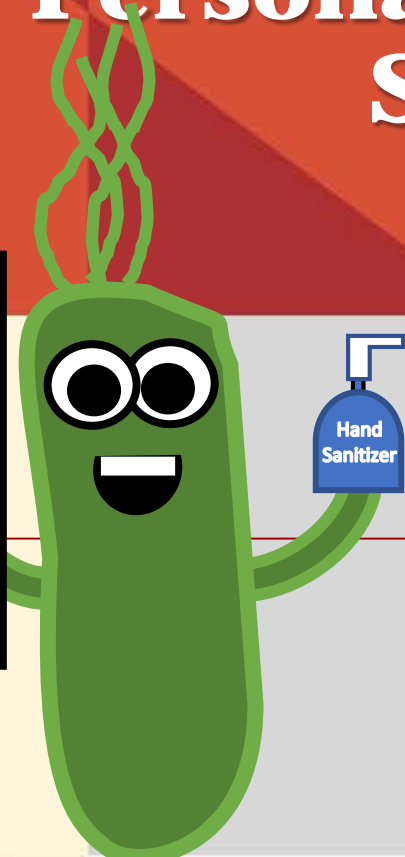


Personal Protective Equipment and Standard Precautions

**LTC
Webinar
Series
Webinar#6
PPE and
Precautions**



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Part 1:

Selecting & Using Personal Protective Equipment

Objectives



- Recognize the different types of personal protective equipment available to healthcare workers.
- Identify best practices in the indications for & use of PPE.
- Be able to effectively demonstrate how to safely don and doff PPE.

Defining Personal Protective Equipment (PPE)



“Specialized clothing or equipment worn by an employee for protection against infectious materials” - OSHA



Regulations and Recommendations



OSHA¹ – BBP 1910.1030(d)(3)

- Personal protective equipment is **required** if exposure to blood and other potentially infectious materials is anticipated.
- Appropriate PPE **must** be provided by the employer.
- PPE is considered appropriate **only** if it does not permit blood or other potentially infectious materials to reach employees clothes, skin, eyes, mouth, or other mucous membranes.
- Employees **must** remove and discard PPE before leaving patient room.
- Employers **must** provide PPE training on employment, within one year of previous trainings, and as needed. Training must include:
 - When PPE is necessary, what PPE is necessary, and how to correctly don and doff.

Regulations and Recommendations

NIOSH/CDC

- It is **recommended** that competency in donning and doffing PPE be accomplished by demonstration with the opportunity for return demonstration.
- The type and duration of precautions used for selected infections and conditions are **recommended** based on the available literature supporting best practices.²



Types of PPE Used in Healthcare Settings

- Gloves – Protect hands from germs and reduce the spread of germs.
- Gowns – Protect clothing and skin from contamination and reduce the spread of germs.
- Eye protection – Protect mucous membranes from blood and bodily fluids.
- Masks – Protect respiratory tract from infectious agents and prevent the spread of germs from nose and mouth.



Gloves



Gloves should be worn when contact with blood/bodily fluids or other potentially infectious materials could occur

Best Practices in Glove Use

- Durable
- Correct fit
- Vinyl, latex, or nitrile
- Disposable
- Single-use
- Clean or Sterile
- Not an acceptable alternative to hand hygiene
 - Hand hygiene should be performed after removal.
 - Gloves should be changed and hands washed when moving from a contaminated body-site to a clean body-site.
 - Work from clean to dirty.

Gowns



Gown should be worn to protect clothing and skin when contact with blood, bodily fluids, secretions, or excretion is reasonably anticipated.

Best Practices in Gown Use

- **Resistant to fluid penetration** (OSHA requirement)
- Disposable
- Secured at the waist and neck
- Single-use for one patient only
- Removed before leaving the patient's environment and hand hygiene performed.
- Easy to don and doff

AAMI PB70 Standards⁴



Liquid barrier Performance levels	Descriptions for use
Level 1	<ul style="list-style-type: none">• Used for MINIMAL risk situations• Provides a slight barrier to small amounts of fluid penetration
Level 2	<ul style="list-style-type: none">• Used in LOW risk situations• Provides a barrier to larger amounts of fluid penetration through splatter and some exposure through soaking
Level 3	<ul style="list-style-type: none">• Used in MODERATE risk situations• Provides a barrier to larger amounts of fluid penetration through spatter and more fluid exposure through soaking than level 2
Level 4	<ul style="list-style-type: none">• Used in HIGH risk situations• Prevents all fluid penetration up to 1 hour• May prevent virus penetration for up to 1 hour.

