



# Influenza Vaccine

Administration by Emergency  
Medical Services Personnel



**NORTH DAKOTA**  
DEPARTMENT *of* HEALTH



# EMS Personnel

- House Bill 1215 passed
- *Licensed paramedics, who are employed by a hospital, licensed ambulance service or quick response unit may provide patient care within a scope of practice established by the department and may administer influenza vaccinations.*



# Special Note

- EMS personnel may NOT administer vaccine to anyone under the age of 18.
- Information will be presented for persons younger than 18 so you can feel comfortable answering questions that pertain to this age group.



# Influenza

- Abrupt onset of:
  - Fever
  - Myalgia
  - Sore throat
  - Nonproductive cough
  - Headache
- Complications:
  - Pneumonia
  - Reye syndrome (in children taking aspirin)
  - Myocarditis
  - Worsening of chronic bronchitis and other chronic pulmonary diseases
- Influenza activity
  - Peaks between late December and early March
  - May occur earlier or later
- Communicability
  - Adults can transmit virus from the day before to 5 days after the onset of symptoms
  - Children can transmit virus to others for 10 or more days

# Influenza Vaccine



- Two types available
  - Both contain 3 strains of virus: two type A (H1N1, H3N2) and type B
    - Trivalent influenza vaccine (TIV)
      - Intramuscular (IM) administration route
    - Live attenuated influenza vaccine (LAIV)
      - Administered as a nasal spray



# Inactivated Influenza Vaccine (TIV)

- Fluzone® (sanofi pasteur)
  - Only TIV currently approved for use in children younger than 48 months
- Fluvirin® (Novartis)
  - Approved only for persons 4 years and older
- Fluarix® (GlaxoSmithKline)
  - Single-dose syringe for persons 18 and older
- FluLaval® (GlaxoSmithKline)
  - Multidose vial for persons 18 and older
- Afluria® (CSL Biotherapies)
  - Single-dose syringe and multidose vial for persons 18 and older



# Inactivated Influenza Vaccine (TIV)

- Begin offering influenza vaccine in September, continue to provide vaccine throughout influenza season

<b>Age Group</b>	<b>Dosage</b>	<b>Number of Doses</b>	<b>Route</b>
6-35 months	0.25 mL	1* or 2	IM
3-8 years	0.50 mL	1* or 2	IM
≥9 years	0.50 mL	1	IM

\*Only one dose is needed if the child received two doses of influenza vaccine during a previous influenza season.



# Who should get TIV?

- All persons 50 years of age or older
- All children 6 months-18 years
- Residents of long-term care facilities
- Pregnant women (during any trimester)
- Persons 6 months-18 years receiving chronic aspirin therapy
- Persons 6 months and older with a chronic illness
- Healthcare personnel, including home care
- Employees of long-term care facilities
- Household contacts of high-risk persons



# Live Attenuated Influenza Vaccine (LAIV)

- Approved for healthy, nonpregnant persons 2 through 49 years of age
- Can be administered as soon as it becomes available in late summer or fall, vaccination can continue throughout influenza season

Age Group	Number of Doses	Route
2-8 years, no previous influenza vaccine	2 (separated by 4 weeks)	Intranasal
5-8 years, previous influenza vaccine*	1 <sup>†</sup> or 2 (separated by 4 weeks)	Intranasal
9-49 years	1	Intranasal

\*LAIV or inactivated vaccine

<sup>†</sup>Only one dose is needed if the child received two doses of influenza vaccine during a previous influenza season



# Storage and Handling

- CDC recommends that both TIV and LAIV be stored at refrigerator temperature (35 -46 F [2 -8 C])
- Must not be frozen or exposed to freezing temperatures
- Temperatures of storage unit (refrigerator) must be monitored and recorded at least twice daily



