Guidance for the Selection and Use of Personal Protective Equipment (PPE) in Healthcare Settings

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PPE Use in Healthcare Settings: Program Goal

Improve personnel safety in the healthcare environment through appropriate use of PPE.

PPE Use in Healthcare Settings: Program Objectives

- Provide information on the selection and use of PPE in healthcare settings
- Practice how to safely don and remove PPE

Personal Protective Equipment Definition

"specialized clothing or equipment worn by an employee for protection against infectious materials" (OSHA)

Regulations and Recommendations for PPE

- OSHA issues workplace health and safety regulations. Regarding PPE, employers must:
  - Provide appropriate PPE for employees
  - Ensure that PPE is disposed or reusable PPE is cleaned, laundered, repaired and stored after use
- OSHA also specifies circumstances for which PPE is indicated
- CDC recommends when, what and how to use PPE

Hierarchy of Safety and Health Controls

- Training and administrative controls
- Engineering controls
- Work practice controls
- Personal protective equipment

Types of PPE Used in Healthcare Settings

- Gloves – protect hands
- Gowns/aprons – protect skin and/or clothing
- Masks and respirators– protect mouth/nose
  - Respirators – protect respiratory tract from airborne infectious agents
- Goggles – protect eyes
- Face shields – protect face, mouth, nose, and eyes

Factors Influencing PPE Selection

- Type of exposure anticipated
  - Splash/spray versus touch
  - Category of isolation precautions
- Durability and appropriateness for the task
- Fit

Gloves

- Purpose – patient care, environmental services, other
- Glove material – vinyl, latex, nitrile, other
- Sterile or nonsterile
- One or two pair
- Single use or reusable

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- **One** or two pair
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Do’s and Don’ts of Glove Use

- Work from “clean to dirty”
- Limit opportunities for “touch contamination” - protect yourself, others, and the environment
  - Don’t touch your face or adjust PPE with contaminated gloves
  - Don’t touch environmental surfaces except as necessary during patient care

Do's and Don'ts of Glove Use (cont'd)

- Change gloves
  - During use if torn and when heavily soiled (even during use on the same patient)
  - After use on each patient
- Discard in appropriate receptacle
  - Never wash or reuse disposable gloves

Gowns or Aprons

- Purpose of use
- Material –
  - Natural or man-made
  - Reusable or disposable
  - Resistance to fluid penetration
- Clean or sterile

Face Protection

- Masks – protect nose and mouth
  - Should fully cover nose and mouth and prevent fluid penetration
- Goggles – protect eyes
  - Should fit snuggly over and around eyes
  - Personal glasses not a substitute for goggles
  - Antifog feature improves clarity

Face Protection

- Face shields – protect face, nose, mouth, and eyes
  - Should cover forehead, extend below chin and wrap around side of face

Respiratory Protection

- Purpose – protect from inhalation of infectious aerosols (e.g., *Mycobacterium tuberculosis*)
- PPE types for respiratory protection
  - Particulate respirators
  - Half- or full-face elastomeric respirators
  - Powered air purifying respirators (PAPR)

Elements of a Respiratory Protection Program

- Medical evaluation
- Fit testing
- Training
- Fit checking before use

For additional information on respirators….

- http://www.cdc.gov/niosh/npptl/respirators/respsars.html
- http://www.cdc.gov/niosh/99-143.html
- http://www.cdc.gov/niosh/topics/respirators

PPE Use in Healthcare Settings: How to Safely Don, Use, and Remove PPE

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Key Points About PPE

- Don before contact with the patient, generally before entering the room
- Use carefully – don’t spread contamination
- Remove and discard carefully, either at the doorway or immediately outside patient room; remove respirator outside room
- Immediately perform hand hygiene

Sequence* for Donning PPE

- Gown first
- Mask or respirator
- Goggles or face shield
- Gloves

***Combination of PPE will affect sequence – be practical**

How to Don a Gown

- Select appropriate type and size
- Opening is in the back
- Secure at neck and waist
- If gown is too small, use two gowns
  - Gown #1 ties in front
  - Gown #2 ties in back

How to Don a Mask

- Place over nose, mouth and chin
- Fit flexible nose piece over nose bridge
- Secure on head with ties or elastic
- Adjust to fit

