



# Immunizations:

## Administration, Recommendations, and Missouri State Law

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# Disclosure

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- Dr. Lauterwasser has no personal or financial conflicts of interest to disclose.

# Objectives

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01

Describe appropriate administration techniques.

02

Explain the importance of patient monitoring after immunization administration.

03

Review Missouri State Laws regarding immunizations.

04

Recognize the pharmacy technician's role in immunization administration.

# Immunization Administration



# General Precautions

- Goal of administration is to decrease risk for spread and exposure of disease
- Proper sanitation practices
  - Hand washing
  - Wearing gloves\*
  - Drawing up vaccines in clean area
  - Multi-dose vials not kept or taken into direct patient care area

# Safe Use of Needles and Syringes

- The Needlestick Safety and Prevention Act enacted by OSHA in 2000
  - Reduce accidental needlesticks and spread of bloodborne pathogens
  - Sharps containers, safety mechanisms on needles

# Needle Length and Injection Site: Intramuscular Injection

Children (birth-18 years)		
Age Group	Injection Site	Needle Length
Neonates	Anterolateral thigh	5/8 inch (16 mm)
Infants, 1-12 months	Anterolateral thigh	1 inch (25 mm)
Toddlers, 1-2 years	Anterolateral thigh	1-1.25 inches (25-32 mm)
	Deltoid muscle of arm	5/8 – 1 inch (16-25 mm)
Children, 3-10 years	Anterolateral thigh	1-1.25 inches (25-32 mm)
	Deltoid muscle of arm	5/8 – 1 inch (16-25 mm)
Children, 11-18 years	Anterolateral thigh	1-1.5 inches (25-38 mm)
	Deltoid muscle of arm	5/8 – 1 inch (16-25 mm)

# Needle Length and Injection Site: Intramuscular Injection

Adults ( $\geq 19$  years)

Age Group	Needle Length Site	Injection Site
Men and women, < 60 kg (130lbs)	1 inch (25 mm)	Deltoid muscle of the are
Men and women, 60-70 kg (130-152 lbs)	1 inch (25 mm)	
Men, 70-118 kg (152-260 lbs)	1-1.5 inches (25-38 mm)	
Women, 70-90 kg (152-200 lbs)		
Men, > 118 kg (260 lbs)	1.5 inches (38 mm)	
Women, > 90 kg (200 lbs)		



# Needle Length and Injection Site: Subcutaneous Injection

- 5/8-inch, 23 to 25-gauge needle
- Administered at a 45-degree angle
- Infants aged < 12 months
  - Inject into thigh
- Persons > 12 months old
  - Inject into upper-outer triceps area

# Administering Multiple Injections

- Multiple vaccines can be administered at a single visit
  - Administer each at a different anatomical site
- If more than 2 vaccines are administered in a single limb
  - Separate by > 1 inch
  - Allows for local reactions to be differentiated



# Contraindications to Vaccines

- Live attenuated vaccinations are contraindicated in:
  - Severely immunocompromised patients
  - Women known to be pregnant
- Pertussis vaccine is contraindicated in:
  - Patients who experienced encephalopathy within 7 days after administration of a previous dose of pertussis-containing vaccine
- Rotavirus vaccine is contraindicated in:
  - Patients with Severe Combined Immunodeficiency (SCID) disease
  - Patient with a history of intussusception

# Monitoring after Immunizations



# Adverse Effects

- Common adverse effects
  - Redness / irritation at the injection site
  - Soreness in muscle
- Severe adverse effects
  - Syncope
  - Anaphylaxis
  - Seizures

# Monitoring

- Patients should be informed to stay at clinic or pharmacy to be observed for 15 minutes after vaccination is given
  - 80% of syncopal events occur within 15 minutes of administration
- Pharmacists should have emergency kits available that include epinephrine pens

# Management of Adverse Effects

- Syncope
  - Patient should be placed flat on a hard surface with legs elevated
- Anaphylaxis
  - Immediate intramuscular epinephrine
  - Additional doses of epinephrine should be available
  - If hypotensive, patient should lay on a flat, hard surface with legs elevated
  - Maintain airway
  - Prepare for immediate transfer to emergency facility