Reference: <https://www.fda.gov/medicaldevices/productsandmedicalprocedures/generalhospitaldevicesandsupplies/personalprotectiveequipment/ucm452775.htm>



Mouth, Nose, and Eye Protection



Wear PPE protecting the mouth, nose, and eyes during procedures and patient-care activities when exposure to splashes, sprays, or droplets of blood or bodily fluid is expected.

Best Practices in Face Protection

- Good fit – Masks should fully cover nose/mouth and goggles should fit snugly over and around eyes.
- Combination masks with fluid shields can be used to offer simultaneous protection to mouth, nose, and eyes.
- Consider masks with ear loops versus ties.
- Prescription glasses should not be used as a substitute for eye protection.
- Fluid resistant

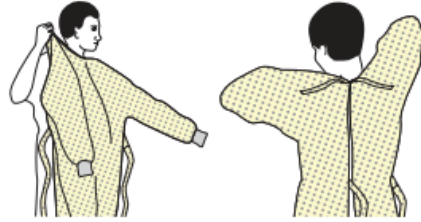


Part 2:

How to Safely Don and Doff PPE⁷

Sequence for Donning PPE

1. Gown



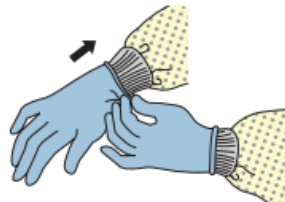
2. Mask or Respirator



3. Goggles or Face Shield



4. Gloves



Key Points

- The type of PPE used will vary on the precautions required
- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn, heavily contaminated, or when moving from dirty body-site to clean body-site.
- Perform hand hygiene

Donning a Gown

- Ensure correct size and type
- Secure at waist and neck



Donning Face Protection

- Ensure correct, snug fit.
- Fit flexible nose piece of masks over bridge of nose.
- Secure any ties or ear loops and adjust.



Donning Gloves

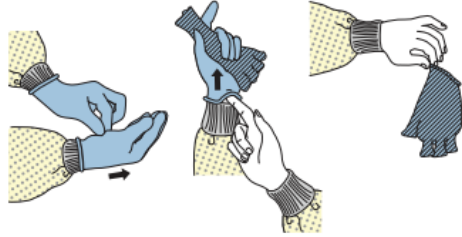
- Ensure correct size and type
- Extend gloves over isolation gown cuffs



