

INFECTION PREVENTION AND CONTROL, BLOODBORNE PATHOGENS AND SAFETY



LEARNING MODULE #1

For Clinical Students and Instructors
HWCA-South Central-Southwest Member Clinical Sites



**INFECTION PREVENTION AND
CONTROL,
BLOODBORNE PATHOGENS,
AND ISOLATION PRECAUTIONS**

Objectives

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At the completion of this module, you should be able to:

- ✓ Verbalize basic understanding of infection prevention and control concepts.
- ✓ Describe how and when to perform hand hygiene.
- ✓ Describe bloodborne pathogens.
- ✓ List the different routes bloodborne pathogens are spread.
- ✓ Describe how you would prevent spread of bloodborne pathogens with standard precautions.
- ✓ Outline the types and use of personal protective equipment (PPE).

Objectives, continued:

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At the completion of this module, you should be able to:

- ✓ Describe the action you would take if you had a bloodborne pathogen exposure.
- ✓ Identify different types of isolation and PPE to be worn.
- ✓ Describe how to don and remove PPE.
- ✓ Identify infectious waste and hazardous pharmaceutical waste.
- ✓ Identify patient safety concerns.
- ✓ Recognize role in assuring patient safety.

REMINDER

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Important!

- When reading this module, please know that you are accountable for understanding the information that is presented and if you have any questions, you will need to talk to your instructor/school/facility and find out the answer before going any further.

Infection Prevention & Control

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- Hand hygiene is the single most effective method to prevent the spread of infection!
 - Click on the link below and follow the learning module instructions.
 - To advance the screens, click on NEXT in the upper right hand corner.
 - When you complete the interactive training, Click exit and click “X” to close the window, and you will return to this course.
- CDC - [Hand Hygiene Training](#)

Infection Prevention & Control: Key Points

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- Use soap and water:
 - When hands are visibly soiled or contaminated with blood/body fluids.
 - Before preparing food.
 - After using the restroom.
 - As directed in contact isolation rooms (e.g., patient has germ such as Norovirus or *C-diff*).



Infection Prevention & Control: Key Points

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- *Use an alcohol based, waterless gel or foam:*
 - For routine cleansing of hands.
 - Before and after your work shift.
 - Before and after patient contact.
 - Before and after using gloves.
 - Before preparing or administering medication (if applicable to role)
 - After blowing nose or covering a sneeze (if visibly soiled, wash with soap and water)
 - After contact with body fluids as long as not visibly soiled.
 - After contact with items used for patient care.

Infection Prevention & Control: Key Points

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- **Fingernails:**
 - Keep nails trim and clean.
 - No artificial nails.



Infection Prevention & Control: Standard Precautions

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- ANY patient may be potentially infectious.
- Protect yourself.
- Use Standard Precautions with **every** patient.
- Standard Precautions include wearing protective items such as gloves, gown or face protection when in contact with any bodily fluid or blood.
- Standard precautions alone may not always protect you from ALL contagious diseases.

Infection Prevention & Control: Standard Precautions

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Respiratory Hygiene/Cough Etiquette -
The following measures to contain
respiratory secretions all year round:

- Cover your mouth and nose with a tissue when coughing or sneezing;
- Use the nearest waste receptacle to dispose of the tissue after use;
- Perform hand hygiene after having contact with respiratory secretions and contaminated objects/materials.
- Do not come to clinical if you have a fever of 100 degrees F or more or you have been vomiting or have diarrhea.
- Follow the facilities policies as it relates to how long you need to wait until you return.
- Avoid touching your eye, nose or mouth without performing hand hygiene first.



Infection Prevention & Control: Personal Protective Equipment (PPE)

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- These may include:
 - Gloves
 - Goggles, safety glasses, face shields
 - Fluid resistant gowns
 - Resuscitative pocket masks and bag-valve-mask (ambu bag)
- You are required to use PPEs to protect yourself.