# CDC Recommendations







# Missouri State Law





# Administration of Vaccines Per Protocol

- A pharmacist may administer vaccines... pursuant to a written protocol with a Missouri licensed physician
- Vaccines must be administered and stored in accordance with treatment guidelines established by the Centers for Disease Control (CDC) and manufacturer's guidelines
- A pharmacist may only delegate vaccine administration to an intern pharmacist... under the direct supervision of a pharmacist qualified to administer vaccines

# Pharmacist Qualifications to Immunize

- Pharmacists must first file a Notification of Intent (NOI) to administer vaccines with the Missouri Board of Pharmacy
  - Pharmacy license
  - Provider level cardiopulmonary resuscitation (CPR) or basic life support (BLS) certification
  - Completion of vaccination certification program accredited by ACPE or an accredited medical or pharmacy school approved by the Board of Pharmacy

# Notification after Immunizations

- After immunization, pharmacist must notify:
  - All persons or entity required by state and federal law
  - The protocol physician
  - Patients primary care provider
- If adverse event occurs, notify:
  - Primary care and protocol provider within 24 hours
  - Vaccine Adverse Event Reporting System (VAERS) within 30 days

# Record Keeping

- All records of vaccinations and notifications of providers must be kept for two (2) years
- Record must include:
  - Patient's name, address and date of birth
  - Date, route, and anatomic site of administration
  - Vaccine's name, dose, manufacturer, lot number and expiration date
  - Name and address of primary care provider (provided by patient)
  - Identity of pharmacist (or intern pharmacist and pharmacist)
  - Any adverse effect, if notified

# ShowMeVax Reporting

- Pharmacists are required to report all immunizations administered to ShowMeVax, unless the patient does not allow the information to be shared
- If a patient does not allow information to be shared, the primary care provider must be notified within 14 days of vaccine administration
- Section 338.010.13

# Pharmacy Technician's Role





# Pharmacy Technician's Role

- Ensure safe storage, preparation, and dispensing of vaccinations
- Assist the pharmacist in identifying patients who may need to be immunized
- Review appropriate documentation and record keeping
- Assist with notifying ShowMeVax / prescriber of the immunization record

# References

CDC. Contraindications and Precautions. Vaccine Recommendations and Guidelines of ACIP. 2020. <https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html>

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CDC. Preventing and Managing Adverse Reactions. Vaccine Recommendations and Guidelines of ACIP. 2020. <https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/adverse-reactions.html>

CDC. Immunization Schedules. 2020. <https://www.cdc.gov/vaccines/schedules/index.html>

20 CSR 2220-6.050. Administration of Vaccines Per Protocol. Rules of Department of Commerce and Insurance. Division 2220 State Board of Pharmacy. Chapter 6- Pharmaceutical Care Standards.


Missouri Board of Pharmacy Statutes. Section 338.010.13

# Questions?

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# Assessment Questions





# Question 1

- DF is a 45-year-old male who is 120 kg. He appears at the outpatient clinic to receive his yearly influenza vaccine, an intramuscular vaccination. What length of needle will the pharmacist use and where will the pharmacist administer the vaccine?
  - A. 1 inch needle in deltoid muscle
  - B. 1 inch needle in anterolateral thigh
  - C. 1.5 inch needle in deltoid muscle
  - D. 1.5 inch needle in anterolateral thigh



## Question 2

- What precautions should be in place for monitoring a patient after they have received an immunization?
  - A. The patient should stay for 15 minutes after immunization
  - B. An emergency kit should be prepared prior to immunization
  - C. Epinephrine should be included in the emergency kit
  - D. All of the above



## Question 3

- According to Missouri State Law, all records of vaccinations and notifications of providers must be kept for....
  - A. 6 months
  - B. 1 year
  - C. 2 years
  - D. 5 years



## Question 4

- Which of the following are tasks that pharmacy technicians can accomplish in regard to vaccinations?
  - A. Receive the order and place the appropriate vaccinations in the refrigerator
  - B. Administer a Tdap vaccine to a pregnant patient
  - C. Review the immunization consent form prior to handing it to the pharmacist to ensure the required information has been filled out
  - D. Assist in reporting vaccine administration to ShowMeVax
  - E. A, C and D



# Evaluation

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