# Vaccine Safety

- Rotate vaccine stock so that oldest vaccines are used first
- Never administer a vaccine past its expiration date
- Wait to draw vaccines into syringes until immediately prior to administration
- Never mix vaccines in the same syringe unless specifically approved for mixing by FDA
- Record vaccine and administration information, including lot number and injection site, in patient's record



# Contraindications & Precautions to Vaccination

## ○ TIV

- Persons with a severe allergic reaction (anaphylaxis) to a vaccine component or following a prior dose of TIV should not receive TIV.
- Moderate or severe acute illness—vaccinate after symptoms have decreased



# Contraindications & Precautions to Vaccination

## ○ LAIV

- Persons who should NOT receive LAIV:
  - Children <2 years of age
  - 50 years of age or older
  - Persons with chronic medical conditions
  - Children or adolescents receiving long-term aspirin therapy
  - Pregnant women
  - Immunosuppressed persons
  - Persons with a history of a severe allergy to egg or any other vaccine component
  - Persons with a history of Guillain-Barré syndrome
- Defer vaccine for persons with moderate or severe acute illness until symptoms improve

# Screening

- Use screening questionnaires to determine whether the patient should receive TIV or LAIV.
- Familiarize yourself with the forms so that you can assist patients if they have questions.

Patient name: \_\_\_\_\_ Date of birth: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(mo.) (day) (yr)

### Screening Questionnaire for Injectable Influenza Vaccination

**For adult patients as well as parents of children to be vaccinated:** The following questions will help us determine if there is any reason we should not give you or your child injectable influenza vaccination today. If you answer "yes" to any question, it just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

1. Is the person to be vaccinated sick today?  Yes  No  Don't Know

2. Does the person to be vaccinated have an allergy to a component of the vaccine?  Yes  No  Don't Know

3. Has the person to be vaccinated ever had a serious influenza vaccine in the past?  Yes  No  Don't Know

4. Has the person to be vaccinated ever had Guillain-Barré syndrome?  Yes  No  Don't Know

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Form reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

© 2009 Immunization Action Coalition. All rights reserved. Form #9037 (9/09)

---

Patient name: \_\_\_\_\_ Date of birth: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(mo.) (day) (yr)

### Screening Questionnaire for Intranasal Influenza Vaccination

**For adult patients as well as parents of children to be vaccinated:** The following questions will help us determine if there is any reason we should not give you or your child intranasal influenza vaccine (FluMist®) today. If you answer "yes" to any question, it does not necessarily mean you (or your child) should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

1. Is the person to be vaccinated sick today?  Yes  No  Don't Know

2. Does the person to be vaccinated have an allergy to eggs or to a component of the influenza vaccine?  Yes  No  Don't Know

3. Has the person to be vaccinated ever had a serious reaction to intranasal influenza vaccine (FluMist®) in the past?  Yes  No  Don't Know

4. Is the person to be vaccinated younger than age 2 years or older than age 49 years?  Yes  No  Don't Know

5. Does the person to be vaccinated have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorders?  Yes  No  Don't Know

6. 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?  Yes  No  Don't Know

7. Does the person to be vaccinated have a weakened immune system because of HIV/AIDS or another disease that affects the immune system, long-term treatment with drugs such as steroids, or cancer treatment with x-rays or drugs?  Yes  No  Don't Know

8. Is the person to be vaccinated receiving aspirin therapy or aspirin-containing therapy?  Yes  No  Don't Know

9. Is the person to be vaccinated pregnant or could she become pregnant within the next month?  Yes  No  Don't Know

10. Has the person to be vaccinated ever had Guillain-Barré syndrome?  Yes  No  Don't Know

11. Does the person to be vaccinated live with or expect to have close contact with a person whose immune system is severely compromised and who must be in a protective environment (such as in a hospital room with reverse air flow)?  Yes  No  Don't Know

12. Has the person to be vaccinated received any other vaccinations in the past 4 weeks?  Yes  No  Don't Know

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Form reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

© 2009 Immunization Action Coalition. All rights reserved. Form #9037 (9/09)

