

IMMUNIZATION RESOURCES FOR UNDERGRADUATE NURSING (IRUN)

SIMULATION SCENARIOS

A Resource to Enhance the IRUN Curriculum Framework



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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Immunization Resources for Undergraduate Nursing (IRUN) Overview

Advancements in teaching methods for health professions education and nursing practice have resulted in the need to enhance immunization resources for training and education of nurses. With the current trend of vaccine hesitancy, it is important that future nurses are armed with the best evidence to promote immunizations. To improve the integration of immunization in prelicensure nursing education, the Association for Prevention Teaching and Research (APTR) and the National Center for Immunization and Respiratory Diseases (NCIRD) at the Centers for Disease Control and Prevention (CDC) convened the Nursing Education Experts (NEE), a group of experts with diverse nursing perspectives. Its members include prelicensure nursing educators, national nursing practice and education association members, and nursing students.

Now referred to as the [Immunization Resources for Undergraduate Nursing \(IRUN\)](#) project, IRUN seeks to improve the integration of immunization content in prelicensure nursing education through the development of a curriculum framework and teaching resources. The following materials are the result of this initiative.

IRUN Framework

The purpose of the IRUN framework is to:

- ✓ Provide guidance for faculty on integrating immunization content into a curriculum, with a focus on entry-level learning for the prelicensure nursing student.
- ✓ Ensure access to and consistency of current information for faculty and students.
- ✓ Prioritize information and content to be included in curricula.

The framework does not provide instructions for teaching immunization in an academic setting. It serves solely as a guide to foundational topics identified by IRUN, CDC, and APTR. Nursing faculty members are encouraged to assess their existing curricula and incorporate appropriate elements of the framework. The framework consists of 12 topic areas with corresponding learning objectives and suggested resources. The framework objectives are meant to be comprehensive. Faculty members can present the subject matter in any manner they find suitable.

User Guide

Simulation-based learning has become widely embedded in health care education. It is an innovative teaching method used to involve and invigorate learners at all levels to improve their cognitive, psychomotor, and affective skills.

Purpose

These simulation scenarios offer an additional tool for teaching current information about immunization to prelicensure nursing students. The simulation scenarios were developed to promote clinical decision-making and enhance communication skills with the following audiences in the following settings:

Appropriate Audience and Setting	
Discipline	Nursing, interdisciplinary
Learner Level	Prelicensure students Appropriate for use after students' completion of assessment and fundamentals coursework
Learner Settings	Skills laboratory, simulation center, classroom role-play

How to Use

These simulations may be used independently, or they may be added to existing simulations to complement the user's current curriculum. They are intended to be comprehensive enough to use in a classroom role-play or as a stand-alone lab simulation. Simulation centers have various theories and methods for simulation management. These scenarios were created to be flexible and fit within a variety of settings, simulation plans, and time periods. Within each scenario, facilitators can select a specific state within a scenario's progression outline or simulate all states provided.

It is best practice that simulation scenarios be led by trained faculty facilitators. Formal simulation facilitator training is recommended to ensure a high-quality, simulation-based curriculum (Jeffries, et al, 2015). In addition, nursing simulation should be developed and implemented according to the standards of best practice developed by the International Nursing Association of Clinical Simulation and Learning (INACSL). The INACSL standards provide evidence-based guidelines for the operations of health care simulation (INACSL, 2017).

Each scenario includes resources for before, during, and after the simulation.

Before the simulation, the **Presimulation Guide** should be provided to students. The **Presimulation Guide** includes the specified *learning objectives*, relevant *teaching tools*, and a brief *background* for each simulation scenario. Teaching tools identified as "required" must be used during scenarios and students may be assigned these teaching tools or the teaching tools identified as "suggested" for reading. Consider having copies of the teaching tools available for reference during the simulation. An optional **Presimulation Assignment** and the corresponding **Answer Key** are also available for each scenario. Facilitators may consider using completion of the **Presimulation Assignment** as a "ticket to entry" for the simulation laboratory exercise.

To prepare for the simulation, a **Suggested Equipment List** details essential equipment and supplies that facilitators should provide. Before the scenario begins, simulation students and their facilitator should participate in a prebriefing. During this time, facilitators should review any questions related to presimulation assignments (if applicable), provide instructions regarding how vaccine administration should be simulated, orient participants to the environment, scenario, time allotment, and objectives, and inform participants about the evaluation process. The **Hand-Off Report**, which describes the scenario, should be provided to students before the simulation experience.

The **Scenario Progression Outline** details the roles of manikin(s) and/or standardized patients and the expectations of simulation students throughout each stage of the scenario. After the scenario is completed, simulation students and their facilitator should participate in a debriefing session using the **Debriefing Guide** that is provided. Debriefing should be conducted by someone who observed the simulation and should be based on the objectives of the scenario (Decker, et al, 2013; Dreifuert and Decker, 2012).

Questions About Use

Please submit questions or comments about the simulation scenarios at the IRUN web page: <https://www.irunursing.org/>.

References

Decker S, Fey M, Sideras S, Caballero S, Rockstraw L, Boese T, Borum JC. *Standards of Best Practice: Simulation Standard VI: The Debriefing Process*. *Clinical Simulation in Nursing*. 2013;9(6):S27–S29. <https://doi.org/10.1016/j.ecns.2013.04.008>

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The INACSL Standards Committee. INASCL Standards of Best Practice: SimulationSM–Operations. *Clinical Simulation in Nursing*. 2017;13:681–687. <https://doi.org/10.1016/j.ecns.2017.10.005>

Vaccine Acronyms

The list of vaccine acronyms below is not exhaustive and only includes those used or included in the following simulation scenarios.

DTaP – Diphtheria, tetanus, and acellular pertussis vaccine

Hib – *Haemophilus influenzae* type b vaccine

HepB – Hepatitis B vaccine

HPV – Human papillomavirus vaccine

IIV – Influenza vaccine (inactivated)

LAIV – Influenza vaccine (live, attenuated)

MMR – Measles, mumps, and rubella vaccine

MenACWY – Meningococcal serogroups A, C, W, Y vaccine

PCV13 – Pneumococcal 13-valent conjugate vaccine

IPV – Poliovirus vaccine (inactivated)

RIV – Influenza vaccine (recombinant)

RV – Rotavirus vaccine

Tdap – Tetanus, diphtheria, and acellular pertussis vaccine

VAR – Varicella vaccine

Vaccine Trade Names

The list of vaccine trade names below is not exhaustive and only includes those used or included in the following simulation scenarios. Within each scenario, a vaccine trade name is specified only when the vaccine products are not interchangeable or when the use of a different trade name would require a different schedule or otherwise modify the scenario as currently written.

ActHIB® – *Haemophilus influenzae* type b vaccine

Pentacel® – DTaP, inactivated poliovirus vaccine, and *Haemophilus influenzae* type b vaccine

Rotarix® – Rotavirus (RV1) vaccine



Multiple vials of vaccines.

Scenario 1: Infant Vaccination/ Simultaneous Administration



A mother holding her infant.