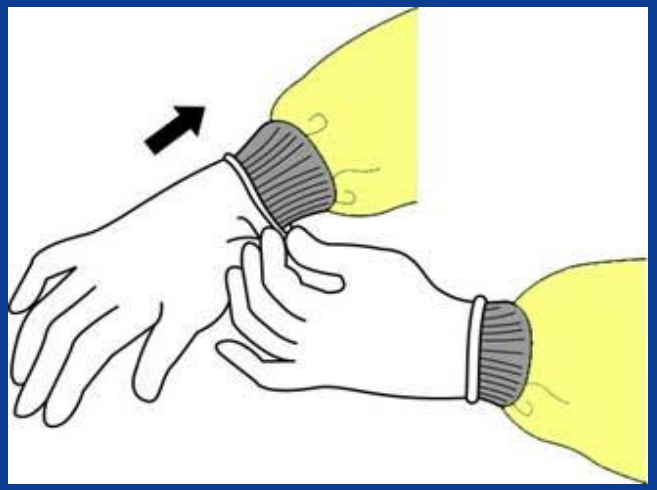
How to Don a Particulate Respirator

- Select a fit tested respirator
- Place over nose, mouth and chin
- Fit flexible nose piece over nose bridge
- Secure on head with elastic
- Adjust to fit
- Perform a fit check –
  - Inhale – respirator should collapse
  - Exhale – check for leakage around face

How to Don Eye and Face Protection

- Position goggles over eyes and secure to the head using the ear pieces or headband
- Position face shield over face and secure on brow with headband
- Adjust to fit comfortably

How to Don Gloves



- Don gloves last
- Select correct type and size
- Insert hands into gloves
- Extend gloves over isolation gown cuffs

How to Safely Use PPE

- Keep gloved hands away from face
- Avoid touching or adjusting other PPE
- Remove gloves if they become torn; perform hand hygiene before donning new gloves
- Limit surfaces and items touched

PPE Use in Healthcare Settings: How to Safely Remove PPE

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“Contaminated” and “Clean” Areas of PPE

- Contaminated – outside front
  - Areas of PPE that have or are likely to have been in contact with body sites, materials, or environmental surfaces where the infectious organism may reside
- Clean – inside, outside back, ties on head and back
  - Areas of PPE that are not likely to have been in contact with the infectious organism

Sequence for Removing PPE

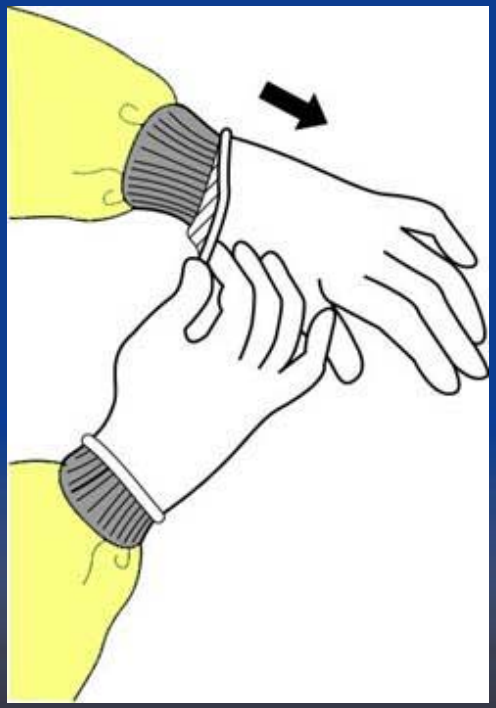
- Gloves
- Face shield or goggles
- Gown
- Mask or respirator

Where to Remove PPE

- At doorway, before leaving patient room or in anteroom*
- Remove respirator outside room, after door has been closed*