Immunization Action Coalition • 1573 Setty Ave. • St. Paul, MN 55104 • (651) 647-9009 • www.immunize.org • www.vaccineinformation.org

# Administering Influenza Vaccine (Intramuscular)

- “How to Administer Intramuscular (IM) Injections” from the Immunization Action Coalition

### How to Administer Intramuscular (IM) Injections


Administer these vaccines by the intramuscular (IM) route: Diphtheria-tetanus (DT, Td) with pertussis (DTaP, Tdap), Haemophilus influenzae type b (Hib); hepatitis A (HepA); hepatitis B (HepB); human papillomavirus (HPV); inactivated influenza (TIV); meningococcal conjugate (MCV); and pneumococcal conjugate (PCV). Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV) either IM or SC.

Patient age	Injection site	Needle size	Needle insertion
Newborn (0–28 days)	Anterolateral thigh muscle	½" (22–25 gauge)	Use a needle long enough to reach deep into the muscle. Insert needle at a 90° angle to the skin with a quick thrust. (Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.) Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.
Infant (1–12 months)	Anterolateral thigh muscle	1" (22–25 gauge)	
Toddler (1–2 years)	Anterolateral thigh muscle	1–1¼" (22–25 gauge)	Use a needle long enough to reach deep into the muscle. Insert needle at a 90° angle to the skin with a quick thrust. (Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.) Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.
	Alternate site: Deltoid muscle of arm if muscle mass is adequate	¾–1" (22–25 gauge)	
Children (3–16 years)	Deltoid muscle	¾–1" (22–25 gauge)	Use a needle long enough to reach deep into the muscle. Insert needle at a 90° angle to the skin with a quick thrust. (Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.) Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)	
Adults 19 years and older	Deltoid muscle of arm	1–1½" (22–25 gauge)	Use a needle long enough to reach deep into the muscle. Insert needle at a 90° angle to the skin with a quick thrust. (Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.) Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)	

1½" needle may be used only if the skin is stretched tight, the subcutaneous tissue is not bunched, and injection is made at a 90° angle.  
1A 1½" needle is sufficient in adults weighing <130 lbs (<60 kg); a 1" needle is sufficient in adults weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 152–200 lbs (70–90 kg) and men weighing 152–200 lbs (70–118 kg); a 1½" needle is recommended in women weighing >200 lbs (>90 kg) or men weighing >200 lbs (>118 kg).

\*CDC. VACIP General Recommendations on Immunization\*  
at www.immunize.org/cip

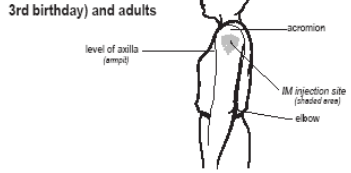
#### IM site for infants and toddlers



IM injection site (shaded area)

Insert needle at a 90° angle into the anterolateral thigh muscle.

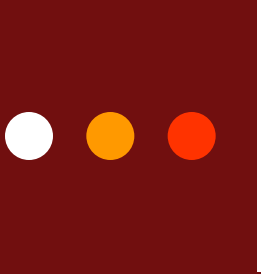
#### IM site for children (after the 3rd birthday) and adults



acromion  
level of axilla (armpit)  
IM injection site (shaded area)  
elbow

Insert needle at a 90° angle into thickest portion of deltoid muscle — above the level of the axilla and below the acromion.

Subtotal content reviewed by the Centers for Disease Control and Prevention, February 2009  
www.immunize.org/cip/090202.pdf • Item #P3030 (2/09)  
Immunization Action Coalition • 1573 Selby Ave. • St. Paul, MN 55104 • (651) 647-9009 • www.immunize.org • www.vaccineinformation.org • admin@immunize.org



# Administering Influenza Vaccine (Intranasal)

- LAIV is supplied in a prefilled single-use sprayer
- Half of the total sprayer contents is sprayed into the first nostril while the recipient is in an upright position
- An attached dose-divided clip is removed to administer the second half of the dose in the other nostril
- *If the recipient sneezes after administration, the dose should not be repeated*

# Vaccine Information Statements (VIS)

## INACTIVATED INFLUENZA VACCINE WHAT YOU NEED TO KNOW 2008-09

Many Vaccine Information Statements are available in Spanish and other languages. See [www.immunize.org/vis](http://www.immunize.org/vis).