Presimulation Guide

Learning Objectives

- Identify which vaccines are recommended for healthy infants and children now and at future visits.
- Engage parent respectfully in discussion to address their concerns about the simultaneous administration of vaccines.
- Verbalize the advantages of combination vaccines.
- Recognize which antigens are included in selected combination vaccines.
- Prepare vaccines aseptically and administer ordered vaccines for a 4-month-old.

Teaching Tools

Required:

1. [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#)
2. [Vaccine Information Statements \(VISs\)](#)

Suggested:

1. [CDC Vaccine Administration Resources](#)
2. [Combination Vaccines](#)
3. [General Best Practice Guidelines for Immunization: Best Practices Guidance of the Advisory Committee on Immunization Practices, Table 3–1: Recommended and Minimum Ages and Intervals between Vaccine Doses](#)
4. [Immunization Action Coalition's \(IAC\) Screening Checklist for Contraindications to Vaccines for Children and Teens](#)
5. [Multiple Vaccines and the Immune System](#)
6. [Positioning and Comforting Techniques during Vaccine Administration](#)
7. [Provider Resources for Vaccine Conversations with Parents–CDC: Talking with Parents about Vaccines for Infants](#)
8. [Reducing Pain during Vaccine Injections: Clinical Practice Guideline](#)

Glossary Words

Antigen: A foreign substance (e.g., bacterium or virus) in the body that is capable of causing disease. The presence of antigens in the body triggers an immune response, usually the production of antibodies.

Combination vaccine: A product containing components that can be divided equally into independently available vaccines.

Immunity: Protection against a disease or an infection, usually associated with antibodies or certain cells in the blood that counteract microbes or toxin. Immunity can come from infection with a disease or from vaccination.

Immunization: The process of being made immune or resistant to an infectious disease, typically by the administration of a vaccine. It implies that you've had an immune response.

Immunization information system (IIS): Confidential, population-based, computerized database that records all vaccine doses administered by participating providers to persons residing within a given geopolitical area. Also known as "immunization registry."

Immunization schedule (vaccination schedule): A summary of vaccination recommendations by the Advisory Committee on Immunization Practices/CDC that gives health care providers information on recommended timelines, conditions, and other indications for administering vaccines. There are child/adolescent, adult, and catch-up immunization schedules.

Invalid vaccine doses: Doses given sooner than the recommended age or interval.

Vaccination: The use of vaccines to produce immunity to a disease. This usually entails administering antigenic material, or vaccine, by injection.

Vaccine information statement (VIS): A document produced by CDC that informs vaccine recipients or their parents or legal representatives about the benefits and risks of a vaccine being administered. All public and private vaccine providers are required by the National Vaccine Childhood Injury Act to give the appropriate VIS to the patient (or parent or legal representative) prior to every dose of specific vaccines.

Background

Lauren is a healthy 4-month-old female who is being seen at the community health clinic in August for her immunizations. She has received her previous immunizations at the same clinic, as indicated on her chart (see Immunization History). Her parent is very concerned that she needs so many vaccinations at one time.

Location

Practitioner's office/clinic/public health

Immunization History

HepB – 2 doses (birth and 2 months of age)

DTaP – 1 dose (2 months of age)

IPV – 1 dose (2 months of age)

RV1 (Rotarix®) – 1 dose (2 months of age)

PCV13 – 1 dose (2 months of age)

Hib (ActHIB®) – 1 dose (2 months of age)

Note: Your simulation facilitator will provide instructions during the prebriefing about how vaccine administration should be simulated.



A father and mother holding their infant.

Presimulation Assignment

1. Assess for needed vaccines by comparing Lauren’s immunization history to the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#). Determine if Lauren is missing any recommended vaccines and if the doses she has already received are valid or invalid. Invalid vaccine doses are doses given sooner than the recommended age or interval. In the table below, place ✓s to indicate valid doses, ✗s to indicate invalid doses, and ○s to indicate missed doses. Not all doses may apply for each vaccine (N/A).

Vaccines valid, invalid, and missed

The first row has been completed for you as an example. The remaining cells are intentionally left blank and are to be completed.

Vaccine	Dose 1	Dose 2
<i>Example:</i> HepB	✓	✓
RV1 (Rotarix®)		
DTaP		
Hib (ActHIB®)		
PCV13		
IPV		

2. Which vaccines and dose numbers should be administered today? Your office stocks Rotarix® and ActHIB®. Complete the table below. Refer to the ACIP [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) (see Table 1, column 4 mos).

Vaccines due for Lauren today

The first row has been completed for you as an example. The remaining cells are intentionally left blank and are to be completed.

Vaccine due today (name)	Dose number
<i>Example:</i> RV1 (Rotarix®)	2

3. Based on your answers in Activity 2, how would you suggest using combination vaccines to decrease the number of injections Lauren will need? Your office stocks Pentacel®.

4. Which vaccines will be needed at the next visit and when should Lauren be scheduled to return for her subsequent doses? Assume that your clinic will have Rotarix® and Pentacel® at the next visit. Complete the table below. Refer to the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#).

Vaccines needed at next visit by dose and age

The first row has been completed for you as an example. The remaining cells are intentionally left blank and are to be completed.

Vaccine	Dose number	Age dose is due
Example: HepB	3	6 months

ANSWER KEY

Presimulation Assignment

1. Assess for needed vaccines by comparing Lauren's immunization history to the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#). Determine if Lauren is missing any recommended vaccines and if the doses she has already received are valid or invalid. Invalid vaccine doses are doses given sooner than the recommended age or interval. In the table below, place ✓s to indicate valid doses, ✗s to indicate invalid doses, and ○s to indicate missed doses. Not all doses may apply for each vaccine (N/A).

Vaccines valid, invalid, and missed: Answers

The first row indicates an example entry.

Vaccine	Dose 1	Dose 2
<i>Example:</i> HepB	✓	✓
RV1 (Rotarix®)	✓	N/A
DTaP	✓	N/A
Hib (ActHIB®)	✓	N/A
PCV13	✓	N/A
IPV	✓	N/A

Rationale:

- A comparison of Lauren's vaccination history with the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) shows that Lauren has received all recommended vaccines and doses from birth through age 2 months. No recommended vaccines or doses have been missed for Lauren at this time.
- Missed doses include doses that are not administered.
- If a vaccine is administered earlier than recommended, then it is not considered a valid dose. To determine if previous vaccine doses received were valid, determine if the time since the most recent vaccine dose meets the minimum interval requirement to give any doses today (see [General Guidelines, Table 3–1](#)).

2. Which vaccines and dose numbers should be administered today? Your office stocks Rotarix® and ActHIB®. Complete the table below. Refer to the ACIP [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) (see Table 1, column 4 mos).

Vaccines due for Lauren today: Answers

The first row indicates an example entry.

Vaccine due today (name)	Dose number
<i>Example: RV1 (Rotarix®)</i>	2
DTaP	2
Hib (ActHIB®)	2
PCV13	2
IPV	2

Rationale:

- RV1 (Rotarix®)—When Rotarix® is used, 2 doses are required at 2 months and 4 months. She had Rotarix® dose 1 at 2 months and needs dose 2 today at 4 months.
- DTaP—She had dose 1 at age 2 months. Dose 2 is due today at 4 months.
- Hib (ActHIB®)—She had ActHIB® dose 1 at 2 months. Dose 2 is due today.
- PCV13—She had dose 1 at 2 months. Dose 2 is due today.
- IPV—She had IPV dose 1 at 2 months. Dose 2 is due today.