Infection Prevention & Control: PPE

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- If you anticipate any spraying, splashing or flaking of body fluids, you should use the correct PPE to protect yourself.



Infection Prevention & Control: Gloves

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- Disposable Gloves:
 - Use when you are handling blood or body fluids or touching unclean surfaces or objects.
 - Perform hand hygiene after removing gloves.



Infection Prevention & Control: Sharps

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You can prevent injury while handling sharp medical instruments by:

- Using facility approved safety devices.
- Always activating safety devices before disposal.
- NEVER recapping a used needle.
- Following facility policy when administering medications that require a needle.
- Immediately disposing of sharps into a sharps container.

Infection Prevention & Control: Sharps

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- Be alert for improperly disposed of sharps when handling regular or red bag waste.
- Safety devices are **REQUIRED** by OSHA.



Infection Prevention & Control Policies

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- Refer also to facility policies related to infection prevention and control...look at policy manuals or on-line at facility.

Bloodborne Pathogens

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- Bloodborne pathogens are microorganisms such as viruses or bacteria that are carried in blood and can cause disease in people.
- There are many different bloodborne pathogens including malaria, syphilis, brucellosis, Hepatitis and HIV.

Bloodborne Pathogens

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Bloodborne diseases **spread** basically three ways:

1. Blood to blood contact
2. Sexually
3. From infected mother to infant (probably at birth)

Bloodborne Pathogens

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- ALL blood and body fluids are potentially infectious and can cause the spread of the following serious diseases:
 - HIV (the virus that causes AIDS)
 - Hepatitis B
 - Hepatitis C
- Hepatitis B vaccine is recommended for all students or healthcare workforce members who may be exposed to blood or body fluids.
 - Contact your school or health department for additional information.

Bloodborne Pathogens

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To reduce your risk of exposure to bloodborne pathogens (as well as other diseases), there are several measures you can take.

Bloodborne Pathogens

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- Effective use of good infection prevention and control work practices:
 - Hand hygiene
 - Use of safety devices (e.g. self-sheathing needles)
 - Proper handling and disposal of sharps
 - Appropriate use of PPE
- Use of **STANDARD PRECAUTIONS** every time you have the possibility of exposure to diseases, blood or body fluids.

Blood Exposure

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- What is blood exposure?
 - A cut or needlestick with a sharp item contaminated with blood or body fluid.
 - A splash to eyes, nose, or mouth with blood or body fluid.
 - A blood contact on mucous membranes (e.g., eyes, nose, or mouth)
 - A blood contact on an open section of skin (e.g., wound, rash or chapped) or prolong contact with intact skin.



Blood Exposure

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- What if you are exposed to the blood or body fluids of a patient?
- What should you do?

Immediately following an exposure to blood*:

- Wash needlesticks and cuts with soap and water.
- Flush splashes to the nose, mouth, or skin with water.
- Irrigate eyes with clean water, saline, or sterile irrigants.

*No scientific evidence shows that using antiseptics or squeezing the wound will reduce the risk of transmission of a bloodborne pathogen. Using a caustic agent such as bleach is not recommended. (CDC, 2003)

Blood Exposure

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- Report the exposure promptly to your instructor, the department supervisor, employee health, or infection preventionist at the facility.
- The facility will provide you direction as to where to present and next steps. The facility will determine if your exposure requires blood draw or any medication.

Safe Injection Practices

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- Whenever possible, use of single-dose vials is preferred over multiple-dose vials, especially when medications will be administered to multiple patients.
- Use aseptic technique to avoid contamination of sterile injection equipment.
- Do not administer medications from a syringe to multiple patients, even if the needle or cannula on the syringe is changed. Needles, cannulae and syringes are sterile, single-use items; they should not be reused for another patient nor to access a medication or solution that might be used for a subsequent patient.
- Use fluid infusion and administration sets for one patient only and dispose appropriately after use.
- Use single-dose vials for parenteral medications whenever possible.
- Do not administer medications from single-dose vials or ampules to multiple patients or combine leftover contents for later use.

Safe Injection Practices

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- If multidose vials must be used, both the needle or cannula and syringe used to access the multidose vial must be sterile.
- Do not keep multidose vials in the immediate patient treatment area and store in accordance with the manufacturer's recommendations; discard if sterility is compromised or questionable.
- Do not use bags or bottles of intravenous solution as a common source of supply for multiple patients.
- During lumbar puncture procedures, wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space.

Isolation Precautions

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- Sometimes patients enter into our facilities with a contagious disease that can easily be spread to other patients or caregivers.
- With these infections, we take measures, in addition to Standard Precautions (transmission based precautions), to prevent the spread of these germs.

Isolation Precautions

- There are three basic kinds of isolation precautions:
 - Contact
 - Droplet
 - Airborne
- The facility you are in may have additional isolation precautions:
 - Contact Plus
 - Hand Hygiene Contact
 - Enteric Precautions
 - Notification signs for Additional actions.

All of the individualized contact precautions indicate the need to wash hands only with soap and water and clean/disinfect with bleach based disinfectants. Review the facility's isolation/infection prevention and control policies for more site specific information.

- Each facility will provide instructions (e.g., patient isolation room sign) to remind you what PPE to put on prior to entering the room.

Isolation Precautions: Contact

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- Contact precautions prevent the transmission of germs that can be spread by direct or indirect patient contact or on environmental surfaces (e.g., wound with uncontaminated drainage).
- Disposable gloves and gowns are worn for Contact precautions. Facilities may vary if all entries require glove and gown or only when touching the patient or the environment. Refer to each facility for guidance.
- Some facilities will place patients with resistant organisms into isolation (e.g., Methicillin-resistant Staphylococcus Aureus , also known as MRSA). Refer to each facility for guidance.

Isolation Precautions: Contact PPE

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Before entering the room:

- Perform hand hygiene
- Put on isolation gown (e.g., slip over head or tie at neck and waist)
- Put on gloves: should cover cuffs of gown

Before leaving the room:

- Remove gloves: discard in wastebasket
- Remove gown (e.g., tear at shoulders or untie waist and then neck)& discard
- Perform hand hygiene
- Leave the room



Isolation Precautions: Droplet

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- Droplet Precautions prevents the spread of germs from the respiratory tract which are generated by the patient during coughing , sneezing or talking (e.g., Influenza and Pertussis).
- Masks are worn for Droplet Precautions when **within three to six feet** of the patient. Check with the facilities as to the individual expectations (e.g., when ever you enter the room of the patient).

Isolation Precautions: Droplet PPE

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Before entering the room:

- Perform hand hygiene
- Put on mask

Before leaving the room, remove PPE in this order:

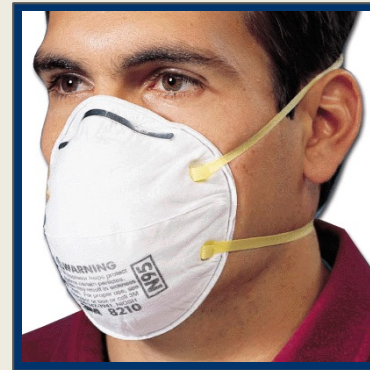
- Remove mask, discard in wastebasket in room
- Perform hand hygiene



Isolation Precautions: Airborne

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- Airborne Precautions are used when the germs are spread long distances on tiny particles in the air (e.g., Measles, Chicken Pox, Active or Suspected Tuberculosis).
- You can not enter an airborne isolation room without completing a medical screening and training.
- Follow facility policy and directions on isolation signage for level/type of respiratory protection for Airborne Precautions ((e.g., mask for varicella, N95 Respirator (specially fitted) or PAPR)



N95 Respirator



PAPR

Isolation Precautions: Airborne

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- A Positive Air Pressure Respirator or “PAPR” is a special air filtering pack that can be worn for airborne precautions.
- There is no need for special “fitting” like the N95 respirator but it does require medical screening and education to use.



Isolation Precautions: Airborne

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- A patient with suspected or confirmed TB or other airborne disease must be placed in a **negative pressure room (air flows from hallway or anti-chamber to the patient's room)**.
- As you **cannot go into a negative pressure room without a special respirator or PAPR**, students may not be assigned to patients in Negative Pressure Rooms – check with the facility.

Isolation Precautions

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Some patients may have an increased chance of acquiring infections. This may be called neutropenic, reverse, or protective isolation (e.g., chemotherapy patient may have low immunity to disease). Instead of protecting you, these steps are taken to protect the patient.

- Consistent hand hygiene is critical.
- Standard Precautions are used.
- Some items may not be allowed in the patient's room (e.g., flowers).
- Ill visitors should be avoided.

Check with facility policies and/or websites for additional information.

CDC Recommendations

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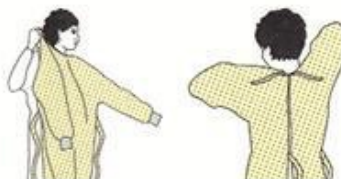
SEQUENCE FOR DONNING PERSONAL PROTECTIVE EQUIPMENT

SEQUENCE FOR DONNING PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required; e.g., Standard and Contact, Droplet or Airborne Infection Isolation.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

SECUENCIA PARA PONERSE EL EQUIPO DE PROTECCIÓN PERSONAL (PPE)

El tipo de PPE que se debe utilizar depende del nivel de precaución que sea necesario; por ejemplo, equipo Estándar y de Contacto o de Aislamiento de infecciones transportadas por gotas o por aire.

1. BATA

- Cubra con la bata todo el torso desde el cuello hasta las rodillas, los brazos hasta la muñeca y dóblela alrededor de la espalda
- Átesela por detrás a la altura del cuello y la cintura

2. MÁSCARA O RESPIRADOR

- Asegúrese los cordones o la banda elástica en la mitad de la cabeza y en el cuello
- Ajustese la banda flexible en el puente de la nariz
- Acomódesela en la cara y por debajo del mentón
- Verifique el ajuste del respirador

3. GAFAS PROTECTORAS O CARETAS

- Colóquesela sobre la cara y los ojos y ajústela

4. GUANTES

- Extienda los guantes para que cubran la parte del puño en la bata de aislamiento

UTILICE PRÁCTICAS DE TRABAJO SEGURAS PARA PROTEGERSE USTED MISMO Y LIMITAR LA PROPAGACIÓN DE LA CONTAMINACIÓN

- Mantenga las manos alejadas de la cara
- Limite el contacto con superficies
- Cambie los guantes si se rompen o están demasiado contaminados
- Realice la higiene de las manos

CDC Recommendations

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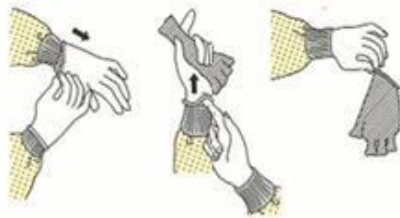
SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT

SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

1. GLOVES

- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first gloved hand
- Discard gloves in waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container



3. GOWN

- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard



4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — **DO NOT TOUCH!**
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container



PERFORM HAND HYGIENE IMMEDIATELY AFTER REMOVING ALL PPE

SECUENCIA PARA QUITARSE EL EQUIPO DE PROTECCIÓN PERSONAL (PPE)

Con la excepción del respirador, quítese el PPE en la entrada de la puerta o en la antesala. Quítese el respirador después de salir de la habitación del paciente y de cerrar la puerta.

1. GUANTES

- ¡El exterior de los guantes está contaminado!
- Agarre la parte exterior del guante con la mano opuesta en la que todavía tiene puesto el guante y quíteselo
- Sostenga el guante que se quitó con la mano enguantada
- Deslice los dedos de la mano sin guante por debajo del otro guante que no se ha quitado todavía a la altura de la muñeca
- Quítese el guante de manera que acabe cubriendo el primer guante
- Arroje los guantes en el recipiente de desechos

2. GAFAS PROTECTORAS O CARETA

- ¡El exterior de las gafas protectoras o de la careta está contaminado!
- Para quitárselas, tómelas por la parte de la banda de la cabeza o de las piezas de las orejas
- Colóquelas en el recipiente designado para reprocessar materiales o de materiales de deshecho

3. BATA

- ¡La parte delantera de la bata y las mangas están contaminadas!
- Desate los cordones
- Tocando solamente el interior de la bata, pásela por encima del cuello y de los hombros
- Voltee la bata al revés
- Dóblela o enróllela y deséchela

4. MÁSCARA O RESPIRADOR

- La parte delantera de la máscara o respirador está contaminada — **¡NO LA TOQUE!**
- Primero agarre la parte de abajo, luego los cordones o banda elástica de arriba y por último quítese la máscara o respirador
- Arrójela en el recipiente de desechos

EFFECTÚE LA HIGIENE DE LAS MANOS INMEDIATAMENTE DESPUÉS DE QUITARSE CUALQUIER EQUIPO DE PROTECCIÓN PERSONAL

PPE Key Tips

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Putting PPE on:

- Perform hand hygiene before applying PPE.
- Be sure to wrap gown fully around body.
- Always tie gown in BACK, not in front.
- Pull gloves over cuffs of gown.
- Be sure the ties of the mask hold it in place so it does not sag.
- Only wear a respirator if you have been given approval after a medical screening, fit testing for respirator, and training.

PPE Key Tips, Continued:

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Remember, the outside of gloves, gowns, masks, or goggles are contaminated!

Taking PPE off:

- Start with gloves, goggles/shield, gown, then mask or respirator.
- When removing gloves, peel glove off over first glove.
- When pulling away gown, **do not touch outside of gown.**
 - Remove by folding inward, turning inside out, and roll into a ball or bundle.
- After disposal, always end with hand hygiene.

OSHA, CDC, and WI DNR

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**INFECTIOUS AND
HAZARDOUS
PHARMACEUTICAL WASTE**

Infectious Waste

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Infectious waste contains blood or body fluids that are:

- Drippable
- Pourable
- Squeezable
- Flakable
- Red bag all items containing blood or body fluids that are drippable, squeezable, or flakeable.
- Pourable items are disposed of by placing it into the sewer system (e.g. toilet, hopper)



Infectious Waste

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High-risk body fluids include:

- Blood
- Semen
- Vaginal secretions
- Pleural fluid
- Amniotic fluid
- Spinal fluid

Infectious Waste

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These items DO NOT belong in a Red Bag:

- IV Bags and lines without visible blood
- Syringes without blood and needles
- PPE without blood
- Packaging materials
- Empty bedpans, emesis basins, wash basins and urinals
- Empty medication vials
- Stool blood cards
- Paper toweling
- Exam table paper
- Diapers and underpads only spotted with blood
- Dressings and bandages only spotted with blood

Infectious Waste

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Remember....

Only blood or body fluids that are:

- Drippable
- Squeezable
- Flakable

Go into the infectious waste containers or Red Bags!

Hazardous Pharmaceutical Waste

- Products used in the health care industry, such as chemotherapy drugs, some pharmaceuticals, etc., can harm the environment and human health if they are not disposed of properly.
- For many years, flushing excess amounts of chemicals down the drain had been a common practice.
- Recent studies indicate that some of these chemicals are passing through wastewater treatment systems and entering our waterways.
- May affect drinking water supplies for local municipalities.

Hazardous Pharmaceutical Waste

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- Detectable levels of hormones, antibiotics, antidepressants and other chemicals have been found in fish and aquatic life.
- These creatures are beginning to show signs of becoming "feminized" or are sterile.

Hazardous Pharmaceutical Waste

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Some of these chemicals are classified as:

- Human mutagens (alter genes)
- Carcinogens (cancer causing)
- Teratagens (harm embryo or fetus)



Hazardous Pharmaceutical Waste

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- The EPA and DNR are beginning to impose fines on facilities who do not dispose of pharmaceutical wastes properly.
- Check with facility policies and procedures on how to dispose of any hazardous pharmaceutical wastes.

Right To Know

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Safety Data Sheet

A Safety Data Sheet (SDS) is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product.

- This may include cleaning agents or developers as well as other potentially hazardous materials at the clinical site.
- It also contains information on the use, storage, handling and emergency procedures all related to the hazards of the material.
- The SDS contains much more information about the material than the label.
- SDSs are prepared by the supplier or manufacturer of the material. It is intended to tell what the hazards of the product are, how to use the product safely, what to expect if the recommendations are not followed, what to do if accidents occur, how to recognize symptoms of overexposure, and what to do if such incidents occur.

Right To Know

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- Each organization is responsible for making SDSs available to employees and students who handle or deal with chemicals during the course of their work. You can look up SDSs for materials on the organization intranet.
- Log on to the intranet and look up the SDS for the hand gel/sanitizer.



Right To Know

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Label Elements Include:

- **Product identifier:** How the hazardous chemical is identified.
- **Signal word:** There are only two signal words, “Danger” and “Warning.” “Danger” is used for the more severe hazards and “Warning” is used for the less severe hazards.
- **Pictogram:** Shapes of a square set at a point and include a black hazard symbol on a white background with red frame sufficiently wide enough to be clearly visible. OSHA has designated eight pictograms under this standard. Those can be found here: <https://www.osha.gov/dsg/hazcom/pictograms/index.html>
- **Hazard statement(s):** Describe the nature of the hazard(s) of a chemical, including where appropriate, the degree of hazard.
- **Precautionary statement(s):** Means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling. Name, address and phone number of the chemical manufacturer, distributor or importer.

Patient safety is a significant concern for all healthcare workforce members!

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PATIENT SAFETY

Patient Safety

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- All healthcare facilities seek to keep their patients, residents, clients, and visitors safe.
- According to the Institutes of Medicine (IOM) Committee on Quality of Health Care in America, 44,000 to 98,000 people die each year as a result of medical errors.

Patient Safety

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- Some of the top safety issues identified across the continuum of healthcare continue to be **problems with communication.**



Patient Safety

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Examples of Safety Concerns Include:

- Not always correctly identifying patients.
- Not communicating important information between facilities, providers and/or departments.
- Incomplete documentation.
- Performing the wrong procedure, or giving the wrong medication to the wrong patient.

(Just to name a few...)

Patient Safety

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- Other patient safety concerns or risks include:
 - Risk for falls
 - Risk for skin breakdown
 - Risk for infection transmitted by healthcare workers
 - Risk for the wrong dose of medication

We all need to work toward preventing these safety risks.



Patient Safety

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- There is a nationwide movement to improve patient safety.
- Agencies such as The Joint Commission, (an accrediting agency) have identified safety goals that will help protect patients.

Patient Safety

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- The Joint Commission has identified several “National Patient Safety Goals”.
- The following slide has a link to safety goals identified in a variety of patient care settings.

National Patient Safety Goals

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- Click on the following link: [National Patient Safety Goals](#)
- Find the healthcare setting where you will be doing clinical, click and review the patient safety goals.
- When done, click on the “x” to close, and you will return to this slide.

Module Completion

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- Congratulations, you have finished learning module #1!
- Please complete module #2, “HIPAA and Compliance.”
- Follow the instructions in the “HIPAA and Compliance” module (#2) to achieve credit for completing both learning modules.

References

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- [CDC – Bloodborne Pathogen Protection](#)
- [CDC – Infection Control Guidelines](#)
- [CDC – Guidelines for Isolation Precautions](#)
- [WI Department of Health – Communicable Diseases](#)