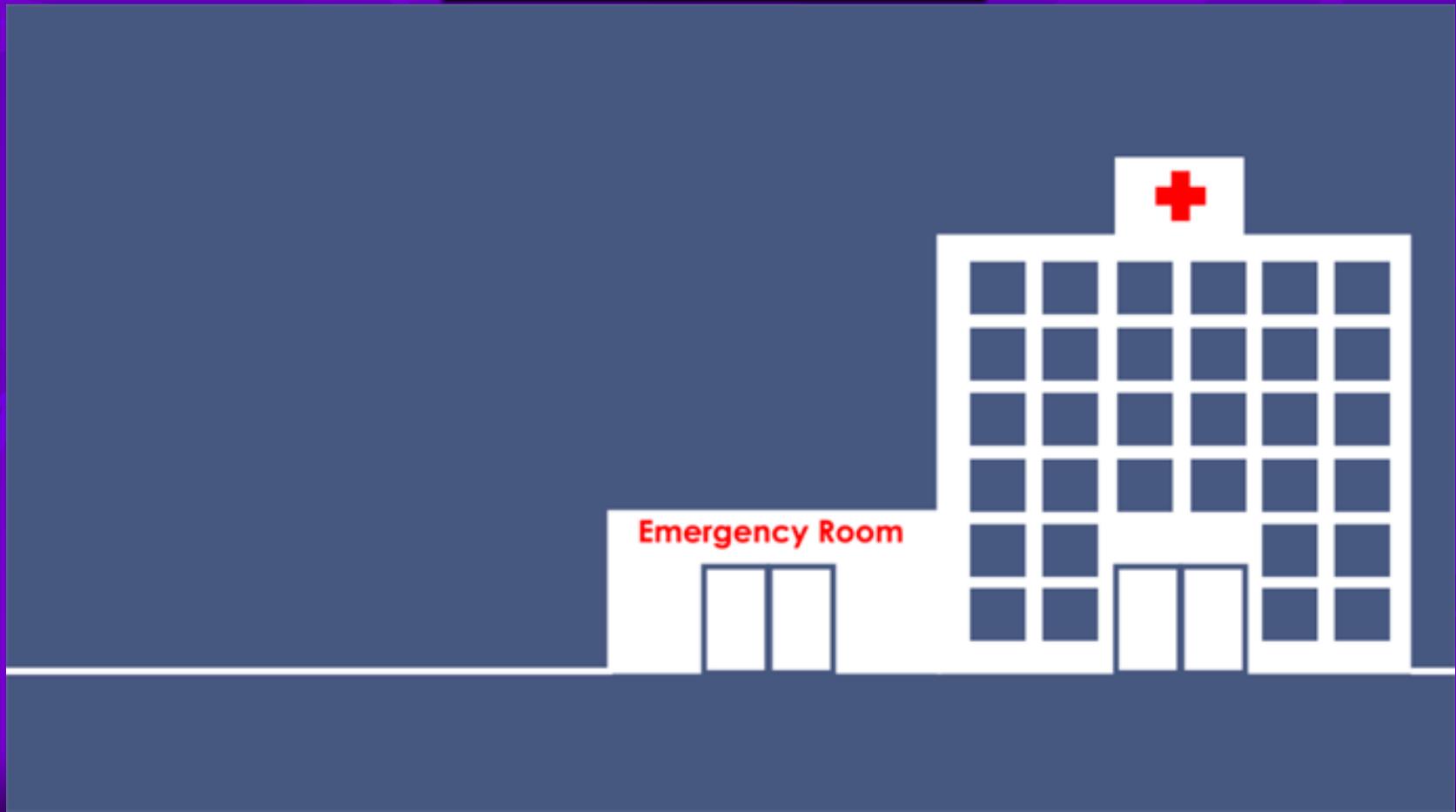


2014 – 2015 Influenza Inservice



Biology of Influenza

Biology of Influenza

Divided into 2 types that spread human disease

- Influenza A
 - H1N1
 - H3N2
- Influenza B
 - New Quadrivalent vaccines have 2 Influenza B like antigens

Influenza Immunity

- Seasonal epidemics are the result of antigenic drift
- Flu vaccine is reevaluated every year to address antigenic drift
- When antigenic shift occurs a new subtype of influenza A appears and can cause a pandemic (Novel H1N1) because there are few with antibodies

Influenza Spread

- Spread by contact with an infected person through:
 - Sneezing
 - Coughing
 - Touching items recently contaminated by a person with the flu virus

Transmission

- Droplet (coughing, sneezing)
- Contact
 - Direct touching of contaminated surfaces
 - Virus may persist 2 – 8 hr on surfaces
- Patients contagious from 1 day before to ≥ 7 days after onset



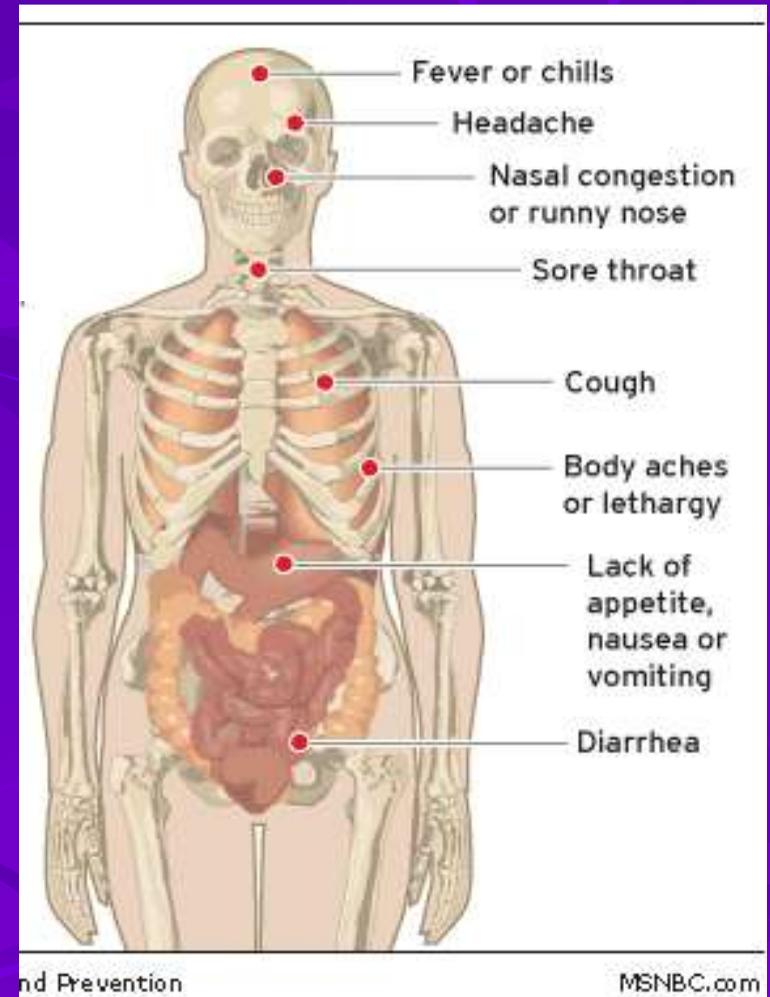
Prevention

- Clean hands frequently
- Avoid touching eyes, nose, mouth
- Try to avoid close contact with sick people
- Get vaccinated



Symptoms

- Fever (typically ≥ 100 F)
- Cough (usually nonproductive)
- Headache, body aches
- Severe fatigue
- Runny nose
- Sore throat
- May have diarrhea, nausea, vomiting



2013 – 2014 Influenza Treatment Recommendations

Influenza is susceptible to the antiivirals oseltamivir (Tamiflu®) and zanamivir (Relenza®)

Start antivirals ASAP for:

- Hospitalized patients.
- High-risk populations for seasonal influenza complications
 - Children < 2 years
 - Adults > 65 years
 - Persons with chronic diseases
 - Persons with immunosuppression.
 - Women who are pregnant or postpartum
 - American Indians/Alaska Natives
 - Persons who are morbidly obese
 - Residents of chronic care facilities
 - Patients with confirmed or suspected influenza who have severe, complicated or progressive illness or who require hospitalization

Influenza Treatment (cont.)

- Antivirals: largest benefit if started within 48 hours of illness, however there is some benefit even if started later.
- Oseltamivir (Tamiflu®) can be used for all ages.
- Can be considered on the basis of clinical judgment for any patient if can be initiated within 48 hours of illness.
- Recommendations may change so clinicians should monitor local resistance data.
- Oral oseltamivir is preferred for treatment of pregnant women.

Seasonal Flu

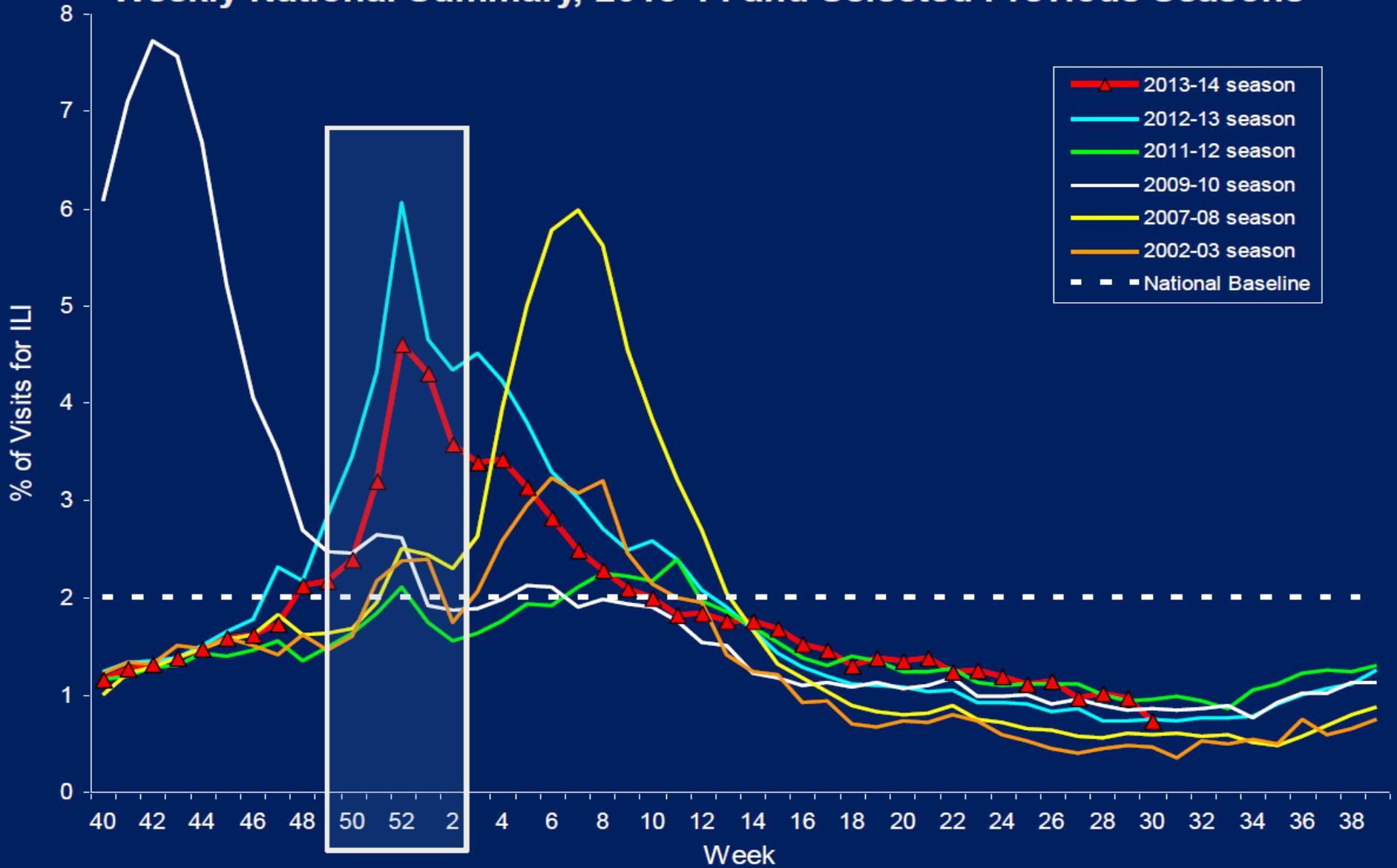
- December - March
- Every Year in the U.S. on the average
 - 200,000 Hospitalized
 - 3,000 - 49,000 Deaths (Very Young, Old, Immune Compromised)
 - Most recover within 1 – 2 weeks
- 2013-14 season in Delaware
 - 1811 cases
 - 422 hospitalizations
 - 6 deaths
 - Peak Jan – Feb
 - 33% 25-49 years old
 - 25% 5-24 years old
 - 17% 0-4 years old
 - 19% 50-64 years old
 - 9% 65 and over