3. Based on your answers in Activity 2, how would you suggest using combination vaccines to decrease the number of injections Lauren will need? Your office stocks Pentacel®.

Rationale:

- Lauren should receive RV1, DTaP, Hib, PCV13, and IPV.
- The health care provider can use the combination vaccine DTaP-IPV/Hib (Pentacel®) to reduce the number of injections. Lauren will receive a total of two instead of four injections. RV1 (Rotarix®) is an oral vaccine.
- Note that when documenting combination vaccines, each antigen should be documented with the generic name of the combination vaccine rather than the trade name because trade names can change or be discontinued.

4. Which vaccines will be needed at the next visit and when should she be scheduled to return for her next doses? Assume that your clinic will have Rotarix® and Pentacel® at this next visit. Complete the table below. Refer to the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#).

Vaccines needed at next visit by dose and age: Answers

The first row indicates an example entry.

Vaccine	Dose number	Age dose is due
<i>Example: HepB</i>	3	6 mos
DTaP-IPV/Hib (Pentacel®)	3	6 mos
PCV13	3	6 mos
IIV	1 of 2	6 mos

Rationale:

- Lauren will be scheduled to return at 6 months to receive the recommended vaccines: HepB, Pentacel®, PCV13, and IIV.
- Because she will be 6 months old in October and it will be flu season, she will be eligible for influenza vaccine.
- Because it is the first time she is receiving flu vaccine, she will need to have 2 doses, scheduled 4 weeks apart.

Suggested Equipment List

- Vaccine information statements (VISs) for the vaccines listed below
- Simulated vaccines:
 - DTaP-IPV/Hib (Pentacel®)
 - RV1 (Rotarix®)
 - Pneumococcal conjugate (PCV13)
- Alcohol wipes
- Bandages
- Gloves
- 2x2 gauze
- 1-mL and/or 3-mL syringes
- 1-inch, 22- to 25-gauge needles for intramuscular (IM) injections
- Sharps container
- Wearable injection pad
- Electronic health record or paper documentation for students to view orders and document vaccinations
- [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#)

Hand-Off Report

Patient Description/Background

Name: Lauren H.

Height: 60.96 cm (24 inches)

Patient Age: 4 months

Race: Caucasian

Gender: F

Allergies: No known medical allergies

Weight: 6.36 kg (14 lbs)

Medications: None

Case History

Immunization History:

- ✓ HepB – 2 doses (birth and 2 months of age)
- ✓ DTaP – 1 dose (2 months of age)
- ✓ IPV – 1 dose (2 months of age)
- ✓ RV1 (Rotarix®) – 1 dose (2 months of age)
- ✓ PCV13 – 1 dose (2 months of age)
- ✓ Hib (ActHIB®) – 1 dose (2 months of age)

Past Medical History: No past medical history to date. Parent denies any accidents or injuries. Lauren has received scheduled vaccines since birth and has had regular pediatric well-checks.

History of Present Illness: Lauren is a healthy, 4-month-old female infant who is being seen at the community health clinic for her vaccinations. She has received her previous vaccinations at the same clinic.

Social History: Lauren lives at home with both parents. Her father is a mechanic, and her mother is a stay-at-home parent. No smoking is allowed in the house and there are no pets in the home. There are no social concerns.

Current Nursing Assessment

Vital Signs–BP: 85/55, HR: 110, RR: 38, SpO₂: 95% RA, Temperature: 36.4°C (97.5°F)

No physical complaints. Appears healthy and alert and has appropriate interactions with parent and staff. Lauren has reached all 4-month developmental milestones.

Lauren H. is a 4-month-old female patient presenting to the community health clinic in August for her routine vaccines. She is alert and smiles at her parent periodically. Her parent denies any health concerns except for apprehension about Lauren receiving “a bunch of shots at one time.” Her parent denies any reactions to past vaccinations except for “fussiness and she felt warm.” Although Lauren received simultaneous vaccinations at 2 months, her parent has decided it wasn’t a good decision. The parent heard from friends and read online that it could be harmful to a baby so young. Lauren’s aunt told her parent that giving multiple vaccinations for different diseases at one time could cause harmful side effects and overload a young baby’s immune system. Her parent is asking if they can space out the vaccines.

The provider discussed the recommended vaccines for Lauren. After completing the physical exam, reviewing the immunization history, and screening for contraindications, the provider orders the following vaccinations:

- ✓ RV1 (Rotarix®) (dose 2)
- ✓ DTaP-IPV/Hib (Pentacel®) (dose 2)
- ✓ PCV13 (dose 2)

Scenario Progression Outline

Infant Vaccination Scenario Progression Outline

State	Manikin or standardized patient actions	Participant expectations/critical actions
1	<ul style="list-style-type: none"> ✓ Patient is alert and cooperative. ✓ Parent is anxious and upset that the provider left the room quickly without spending more time answering questions. 	<ul style="list-style-type: none"> • Perform hand hygiene, introduce self, and confirm patient ID. • Determine which vaccinations are due for patient. • Compare Lauren’s immunization history to the Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger. • Properly screen for contraindications and precautions prior to vaccine administration. • Evaluate parent understanding of vaccinations. • Address concerns expressed by parent. • Use appropriate vaccine information statements (VISs) when educating.
2	<ul style="list-style-type: none"> ✓ Parent is concerned. Parent states they know these vaccines are important but does not understand how it can be good for a baby to receive so many shots at once. ✓ Parent asks the nurse if s(he) could please explain the need for these immunizations. Parent wants to know if there is any problem with spacing out the vaccinations and having some given to Lauren in a few weeks rather than all at once today. <p><i>*Note: If the student is unable to articulate benefits of not delaying recommended doses and provide appropriate teaching, the script may be changed to have the parent refuse the vaccines.</i></p>	<ul style="list-style-type: none"> • Approach parent with respect and acknowledge parent’s concerns. • Engage the parent in a discussion about their concerns and address their misconceptions. • Review the expected side effects, such as pain, swelling, or redness at the injection sites that may last a couple of days. • Discuss with parent comfort measures that may ease vaccine side effects, such as OTC pain medication, cool compresses, etc. • Teach the parent about the importance of the vaccines and benefits of not delaying recommended doses. • Teach parent which vaccines will require additional doses and when the patient will need to return to the clinic. Reinforce the importance of the influenza vaccine that should be administered during the upcoming influenza season and at their 6-month visit. • Verbalize the advantages of combination vaccines to decrease the number of injections needed.
3	<ul style="list-style-type: none"> ✓ After teaching and discussion, the parent agrees to vaccinations. 	<ul style="list-style-type: none"> • Prepare and administer vaccinations using aseptic technique and appropriate medication administration practices (e.g., oral [PO] administration and intramuscular [IM] and subcutaneous [Subcut] injection techniques). • Show parent technique to effectively comfort and restrain Lauren. • Document vaccines administered in the patient’s record and immunization information system (IIS), if applicable.