Sequence for Doffing PPE

Example # 1

1. Gloves



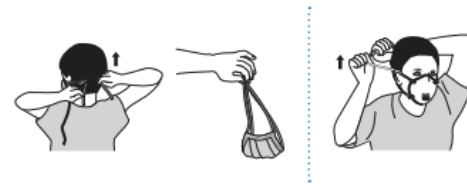
2. Goggles or Face shield



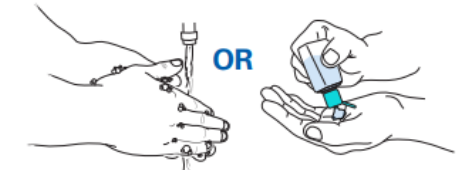
3. Gown



4. Mask or Respirator

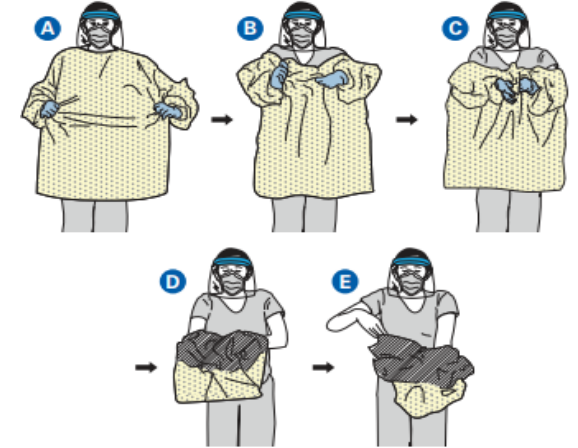


5. Hand Hygiene



Example # 2

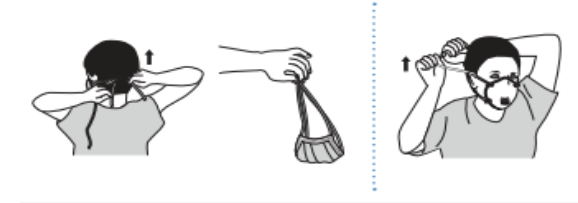
1. Gown and Gloves



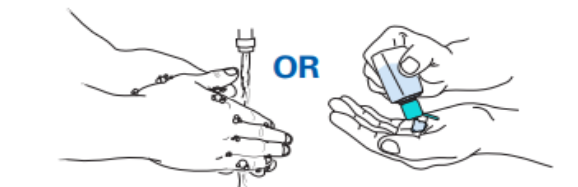
2. Goggles or Face shield



3. Mask or Respirator



4. Hand Hygiene



Key Points of Doffing

- Consider contaminated:
 - Outside of gown and sleeves
 - Outside of gloves
 - Goggles or face shield
 - Front of mask or respirator
- Perform hand hygiene between removal steps if hands become contaminated.
- Design of PPE may affect choice of removal procedure.
- After removal, observe for any visible contamination.



Removing Gloves



Removing Goggles or Face Shield

- Grasp ear or head piece and lift away from face.
- Do not grab front of goggles or face shield.



Removing Gown

- Break or unfasten neck ties and bring gown down.
- Touch inside of the gown **only**.
- Roll contaminated, outside of the gown toward the inside.



Removing Gown and Gloves Together

Step 1: Grasp gown in the front and pull away from your body so that ties break.



Step 2: While removing the gown, fold or roll the gown inside-out into a bundle.



Step 3: Peel off gloves while removing the gown, only touching the inside of the gloves and gown with bare hands.



Removing a Mask

- Untie the bottom, then the top.
- Remove at ear loops.
- Do not touch front of mask.



Removing a Respirator

- Should be removed last.
- Should be removed outside patient room or in an anteroom.
- Lift bottom elastics first then lift top elastic.



PPE Competency Validation

Why Evaluate Competency?

- To address regulatory compliance laws
- To promote patient safety
- To reveal gaps in performance
- To determine where to focus education
- To ensure staff can safely perform their job



Competency Validation Methods

Methods for Assessing Competency

- Performance improvement monitors
- Competency skills fairs
- Self-Assessment
- Return demonstration⁴

"The best way to know if a learner can apply what he or she has learned when psychomotor skills are involved is to watch them try to do it."

Personal Protective Equipment (PPE) Competency Validation		
Donning and Doffing Standard Precautions and Transmission Based Precautions		
Type of validation: Return demonstration	<input type="checkbox"/> Orientation <input type="checkbox"/> Annual <input type="checkbox"/> Other	
Employee Name: _____ Job Title: _____		
Donning PPE	Competent	
	YES	NO
1. Perform Hand Hygiene		
2. Don Gown: Fully covering torso from neck to knees, arms to end of wrists		
3. Tie/fasten in back of neck and waist		
4. Don Mask/Respirator: Secure ties/elastic bands at middle of head & neck		
5. Fit flexible band to nose bridge		
6. Fit snug to face and below chin (Fit-check respirator if applicable)		
7. Don Goggles or Face Shield: Place over face and eyes; adjust to fit		
8. Don Gloves: Extend to cover wrist of gown		
Doffing PPE		
9. Remove Gloves: Grasp outside of glove with opposite gloved hand; peel off		
10. Hold removed glove in gloved hand		
11. Slide fingers of ungloved hand under remaining glove at wrist		
12. Peel glove off over first glove		
13. Discard gloves in waste container		
14. Remove Goggles or Face Shield: Handle by head band or ear pieces		
15. Discard in designated receptacle if re-processed or in waste container		
16. Remove Gown: Unfasten ties/fastener		
17. Pull away from neck and shoulders, touching inside of gown only		
18. Turn gown inside out		
19. Fold or roll into bundle and discard		
20. Remove Mask/Respirator (respirator removed after exit room/closed door): Grasp bottom, then top ties or elastics and remove		
21. Discard in waste container		
22. Perform Hand Hygiene		

Part 3:

PPE Use in Standard Precautions⁸

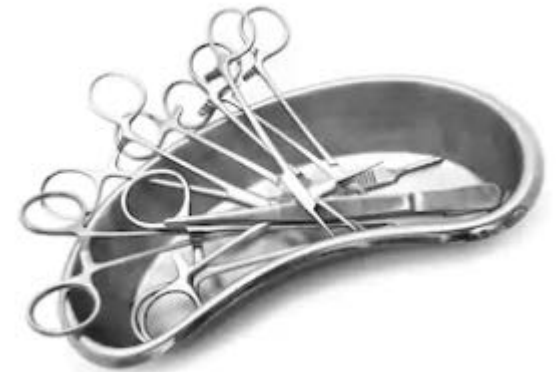
Defining Standard Precautions

“Minimum infection prevention practices that apply to all persons, regardless of suspected or confirmed infection status, in all healthcare settings.” -CDC



What's Included?

- Hand Hygiene
- **PPE**
- Respiratory etiquette
- Sharps safety
- Device sterilization and disinfection
- Environmental Cleaning



**RECOMMENDATIONS FOR APPLICATION OF STANDARD PRECAUTIONS
FOR THE CARE OF ALL PATIENTS IN ALL HEALTHCARE SETTINGS**

Component	Recommendation
Hand Hygiene	After touching blood, body fluids, secretions, excretions, contaminated items; immediately after removing gloves; between patient contacts.
Personal Protective Equipment (PPE) <ul style="list-style-type: none"> Gloves Gown Mask, eye protection (goggles), face shield* 	<ul style="list-style-type: none"> For touching blood, body fluids, secretions, excretions contaminated items; for touching mucous membranes and nonintact skin During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated. During procedures and patient-care activities likely to generate splashes or sprays of blood, body fluids, secretions, especially suctioning, endotracheal intubation During aerosol-generating procedures on patients with suspected or proven infections transmitted by respiratory aerosols (e.g., SARS, influenza), wear a fit-tested N95 or higher respirator in addition to gloves, gown, and face/eye protection.
Soiled patient care equipment	Handle in a manner that prevents transfer of microorganisms to others and to the environment; wear gloves if visibly contaminated; perform hand hygiene.
Environmental control	Develop procedures for routine care, cleaning, and disinfection of environmental surfaces, especially frequently touched surfaces in patient-care areas.
Textiles and laundry	Handle in a manner that prevents transfer of microorganisms to others and to the environment
Safe injection practices	Do not recap, bend, break, or hand-manipulate used needles; if recapping is required, use a one-handed scoop technique only; use safety features when available; place used sharps in puncture-resistant container
Patient resuscitation	Use mouthpiece, resuscitation bag, other ventilation devices to prevent contact with mouth and oral secretions

Source: Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007
Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. At:

What type of PPE would **YOU** wear?

PPE should be used as a part of standard precautions when exposure to blood or bodily fluid is anticipated.

- Cleaning an incontinent patient?
 - Gloves w/wo gown
- Responding to an emergency where blood is spurting?
 - Gloves, fluid-resistant gown, mask with face shield
- Taking vital signs?
 - Usually none
- Checking blood glucose
 - Gloves
- Suctioning oral secretions?
 - Gloves, mask with face shield, fluid-resistant gown
- Transporting a patient in a wheel chair?
 - Usually none
- Changing a wound dressing?
 - Gloves

References

1. OSHA Requirements - [https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030#1910.1030\(g\)\(2\)\(vii\)\(G\)](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030#1910.1030(g)(2)(vii)(G))
2. CDC Guidelines for Isolations Precautions - <https://www.cdc.gov/infectioncontrol/guidelines/isolation/recommendations.html>
3. CDC PPE donning and doffing return demonstration training - https://www.cdc.gov/hai/prevent/ppe_train.html
4. FDA Medical Gowns Guidelines – <https://www.fda.gov/medicaldevices/productsandmedicalprocedures/generalhospitaldevicesandsupplies/personalprotectiveequipment/ucm452775.htm>
5. Niosh approved respirators - https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html
6. Medical evaluations for workers who use respirators - https://www.osha.gov/video/respiratory_protection/medevaluations_transcript.html
7. Sequence for donning and doffing PPE - <https://www.cdc.gov/hai/pdfs/ppe/PPE-Sequence.pdf>
8. Standard Precautions - <https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html>