2013-14 Influenza Season, US

- **H1N1 predominant**
- **Viruses similar to vaccine strains**
- **Moderately severe season**
- **Highest rates among elderly, but relatively high rates of severe disease among younger adults**
- **Early season – 2nd year in a row**
- **Vaccine effectiveness ~52% overall**



Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2013-14 and Selected Previous Seasons



Seasonal Flu

- Global:
 - Millions infected
 - Between 250,000 to 500,000 deaths per year

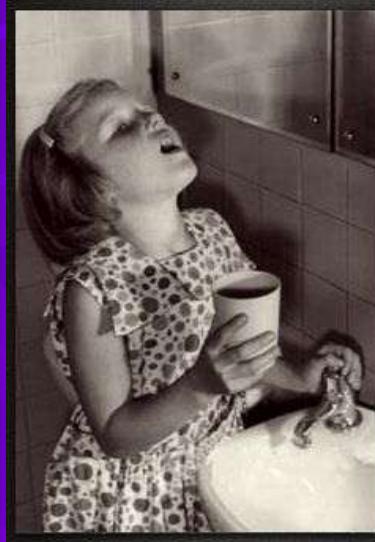
Seasonal vs. Pandemic Flu

- Seasonal flu is predictable – Pandemic flu is not
- Pandemic flu is caused by a novel virus strain that humans have little resistance against
- Pandemic flu infects large numbers of people of different ages globally and can cause serious illness and deaths

Influenza Pandemics of the 20th Century



1918 “Spanish Flu”
20–40 Million Deaths
675,000 U.S.
A (H1N1)



1957 “Asian Flu”
1–4 Million Deaths
70,000 U.S.
A (H2N2)



1968 “Hong Kong Flu”
1-4 Million Deaths
34,000 U.S.
A (H3N2)

Influenza Treatment and Prevention

The most cost effective way to combat influenza is to prevent it by **immunization** and **good hygiene.**

Influenza Immunization Recommendation

- All individuals ≥ 6 months of age should receive influenza vaccine. Influenza vaccination should not be delayed to procure a specific vaccine preparation if an appropriate one is already available
- Vaccination to prevent influenza is particularly important for persons who are at increased risk for severe complications from influenza, or at higher risk for influenza-related outpatient, emergency department, or hospital visits
- Vaccination optimally should occur before onset of flu activity, as soon as vaccine is available (if possibly by October) and should be offered through the influenza season

NOTE: If there is a vaccine shortage and/or late arrival of vaccine supplies (especially early in the flu season), it is appropriate to use contingency plans to vaccinate those persons with high-risk conditions rather than those who wish to reduce risk, or all persons 50 years of age or over until adequate vaccine supplies are available.

Inactivated Influenza Vaccine (IIV)

2014 - 2015 FORMULA :

- A/California/7/2009(H1N1)pdm09– like virus;
- A/Texas/50/2012(H3N2) – like virus;
- B/Massachusetts/2/2012 – like virus.
- B/Brisbane/60/2008-like antigen only in the new quadrivalent vaccines.

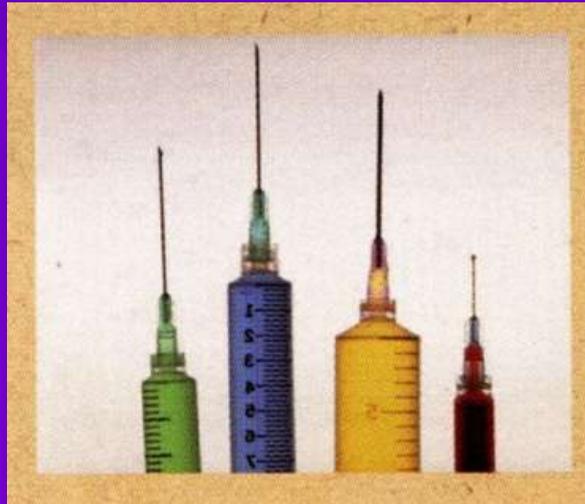
Per CDC Advisory Committee on Immunizations Practices (ACIP):

Within approved indications and recommendations, no preferential recommendation is made for any type or brand of licensed influenza vaccine over another.

Flu Shot

Inactivated Influenza Vaccine (IIV)

- Immunization into the muscle via needle
- Few contraindications
- Anyone \geq 6 months



Influenza Standing Orders 2014-2015

Inactivated Influenza
Vaccine (IIV)

Live, Attenuated,
Influenza Vaccine
(LAIV)



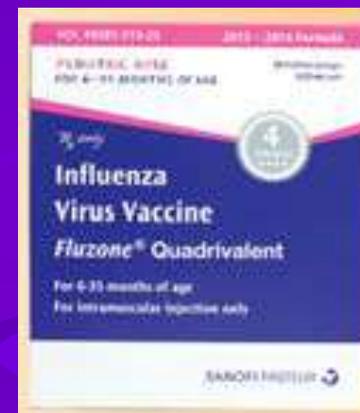
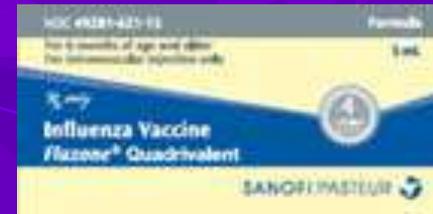
Inactivated Influenza Vaccines

6 Preparations of Fluzone[®]

1 Preparation of Fluarix[®]

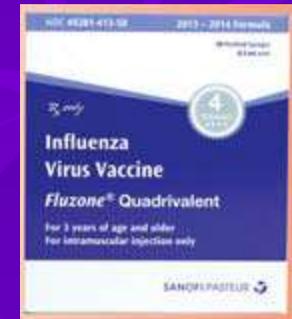
Inactivated Influenza Vaccines

- Fluzone[®] 5.0mL multidose with thimerosal (trivalent and quadrivalent; individuals \geq 8 years)
- Fluzone[®] 0.25mL single dose; thimerosal free (quadrivalent; children 6 – 35 mos) Quadrivalent only



Inactivated Influenza Vaccines

- Fluzone[®] 0.5 mL single dose prefilled syringe; thimerosal free (trivalent and quadrivalent; prioritize for children 3 years to < 8 years and pregnant women)

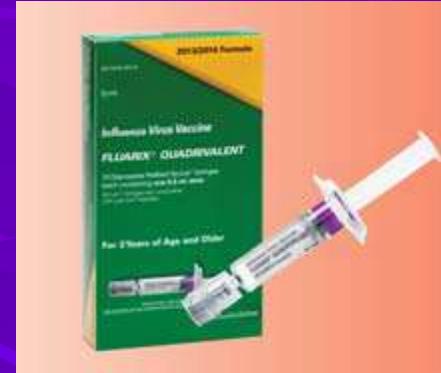


- Fluzone[®] 0.5 mL single dose vials; thimerosal free (quadrivalent; prioritize for children 3 years to < 8 years and pregnant women)



Inactivated Influenza Vaccines

- Fluarix[®] 0.5mL vial or 0.5mL prefilled syringe thimerosal free (quadrivalent; individuals \geq 3 years)