### 1 Why get vaccinated?

Influenza ("flu") is a contagious disease.

It is caused by the influenza virus, which can be spread by coughing, sneezing, or nasal secretions.

Other illnesses can have the same symptoms and are of mistaken for influenza. But only an illness caused by influenza virus is really influenza.

Anyone can get influenza, but rates of infection are highest among children. For most people, it lasts only a few days. It can cause:

· fever · sore throat · chills · fatigue  
· cough · headache · muscle aches

Some people get much sicker. Influenza can lead to pneumonia and can be dangerous for people with heart or breathing conditions. It can cause high fever, diarrhea, and seizures in children. On average, 226,000 people are hospitalized every year because of influenza and 36,000 mostly elderly.

Influenza vaccine can prevent influenza.

### 2 Inactivated influenza vaccine

There are two types of influenza vaccine:

1. Inactivated (killed) vaccine, or the "flu shot" is given by injection into the muscle. 2. Live, attenuated (weakened) influenza vaccine is sprayed into the nostrils. *This vaccine is described in a separate Vaccine Information Statement.*

Influenza viruses are always changing. Because of this, influenza vaccines are updated every year, and an annual vaccination is recommended.

Each year scientists try to match the viruses in the vaccine to those most likely to cause flu that year. When there is a close match the vaccine protects most people from serious influenza-related illness. But even when there is not a close match, it still provides some protection. Influenza vaccine will prevent "influenza-like" illnesses caused by other viruses.

It takes up to 2 weeks for protection to develop after the shot. Protection lasts up to a year.

Some inactivated influenza vaccine contains a preservative called thimerosal. Some people have suggested that thimerosal may be related to developmental problems in children. In 2004 the Institute of Medicine reviewed studies looking into this theory and concluded that there is no evidence of such a relationship. Thimerosal-free influenza vaccine is available.

## LIVE, INTRANASAL INFLUENZA VACCINE WHAT YOU NEED TO KNOW 2008-09

Many Vaccine Information Statements are available in Spanish and other languages. See [www.immunize.org/vis](http://www.immunize.org/vis).

### 1 Why get vaccinated?

Influenza ("flu") is a contagious disease.

It is caused by the influenza virus, which can be spread by coughing, sneezing, or nasal secretions.

Other illnesses can have the same symptoms and are often mistaken for influenza. But only an illness caused by influenza virus is really influenza.

Anyone can get influenza, but rates of infection are highest among children. For most people, it lasts only a few days. It can cause:

· fever · sore throat · chills · fatigue  
· cough · headache · muscle aches

Some people get much sicker. Influenza can lead to pneumonia and can be dangerous for people with heart or breathing conditions. It can cause high fever, diarrhea, and seizures in children. On average, 226,000 people are hospitalized every year because of influenza and 36,000 die – mostly elderly.

Influenza vaccine can prevent influenza.

### 2 Live, attenuated influenza vaccine - LAIV (nasal spray)

There are two types of influenza vaccine:

1. Live, attenuated influenza vaccine (LAIV) contains live but attenuated (weakened) influenza virus. It is sprayed into the nostrils. 2. Inactivated influenza vaccine, sometimes called the "flu shot," is given by injection. *Inactivated influenza vaccine is described in a separate Vaccine Information Statement.*

Influenza viruses are always changing. Because of this, influenza vaccines are updated every year, and an annual vaccination is recommended.