Debriefing Guide

Early/emotional reactions

- What was the experience like for you?
- What happened and why?

Middle/analysis, understanding, and generalization to practice

- Review objectives: Which objectives were you able to achieve? Unable to achieve?
- What did you do and was it effective?
- What would you do differently next time?

End/summary and translation to practice

- Facilitator to summarize and encourage students to provide answers:
- These are the things we need to work on: _____
- What are you going to take away from this experience? How will this change your future practice?

Scenario-specific talking points during debriefing

- ✓ Listen to the parent's concerns. Encourage Lauren's parent to ask questions. Teach parent that receiving multiple vaccines at the same time is safe (reference: <https://www.cdc.gov/vaccinesafety/concerns/multiple-vaccines-immunity.html>). Inform parent they contain weakened or killed versions of the diseases. Infants have robust immune systems and are exposed to many different bacteria and viruses early in life from exploring the environment and putting their hands in their mouths. Vaccines are a small part of that exposure.
- ✓ Discuss the use of combination vaccines. For example, using Pentacel® will decrease the number of injections needed at this visit and the 6-month visit by two each time.
- ✓ Discuss the use of simultaneous administration. Receiving multiple vaccines at the same time is effective, minimizes the number of times the child needs to be seen for injections, and assures the child is gaining early protection against vaccine-preventable diseases.
- ✓ Remember that the recommendation of a health care provider is an effective way to improve vaccination coverage. Let the parent know that your children are vaccinated or that you will get your children vaccinated when you have children.
- ✓ Which vaccines will be needed at the next visit and when should Lauren be scheduled to return for her next doses?

Scenario 2: Adolescent Vaccination



A group of smiling, healthy adolescents.

Presimulation Guide

Learning Objectives

- Identify contraindications and precautions to vaccines recommended for adolescents.
- Identify conditions frequently misperceived as contraindications to vaccination.
- Educate the patient and parent about the safety and common side effects of adolescent immunizations.
- Recognize the importance of family-centered care and communicate appropriately with the family about the importance of the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) and benefits of immunizations.
- Prepare vaccines aseptically and administer ordered vaccines.

Teaching Tools

Required:

1. [General Best Practice Guidelines for Immunization: Best Practices Guidance of the Advisory Committee on Immunization Practices, Table 3–1: Recommended and Minimum Ages and Intervals between Vaccine Doses](#)
2. [General Best Practice Guidelines for Immunization: Best Practices Guidance of the Advisory Committee on Immunization Practices, Table 4–1: Contraindications and Precautions to Commonly Used Vaccines](#)
3. [General Best Practice Guidelines for Immunization: Best Practices Guidance of the Advisory Committee on Immunization Practices, Table 4–2: Conditions Incorrectly Perceived as Contraindications to Vaccination](#)
4. [Immunization Action Coalition’s Screening Checklist for Contraindications to Vaccines for Children and Teens](#)
5. [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#)
6. [Talking to Parents about HPV Vaccine](#)
7. [Vaccine Information Statements \(VISs\)](#)

Suggested:

1. [Adolescent #HowIRecommend Vaccination Video Series](#)
2. [American Academy of Pediatrics HPV Champion Toolkit](#)
3. [Clinician FAQs: CDC Recommendations for HPV Vaccine 2-Dose Schedules](#)
4. [Human Papillomavirus \(HPV\) for Parents](#)
5. [Positioning and Comforting Techniques during Vaccine Administration](#)
6. [Preteen and Teen Immunization Resources](#)
7. [Reducing Pain during Vaccine Injections: Clinical Practice Guideline](#)

Glossary Words

Acellular pertussis: One of the vaccine components in the DTaP and Tdap combination vaccines. It contains partial cellular pertussis material rather than complete cells.

Campylobacter infection: Also called “campylobacteriosis”; an infectious disease caused by *Campylobacter* bacteria. It is one of the most common causes of diarrheal illness in the United States.

Catch-up schedule: A schedule for persons whose vaccinations have been delayed. www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf#page=3

Chemotherapy: Anticancer medicines or drug treatments for cancer in which chemicals are administered to destroy cancer cells.

Diphtheria: A disease caused by *Corynebacterium diphtheriae* bacteria. It may involve infection of any mucous membrane in the body, but most commonly the tonsils and pharynx. The disease is marked by the formation of a false membrane, usually in the throat, that can obstruct the airway. Most complications, including death, are caused by the effects of the bacteria’s toxin on organs in the body.

Guillain-Barré syndrome (GBS): A rare, autoimmune disorder in which a person’s own immune system damages the nerves, causing muscle weakness and sometimes paralysis. GBS can cause symptoms that last for a few weeks to several years. Most people recover fully, but some have permanent nerve damage. Some people have died of GBS.

Immunization: The process of being made immune or resistant to an infectious disease, typically by the administration of a vaccine. It implies that you’ve had an immune response.

Immunization information system (IIS): Confidential, population-based, computerized database that records all vaccine doses administered by participating providers to persons residing within a given geopolitical area. Also known as “immunization registry.”

Immunocompromised: A condition in which the immune system is unable to protect the body from disease. This condition can be caused by disease (like HIV infection or cancer) or by certain drugs (like those used in chemotherapy). Individuals whose immune systems are compromised should not receive live, attenuated vaccines.

Immunologic memory: The persistence of protection for many years after an infection.

Live vaccine: A vaccine in which live antigen is weakened (attenuated) through chemical or physical processes to produce an immune response without causing the severe effects of the disease. Live vaccines currently licensed in the United States include measles-mumps-rubella, varicella, rotavirus, yellow fever, smallpox, and some formulations of influenza, shingles, and typhoid vaccines. Also known as an “attenuated vaccine.”

Syncope: Fainting or a temporary loss of consciousness caused by decreased blood flow to the brain. Although fainting has a variety of possible causes, it is usually triggered by pain or anxiety. Sometimes people faint after vaccination. People who faint might fall and injure themselves if they are not sitting or lying down at the time that they lose consciousness. Sometimes when people faint, their muscles twitch and their bodies make jerking movements. This can sometimes be confused with a seizure but is not actually a seizure.

Tetanus: An infection caused by the bacteria *Clostridium tetani*. When the bacteria invade the body, usually through a wound, they produce a poison (toxin) that causes painful muscle contractions. Another name for tetanus is “lockjaw.” It often causes a person’s neck and jaw muscles to lock, making it hard to open the mouth or swallow.

Vaccinia (smallpox) vaccine: A vaccine that contains live vaccinia virus, which is a poxvirus similar to smallpox, but less harmful. It is used to prevent smallpox and is administered percutaneously using a jabbing technique with a special needle (bifurcated). The vaccination results in a skin reaction that includes the appearance of a pustular lesion. This vaccine is not routinely administered.

Varicella (chickenpox): An acute, highly contagious viral infection, usually appearing in childhood, that causes fever, skin lesions, and malaise; caused by varicella zoster virus.