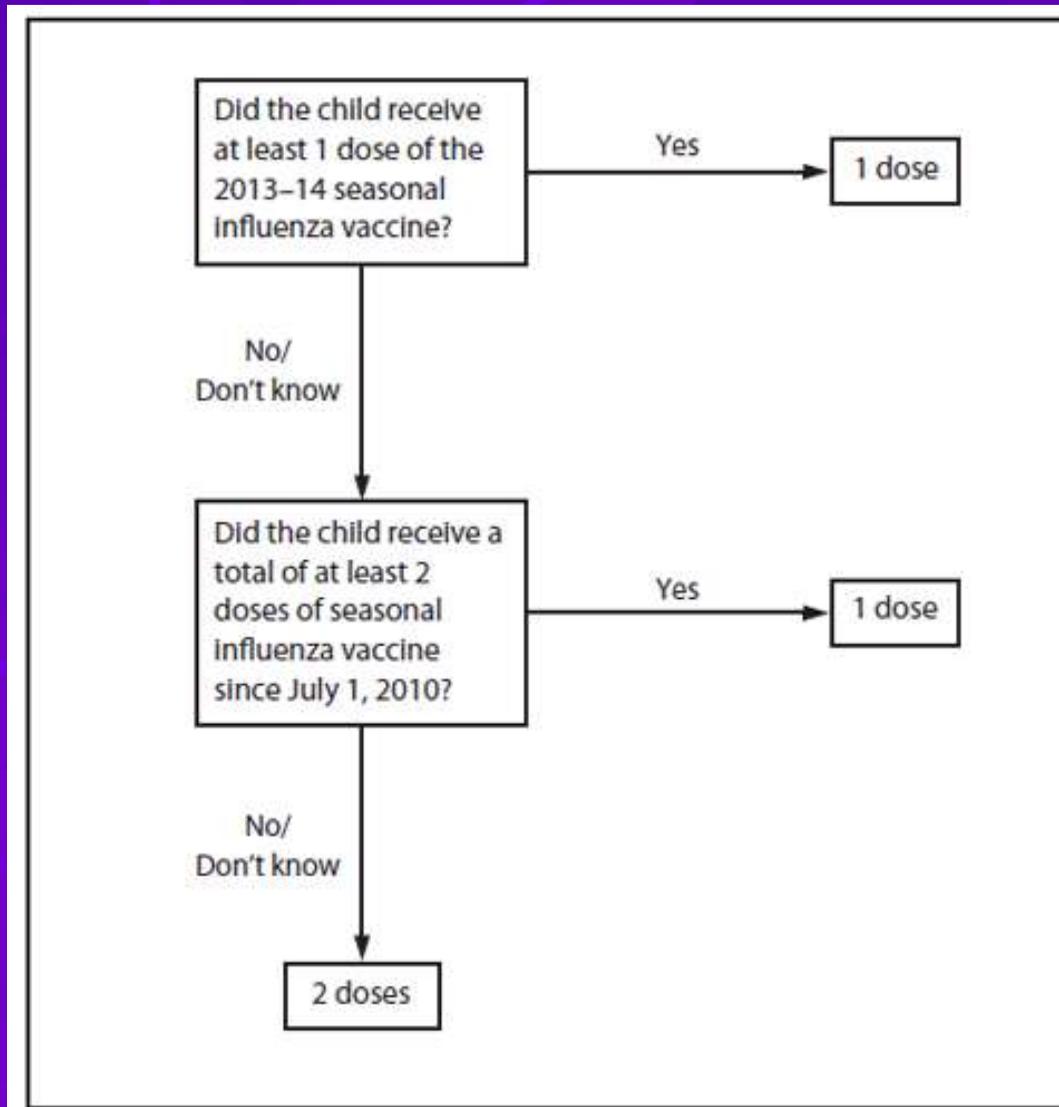


Inactivated Influenza Vaccine Dosage

AGE GROUP	DOSE	NUMBER of DOSES*	ROUTE
6 – 35 months	0.25 mL	1 or 2	IM
3 – 8 years	0.5 mL	1 or 2	IM
≥ 9 years	0.5 mL	1	IM

*See next slide for how to determine # of doses

Doses and Intervals for Children (IIV & LAIV)



Doses and Intervals for Children (IIV & LAIV)

- During their first season of vaccination children 6 months through 8 years of age should receive 2 doses, spaced \geq 4 weeks apart.
- Children 6 months through 8 years of age who received:
 - 1) at least 1 dose of 2013–14 seasonal influenza vaccine, or
 - 2) at least two seasonal influenza vaccines during any previous season, and at least 1 dose of a 2009(H1N1)–containing vaccineNeed only 1 dose for 2014-15.
- Using the above approach; children 6 months through 8 years of age need only 1 dose of vaccine in 2014-15 if they have received any of the following:
 - 1) 1 or more dose(s) of 2013 -14 of seasonal influenza vaccine
 - 2) 2 or more doses of seasonal influenza vaccine since July 1, 2010;
 - 3) 2 or more doses of seasonal influenza vaccine before July 1, 2010, and 1 or more doses of monovalent 2009(H1N1) vaccine;
 - 4) 1 or more doses of seasonal influenza vaccine before July 1, 2010, and 1 or more doses of seasonal influenza vaccine since July 1, 2010

LAIV vs. IIV

- The use of LAIV for healthy children aged 2 through 8 years is preferred if it is immediately available
- If LAIV is not immediately available, use IIV rather than delay immunization

Preferred Site for IIV IM

- IIV is given intramuscularly (IM)
- The recommended site of IM flu vaccination for is the deltoid muscle for adults and older children.
- The preferred site for IM vaccination in infants and young children is the antero-lateral aspect of the thigh.

Inactivated Influenza Vaccines (IIV) Contraindications and Precautions

■ Contraindications

- Severe allergic reaction to any component of the vaccine, including egg protein.
- Severe allergic reaction after previous dose of influenza vaccine.

■ Precautions

- Moderate or severe acute illness with or without fever (note this is not a contraindication).
- Guillain-Barré syndrome within 6 weeks following a previous dose.

If anyone indicates a hypersensitivity or allergy to eggs or history of Guillain-Barré refer them to their PCP.

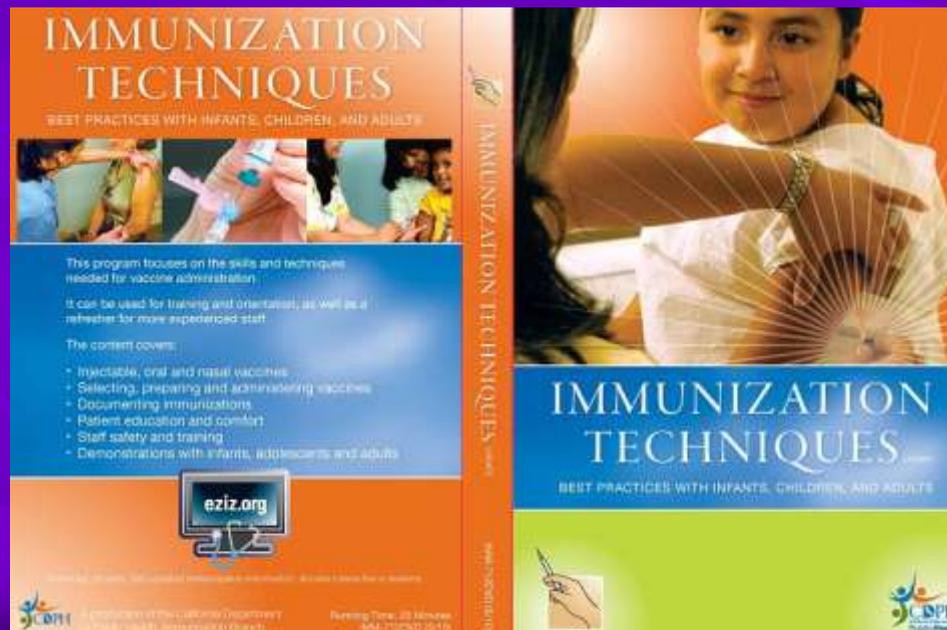


Drawing up Vaccine

(multidose vials only)

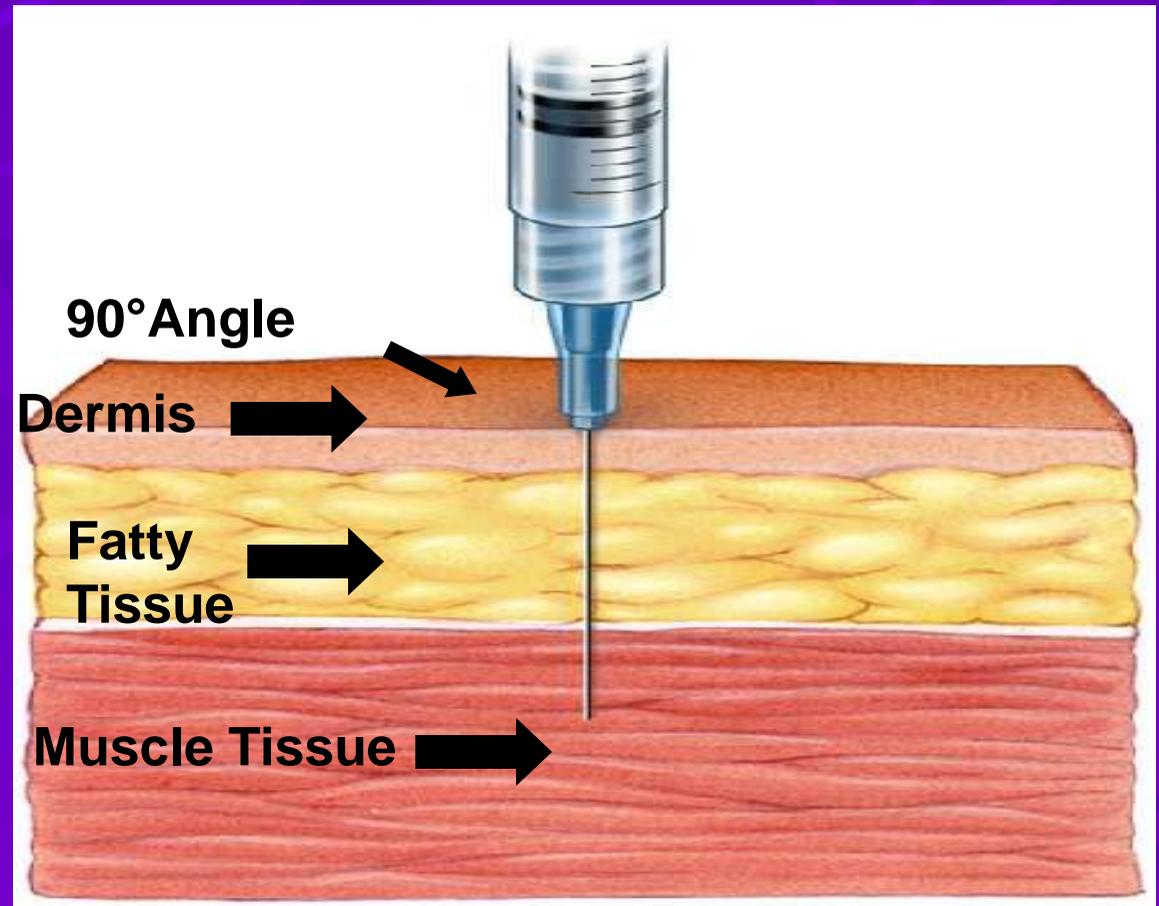
- Agitate Vaccine (vaccine in prefilled syringes should also be shaken)
- Clean vaccine stopper with alcohol pad
- Draw up air amount equal to vaccine dose into syringe
- Inject air into vaccine through stopper
- Pull up appropriate dose
- Label multidose vial with date opened
- Document any wasted vaccine or syringes and report.

