

APGO Basic Clinical Skills Curriculum



Universal Precautions



Association of Professors of Gynecology and Obstetrics (APGO)
Undergraduate Medical Education Committee ©2008

Universal Precautions

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DESCRIPTION

Health care workers, including medical students, are exposed occupationally to infectious diseases, blood and other potentially infectious materials. Medical students may be at greater risk for these exposures because of relative clinical inexperience. It is imperative that medical students learn and practice universal precautions to minimize their occupational risks.

According to the Occupational Safety and Health Administration's (OSHA) Blood-borne Pathogens Standard (29 CFR 1910.1030), universal precautions is an approach to infection control to treat all human blood and certain human body fluids as if they were known to be infectious for HIV, hepatitis B (HBV) and other blood-borne pathogens. Universal precautions are used to prevent contact with blood and potentially infectious materials.

When it is difficult or impossible to distinguish body fluid types, all body fluids are considered potentially infectious. Blood, and all potentially infectious materials, require the use of personal protective equipment, engineering controls, and work practice controls.

Obstetrics and gynecology is associated with greater potential for exposures to blood and other potentially infectious materials. Medical students need to recognize these potential occupational exposures and know how to minimize the risks for occupational exposure and injury. These exposures can include, but may not be limited to, splashes, needle sticks, and scalpel lacerations.

Students should know what constitutes universal precautions, why they were established when, and how to use them properly to prevent an occupational exposure to blood-borne pathogens, and what to do if and when an occupational exposure to a blood-borne pathogen occurs.

Definition

Universal precautions is an approach to infection control. According to the concept of universal precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, hepatitis B and other blood-borne pathogens (29 CFR 1910.1030(b) definitions). Absolute risk is low.

Purpose

Universal precautions are designed to prevent transmission of blood-borne pathogens when providing first aid or health care. The greatest risks are from HIV, hepatitis B and hepatitis C.

Use

Universal precautions should be used whenever there may be occupational exposure to blood or other potentially infectious material to prevent contact with that blood or other potentially infectious material. Other potentially infectious material is defined as:

- Human body fluids, including semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva

in dental procedures, any body fluid visibly contaminated with blood and all body fluids when it is difficult or impossible to differentiate between body fluids

- Any unfixed tissue or organ (other than intact skin) from a human (living or dead)
- HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs or other tissues from experimental animals infected with HIV or HBV (29 CFR 1910.1030(b))

In obstetrics and gynecology, medical students may be exposed to blood or other potentially infectious materials during IV insertion, phlebotomy, vaginal exams, deliveries, surgery, invasive procedures or research. Therefore, in these situations, medical students should know to use universal precautions. Along with the absolute need for and importance of handwashing with proper technique, medical students should know the proper use of personal protective equipment (PPE), as well as engineering and work practice controls, as part of universal precautions.

If exposure to blood or other potentially infectious material is anticipated, appropriate PPE such as gloves, masks, eye shields or other protective eyewear, shoe covers, surgical cap and waterproof gowns should be used. Medical students should know which PPE is appropriate for which clinical situation. For example, gloves should be worn for phlebotomy or IV insertion, protective eyewear should be worn if there is the potential for a splash and head-to-toe PPE should be worn for surgery. Medical students should know where to obtain the PPE, as well as the proper technique for donning, removing and disposing the PPE. Likewise, medical students should know about engineering controls, such as self-sheathing needles and work practices, using a one-hand, rather than a two-hand, technique for recapping a needle and syringe or suturing technique that minimizes the risk of a needle stick. As part of work practices, medical students also should know how to correctly dispose of sharps, reusable instruments or equipment for reprocessing and medical waste contaminated with blood or other potentially infectious material.

Post-Exposure

Medical students should know where the post-exposure plan is located and what it contains. Similarly, medical students should know what to do in the event of an exposure as well as to whom and how to report an exposure (see **Figure 1**). In the event of an exposure, medical students should know to whom to report the incident. Students should be given information on where and how to receive appropriate follow-up care for themselves (e.g., a student health, occupational health clinic or emergency room). Hepatitis B immunization is required for employees under the blood-borne pathogens standard. If not previously immunized for hepatitis B, immunization may be initiated, if indicated, during the post-exposure follow-up. If there is clinical concern about HIV exposure, antiretroviral prophylaxis may be recommended.