Each year scientists try to match the viruses in the vaccine to those most likely to cause flu that year. When there is a close match the vaccine protects most people from serious influenza-related illness. But even when there is not a close match, the vaccine provides some protection. Influenza vaccine will not prevent "influenza-like" illnesses caused by other viruses.

It takes up to 2 weeks for protection to develop after the vaccination. Protection lasts up to a year.

LAIV does not contain thimerosal or other preservatives.

### 3 Who can get LAIV?

LAIV is approved for people from 2 through 49 years of age, who are not pregnant and do not have certain health conditions (see #4, below). Influenza vaccination is recommended for people who can spread influenza to others at high risk, such as:

- Household contacts and out-of-home caregivers of children up to 5 years of age, and people 50 and older.
- Physicians and nurses, and family members or anyone else in close contact with people at risk of serious influenza.

Health care providers may also recommend a yearly influenza vaccination for:

- People who provide essential community services.
- People living in dormitories, correctional facilities, or under other crowded conditions, to prevent outbreaks.

Influenza vaccine is also recommended for anyone who wants to reduce the likelihood of becoming ill with influenza or spreading influenza to others.

### 4 Some people should not get LAIV

LAIV is not licensed for everyone. The following people should get the inactivated vaccine (flu shot) instead:

- Adults 50 years of age and older or children between 6 months and 2 years of age. (Children younger than 6 months should not get *either* influenza vaccine.)
- Children younger than 5 with asthma or one or more episodes of wheezing within the past year.
- People who have long-term health problems with:
  - heart disease
  - kidney or liver disease
  - lung disease
  - metabolic disease, such as diabetes
  - asthma
  - anemia, and other blood disorders
- Anyone with certain muscle or nerve disorders (such as seizure disorders or cerebral palsy) that can lead to breathing or swallowing problems.
- Anyone with a weakened immune system.
- Children or adolescents on long-term aspirin treatment.
- Pregnant women.

Tell your doctor if you ever had Guillain-Barré syndrome (a severe paralytic illness also called GBS). You may be able to get the vaccine, but your doctor should help you make the decision.

The flu shot is preferred for people (including health-care workers and family members) in close contact with anyone

- By federal law, all persons being vaccinated must be given a current VIS prior to receiving the vaccine.

# North Dakota Immunization Information System (NDIIS)

- Confidential, computerized information system for tracking immunizations of North Dakotans
- By law, all immunizations for persons under the age of 18 **MUST** be entered into NDIIS
  - It is recommended that adult vaccinations are also entered into the system





# Adverse Reactions (TIV)

- Local reactions
  - Soreness, redness, or hardening at the injection site
    - Reported in 15-20% of vaccinees
    - Transient, last 1-2 days
- Systemic reactions
  - Fever, chills, malaise, myalgia
    - Not common, last 1-2 days
- Allergic reactions
  - Hives, excessive swelling, respiratory distress
    - Rare, probably result from hypersensitivity to a vaccine component (i.e. residual egg protein)
- Neurological reactions
  - Very rare



# Adverse Reactions (LAIV)

- Among healthy adults:
  - Significantly increased rate of cough, runny nose, nasal congestion, sore throat, and chills
    - Reported in 10-40% of recipients
  - No increase in occurrence of fever
  - No serious adverse reactions
  - No instances of Guillain-Barré syndrome

# Reporting Adverse Events Following Vaccination

- Severe allergic reactions should be handled as urgently as possible.
- Treat the patient according to protocol and, under the advice of medical direction, transport to the hospital.
- File a report through the Vaccine Adverse Event Reporting System (VAERS), found at [www.vaers.hhs.gov](http://www.vaers.hhs.gov).