DVD: Immunization Techniques: Best Practices with Infants, Children, and Adults

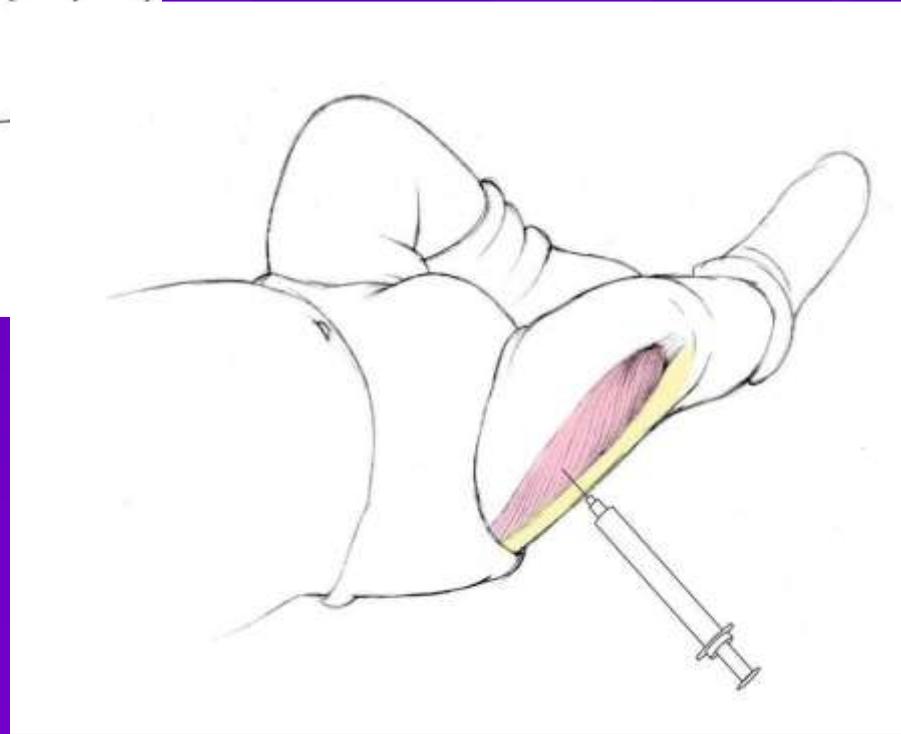


Intramuscular (IM) Tissue

- Site selection depends on:
 - person's age
 - muscle development.
- Use anatomical landmarks to locate site.
- Gauge: 22 to 25.
- Length:
 - Infants (6 through 11 mos): 1 inch
 - Children (1 through 2 years): 1 – 1 ¼ inch.
 - Children and adults (3 years and older): 1 – 1 ½ inch.



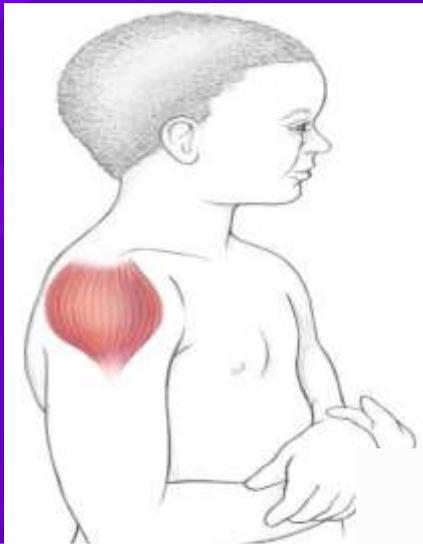
IM Site - Infant



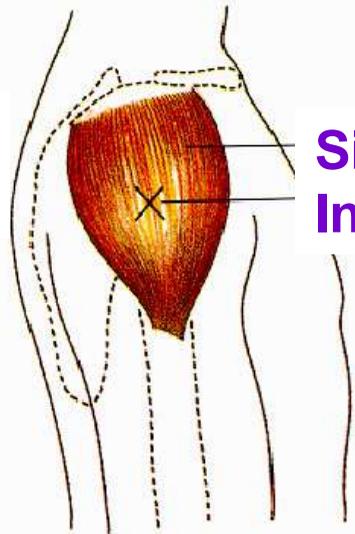
Anterolateral Thigh (vastus lateralis muscle)

IM Sites

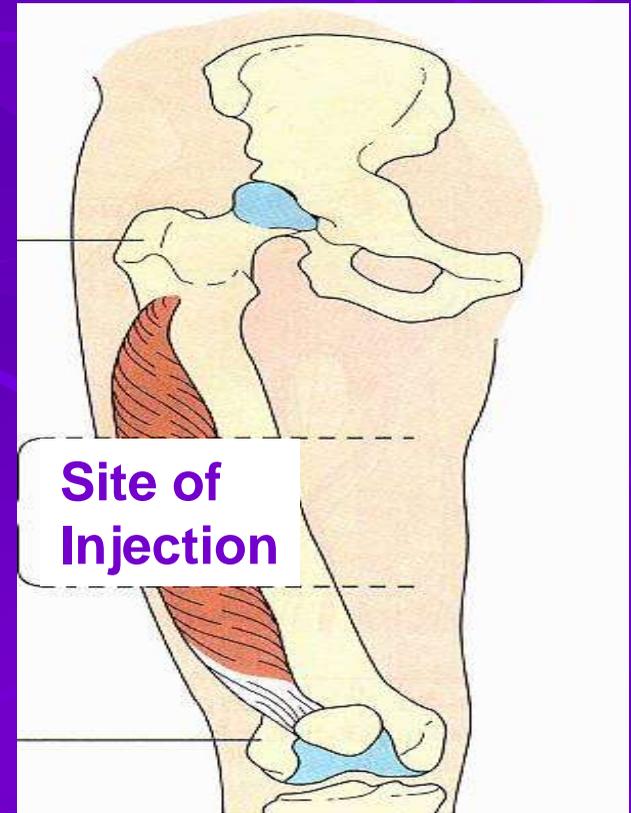
Child/Adolescent/Adult



**Deltoid Muscle
(preferred site)**



**Site of
Injection**



**Site of
Injection**

**Vastus lateralis Muscle
(alternative site)**

Intramuscular Injection Technique



Inactivated Influenza Vaccines

Possible Reactions

- Soreness (>50%), redness and/or swelling at the vaccination site are the most frequent side effects of vaccination
- Headache, lethargy, sore throat, red itchy eyes, cough, fever and muscle aches (last 1-2 days)
- Severe problems include immediate responses such as hives, angioedema, allergic asthma, or systemic anaphylaxis (severe allergic reaction estimated at less than 1 in a million doses)

Live Attenuated Influenza Vaccine (LAIV) FluMist®

- Healthy persons
- Ages 2 – 49 years
- No pregnant women
- No history of wheezing
- No aspirin therapy
- No contact with severely immunocompromised people
- LAIV should be used for healthy children 2 through 8 years who have no contraindications or precautions
- If LAIV is not available, IIV should be used. Vaccination should not be delayed in order to procure LAIV

Live, Attenuated, Influenza Vaccine (LAIV)

- FluMist® 0.2mL spray single dose (Age ≥ 2 but < 50)
 - For healthy people only
 - Not for pregnant women
 - Not for use in children 2- 4 who have asthma or wheezing.
Parents should be asked: “In the past 12 months, has a healthcare provider ever told you that your child had wheezing or asthma?”



Live, Attenuated, Influenza Vaccine (LAIV) Indications

Well individuals 2 through 49 years of age to protect from influenza infection and the compromising sequelae that may follow.

Note: If there is a vaccine shortage and/or late arrival of vaccine supplies (especially early in the flu season), it is appropriate to use contingency plans to vaccinate those persons with higher risk (i.e. children).

Live, Attenuated, Influenza Vaccine (LAIV) Contraindications

- Individuals aged <2 years or ≥ 50 years.
- Pregnant Women
- Individuals with a history of hypersensitivity, including anaphylaxis, to any of the components of LAIV including egg protein, gentamicin, gelatin, and arginine, or after a previous dose of any influenza vaccine.
- Children and adults who have immunosuppression (including immunosuppression caused by medications or by human immunodeficiency virus);
- Children or adolescents (6 months–18 years) receiving aspirin or other salicylates.
- Children aged 2 - 4 years whose parents or caregivers report that a healthcare provider has told them during the preceding 12 months that their child had wheezing or asthma, or whose medical record indicates a wheezing episode has occurred during the preceding 12 months.
- Close contacts of immunosuppressed persons requiring a protected environment (e.g. hematopoietic stem cell transplant recipient).

Live, Attenuated, Influenza Vaccine (LAIV) Precautions

- LAIV should not be administered until 48 hours after cessation of influenza antiviral therapy. Influenza antiviral medications should not be administered for 2 weeks after receipt of LAIV.
- Individuals with chronic pulmonary disease (including asthma), cardiovascular (except isolated hypertension), renal, hepatic, neurologic/neuromuscular, hematological or metabolic disorders (including diabetes mellitus). Give IIV instead or refer to PCP if desires LAIV.
- Guillain-Barre Syndrome (GBS) within 6 weeks following a previous dose of influenza vaccine (should consult their PCP)
- Moderate or severe acute illness with or without fever.

Simultaneous Administration with Other Vaccines

If live injected vaccines (MMR, MMRV, varicella, and yellow fever) and live intranasal influenza vaccine (LAIV) are not administered at the same visit, they should be separated by at least 4 weeks.

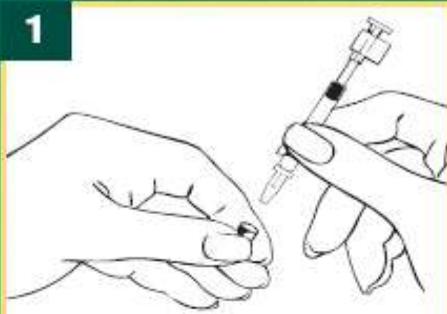


Live, Attenuated, Influenza Vaccine (LAIV) Preferred Site

- For nasal use only (intranasal).
- Approximately half of the total sprayer contents is sprayed into the first nostril while the recipient is in the upright position. An attached dose-divider clip is removed from the sprayer to administer the second half of the dose into the other nostril. If the vaccine recipient sneezes after administration, the dose should not be repeated.

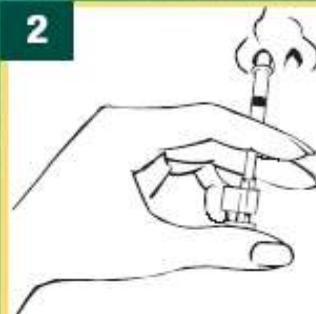
Administration Guidelines

1



Remove rubber tip protector.

2



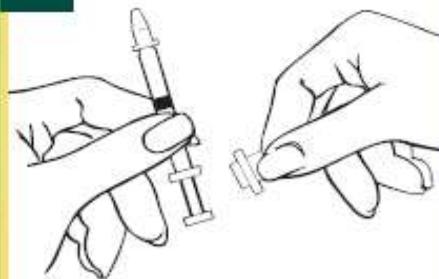
With the patient in an upright position, head tilted back, place the tip just inside the nostril to ensure FluMist is delivered into the nose.

3



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

4



Pinch and remove dose-divider clip from plunger.

5



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

FluMist

Live, Attenuated, Influenza Vaccine (LAIV)

Possible Reactions

- Children (2-17 years of age)
 - Runny nose or nasal congestion (44%) or cough
 - Fever (7% children fever >100° F)
 - Headaches and muscle aches
 - Wheezing
 - Abdominal pain or occasional vomiting or diarrhea
- Adults (18-49 years of age):
 - Runny nose or nasal congestion (32%)
 - Sore throat (reported by 19% of adults)
 - Cough, chills, tiredness/weakness
 - Headache
- A severe allergic reaction could occur after any vaccine (estimated at <1 in a million doses).