Figure 1. What a Medical Student Should Do When There Is a Blood Borne Pathogen Exposure

- Report the exposure immediately to the proper person on site (identified in the post-exposure plan) – CALL # _____
- Practice the cardinal principal of immediate washing and irrigating:
 - Wash intact skin with soap and water
 - Wash a needle stick or scalpel laceration with soap and water and then apply 3 percent hydrogen peroxide or Betadine (R)
 - Rinse mouth well with 3 percent hydrogen peroxide followed with water
 - Rinse eye(s) with sterile water, saline or tap water
- Report the exposure and provide the necessary personal information and exposure details according to the post-exposure plan
- Schedule and obtain follow-up care at the appropriate clinic according to the post-exposure plan

INTENDED LEARNING OUTCOMES

The purpose of this universal precautions module is to:

1. Teach medical students what universal precautions are, why they were established and how to use them properly
2. Train medical students to use universal precautions to prevent occupational exposures to and injuries from blood-borne pathogens during their training and subsequent practice of medicine
3. Teach medical students what to do if and when an occupational exposure to a blood-borne pathogen occurs

BEST PRACTICES

Thirty percent of medical students report that they have sustained a needle stick injury¹. Among graduating medical students, the mean percentage of correct answers on a proper use of PPE questionnaire was 71 percent, while 84 percent reported at least one occupational exposure to blood-borne pathogens during their clinical training; only 42 percent of those exposed presented to an exposure center².

Commonly, universal precautions training is included in preclinical training, usually in the second year. Typically, it consists of a lecture, demonstration, an opportunity to practice and observed student performance of procedures, including phlebotomy, IV insertion and arterial blood gas³⁻⁵.

Preclinical universal precautions training is not sufficient. Training during the clinical years is necessary for reinforcement; most hospitals have incorporated such training. Training specific to obstetrics and gynecology is necessary to teach those aspects of universal precautions not included in the pre-clinical training and cover that information unique to obstetrics and gynecology.

CHECKLIST

The following checklist may be used as a component of a training session and/or as a component of a performance assessment.

	Done	Not Done
Properly defines universal precautions		
Explains purpose of universal precautions		
Identifies the three most important infection risks		
Lists three situations where PPEs are needed		
Defines three potentially infectious materials other than blood		
Lists three potential ob-gyn-related blood-borne pathogen exposures		
Demonstrates proper handwashing technique		
<ul style="list-style-type: none"> • Pelvic exam 		
<ul style="list-style-type: none"> • Vaginal delivery 		
<ul style="list-style-type: none"> • Cesarean section and gynecologic surgery 		
Shows how to don PPE properly		
Demonstrates how to remove PPE properly		
Knows how to dispose of PPE correctly		
Provides an example of engineering controls		
Cites one example of work practice controls		
Shows how to handle a used needle and syringe		
Shows how to dispose of sharps properly		
Knows where the post-exposure plan is located		
Knows to whom to report an exposure		
Knows how/where to receive post-exposure follow-up care		

PERFORMANCE ASSESSMENT

After a didactic introduction to universal precautions, a demonstration of PPE and examples of engineering and work practice controls appropriate to obstetrics and gynecology, medical student universal precautions skills may be practiced and assessed through a number of different methods or combination of methods. Examples are provided in **Table 1**.

Table 1: Possible Assessment Scenarios

Topic	Method of Assessment	Example Scenario
Handwashing/Donning PPE	OSCE, clinical observation	<ul style="list-style-type: none"> • Student will perform a routine pelvic exam on a 30-year-old G2P2 • Student will scrub in to assist in a Cesarean delivery
Disposal of a Sharp	OSCE, clinical observation	Student completes a perineal laceration repair and must dispose of the needle
Skin Exposure to Fluids	OSCE	Student performs a pelvic exam on a pregnant patient in labor; during the exam, her membranes rupture and amniotic fluid contacts the students clothing, hands and face
Ocular Exposure to Fluids	OSCE	Student is scrubbed in on a GYN surgery when an artery is inadvertently lacerated and results in a splash injury to the student's eye
Needle stick Injury in Surgery	OSCE	Student is assisting in a Cesarean delivery, clearing the hysterotomy field between stitches when the resident inadvertently punctures the student's glove with the needle

Objective structured clinical examinations (OSCE) can be used to incorporate standardized patients with “low-tech” above described simulations. These “low-tech” simulation stations need only to be equipped with a few pieces of PPE, such as surgical caps, masks with and without protective eye shields, protective eyewear, gowns, gloves (including outer and inner for double gloving) and shoe covers. If resources permit, simulation stations may be equipped with self-sheathing needles, conventional needles, suturing sets and sharps disposal containers.

PRACTICAL TIPS

We suggest that universal precautions be introduced during the preclinical years with didactic instruction, demonstrations and opportunities for practice. Universal precaution training should be conducted again in the clinical years for reinforcement and reduction of exposures to blood-borne pathogens during clinical training and subsequent clinical practice. Performance assessment should be through an OSCE at the end of the obstetrics and gynecology clerkship or the third year.

RESOURCES

[OSHA Safety Orientation for Healthcare 2014](#)

[Bloodborne Pathogens Standard \(29 CFR 1910.1030\)](#)

[\(Lack of\) Universal Precautions](#)

[Healthcare Wide Module-Bloodborne Pathogens](#)

[Bloodborne Pathogens and Needlestick Prevention](#)

[Healthcare-associated Infections](#)

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