Vaccine information statement (VIS): A document produced by CDC that informs vaccine recipients or their parents or legal representatives about the benefits and risks of a vaccine being administered. All public and private vaccine providers are required by the National Vaccine Childhood Injury Act to give the appropriate VIS to the patient (or parent or legal representative) prior to every dose of specific vaccines.

Background

Ethan E. is a healthy, 12-year-old twin, born at 37 weeks' gestation, who has had an uneventful health history except for the diagnosis of Guillain-Barré syndrome (GBS) at 8 years of age, believed to be the result of *Campylobacter* infection he acquired on a trip to Mexico with his family. Ethan lives with his parents, twin sister, and his maternal grandmother. His grandmother is currently receiving chemotherapy for renal cancer. Ethan's twin sister had a syncopal episode after receiving her Tdap vaccine two years ago. The event was very frightening for Ethan's parents. The twins' parent believes that the event was related to the vaccines and is concerned about their child receiving vaccines at this visit. Your office currently has flu vaccine in stock, and Ethan has not yet received his flu vaccine.

Location

Practitioner's office/clinic/public health

Immunization History

Completed childhood vaccines **at age 5** (except only had 1 dose of VAR at 5 years of age)

Note: Your simulation facilitator will provide instructions during the prebriefing about how vaccine administration should be simulated.



Six smiling, healthy adolescents standing side by side.

Presimulation Assignment

- Which vaccines does Ethan need today? Use the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) and the General Guidelines, [Table 3-1](#), to complete the table below.

Vaccines due today for Ethan

The first row has been completed for you as an example. The remaining cells are intentionally left blank and are to be completed.

Vaccine	Number of doses in the series	Vaccination schedule	Patient immunization history	Vaccines due today
Example: VAR	2	12-15 mos, 4-6 yrs	Dose 1 at 5 yrs	Dose 2

- Are there contraindications for any vaccines Ethan needs today?

Step 1. Screen the individual for vaccine contraindications (use [the Screening Checklist](#)).

Step 2. Identify contraindications and precautions by vaccine (use the General Guidelines, [Table 4-1](#)).

Step 3. Identify commonly misperceived contraindications (use the General Guidelines, [Table 4-2](#)).

3. How will you respond to Ethan's parent's concerns about the safety of the HPV vaccine? Refer to [Talking to Parents about HPV Vaccine](#).

4. When will Ethan need to receive further doses of any of the vaccines he will receive today? Use the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) and the General Guidelines, [Table 3-1](#), to determine when the next doses are due.

ANSWER KEY

Presimulation Assignment

1. Which vaccines does Ethan need today? Use the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) and the General Guidelines, [Table 3–1](#), to complete the table below.

Vaccines due today for Ethan: Answers

The first row has been completed for you as an example.

Vaccine	Number of doses in the series	Vaccination schedule	Patient immunization history	Vaccines due today
<i>Example: VAR</i>	2	12–15 mos, 4–6 yrs	Dose 1 at 5 yrs	Dose 2
MenACWY	2	11–12 yrs, 16 yrs	None	Dose 1
Tdap	1	11–12 yrs	None	Dose 1
HPV	2	0, 6–12 mos (age 9–14 yrs at initiation)	None	Dose 1
IIV or LAIV	1	1 dose annually	N/A	1 dose

Rationale:

- Ethan needs 1 dose of VAR and completes the series today.
 - He needs MenACWY vaccine today.
 - A lifetime dose of Tdap is required for children at 11 or 12 years old.
 - HPV vaccine is also routinely recommended at 11 or 12 years of age for both boys and girls.
 - Ethan should receive 1 dose of influenza vaccine.
2. Are there contraindications for any vaccines Ethan needs today?

Step 1. Screen the individual for vaccine contraindications (use [the Screening Checklist](#)).

Step 2. Identify contraindications and precautions by vaccine (use the General Guidelines, [Table 4–1](#)).

Step 3. Identify commonly misperceived contraindications (use the General Guidelines, [Table 4–2](#)).

Ethan does not have any contraindications to the vaccines he needs today. An immunocompromised household contact, such as Ethan's grandmother, is not a contraindication to any vaccine except smallpox. Even though it is a live vaccine, VAR is not contraindicated. If Ethan were to develop a rash after vaccination, he should stay away from his grandmother (unless she has evidence of immunity) until all lesions resolve or no new lesions appear within a period of 24 hours.

Ethan's history of GBS is not a precaution for receipt of meningococcal conjugate vaccine. In 2010, ACIP recommended removing GBS as a precaution.

3. How will you respond to Ethan's parent's concerns about the safety of the HPV vaccine? Refer to [Talking to Parents about HPV Vaccine](#).

Assure the parent the vaccine is safe. Review some of the expected side effects, such as pain, swelling, or redness at the injection site that may last 2–3 days. Teach the parent that the HPV vaccine is effective in stopping some infections and precancers in young people. One benefit of starting the series at the age of 12 is that children will need 2 doses instead of 3 if they wait until they are 15 or older. No evidence shows a link between getting the HPV vaccine and early sexual activity. Give a strong recommendation for HPV vaccine.

4. When will Ethan need to receive further doses of any of the vaccines he will receive today? Use the [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#) and the [General Guidelines, Table 3–1](#), to determine when the next doses are due.

- He should receive a booster dose of MenACWY at age 16.
- A second dose of HPV vaccine should be administered 6–12 months after today's dose.
- He will not need further doses of Tdap vaccine. He will need a tetanus-toxoid-containing vaccine (Td or Tdap) every 10 years from now on.
- Today Ethan received flu vaccine to cover the upcoming flu season. He is recommended for annual flu vaccination in future seasons.

Suggested Equipment List

- Vaccine information statements (VISs) for the vaccines listed below
- Simulated vaccines:
 - VAR
 - MenACWY
 - Tdap
 - HPV
 - IIV or LAIV
- Alcohol wipes
- Bandages
- 2x2 gauze
- Gloves
- 1-mL and/or 3-mL syringes
- 5/8- to 1-inch, 22- to 25-gauge needles for intramuscular (IM) injections
- 5/8-inch, 23- to 25-gauge needle for subcutaneous (Subcut) injection
- Sharps container
- Wearable injection pad
- Electronic health record or paper documentation for students to view orders and document vaccinations
- [Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger](#)

Hand-Off Report

Patient Description/Background

Name: Ethan E.

Height: 170.1 cm (67 inches)

Patient Age: 12

Race: Hispanic

Gender: M

Allergies: No known medical allergies

Weight: 57 kg (125 lbs)

Medications: None

Case History

Immunization History:

- ✓ **Completed childhood vaccines at age 5** (had only 1 dose of varicella vaccine at age 5)

Past Medical History: Guillain-Barré syndrome (GBS) at age 8, otherwise healthy child.

History of Present Illness: Ethan was born at 37 weeks' gestation and has had an uneventful health history except for the diagnosis of GBS at 8 years of age, believed to be the result of *Campylobacter* infection he acquired on a trip to Mexico with his family.

Social History: Ethan lives with his parents, twin sister, and his maternal grandmother. His grandmother is currently receiving chemotherapy for renal cancer.