Who Can Administer LAIV

- Persons with underlying medical conditions placing them at high risk
- Pregnant Women
- Persons with Asthma
- Persons aged ≥ 50 years

Severely immunosuppressed persons should not administer LAIV (those requiring a protected environment).

Additional Available Vaccine Preparations

Fluzone[®] Intradermal

- Intradermal injection with needle inserted perpendicular to the skin in the deltoid area
- Ages 18 through 64
- Dose is 1/5 volume of IM immunization (and requires less antigen)
- Few contraindications
- More local side effects than intramuscular

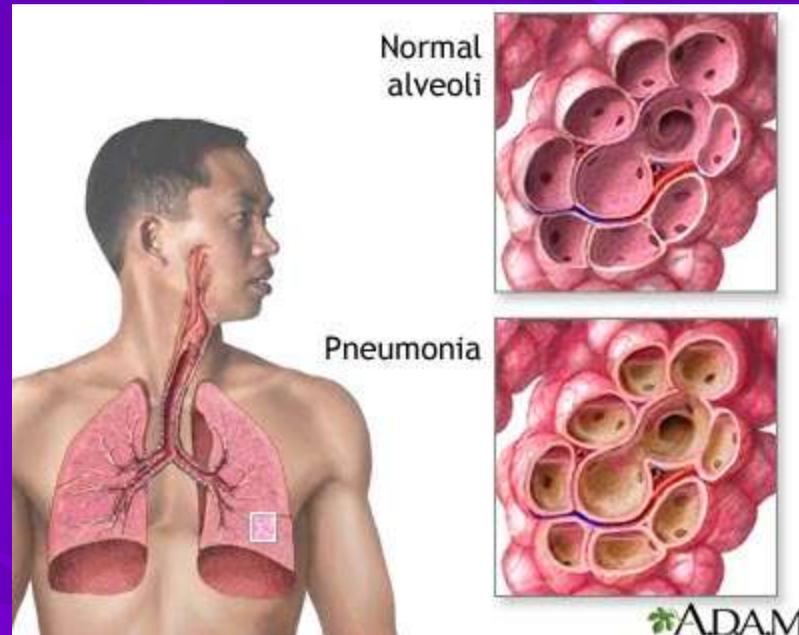
Fluzone[®] High dose

- ≥ 65 years
- 4x as much antigen
- a recent study shows some evidence that it provides better immunity in seniors

Thimerosal Legislation

- Vaccine containing mercury may not be given to children < 8 years or pregnant women.
- If there is a thimerosal free vaccine shortage the Director could apply for an exemption.
 - If an exemption is in place the pregnant client, or parent or guardian of a child < 8, must be informed that the vaccine contains mercury and must sign a consent form.

Pneumococcal Polysaccharide Vaccine (PPSV23)



PPSV23 Indications

- All persons age 65 and older.
- Persons aged 2 – 64 that have:
 - chronic cardiovascular disease (including congestive heart failure and cardiomyopathy)
 - chronic pulmonary disease (including COPD, emphysema)
 - alcoholism or chronic liver disease (including cirrhosis)
 - diabetes mellitus
 - cochlear implants
 - a CSF leak
 - have functional or anatomic asplenia
 - environments that have identified increased risk
 - immunocompromising conditions (HIV infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome, congenital or acquired immunodeficiencies, those receiving immunosuppressive therapy, and those who have received an organ or bone marrow transplant)

PPSV23 Indications (cont.)

- Persons aged 19 – 64:
 - With asthma or who smoke cigarettes.
- Vaccinate persons ≥ 2 years deemed at risk by the Medical Director

PPSV23 Dosage Schedule

- **All adults age 65 years and older should receive one dose.** If previously vaccinated with PPSV23 prior to age 65 years; use a minimum interval of 5 years before final dose
- Persons <65 years without immunocompromising conditions that meet the indications for PPSV23 should receive 1 dose of PPSV23 between the ages of 2 - 64 years and 1 dose of PPSV23 at/after age 65 years
- Persons with asplenia or who are immunocompromised should receive 2 doses of PPSV23 between the ages of 2 – 64 years and 1 dose of PPSV23 at/after age 65 years use a minimum interval of 5 years between doses

Immunizing Process and Techniques

LATEX Concerns

■ No Latex

- Fluzone[®] Vials
- Fluzone[®] Intradermal prefilled
- Fluzone[®] prefilled syringes
- FluMist[®]
- Pneumovax[®] (PPSV23)
- VanishPoint[®] Syringes
- Fluarix[®]

Vaccine Information Sheets (VIS)

- Vaccine fact sheet
 - Lists normal and expected vaccination effects.
 - Includes unusual vaccine adverse reactions.
 - Available at the CDC Web site in multiple languages.
- Federal law requires giving* a VIS to the patient or parent of child before administering any vaccine on the recommended childhood vaccination schedule.
- [vis-statements/flu.pdf](#)
- [vis-statements/flulive.pdf](#)
- [vis-statements/ppv.pdf](#)

*client does not have to accept the VIS, but must be offered.

VAR



DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Address of nearest DPH Clinic

Influenza and Pneumococcal Vaccine Administration Record

Name: _____ Sex: F M Phone: _____

Address: _____ City: _____ State: _____ Zip Code: _____

Date of Birth: ____/____/____ Age: _____ Hispanic Ethnicity: Yes No

Race (Check all that apply): White Black Asian Native Hawaiian/Pacific Islander American Indian/Alaskan Native

Insurance: None Medicare Medicaid DHCP* Other _____

If insured by Medicaid/MCHW: _____ and MCO: DPC/Retna DSP United-Healthcare Other _____

How did you find out about this clinic? Newspaper Radio Poster/Flyer DPH Website Friend/Family E-mail / Electronic Newsletter

Medical Screening	No	Yes	Clinician's Note
Does the person to be vaccinated have any of the following conditions? <ul style="list-style-type: none"> Chronic lung disease (including asthma or COPD) and/or is a smoker Neurologic conditions Heart disease (excluding high blood pressure) Disorders of blood, kidneys, liver or metabolic diseases (including diabetes mellitus) Weakened immune system (because of a disease or condition, long-term steroids, or cancer treatments) Under age 19 and on long-term aspirin therapy Morbidly obese 			
Is the person to be vaccinated pregnant?			
Is the person to be vaccinated sick today?			
Has the person to be vaccinated ever had a serious allergic reaction to: <ul style="list-style-type: none"> Influenza or pneumococcal vaccine? Eggs, egg proteins Natural rubber latex, or other substances? 			
Has the person to be vaccinated ever had Guillain-Barré syndrome?			

Mark the type(s) of vaccine that you are requesting Influenza (for Flu) _____ Pneumococcal (for Pneumonia) _____
(Available only at select sites.)

Complete the next section and sign after you have talked with the clinician.
A check next to the vaccine type(s) above and my signature (below) means that I have been given a copy of the appropriate Vaccine Information Statement (VIS) and have read, or have had explained to me, information about the disease(s) and the vaccine(s). I have had a chance to ask questions that were answered to my satisfaction. I understand the risks and benefits as set forth in the VIS I was given and I ask that the vaccine(s), as marked, be given. Also, by signing below I hereby give my consent for DPH to bill my insurance based on eligibility for the vaccine(s) received.

Signature _____ Signer's Name _____
Patient _____ Parent _____ Guardian _____ Date _____ Print Clearly
(Do not write below this line. For Clinician use only.)

NHS _____ SHS _____ Clinic Location: _____

Presentation/Route	Dose	Site	VIS Date	VIS Given Date
LA/IV/ Nasal	0.2ml	IN	8/19/2014	
IV3/ IM	0.25ml	RA RT LA LT	8/19/2014	
IV / ID	0.1ml	RA RT LA LT	8/19/2014	

Vaccination Date: _____ Manufacturer: Sanofi, Medtronic, GSK Lot # _____

Presentation/Route	Dose	Site	VIS Date	VIS Given Date
Pneumo / IM SC	0.5ml	RA RT LA LT	10/6/2013	

Vaccination Date: _____ Manufacturer: Merck Lot # _____

Clinician's Signature: _____ License Title _____

- VFC - Child is under age 19 and (use #00) Child is enrolled in Delaware Healthy Children's Program (DHCP)* (use #00)
- Child is enrolled in Medicaid or None of the above (child or adult) (use #00#)
- Child is uninsured or
- Child is American Indian or Native Alaskan

Doc # 35-05-20/14/08/28

Name _____ Last _____ First _____ MI _____ Date of Birth _____

For Nasal Mist Vaccine Only

Answer these questions only if the person to be vaccinated is age 2-49 and prefers a vaccine that is sprayed into the nose (nostrils) instead of injected in the arm

	No	Yes	Clinician's Note
Is the person to be vaccinated sick today?			
Is the person to be vaccinated pregnant or could she become pregnant within the next month?			
Is the person to be vaccinated younger than 2 or older than age 49?			
If the person to be vaccinated is a child age 2 through 4 years, in the past 12 months, has a healthcare provider ever told you that he or she had wheezing or asthma?			
Has the person to be vaccinated ever had a serious reaction to intranasal flu vaccine (FluMist)?			
Has the person to be vaccinated ever had a serious allergic reaction to: <ul style="list-style-type: none"> Eggs, egg proteins or a previous influenza vaccination, or Other vaccine components such as gentamicin, gelatin, or arginine? 			
Has the person to be vaccinated received any other vaccinations in the past 4 weeks?			
Is the person to be vaccinated receiving anti-viral medications?			
Is the person to be vaccinated a child or adolescent on long-term aspirin therapy?			
Has the person to be vaccinated ever had Guillain-Barré syndrome?			
Does the person to be vaccinated: Have long-term health problem with heart disease, lung disease, asthma, kidney or liver disease, metabolic disease (such as diabetes), anemia, or other blood disorders?			
Have muscle or nerve disorders (such as seizure disorders or cerebral palsy) that can lead to breathing or swallowing problems?			
Have cancer, leukemia, HIV/AIDS or another disease that affects the immune system, or, in the past 3 months, taken medications that weaken the immune system such as cortisone, steroids, or anti-cancer drugs; or have had radiation treatments?			
Live in or have close contact with someone whose immune system is so weak he or she requires care in a protected environment (such as a bone marrow transplant unit)?			