WEBSITE: [www.vaers.hhs.gov](http://www.vaers.hhs.gov) E-MAIL: [info@vaers.org](mailto:info@vaers.org) FAX: 1-877-721-0366

**VACCINE ADVERSE EVENT REPORTING SYSTEM**  
 24 Hour Toll-Free Information 1-800-822-7967  
 P.O. Box 1100, Rockville, MD 20849-1100  
 PATIENT IDENTITY KEPT CONFIDENTIAL

**For CDC/FDA Use Only**  
 VAERS Number \_\_\_\_\_  
 Date Received \_\_\_\_\_

Form completed by (Name): \_\_\_\_\_  
 Relation  Vaccine Provider  Patient/Parent  
 Physician  Manufacturer  Other  
 Address (if different from patient or provider) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Patient Name: Last First M.I. Address City State Zip Telephone no. (\_\_\_\_) \_\_\_\_\_

Vaccine administered by (Name): Physician Facility Name/Address City State Zip Telephone no. (\_\_\_\_) \_\_\_\_\_

1. State 2. County where administered 3. Date of birth \_\_\_\_/\_\_\_\_/\_\_\_\_ 4. Patient age \_\_\_\_ 5. Sex  M  F 6. Date form completed \_\_\_\_/\_\_\_\_/\_\_\_\_

7. Describe adverse event(s) (symptoms, signs, time course) and treatment, if any

8. Check all that apply:  
 Patient died (date \_\_\_\_/\_\_\_\_/\_\_\_\_)  
 Life threatening illness  
 Required emergency room/doctor visit  
 Required hospitalization (\_\_\_\_ days)  
 Resulted in permanent disability  
 None of the above

9. Patient recovered  YES  NO  UNKNOWN

10. Date of vaccination \_\_\_\_/\_\_\_\_/\_\_\_\_ 11. Adverse event onset \_\_\_\_/\_\_\_\_/\_\_\_\_ AM/PM

12. Relevant diagnostic tests/laboratory data

13. Enter all vaccines given on date listed in no. 10

Vaccine (type)	Manufacturer	Lot number	Route/Site	No. Previous Doses
a. _____	_____	_____	_____	_____
b. _____	_____	_____	_____	_____
c. _____	_____	_____	_____	_____
d. _____	_____	_____	_____	_____

14. Any other vaccinations within 4 weeks prior to the date listed in no. 10

Vaccine (type)	Manufacturer	Lot number	Route/Site	No. Previous doses	Date given
a. _____	_____	_____	_____	_____	_____
b. _____	_____	_____	_____	_____	_____

15. Vaccinated at:  
 Private doctor's office/hospital  Military clinic/hospital  
 Public health clinic/hospital  Other/unknown

16. Vaccine purchased with:  
 Private funds  Military funds  
 Public funds  Other/unknown

17. Other medications \_\_\_\_\_

18. Illness at time of vaccination (specify) \_\_\_\_\_

19. Pre-existing physician-diagnosed allergies, birth defects, medical conditions (specify) \_\_\_\_\_

20. Have you reported this adverse event previously?  No  To health department  To doctor  To manufacturer

21. Adverse event following prior vaccination (check all applicable, specify)  
 Adverse Event Onset Age Type Vaccine Dose no. In series

In patient \_\_\_\_\_  
 In brother or sister \_\_\_\_\_

22. Birth weight \_\_\_\_\_ lb. \_\_\_\_\_ oz.  
 23. No. of brothers and sisters \_\_\_\_\_

24. Mfr. Inv. report no. \_\_\_\_\_ 25. Date received by mfr. Inv. report \_\_\_\_\_

26. 15 day report?  Yes  No

27. Report type  Initial  Follow-Up

Health care providers and manufacturers are required by law (42 USC 300aa-25) to report reactions to vaccines listed in the Table of Reportable Events Following Immunization. Reports for reactions to other vaccines are voluntary, except when required as a condition of immunization grant awards.

Form VAERS-1(Rev)



# Questions

- If you have questions or concerns regarding influenza vaccine or its administration, please contact either your medical director or the North Dakota Department of Health Immunization Program at 701.328.3386 or 800.472.2180.