

Influenza Vaccination

Influenza Vaccine Overview

History of Influenza Vaccine

- 1918: The Spanish Flu
- 1933: Flu virus isolated
- 1936: First vaccine attempts by USSR
- 1942: First bivalent influenza A/B vaccine (Armed Forces)
- 1945: Licensed for use amongst citizens
- 2008: ACIP recommendation ≥ 6 months
- 2013: Quadrivalent vaccine licensed

How does the flu vaccine work?

- Causes antibodies to develop
- About 2 weeks for optimal protection
- Provides protection against circulating strains
- Cross protection against related influenza viruses

Influenza Vaccine Strain Selection

- More than 100 national influenza centers
- Samples collected year-round
- Testing at Collaborating Centers
- World Health Organization (WHO) February meeting
- US Vaccines and Related Biological Products Advisory Committee (VRBAC) makes final decision re: strain composition
- Manufacturer production

2016 – 2017 Influenza Vaccine Strains

- A/California/7/2009 (H1N1)pdm09-like virus
- A/Hong Kong/4801/2014 (H3N2)-like virus
- B/Brisbane/60/2008-like virus (B/Victoria lineage)
- B/Phuket/3073/2013-like virus (B/Yamagata lineage) *

*Quadrivalent vaccines only

Types of Influenza Vaccine

Inactivated Influenza Vaccine (IIV)

- Trivalent Inactivated Vaccine (IIV3)
- Quadrivalent Inactivated Vaccine (IIV4)
- Cell culture-based (ccIIV3)
- High-dose (IIV3)
- Recombinant Influenza Vaccine (RIV3)

Live Attenuated Influenza Vaccine (LAIV4)

- CDC's Advisory Committee on Immunization Practices (ACIP) votes on the use and dosing schedule of every vaccine available in the U.S.
- June ACIP meeting: LAIV, also known as the “nasal spray flu vaccine,” or **FluMist®**, **should NOT be used in the upcoming flu season**
- Vaccine effectiveness (VE) data showed no protective effect of LAIV during the 2015-2016 flu season.
 - 3 percent (95% CI: -49 to 37 percent)

Influenza Vaccine Recommendations

ACIP Recommendations

- Annual influenza vaccination
- Everyone ≥ 6 months without contraindications
- Children 6 months – 8 years: 2 doses*

*if not previously vaccinated

High-Risk Groups

- Children and infants
- Pregnant women
- Seniors
- Chronic Health Conditions
 - Arthritis
 - Asthma
 - Cancer
 - Heart Disease
 - HIV/AIDS
 - Immunosuppression

Who should not receive flu vaccine?

- Children <6 months
- Severe, life threatening allergic reaction(s) to vaccine/ingredients

Patients Who Should Discuss Flu Vaccine with their Health Care Provider

- Guillain-Barré Syndrome (GBS)
- Moderate to severe illness with or without a fever
- Allergy to chicken eggs or other vaccine ingredients*

*New data suggests that severe allergies to eggs should not disqualify a person from receiving influenza vaccination

Safety and Efficacy

Influenza Vaccine Safety

- Good safety record
- Common side effects
- Rare side effects
- Vaccine Adverse Event Reporting System (VAERS)
- Vaccine Safety Data Link (VSD)

Influenza Vaccine Effectiveness

- Varies from year to year
- Varies among different age groups
- Two important factors:
 - Characteristics of person vaccinated
 - Match of vaccine strains to circulating strains
- Ongoing evaluation

Policy, Resources, & Campaigns

Texas Health & Safety Code

- Title 4, Subtitle A, Chapter 224, Section 224.002
- Health care facilities shall develop and implement a policy to protect patients from vaccine preventable diseases (VPDs)
 - Identify VPDs
 - Identify levels of risk
 - Procedures for verifying immunization history
 - Identify any exemptions allowed (discrimination or retaliation prohibited)
 - Identify protective equipment requirements for unvaccinated
 - Maintain written or electronic records
 - Identify disciplinary actions for noncompliance

Texas Administrative Code (TAC)

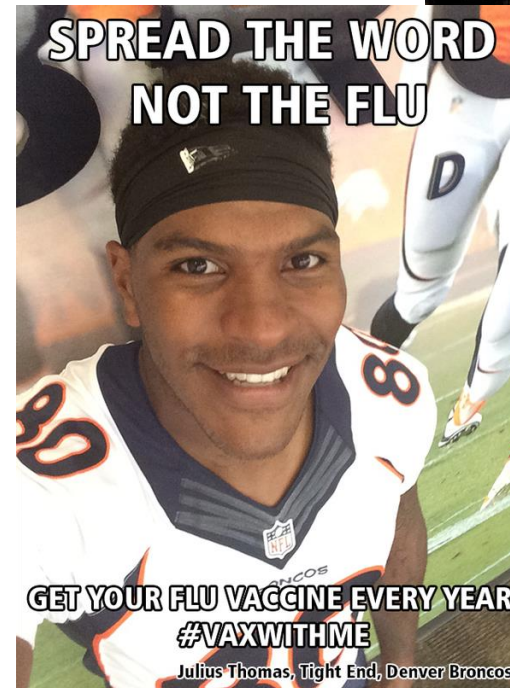
- Title 25, Part 1, Chapter 97, Subchapter I, Rule 97.202
- Nursing home facilities must offer influenza vaccination to residents and employees in contact with residents
- Must be completed unless the vaccine is medically contraindicated by a physician or if resident or employee has refused the vaccine
- Must be completed by November 30 of each year
- Should follow ACIP recommendations
- Documentation shall be maintained (including refusal)