Signature _____ Signer's Name _____
Patient _____ Parent _____ Guardian _____ Date _____ Print Clearly

Screening Clients for Contraindications and Precautions

Contraindication

A patient condition that increases serious vaccine adverse reaction risk
i.e.: Severe allergic reaction to any vaccine component or previous vaccine dose

**Don't administer
vaccine!**

Precaution

A patient condition that might:

- Increase risk of adverse reaction
- Compromise vaccines ability to produce immunity

**May administer if
benefits outweigh
risks**

Invalid Contraindications to Vaccine

- Mild illness
- Antimicrobial therapy
- Disease exposure or convalescence
- Pregnant or immunosuppressed person in household
- Breastfeeding
- Preterm birth
- Allergies to items not present in vaccine or allergy that is not anaphylactic
- Family history of adverse events
- TB skin testing
- Multiple vaccines

Infection Control

- Hand Hygiene
 - Recommended between patients
 - Alcohol based waterless antiseptic can be used
- Gloves
 - Not required by OSHA unless
 - Potential for exposure to blood or body fluids
 - Open lesions on the hands or
 - Agency policy
 - If used **must** be changed in between each patient
 - Hands **must** be cleaned after removing gloves in between every patient

Infection Control

Needle and Syringe Disposal

- Never detach or recap a used needle
- Place in puncture proof container
- Dispose of as infectious medical waste
- Use safety needles whenever available to reduce the risk of injury



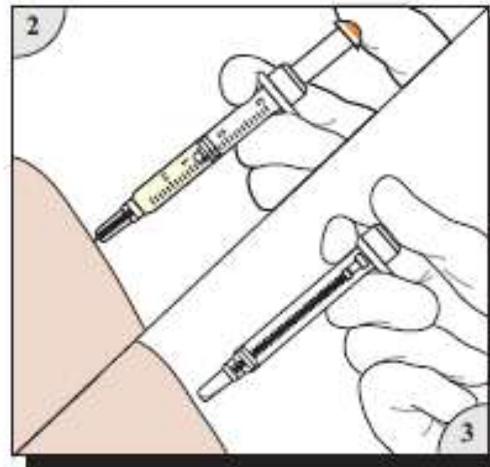
VANISHpoint[®]

Syringe

Standard Draw Procedure



In-Patient, Automated Retraction



Non-Reusable



Product Usage Information:

1. Prepare and give injection using aseptic technique according to institutional policy.
2. For injection into patients, continue depressing plunger to activate automatic needle retraction *while needle is still in patient*. For injection into IV ports, continue depressing plunger to activate automatic needle retraction and *immediately remove needle from port*. *Full dose is administered only when needle retraction is activated*.
3. Needle will automatically retract into syringe, preventing exposure to contaminated needle and rendering syringe non-reusable. In the event that needle retraction mechanism does not activate, discard syringe in an appropriate sharps container per protocol of institution. Do not recap contaminated needles.
4. Dispose of VanishPoint[®] syringe in an appropriate sharps container per protocol of institution.

Safety Needle For Use with Prefilled Syringe

Immediately after injection apply a single finger stroke to the Activation-Assist™ lever arm to activate the shielding mechanism.



The Proper Vaccine Administration Technique

Proper technique is necessary to:

- Promote optimal antibody response
- Reduce risk of local adverse reactions

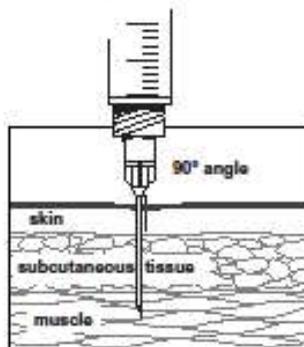
How to administer intramuscular, intradermal, and intranasal influenza vaccines

Intramuscular injection

Trivalent Inactivated Influenza Vaccines (TIV)

1. Use a needle long enough to reach deep into the muscle. Infants age 6 through 11 mos: 1"; 1 through 2 yrs: 1–1¼"; children and adults 3 yrs and older: 1–1½".
2. With your left hand*, bunch up the muscle.
3. With your right hand*, insert the needle at a 90° angle to the skin with a quick thrust.
4. Push down on the plunger and inject the entire contents of the syringe. There is no need to aspirate.
5. Remove the needle and simultaneously apply pressure to the injection site with a dry cotton ball or gauze. Hold in place for several seconds.
6. If there is any bleeding, cover the injection site with a bandage.
7. Put the used syringe in a sharps container.

*Use the opposite hand if you are left-handed.



Intradermal administration

Trivalent Inactivated Influenza Vaccine (TIV)

1. Gently shake the microinjection system before administering the vaccine.
2. Hold the system by placing the thumb and middle finger on the finger pads; the index finger should remain free. 
3. Insert the needle perpendicular to the skin, in the region of the deltoid, in a short, quick movement.
4. Once the needle has been inserted, maintain light pressure on the surface of the skin and inject using the index finger to push on the plunger. Do not aspirate. 
5. Remove the needle from the skin. With the needle directed away from you and others, push very firmly with the thumb on the plunger to activate the needle shield. You will hear a click when the shield extends to cover the needle. 
6. Dispose of the applicator in a sharps container.

Intranasal administration

Live Attenuated Influenza Vaccine (LAIV)

1. FluMist (LAIV) is for intranasal administration only. Do not inject FluMist.
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 (i.e., head not tilted back), place the tip just inside the nostril to ensure LAIV is delivered into the nose. The patient should breathe normally. 
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 the plunger.
6. Place the tip just inside the other nostril, and with a single motion, depress plunger as rapidly as possible to deliver the remaining vaccine.
7. Dispose of the applicator in a sharps container.

Other Vaccination Administration Tips

- Injection sites in same limb should be separated by at least 1 inch.
- Do not aspirate
 - There have been no reports of injury from failure to aspirate.
 - Can result in wastage of vaccine

Vaccine Administration Errors Include:

- Wrong Vaccine,
- Wrong Dose,
- Using Expired Vaccine,
- Incorrect Route,
- Timing and Spacing Mistakes.

Post-Vaccination

Observe for:

- Syncope,
- Immediate allergic reactions,
- Any adverse reactions or events.

Vaccine Adverse Reactions

- Adverse reaction
 - Extraneous effect *caused by vaccine*,
 - Side effect.
- Adverse event
 - *Any* event following vaccination,
 - May be true adverse reaction,
 - May be only coincidental.

Report Adverse Events

VAERS

Vaccine Adverse Events Reporting System

- Established as the U.S. foundation for vaccine safety surveillance in 1990.
- Monitors reports of possible adverse events after immunization.
- Helps detect potential vaccine safety concerns needing further investigation.



The National Childhood Vaccine Injury Act of 1986

- Mandates that health care providers report certain immunization adverse events to VAERS:
 - Events listed by vaccine manufacturer as a contraindication to subsequent vaccine doses.
 - Events appearing in the reportable events table (available at the VAERS Web site).
- Reporting other types of post-immunization adverse effects is voluntary.

Filing a VAERS Report

- What should you report?
 - All significant adverse events that occur after vaccination.
 - Knowing whether a vaccine caused an adverse event can be difficult, so file a report after all events.
- What does it include?

The one page [form](#) asks for:

 - Vaccine information,
 - Adverse event details,
 - Relevant lab and diagnostic data,
 - Patient's medical conditions.
- Is also available [electronically](#)
(<https://vaers.hhs.gov/esub/step1>)

Relevant Policies and Procedures

Medical Emergency Standing Orders

The physician and/or licensed medical personnel should be notified immediately of any medical emergencies

Medical Emergency Standing Orders

The following items are in stock for emergencies:

- Ammonia Inhalants
- Alcohol Swabs
- O₂ mask with tubing and cannulas
- O₂ tank with nipple and flow meter
- Ambu bag
- Pocket face mask with one-way valve
- Benadryl for PO and IM
- Epinephrine
- Syringes and needles
- AED
- Copy of Bloodborne Pathogen Exposure Control

Medical Emergency Standing Orders

- Vasovagal Syncope
- Shock
- Cardiac and or Respiratory Arrest
- Hyperventilation Syndrome
- Allergic Reaction/Anaphylaxis

Vasovagal Syncope

- Transient loss of postural tone and consciousness with spontaneous recovery
 - Bradycardia, vasodilation or hypotension resulting in decreased brain perfusion
 - Due to abnormal sympathetic response
- Elicited by a variety of stimuli in settings of fear or emotional distress
- Occurs after medical procedures including vaccination

Syncope-Injury

- 76% of serious syncope VAERS reports occurred among adolescents.
- Life-threatening injuries, head trauma, and one fatality have been reported.

Preventing Syncope and Injury

- Adolescents and adults should be seated during the vaccination and observation period
- If weakness, dizziness or loss of consciousness occurs act quickly to prevent injury

Vasovagal Syncope

Signs and Symptoms Phase I

- Increased pulse rate
- Increased blood pressure
- Increased cardiac output
- Increased vascular resistance
- Individual says (s)/he is fine but appears pale and apprehensive

Vasovagal Syncope

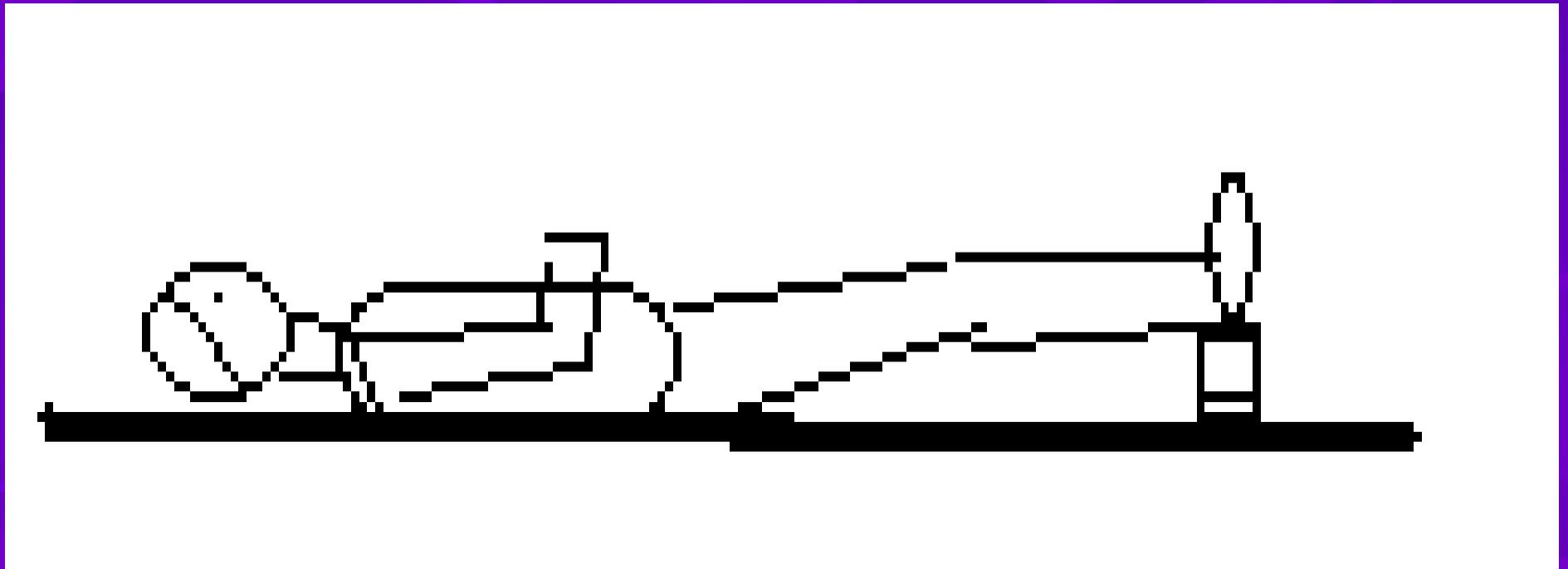
Signs and Symptoms Phase II

- Decreased pulse rate
- Decreased blood pressure
- Decreased cardiac output
- Decreased vascular resistance
- Diaphoresis
- Weakness
- Lightheadedness /vertigo
- Loss of consciousness
- Vomiting
- Seizures

Management of Vasovagal Syncope

- Assess and maintain the patient's circulation, airway, and breathing (CABs)
- Place the patient in shock position I
- Loosen tight clothing
- Reassure patient and keep comfortably warm
- Administer ammonia inhalant
- Monitor and record vital signs (blood pressure, apical or radial pulse, respirations)
- Remain with patient until fully recovered or EMS arrives
- If no signs of improvement within 5 min call 911

Shock Position I



Vasovagal Syncope

Call 911 if:

- Systolic BP is ≤ 90 mmHg or ≥ 170 mmHg
- Heart rate is ≤ 55 bpm or ≥ 120 bpm.
- Person has a known cardiac condition
- Person c/o chest pain, H/A or palpitations before passing out

While waiting for EMS:

- Continue the above measures
- Administer oxygen by mask at 8 L or by nasal cannula at 6 L
- Monitor and record vital signs (blood pressure, apical or radial pulse, respirations) until stable
- Remain with the patient and prepare for transportation to the nearest emergency department

Shock

A life threatening condition that is caused by a decrease in BP and tissue perfusion.