Current Nursing Assessment

Vital Signs—BP: 105/62, HR: 90, RR: 20, SpO₂: 95% RA, Temperature: 36.4°C (97.5°F)

No physical complaints. Appears healthy and alert and has appropriate interactions.

Ethan E. is a healthy, 12-year-old male patient presenting to his pediatrician's office for a routine physical prior to the school year. Ethan has a 12-year-old twin sister who had a syncopal episode after receiving her Tdap vaccine two years ago. She was evaluated in the emergency department at that time and released without specific treatment. The event was very frightening for Ethan's parent. The twins' parent is concerned about the safety of the HPV vaccine. His parent questions why he needs to receive the vaccine at such a young age, especially because he is not sexually active. Ethan's grandmother lives with them and is currently receiving chemotherapy for renal cancer.

The provider discussed the recommended adolescent vaccines. After completing the physical exam, reviewing the immunization history, and screening for contraindications, the provider orders the following vaccinations:

- ✓ **VAR** (dose 2)
- ✓ **MenACWY** (dose 1)
- ✓ **Tdap** (dose 1)
- ✓ **HPV** (dose 1)
- ✓ **IIV or LAIV**

Scenario Progression Outline

Adolescent Vaccination Scenario Progression Outline

State	Manikin or standardized patient actions	Participant expectations/critical actions
1	<ul style="list-style-type: none"> ✓ Patient is alert and cooperative. ✓ Parent is anxious and upset that the provider left the room quickly without spending more time answering questions. 	<ul style="list-style-type: none"> • Perform hand hygiene, introduce self, and confirm patient ID. • Determine which vaccinations are due for patient. • Screen for contraindications and precautions for the patient's vaccines today. • Address concerns expressed by the parent. • Use appropriate vaccine information statements (VISs) when educating the patient and his parent. • Accurately evaluate patient's and his parent's understanding of vaccinations.
2	<ul style="list-style-type: none"> ✓ Parent asks the nurse if s(he) could please explain the need for these immunizations. Parent states that (s)he doesn't know anyone who has had these diseases, with the exception of chickenpox. ✓ Parent is not only concerned about the necessity of HPV and other vaccines but believes that their children will have reactions to vaccines because of the syncopal episode Ethan's sister experienced. She believes it was directly related to the vaccines. ✓ Parent is now very specifically questioning the need for the HPV vaccine and stating they do not want Ethan to receive it because he will think it means sexual activity is approved. <p><i>*Note: If the student is unable to articulate reasons for vaccinations and provide appropriate teaching, the script may be changed to have the patient refuse the vaccines.</i></p>	<ul style="list-style-type: none"> • Evaluate the parent's concerns and engage the parent in a respectful discussion about their concerns. • Address parent's misconceptions. • Review the expected side effects, such as pain, swelling, or redness at the injection site, which may last a couple of days. • Discuss comfort measures that may ease vaccine side effects, such as OTC pain medication, cool compresses, etc. • Listen to the parent's concerns and explain that sometimes adolescents faint after vaccinations due to anxiety and it is not a reaction to the vaccine. • Teach the parent about the importance of the vaccine and the benefits of being vaccinated according to the Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger.
3	<ul style="list-style-type: none"> ✓ After teaching and discussion, the parent agrees to all vaccinations. 	<ul style="list-style-type: none"> • Prepare and administer vaccinations using aseptic technique and appropriate medication administration practices (e.g., intranasal administration and injection techniques for [IM] and/or subcutaneous [Subcut] administration). • Ensure the patient is seated or lying down for the injection. • Ensure the patient remains seated or lying down for 15 minutes after the injection. • Take safety precautions to avoid injuries resulting from a possible syncopal episode. • Use age-appropriate strategies to decrease procedural pain and anxiety. • Teach the patient and parent about which vaccines require additional doses and when the patient will need to return to the clinic. Reinforce the importance of receiving annual flu vaccinations. • Document vaccines administered in the patient's record and immunization information system (IIS), if applicable.

Debriefing Guide

Early/emotional reactions

- What was the experience like for you?
- What happened and why?

Middle/analysis, understanding, and generalization to practice

- Review objectives: Which objectives were you able to achieve? Unable to achieve?
- What did you do and was it effective?
- What would you do differently next time?

End/summary and translation to practice

- Facilitator to summarize and encourage students to provide answers:
- These are the things we need to work on: _____
- What are you going to take away from this experience? How will this change your future practice?

Scenario-specific talking points during debriefing

- ✓ Ethan's twin, Emma, had a syncopal episode when she received her Tdap dose two years ago. A prior history of syncope after vaccination is not a contraindication to subsequent vaccination. However, this history should remind you to have patients seated when vaccinating and, when concerned, have the patient sit or lie down for 15 minutes after the vaccination.
- ✓ Having an immunocompromised household contact, such as Ethan's grandmother, is not a contraindication to any vaccine except smallpox vaccine. If Ethan were to develop a rash after a vaccination, he would be advised to stay away from immunocompromised people who do not have evidence of immunity to varicella until all lesions resolve or no new lesions appear within a period of 24 hours.
- ✓ Teach the parent that the HPV vaccine has been very effective in stopping some infections and precancers in young people. One benefit of starting the series at age 12 is that children will only need 2 doses in the series rather than 3 if they wait until they are 15 years or older. No evidence shows a link between getting the HPV vaccine and beginning early sexual activity.
- ✓ As of 2010, the Advisory Committee on Immunization Practices (ACIP) no longer considers a history of GBS as a precaution for meningococcal conjugate vaccine. Large studies ([Yih W., Weintraub E., and Kulldorff M., 2012](#)) have not indicated an increased risk of GBS following receipt of MenACWY, so this precaution is outdated.
- ✓ Note also that ACIP recommends that Guillain-Barré syndrome (GBS) occurring less than 6 weeks after receipt of a tetanus-toxoid-containing vaccine is a precaution for subsequent administration of tetanus-toxoid-containing vaccines. There is no precaution for Ethan, and he can receive Tdap because his GBS was unrelated to any vaccination.
- ✓ Discuss the importance of assuring the parent about the safety of vaccines. If not performed during the simulation, review the importance of teaching the caregivers and patients about expected side effects of vaccines, such as pain, swelling, or redness at the injection site that may last a few days.



A smiling adolescent boy resting his arms on the shoulders of two other smiling adolescent boys.

Scenario 3: Adult Vaccination/Flu Vaccine



A group of smiling, healthy adults of various ages.

Presimulation Guide

Learning Objectives

- Identify vaccines that are recommended for adults 50 through 64 years old.
- Verbalize the advantages of offering vaccines to hospitalized patients.
- Educate the patient and his family members about the importance of annual influenza vaccination, especially for patients with risk factors (e.g., obesity and heart disease).
- Address the patient's concerns and teach him about the importance of adult vaccines (especially the influenza vaccine).
- Use CDC's vaccine information statements (VISs) for teaching and explaining information before the administration of any vaccines.
- Prepare vaccines aseptically and administer ordered vaccine.