Locating Influenza Vaccine

- Flu Vaccine Finder: www.flu.gov
- HealthMap Vaccine Finder: <http://flushot.healthmap.org/>

Media Campaigns

- CDC: #VaxWithMe
- DSHS:
 - Protect Two From the Flu <http://protect2.org>
 - <http://TexasFlu.org>
- Walgreens: Vaccinate Texas



TVFC Annual Flu Vaccine Ordering

TVFC

- Passed nationally in 1994 as the Vaccines for Children program, our Texas Vaccines for Children program guarantees ACIP-recommended vaccines will be available at no cost to providers in order to immunize children who meet the eligibility requirements.
 - Texas has approx. 3,300 VFC provider sites
- Every year in January, TVFC providers order flu vaccine from us through a process called “prebooking” to serve their populations for the following fall when flu season begins.
- At Central Office, we track these orders and are responsible for the allocating the flu vaccine as it is received from CDC.

2016-2017 TVFC Flu Vaccine Order Data

Formulation	2010	2011	2012	2013	2014	2015	2016
.25 mL	458,810	421,950	458,880	486,530	548,400	540,240	536,970
.5 mL (trivalent)	1,062,270	718,600	780,960	499,820	56,040	36,490	16,770
.5 mL (quadrivalent)	N/A	N/A	N/A	419,540	833,850	892,370	1,439,490
FluMist®	480,770	433,040	432,360	519,280	500,630	567,800	Unavail- able
Total	2,001,850	1,573,590	1,672,200	1,925,170	1,938,920	2,036,900	1,993,230



Flu Vaccine Loss

- In the 2015-2016 flu season:
 - 296,210 doses of flu vaccine wasted
 - 14.5% of all doses ordered
 - Cost of \$4,607,501