Can be caused by:

- Dehydration
- Sepsis
- Hemorrhage
- Myocardial infarction
- Cardiac tamponade
- Adrenal failure
- Trauma
- Spinal cord injury
- Anaphylaxis
- Poisoning
- Other major insults to the body

Shock: Signs and Symptoms

- Restlessness
- Confusion
- Yawning
- Loss of consciousness
- Vomiting
- Diaphoresis
- Pallor
- Change in pulse and/or respirations
- Hypotension
- Convulsion

Shock: Management

- Notify licensed medical personnel
- Call 911 immediately
- Assess and maintain CABs
- Place in shock position
|
- Monitor and record vital signs
- Loosen tight clothing
- O₂ via mask @ 8 L, via nasal cannula @ 6L
- Control bleeding with:
 - Direct pressure
 - Elevation of bleeding site
 - Can apply a tourniquet*
- Remain with patient and prepare for transfer to emergency department

Cardiac/Respiratory Arrest: Signs and Symptoms

- Unresponsiveness
- Absence of breathing
- Absence of breathing and absence of palpable carotid pulse

Cardiac/Respiratory Arrest: Management

- Assess unresponsiveness
- Assess for pulse and respirations
- Call 911 and obtain AED immediately
- Assess Circulation Airway and Breathing (C-A-B)
- Initiate rescue breathing if there is a pulse but no breathing
- Initiate CPR if no breathing or pulse
- O₂ via mask @ 8L, via nasal cannula @ 6L may use ambu bag
- Continue CPR or rescue breathing until help arrives or client's own pulse/respiration is re-established
- Remain with patient until EMS arrives

Hyperventilation Syndrome

Hyperventilation is usually manifested by acute anxiety which increases inspiration and expiration of air resulting in carbon dioxide depletion.

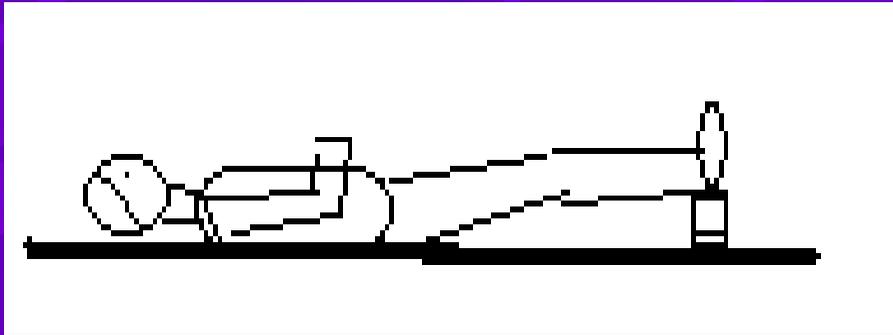
Hyperventilation Syndrome: Signs and Symptoms

- Diaphoresis
- Hypotension
- Tightness in chest
- Perioral tingling
- Tingling/spasms of hands or fingers
- Convulsions (in severe cases)
- Lightheadedness
- Fainting
- Feeling of suffocation

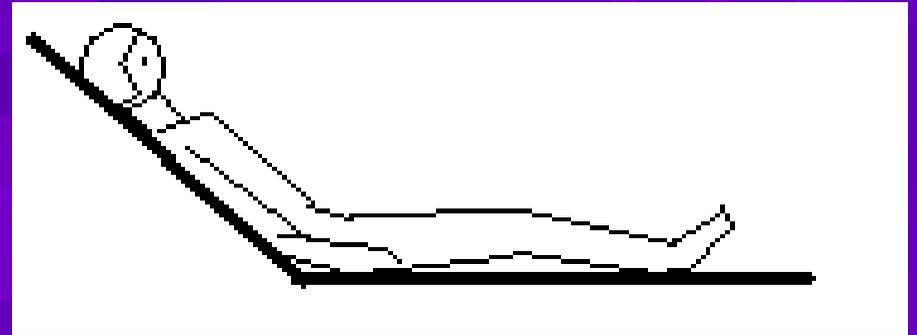
Hyperventilation Syndrome: Management

- Notify licensed medical personnel
- Assess and maintain CABs
- Reassure and comfort patient
- Encourage patient to slow breathing
- Monitor and record vital signs
- Give O_2 as needed
- If no improvement within 5 minutes call 911 immediately
- Remain with patient and prepare for transfer to emergency department

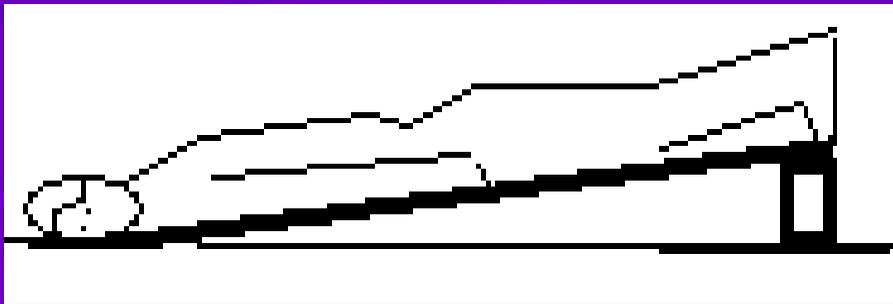
Shock Positions



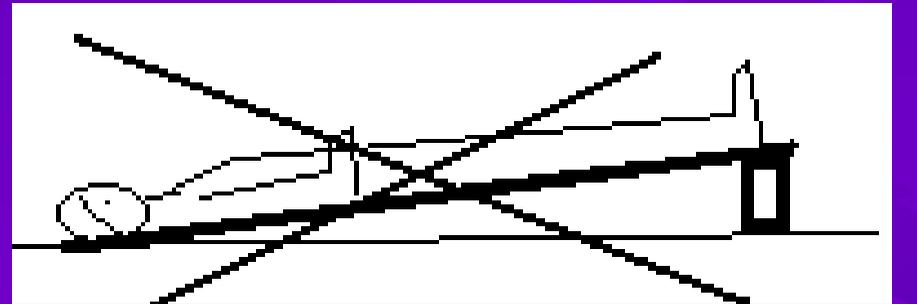
I. Shock Position I



II. Position to Ease Resp.



III. Aspiration Position



IV. Incorrect Shock Position

Anaphylaxis

Severe potentially life-threatening allergic reaction that can occur within seconds or minutes of exposure to an allergen.

Allergic Reaction/Anaphylaxis

Mild

Signs and Symptoms

- Mild SOB, able to talk
- Mild urticaria

Allergic Reaction/Anaphylaxis

Severe

Signs and Symptoms

- Generalized (bodywide) itching, erythema (redness) or urticaria (hives) **and/or**
- Angio edema (swelling of face, throat, tongue, lips and/or drooling) **and/or**
- Abdominal cramping
- Respiratory distress (wheezing, stridor, unable to talk, voice change, tightness in throat/chest) **and/or**
- Shock symptoms (tachycardia, hypotension)

Allergic Reaction/Anaphylaxis

Initial Treatment

for Mild and Severe Symptoms

- Call for help - activate the EMS system – Call 911
- Remain with the client
- Initiate basic life support measures:
 - Circulation – ongoing assessment of vital signs
 - Airway – maintain patent airway with client in position of safety/comfort
 - Breathing – give supplemental oxygen via face mask at 8 liters per minute or nasal cannula at 6 liters per minute

Allergic Reaction/Anaphylaxis Treatment For Mild Symptoms

- Give liquid PO Diphenhydramine (Benadryl) 12.5mg/5ml per standing orders dosage chart
- If condition worsens use treatment for severe symptoms

Allergic Reaction/Anaphylaxis Treatment For Severe Symptoms

- Give IM Epinephrine refer to dosage chart **client must remain supine after epi**
- If EMS has not arrived, and symptoms are still present, repeat epinephrine at 5 -15 minute intervals for up to 3 doses depending on response

AND

- If able to swallow, give liquid PO Diphenhydramine (Benadryl 12.5 mg /5ml) refer to dosage chart

OR

- If not able to swallow, give IM Diphenhydramine (Benadryl 50 mg/ml)

Allergic Reaction/Anaphylaxis Documentation

- Record actions and drugs on Emergency Summary Sheet
- Send one copy of Summary Sheet and all personal belongings with client
- Give one copy of Summary Sheet to Clinic Manager, and one copy to Nursing Director.
- Retain original Summary Sheet for DPH record.

Bloodborne Pathogens Policy

DPH PM #27

Universal Precautions:

All blood and body fluid is treated as if it is infected with bloodborne pathogens.

Bloodborne Pathogens Policy

DPH PM #27

Work Practice Controls

- Handwashing

Wash hands immediately after removing PPE or becoming contaminated with blood or body fluids. Can use waterless hand cleaner when handwashing is not feasible

- Eating, drinking, applying lip balm and handling contact lenses prohibited in work areas where they may become contaminated

Bloodborne Pathogens Policy

DPH PM #27

Work Practice Controls (cont.)

- No food/drink in refrigerators or areas where blood or infectious material is present
- Procedures are performed to minimize exposure to blood and body fluids
- No mouth pipetting
- No recapping or handling used needles

Bloodborne Pathogens Exposure

What do I do if I am exposed?