Teaching Tools

Required:

5. [Recommended Child and Adolescent Immunization Schedule for ages 19 years or younger](#)
6. [Vaccine Information Statements \(VISs\)](#)

Suggested:

1. [ACIP Influenza Vaccine Recommendations](#)
2. [Adult Vaccination Resources](#)
3. [AMA Adult Vaccinations: Team-Based Immunization](#)
4. [Effect of Influenza Vaccination Against Postoperative Pneumonia and Mortality for Geriatric Patients](#)
5. [Immunization Action Coalition's Screening Checklist for Contraindications to Vaccines for Adults](#)
6. [Influenza Vaccination: A Summary for Clinicians](#)
7. [Key Facts about Seasonal Flu Vaccine](#)
8. [Misconceptions about Seasonal Flu and Flu Vaccines](#)

Glossary Words

Comorbidity: More than one disease or condition is present in the same person at the same time. Conditions described as “comorbidities” are often chronic or long-term conditions.

Contraindication: A condition that increases the likelihood of a serious adverse reaction to a vaccine for a patient with that condition. If the vaccine is given in the presence of that condition, the resulting adverse reaction could seriously harm the recipient.

Immunization: The process of being made immune or resistant to an infectious disease, typically by the administration of a vaccine. It implies that you’ve had an immune response.

Immunization information system (IIS): Confidential, population-based, computerized database that records all vaccine doses administered by participating providers to persons residing within a given geopolitical area. Also known as “immunization registry.”

Inactivated vaccine: A vaccine in which the virus is inactivated with heat and/or chemicals. The antigen in the vaccine is not alive and cannot replicate. These vaccines cannot cause disease from infection, even in an immunodeficient person. Inactivated vaccines always require multiple doses.

Influenza: Highly contagious viral infection characterized by sudden onset of fever, severe aches and pains, and inflammation of the mucous membrane.

Influenza season: While seasonal influenza viruses are detected year-round in the United States, influenza viruses are most common during the fall and winter. The exact timing and duration of influenza seasons can vary, but influenza activity often begins to increase in October. Most of the time influenza activity peaks between December and February, although activity can last as late as May.

Live vaccine: A vaccine in which live antigen is weakened (attenuated) through chemical or physical processes to produce an immune response without causing the severe effects of the disease. Live vaccines currently licensed in the United States include measles-mumps-rubella, varicella, rotavirus, yellow fever, smallpox, and some formulations of influenza, shingles, and typhoid vaccines. Also known as an “attenuated vaccine.”

Vaccine information statement (VIS): A document produced by CDC that informs vaccine recipients or their parents or legal representatives about the benefits and risks of a vaccine being administered. All public and private vaccine providers are required by the National Vaccine Childhood Injury Act to give the appropriate VIS to the patient (or parent or legal representative) prior to every dose of specific vaccines.

Background

Calvin H. is a 57-year-old African-American male who underwent laparoscopic banding surgery for weight loss one day ago. His recovery has been uncomplicated, and he is being prepared for discharge today. The hospital protocol is to screen for and offer vaccines before discharge. It is influenza season, and Calvin has not received his flu vaccine this year.

Location

Hospital, inpatient unit

Immunization History

Adult vaccinations are up to date

Influenza vaccine – 1 dose (3 years ago)

Note: Your simulation facilitator will provide instructions during the prebriefing about how vaccine administration should be simulated.



A health care provider reviewing a screening form with an older adult patient

ANSWER KEY

Presimulation Assignment

1. What are some particular health situations when an influenza vaccination is NOT recommended?

Contraindications to vaccination are conditions under which vaccines should not be administered.

Contraindications for the inactivated influenza vaccine (IIV):

- People who have experienced a severe, life-threatening allergy to a prior dose of a seasonal influenza vaccine (inactivated influenza vaccine or live, attenuated influenza vaccine). Health care providers should consult the package inserts for information on vaccine components.
- People who have a severe allergy to a component of IIV. Health care providers should consult the CDC recommendations for vaccinating patients who are allergic to eggs at <https://www.cdc.gov/flu/prevent/egg-allergies.htm>.

In general, vaccinations should be deferred when a precaution is present. However, a health care provider may determine that vaccination is indicated in the presence of a precaution because the benefit of protection from the vaccine outweighs the risk for adverse reactions.

Precautions for the inactivated influenza vaccine (IIV):

- Guillain-Barré syndrome within 6 weeks of a previous dose of an influenza vaccine (IIV or LAIV)
- Presence of a moderate or severe acute illness with or without a fever (individuals who were hospitalized with an acute illness but who are now well enough to be discharged from a hospital can be vaccinated)

https://www.cdc.gov/flu/professionals/vaccination/vaccine_safety.htm

2. Explain how you could adequately teach a patient with heart disease about the importance of receiving a flu vaccine.

Explain the following complications related to heart disease and influenza:

- Heart disease, such as congestive heart failure, can make it harder for you to fight off certain diseases.
- Some vaccine-preventable diseases like the flu can increase the risk of a heart attack or stroke.
- Vaccines are one of the safest ways to protect your health, even if you are taking prescription medications.
- Immunization provides the best protection against vaccine-preventable diseases.

3. Your patient states the flu vaccine “always makes me sick.” What can you teach them about the flu vaccine to clear up the misconception?

Validate the patient concern that he got the flu from the vaccine by telling him that many people believe this, but explain that it is a myth that you can get the flu from the flu shot. Explain to the patient that it takes about two weeks for the vaccine to take full effect. Often people have already been exposed to the flu, unknowingly and without symptoms, when they receive the vaccine. They will then have the flu, but the symptomatology is not as problematic as it would have been if they received no vaccine at all. That’s why we urge people to get their vaccine as early in the season as they can and to practice activities like good handwashing that will help prevent flu transmission.

Teach your patient that a flu vaccine cannot cause flu illness. Flu vaccines are made with viruses that have been killed (inactivated) and are, therefore, not infectious, or with proteins from a flu vaccine virus instead of the actual virus.

<https://www.cdc.gov/flu/prevent/keyfacts.htm>

4. Describe what you will teach your patient about what side effects they may experience after receiving an influenza vaccine.

Some minor side effects that may occur include:

- Soreness, redness, or swelling at the injection site
- Low-grade fever
- Body aches

These problems are usually mild and short-lived. The patient may use over-the-counter remedies to alleviate symptoms. Almost all people who receive the flu vaccine have no serious effects from it.



An adult female receiving a vaccination from a health care provider.

Suggested Equipment List

- Influenza vaccine information statement (VIS)
- Influenza vaccine single-dose vial
- Alcohol wipes
- Bandages
- 2x2 gauze
- Gloves
- 1-mL and/or 3-mL syringe
- 1 1/2-inch, 22- to 25-gauge needle for intramuscular (IM) injection
- Sharps container
- Wearable injection pad
- Electronic health record or paper documentation for students to view orders and document vaccinations
- [Recommended Adult Immunization Schedule for ages 19 years or older](#)

Hand-Off Report

Patient Description/Background

Name: Calvin H.