Texas Influenza Vaccine Coverage

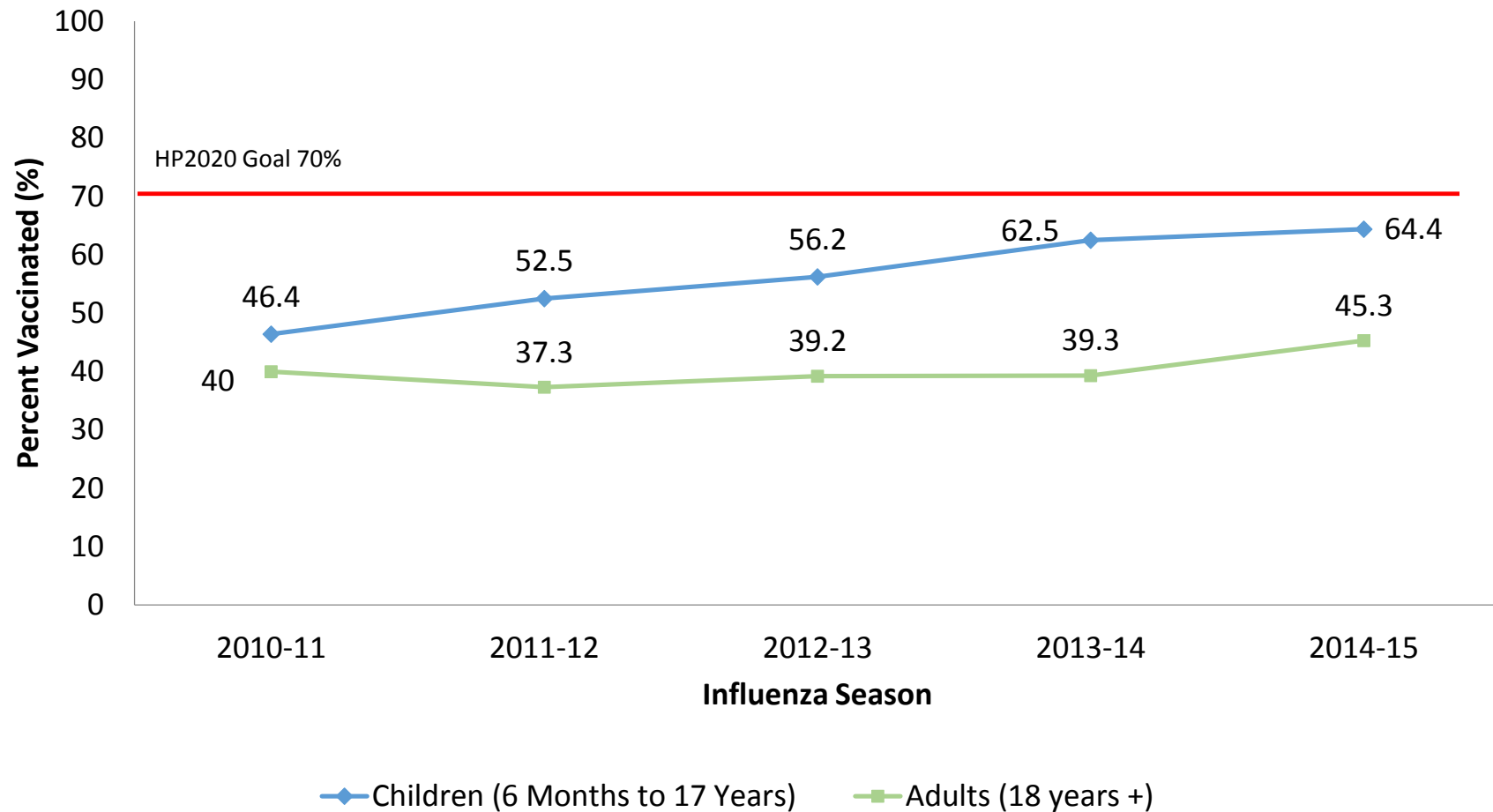
2014-2015 Flu Season

Influenza Vaccination Coverage by Age Group



Age Group	2013-2014 Coverage, Texas	2014-2015 Coverage, Texas	+/- Change from previous Flu Season	2014-2015 Coverage, United States
≥6 months	45.2%	50.1%	+4.9%	47.1%
6 months – 17 years	62.5%	64.4%	+1.9%	59.3%
≥18 years	39.3%	45.3%	+6.0%	43.6%
18-64 years (high risk)	47.4%	48.7%	+1.3%	47.6%
≥65 years	63.4%	72.3%	+8.9%	66.7%

Influenza Vaccination Coverage by Season and Age Group



Top reasons Texas adults didn't get a flu shot in 2014-2015:

- **18.5% “Did not have time to get the vaccination/did not get around to it”**
- 18.0% “Never get the flu”
- 11.7% are “Unlikely to get very sick from the flu”
- 8.6% are “Concerned about getting the flu from the vaccination/concerned about getting sick from the vaccination”
- ...
- Only 2.0% “Do not trust what the government says about the flu”

DSHS Strategies to Improve Flu Vaccination Coverage

- Encouraging use of evidence-based practices at medical sites to increase access to vaccination services
 - Promote use of ImmTrac
 - Promote the use of client and provider reminder recall systems
- Increasing community demand for vaccinations
 - Flu child care facility mail out
 - Increase awareness through Texas Influenza Awareness Day on October 1st
- Expanding access to flu vaccines through the Texas Vaccines for Children Program
- Promote public and private partnerships to improve vaccination coverage
 - Communicate key immunization messages through network of state and local health department ImmTrac outreach specialists
 - Collaborate with vaccine manufacturers to identify financial assistance programs and disseminate the program information to key stakeholders throughout the state
 - Work closely with key officials from the manufacturers to stay abreast of vaccine changes and any future plans to make changes to the vaccine, as well as gauging supply levels

Rio Olympics Flu Recommendations



Health and Wellness

The Center for Disease Control (CDC) recommends all travelers be up-to-date on routine vaccines before every trip. These vaccines include the measles-mumps-rubella (MMR) vaccine, diphtheria-tetanus-pertussis vaccine, varicella (chickenpox) vaccine, polio vaccine, and your yearly flu shot. In addition to routine vaccines, the CDC recommends specific immunization for both Rio and other parts of Brazil. Ideally 4-6 weeks before your trip you receive the vaccines. Please visit the [CDC](#) for more detailed information.



In preparation for the Rio Olympic and Paralympic Games, the Center for Disease Control, the FISA Medical Commission and the USRowing Medical Commission have recommended that all individuals traveling to Rio receive the following vaccinations.

- **Hepatitis A:** This vaccination is given by injection. When feasible, a second “booster” can be given to strengthen immunity to Hepatitis A. The second vaccination is given 6 months following the first.
- **Typhoid:** this vaccination is given in pill form.
- **Flu Shot:** the similarity in expected flu strains between the northern and southern hemisphere suggests that our northern hemisphere vaccine will be adequate for protection in the southern hemisphere. If it has been more than 6 months since you received the flu vaccine, it is recommended that you received another dose in the next 1-2 months prior to travel to Rio.

Medal Count

Contact Information

Kenda Deputy, RN, BSN

Immunization Unit Nurse Consultant

kenda.deputy@dshs.state.tx.us

Erin Gardner, MPH

Immunization Unit Epidemiologist

erin.gardner@dshs.state.tx.us