- Immediately cleanse the exposure site with soap and water
- Report exposure to your supervisor
- Identify if possible the source client

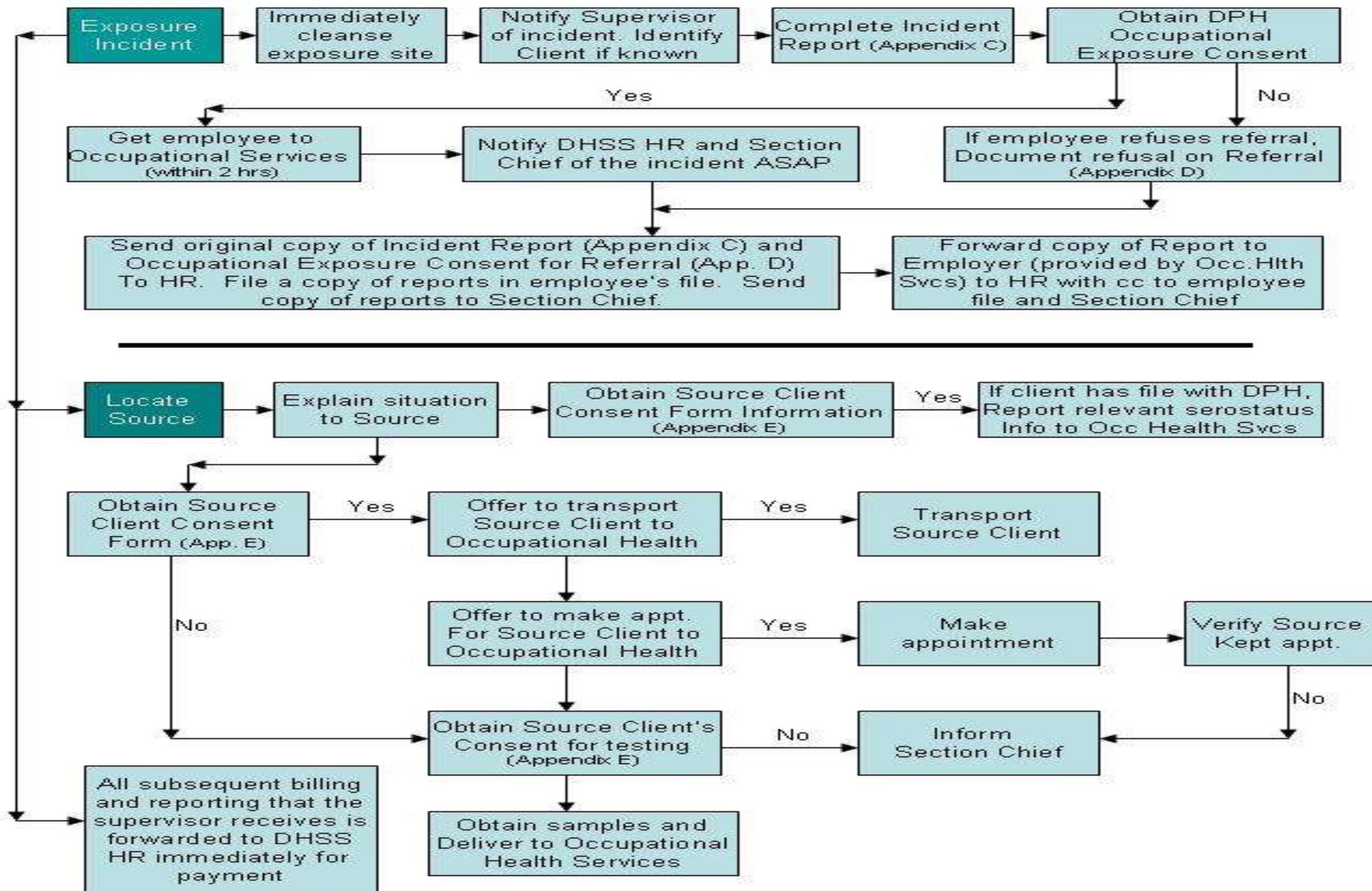
Bloodborne Pathogens Policy

DPH PM #27

Supervisors responsibility for exposures

- Complete an injury/illness report
- Obtain consent from employee for referral to Bayhealth/ WorkProHealth, then call in referral
- Send employee to Occupational Health (OHS) within 2 hours of exposure for best results (provide transportation if needed)
- Notify DHSS HR and section chief of incident
- Determine infection status of source client
- If source client is unknown report this to OHS

Bloodborne Exposure Procedural Flow Chart



Store and Handle Vaccines Properly

Improper vaccine handling and storage may cause it to:

- Lose potency, or
- Become contaminated



Community Clinic Logistics

Cold Chain

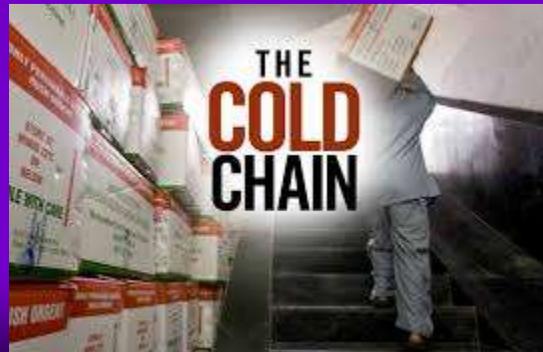
Vaccines must be stored properly from manufacturing to administration. This includes:

- Manufacturer to distributor
- Distributor to office
- Office to patient



Vaccine Storage and Handling

- IIV, LAIV and PPSV23 should be refrigerated (35°– 46°) at all times
- These vaccines cannot be frozen or exposed to freezing temperatures
- Monitor and document vaccine temperatures hourly at an offsite clinic.



Tips for Preparing for a Mass Clinic

- Administer only one type of vaccine
- Separate vaccine stations by vaccine type
- Transport the vaccine to the clinic in the manufacturer-supplied packaging at the recommended temperature
- Use an insulated barrier (such as bubble wrap) between the vaccine and the cold or frozen packs
- A single layer of towel over ice is NOT adequate protection

Research on Prefilling Syringes

- Increased risk for administration errors.
- Increased vaccine wastage.
- Risk of inappropriate vaccine storage conditions.
- Bacterial growth in vaccines that do not contain a preservative.
- Reduced vaccine potency.

Tips for Prefilling Syringes at a Mass Clinic

- Draw up <1 vial or 10 doses
- Replenish supply throughout the day
- Monitor patient flow to avoid drawing up unnecessary doses
- Discard any syringes other than those filled by the manufacturer at the end of the clinic day

2014 – 2015

Community Clinic Logistics

- All clinics this year are walk-in (no appointments)
 - All staff is responsible for arriving prior to the event start time to assist with set up and stay to assist with break down.

Community Clinic Staffing

- **DPH greeter** (may also serve as billing staff in smaller clinics)
 - Hand out VAR and VIS
 - Direct to table to complete VAR
 - Answer questions about VAR
 - Ask clients to have Medicare or Medicaid info ready (if applicable)
- **Medicare billing staff (2 – 3 people)**
 - Ensure VAR is complete, signed.
 - Completes Medicare billing sheet
 - Use Medicare card and completed VAR to fill out demographics.
 - Client must sign
- **All VARs need to be marked whether VFC eligible**

Community Clinic Staffing (continued)

- Lead Nurse
 - Answers questions of staff.
 - Discusses clinic process with Instructors (Instructors to sign off on each VAR completed by students, Instructors and students need to have viewed this presentation).
 - Ensures DMRC volunteers have completed paperwork.
 - Ensures clinic runs smoothly.
 - All requests for additional or restock of supplies to be requested via lead nurse.
- Nurses (1 to 4) (at least 2 nurses are required at flu clinics).
 - Check VAR for contraindications for vaccine (Bring your 2014 Standing Orders)
 - Administer vaccine
 - **Complete** VAR and sign
 - Check for adverse effects

ALL DPH STAFF WILL SET UP/BREAK DOWN
VACCINATION AREAS

Packing Flu Clinic Supplies

Support Staff

- Alcohol Pads
- Band-Aids
- Sharps Containers (1 for each nurse)
- Gloves
- Forehead thermometer
- Hand Sanitizer
- Gauze Pads
- Table Covers
- Receipt Book
- Binder Clips, Paper Clips, Rubber Bands
- Tissues
- Tape
- Donation Boxes
- Paperwork
 - VAR
 - VIS
 - Medicare Forms, Cash Report
 - Flu Binder
 - S.O.: Flu, Medical Emergency
 - Exposure Policy (DPH PM 27)
 - VAERS Form
 - Vaccine/syringe wasting form
- Pens
- Clip Boards
- Numbers
- DPH Vaccination Cards

Packing Flu Clinic Supplies

Lead Nurse/& Immunization Staff

- Vaccine
- Syringes
- Emergency Box
- Oxygen
- AED
- Standing Orders
 - Flu
- Coolers

DMRC Release Form

	DELAWARE HEALTH AND SOCIAL SERVICES Division of Public Health
Office of the Director	
<u>Date</u>	
Dear <u>Name, Profession, License Number,</u>	
<p>Thank you for agreeing to provide volunteer professional health services as part of the Delaware Medical Reserve Corp. Your participation in the DMRC may include training, participating in drills or exercises, various activities necessary to improve public health and serving on an organized team to be called upon for service in an emergency. Your participation with the DMRC is strictly voluntary. As a volunteer, all services you perform are performed on behalf of the State of Delaware. You will not receive any compensation from DPH or the State for your services.</p>	
<p>By signing below, you agree with the terms stated herein and further agree you understand and will not hold the State of Delaware, its employees, or any other private or public agency participating in the DMRC or any such employees or volunteers liable for any injury or illness that maybe be caused by your volunteer service in the DMRC.</p>	
_____ Signature of Volunteer	_____ Date
For Division of Public Health:	
_____ Awele Maduka-Ezeh, MD, MPH Medical Director	_____ Date
_____ Rick Hong, MD Preparedness Medical Director	_____ Date
<small>JESSE S. COOPER BUILDING • FEDERAL STREET • DOVER • DELAWARE MAILING ADDRESS: 417 FEDERAL STREET • DOVER • DELAWARE • 19901</small>	

Reports

- Support staff is responsible for collection information and reporting out on numbers immunized and donations collected.
- All immunizations administered must eventually be entered into Del Vax.

Frequently Asked Questions 2014 – 2015 Flu Season

Will pneumonia vaccine be offered at community flu clinics?

- Pneumonia vaccine will only be available at the DPH Immunization clinics at State Service Centers
- Pneumonia vaccine can be given throughout the year (not seasonal), therefore can be administered during a routine doctor's visit

Who should not be vaccinated?

- People with allergies to eggs or other vaccine components.
- People who have had an allergic reaction to past influenza vaccination.
- Children younger than 6 months of age.

The Flu I.Q.

(click above to access the
CDC widget)

Still have questions?

Contact us

In Kent and Sussex:

Lisl Phelps 424-7135

lisl.phelps@state.de.us

In New Castle:

Grace Courtney 283-7186

Grace.Courtney@state.de.us