Race: African American

Patient Age: 57

Allergies: No known medical allergies, no known food allergies

Gender: M

Medications: Influenza vaccine ordered, hydrocodone/acetaminophen 5/325 mg every 4 hours prn pain

Weight: 170.5 kg (375 lbs)

Height: 170 cm (67 inches)

*The BMI calculator on the CDC website indicates BMI is 58.7. This is important because persons with BMI over 40 are at increased risk for influenza complications.

Case History

Immunization Status: Patient is up to date on adult immunizations and has a history of varicella disease documented by a health care provider. He has not had an influenza vaccine. He states he has not had this vaccine for three years because “the last few times I had it, I got the flu right after.”

Past Medical History: Medical history includes morbid obesity, mild osteoarthritis in hips and knees, and mild hypertension. He does not take any routine medications and has stopped taking the antihypertensive medication his physician prescribed. The patient has been overweight since his teens. He requested laparoscopic banding surgery to help improve his health, as the weight adversely affects his lifestyle. Obesity has caused daily low back, hip, and leg pain.

History of Present Illness: Calvin has experienced significant weight gain over the past two years and has been unsuccessful at keeping weight off with traditional medically supervised weight loss plans. His father was obese, had a significant history of cardiovascular disease, and died at the age of 62. Calvin does not want this outcome. His doctor has informed Calvin that he appears to have early symptoms of congestive heart failure, but he believes weight loss will resolve the problem.

He had a laparoscopic banding procedure yesterday and had an uneventful hospital stay. He is tolerating soft foods and fluids well, and his pain is well-controlled. He is being prepared for discharge.

Social History: The patient has been married to his wife for 24 years. He has two grown children, a 22-year-old son, and a 20-year-old daughter. He is a certified public accountant and continues to work full-time. He denies smoking or illicit drug use. He occasionally drinks alcohol. He is being discharged home to the care of his wife.

Current Nursing Assessment

Vital Signs—BP: 140/82, HR: 88, RR: 20, SpO₂: 95% RA, Temperature: 36.9°C (98.4°F)

The patient is dressed and ready for discharge. Four small incisions with adhesive skin closures are intact on his abdomen. No drainage or redness noted. Edges are well-approximated. No new complaints and patient is preparing for discharge.

Calvin H. has progressed well after his laparoscopic gastric banding procedure. His pain is well-controlled with oral medications, and he is being discharged home today. He is a well-educated, healthy man and does not oppose immunizations. However, when he is offered the influenza vaccination before discharge, Calvin tells the student nurse that he does not believe in this particular vaccine. He explains he received the flu vaccine for many years, but the last few times he received it, he “got the flu.” Calvin is particularly worried that he should not receive the vaccine so soon after surgery. He tells the student his immune system is weakened, and he will “definitely” get sick if he receives the vaccine.

Scenario Progression Outline

Adult Vaccination/Flu Vaccine Scenario Progression Outline

State	Manikin or standardized patient actions	Participant expectations/critical actions
1	<ul style="list-style-type: none"> ✓ Patient is alert and cooperative. ✓ Patient tells the student he does not want the influenza vaccine. ✓ Patient states he would prefer to risk getting the flu and then seeking treatment if he becomes ill. <p><i>*Note: If the student is unable to articulate reasons for influenza vaccination and provide appropriate teaching, the script may be changed to have the patient refuse the vaccine.</i></p>	<ul style="list-style-type: none"> • Perform hand hygiene, introduce self, and confirm patient ID. • Correctly evaluate patient's understanding of immunizations. • Discuss the symptoms of illness Calvin states he experienced after his most recent influenza vaccinations. • Approach the patient (and family) with respect and acknowledge his concerns. • Identify the patient's specific concerns related to the influenza vaccine. • Review the expected side effects, such as pain, swelling, or redness at injection site that may last a couple of days. • Validate patient's concern that he got the flu from the vaccine by teaching him that many people believe this, but it is impossible to get the flu from a flu shot because vaccine is made either with a) flu vaccine viruses that have been killed (inactivated) and are, therefore, not infectious, b) live, attenuated influenza virus that cannot cause influenza disease, or c) proteins from a flu vaccine virus instead of flu vaccine viruses (which is the case for recombinant influenza vaccine). • Teach patient that influenza is a vaccine-preventable disease and, while there is no cure for the flu, antiviral medications may be used to reduce the severity and length of the illness. However, significant complications may result from the flu. • Teach patient that complications of flu may include pneumonia and inflammation of the heart (myocarditis) and brain (encephalitis) or muscle (myositis, rhabdomyolysis). Flu virus of the respiratory tract can lead to sepsis. • Use appropriate vaccine information statement (VIS) when educating.
2	<ul style="list-style-type: none"> ✓ After teaching and discussion, the patient agrees to receive the flu vaccine. 	<ul style="list-style-type: none"> • Prepare and administer vaccinations using aseptic technique and appropriate medication administration practices (e.g., injection techniques for intramuscular [IM] administration). • Ensure the patient is seated or lying down for the injection. • Document vaccines administered in the patient's record and immunization information system (IIS), if applicable.

Debriefing Guide

Early/emotional reactions

- What was the experience like for you?
- What happened and why?

Middle/analysis, understanding, and generalization to practice

- Review objectives: Which objectives were you able to achieve? Unable to achieve?
- What did you do and was it effective?
- What would you do differently next time?

End/summary and translation to practice

- Facilitator to summarize and encourage students to provide answers:
- These are the things we need to work on: _____
- What are you going to take away from this experience? How will this change your future practice?

Scenario-specific talking points during debriefing

- ✓ All health care professionals should assess the immunization status of all patients at every visit. They should strongly RECOMMEND vaccines that patients need and administer the necessary vaccines.
- ✓ If certain vaccines are not stocked at your organization, REFER patients to a local immunization provider that can vaccinate.
- ✓ In November 2018, adult flu vaccination coverage was only 44.9% (<https://www.cdc.gov/flu/fluview/nifs-estimates-nov2018.htm>). As health care providers, what is our responsibility to improve these numbers?
- ✓ The influenza vaccine is recommended because the flu is a widespread virus that can spread rapidly, and anyone can get it. Flu strikes suddenly and can last several days.
- ✓ Flu can cause troublesome symptoms, such as fever, chills, sore throat, cough, fatigue, headache, and muscle aches. It may also lead to pneumonia and blood infections.
- ✓ Flu is more dangerous for some persons, including infants and young children, pregnant women, people age 65 and older, and those with a weakened immune system or with extreme obesity (body mass index [BMI] of 40 or more).
- ✓ Each year, thousands of people in the United States die from the flu, and many more are hospitalized.
- ✓ Research shows that when patients receive vaccine recommendations and are offered the vaccine at the same time, they are more likely to get vaccinated.
- ✓ **There is NO live flu virus in flu shots. They cannot cause the flu.**
- ✓ What can a nurse do if the patient refuses a recommended vaccine? It is always important to be respectful of a patient's decision. Ask your patients to think about it more and teach them they can change their minds at any time and receive the vaccine at a future visit. Provide them with information on future vaccines they may need.

Notes

Lined area for writing notes, consisting of 25 horizontal lines.



Seven health care providers meeting to discuss immunization strategies.



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention