What is PPE?

- PPE is defined as specialized clothing or equipment worn by an employee for protection against infectious materials.
- The protection of healthcare workers from infectious disease exposures in the workplace requires a combination of controls, one of which is the use of PPE. There are four major components to healthcare worker safety programs.
  - Training and administrative controls, like isolation policies and procedures, and procedures for recognizing patients with a communicable disease before they expose workers.
  - Engineering controls like negative pressure rooms for patients with airborne diseases such as tuberculosis.
  - Work practice controls such as prohibiting recapping needles.
  - PPE is last in the hierarchy of prevent
Regulations for PPE and Hazard Assessment

- Employers are required to perform a hazard assessment, select the appropriate PPE for the job, and provide employees with training on the hazards involved in healthcare, and the required PPE.

- Employers must assess the workplace to determine if hazards are present, or likely to be present, which necessitate the use of PPE. If such hazards are present, or likely to be present, the employer shall, for each record employee:
  - Select and have the employee use the types of PPE that will protect them from the hazards identified in the hazard assessment.
  - Communicate selection decisions to the employee.
  - Select the PPE that properly fits the employee.

- Once an employer has conducted a hazard assessment and selected the appropriate PPE, the employer must provide training to each employee who will use the PPE. That training must include:
Once an employer has conducted a hazard assessment and selected the appropriate PPE, the employer must provide training to each employee who will use the PPE. That training must include:

◦ When using the selected PPE is necessary.
◦ What PPE should be used in different situations.
◦ How to properly put on, take off, adjust, and wear the PPE.
◦ The limitations of the PPE.
◦ Proper care, maintenance, useful life, and disposal of the PPE.

Employees are then required to demonstrate an understanding of the training and their ability to use the PPE properly before being allowed to perform work requiring the use of PPE.
Using PPE

- There are four key points to remember about PPE use.
  - Put it on before you have any contact with the patient, generally before entering the room.
  - Once you have PPE on, use it carefully to prevent spreading contamination.
  - When you have completed your tasks, remove the PPE carefully and discard it in the receptacles provided.
  - After removing PPE, immediately perform hand hygiene before going on to the next patient.
Types of PPE

The types of PPE used in healthcare settings include:

- gloves, which protect hands;
- gowns or aprons, which protect skin and clothing;
- goggles, which protect the eyes; face shields, which protect the face, mouth, nose, and eyes;
- masks, which protect the mouth and nose;
- and respirators, which protect the respiratory tract from airborne infectious agents.

Foot coverings protect the environment against the possibility of spreading viruses and bacteria on footwear. Covering footwear with disposable plastic booties before performing certain patient care tasks helps prevent this.

In addition to wearing PPE, you should use safe work practices. Avoid contaminating yourself by keeping your hands away from your face and not touching or adjusting PPE.
Donning PPE

- The sequence for donning, or putting on PPE goes as follows.
- Your gown should always be donned first. The mask or respirator should be put on next and properly adjusted to fit. The goggles or face shield should be donned next and the gloves are donned last.
Removing or doffing PPE is critical to protect you, your colleagues, and patients from exposure to contaminated materials.

To remove PPE safely, you must first be able to identify which sites are considered “clean” and which are “contaminated.”

The areas that are considered “clean” are the parts that will be touched when removing PPE. These include inside the gloves; the inside and back of the gown, including the ties; and the ties, elastic, or ear pieces of the mask, goggles, and face shield.

In general, the outside front and sleeves of the isolation gown and outside front of the goggles, mask, respirator and face shield are considered “contaminated,” regardless of whether there is visible soil. Also, the outside of the gloves are contaminated.
The sequence for removing PPE is intended to limit opportunities for self-contamination. The gloves are considered the most contaminated pieces of PPE and are therefore removed first. The face shield or goggles are next because they are more cumbersome and would interfere with removal of other PPE. The gown is third in the sequence, followed by the mask or respirator.
Proper Use of Gloves

- If gloves do become torn or heavily soiled and additional patient care tasks must be performed on that patient, you must change the gloves before starting the next task.
- Always change gloves after use on each patient, and discard them in the nearest appropriate receptacle. Patient care gloves should never be washed and used again.
- Washing gloves does not necessarily make them safe for reuse as it may not be possible to eliminate all microorganisms and washing can actually make the gloves more prone to tearing or leaking.
- To don gloves:
  - Make sure to select the right size glove for your hand. You can use a glove sizing chart to determine which size is the best fit for your hand. Wearing a glove that fits you correctly reduces the likelihood of tearing and ensures freedom of movement for the hand.
Proper Use of Gloves (cont.)

- Remove any jewelry before donning the gloves and ensure your hands are washed using the hand hygiene techniques described in the Infection Control module.
- Select a glove from the container and check for any visible defects.
- Open the glove at the cuff and insert the hand into the glove.
- Once the hand is inserted, move the fingers down into the glove’s fingers to properly align it and ensure you have a snug fit all over.
- Roll the cuff of the glove down the wrist until the glove is secure.
- Apply the same technique for the second glove.

To doff gloves:
- When removing gloves, grasp the outer edge of the glove near the wrist area. Fold it over and peel it away from the hand turning it inside out as you remove it. This will trap any potential infectious materials inside the glove.
Proper Use of Gloves (cont.)

- Once the glove is off, hold it with the gloved hand. To remove the other glove, place your bare fingers inside the cuff without touching the exterior of the glove.
- Peel the glove off from the inside turning it inside out as it moves down and use it to envelop the other glove.
- Discard the gloves appropriately.
There are three factors that influence the selection of an isolation gown or apron as PPE:

- **Purpose of Use**: Isolation gowns are generally the preferred PPE for clothing but aprons occasionally are used where limited contamination is anticipated. If contamination of the arms is likely, a gown should be selected. Gowns should fully cover the torso, fit comfortably over the body, and have long sleeves that fit snugly at the wrist.

- **Material Properties of the Gown**: Isolation gowns are made either of cotton or a spun synthetic material. The type of material dictates whether they can be laundered and reused, or whether they must be disposed of. Cotton and spun synthetic isolation gowns vary in their degree of fluid resistance, which is another factor which must be considered in the selection of this garment. If fluid penetration is likely, a fluid resistant gown should be used.
Patient Risks: The last consideration concerns patient risks and whether a clean, rather than sterile gown can be used. Clean gowns are generally used for isolation. Sterile gowns are only necessary for performing invasive procedures, such as inserting a central line.

How to Don an Isolation Gown:
- To don a gown, first select the appropriate type for the task and the right size for you.
- Put the gown on so that the opening of the gown is at the back.
- Secure the gown at the neck and waist. If the gown is too small to fully cover your torso, use two gowns.
- If using two gowns, put on the first gown with the opening at the front and the second gown over the first with the opening at the back.
How to Doff an Isolation Gown:

- Unfasten the gown ties with your ungloved hand.
- Slip your hands underneath the gown at the neck and shoulder and peel the gown away from the shoulders.
- Slip the fingers of one hand under the cuff of the opposite arm.
- Pull the hand into the sleeve, grasping the gown from the inside.
- Reach across and push the sleeve off the opposite arm.
- Fold the gown towards the inside and fold or roll into a bundle. Only the “clean” part of the gown should be visible.
- Discard the gown by placing it in the waste or linen container, as appropriate.
Face Protection

- A combination of PPE types is available to protect all or parts of the face from contact with potentially infectious material. The selection of facial PPE is determined by the isolation precautions required for the patient and/or the nature of the patient contact.
  - **Masks**: should fully cover the nose and mouth in order to prevent fluid penetration. Masks should fit snuggly over the nose and mouth. For this reason, masks that have a flexible nose piece and can be secured to the head with string ties or elastic are preferable.
  - **Goggles**: provide barrier protection for the eyes; personal prescription lenses do not provide optimal eye protection and should not be used as a substitute for goggles. Goggles should fit snugly over and around the eyes or personal prescription lenses. Goggles with anti-fog features will help maintain clarity of vision.
Face Protection (cont.)

- **Face Shield**: When skin protection is needed, in addition to mouth, nose, and eye protection, a face shield can be used as a substitute to wearing a mask or goggles. For example, when irrigating a wound or suctioning copious secretions. The face shield should cover the forehead, extend below the chin, and wrap around the side of the face.

- To don a mask:
  - If the mask has ties:
    - Place the mask over your mouth, nose, and chin.
    - Fit the flexible nose piece to the form of your nose bridge.
    - Tie the upper set of ties at the back of your head and the lower set at the base of your neck.
  - If the mask has elastic head bands:
    - Separate the two bands, hold the mask in one hand and the bands in the other.
Face Protection (cont.)

- Place and hold the mask over your nose, mouth, and chin, then stretch the bands over your head and secure them comfortably as shown; one band on the upper back of your head, the other below the ears at the base of the neck.

- To remove a mask:
  - Remove the mask by handling only the ties or elastic bands, starting with the bottom then moving to the top tie or band.
  - Lift the mask or respirator away from your face and discard it into the designated waste receptacle.

- To don goggles or a face shield:
  - Position either device over the face and/or eyes and secure to head using the attached ear pieces or head band.
  - Adjust to fit comfortably. Goggles should feel snug but not tight.
To remove goggles or face shield:

- Using ungloved hands, grasp the “clean” ear or head pieces and lift it away from your face.
- If the goggles or face shield is reusable, place them in a designated receptacle for subsequent reprocessing. Otherwise, discard them in the waste receptacle.
Respiratory Protection

- PPE also is used to protect healthcare workers from hazardous or infectious aerosols, such as Mycobacterium tuberculosis. Respirators that filter the air before it is inhaled should be used for respiratory protection.
- The most commonly used respirators in healthcare settings are the N95, N99, or N100 particulate respirators.
- Not all healthcare workers will use a respirator. If your job does require you to use one, your employer is required to have you medically evaluated to determine that it is safe for you to wear a respirator, to fit test you for the appropriate respirator size and type, and to train you on how and when to use a respirator. You are responsible for fit checking your respirator before each use to make sure it has a proper seal.
- To don a respirator:
  - Start by selecting a fit tested respirator
  - Place it over your nose, mouth, and chin.
Respiratory Protection

- Fit the flexible nose piece over nose bridge.
- Secure on your head with the elastic.
- Adjust to fit.
- Perform a fit check by inhaling and exhaling as follows.
  - When you inhale, the respirator should collapse.
  - When you exhale, check for leakage around face.
You should perform hand hygiene immediately after removing PPE.

If your hands become visibly contaminated during PPE removal, wash your hands before continuing to remove PPE.
When you are selecting PPE, there are three major things you should consider:

- **Type of Anticipated Exposure**: The type of anticipated exposure, such as touch, splashes, or sprays, or large volumes of blood or body fluids that might penetrate the clothing helps determine what type of PPE is required. The selection and combination of PPE is determined by the category of isolation precautions a patient is on.

- **Durability and Appropriateness**: Durability and appropriateness of the PPE will be determined by the task at hand. For example, whether a gown or apron is appropriate, and if a gown is selected, whether it needs to be fluid resistant, fluid proof, or neither.

- **Fit**: PPE must fit the individual user, and it is up to the employer to ensure that all PPE are available in sizes appropriate for the workforce that must be protected.
Standard Precautions are intended to prevent the transmission of common infectious agents to healthcare personnel, patients, and visitors in healthcare settings.

Under Standard Precautions, gloves should be used when touching blood, body fluids, secretions, excretions, or contaminated items and for touching mucous membranes and non-intact skin. An isolation gown should be used during procedures and patient care activities when contact of clothing and/or exposed skin with blood, body fluids, secretions, or excretions is anticipated.

Mask and goggles or a face shield should be used during patient care activities that are likely to generate splashes and sprays of blood, body fluids, secretions, or excretions.
Sometimes healthcare workers are required to wear a higher level of PPE than recommended for Standard Precautions, as per facility policies and procedures. The three Expanded Precaution categories where this applies are:

- **Contact Precautions:** Contact Precautions require gloves and an isolation gown for contact with the patient and/or the environment of care; in some instances, use of this PPE is recommended for even entering the patient’s environment.

- **Droplet Precautions:** Droplet Precautions require the use of a surgical mask.

- **Airborne Infection Isolation:** Airborne Infection Isolation requires that a respirator be worn.
To StartSafe, you should learn the job requirements, and if there is anything you don’t understand, ask questions.

To StaySafe, you will need to put into action all the things you learned about your job and about how to do your job safely. To StaySafe, be sure you:

◦ Understand the hazards you may encounter and eliminate them if possible.
◦ Choose the appropriate PPE for the job and be sure it fits you properly, and
◦ Inspect your PPE to ensure it is in good condition before use and discard PPE that is not safe.

Always keep in mind the job you have to do, the potential hazards that may exist, and the ways to ensure you and others StaySafe.