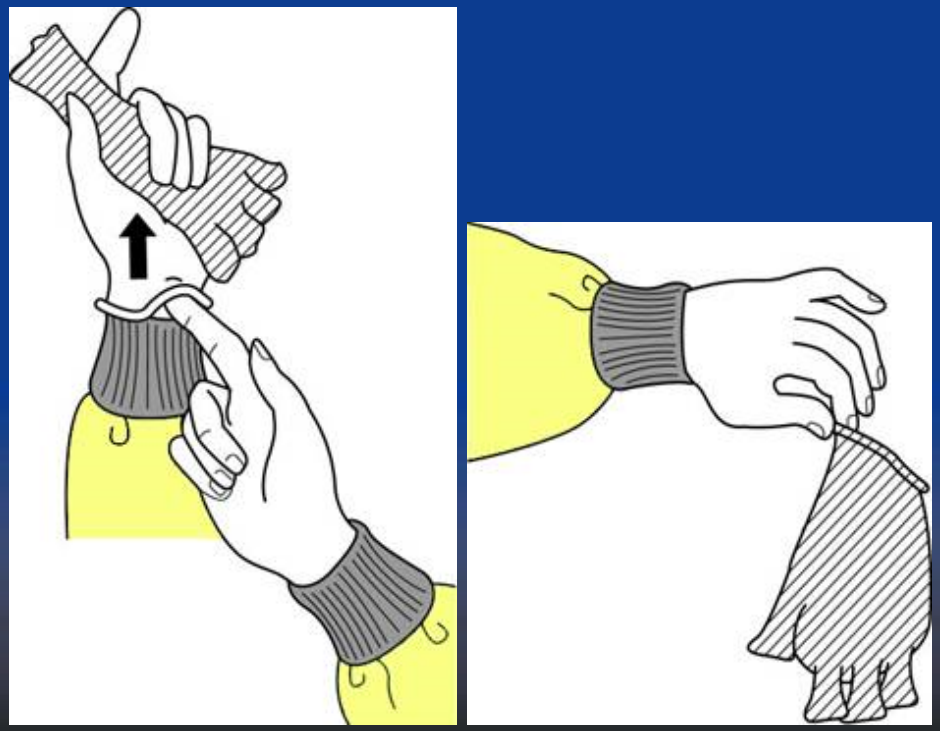
* Ensure that hand hygiene facilities are available at the point needed, e.g., sink or alcohol-based hand rub

How to Remove Gloves (1)



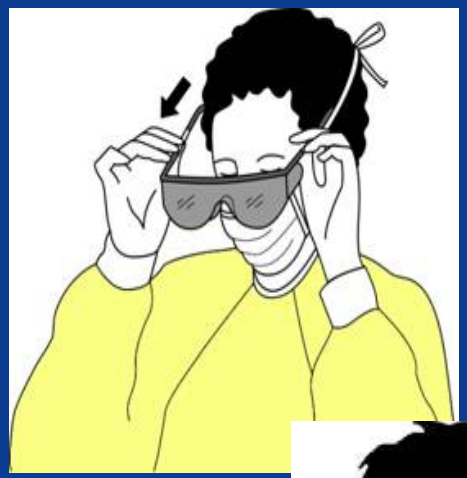
- Grasp outside edge near wrist
- Peel away from hand, turning glove inside-out
- Hold in opposite gloved hand

How to Remove Gloves (2)



- Slide ungloved finger under the wrist of the remaining glove
- Peel off from inside, creating a bag for both gloves
- Discard

Remove Goggles or Face Shield

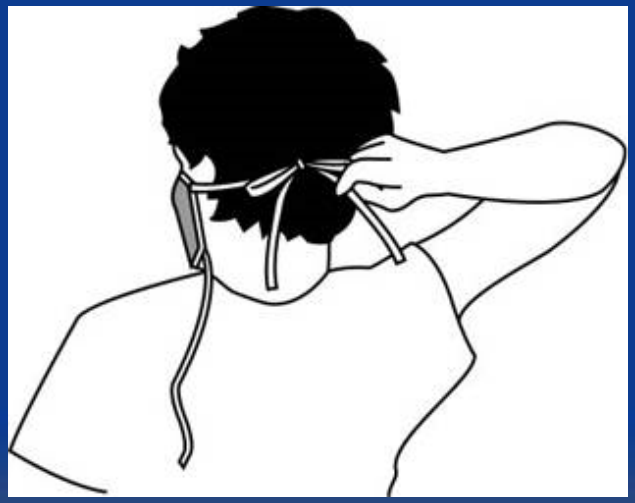


- Grasp ear or head pieces with ungloved hands
- Lift away from face
- Place in designated receptacle for reprocessing or disposal

Removing Isolation Gown

- Unfasten ties
- Peel gown away from neck and shoulder
- Turn contaminated outside toward the inside
- Fold or roll into a bundle
- Discard

Removing a Mask



- Untie the bottom, then top, tie
- Remove from face
- Discard

Removing a Particulate Respirator

- Lift the bottom elastic over your head first
- Then lift off the top elastic
- Discard

Hand Hygiene

- Perform hand hygiene immediately after removing PPE.
  - If hands become visibly contaminated during PPE removal, wash hands before continuing to remove PPE
- Wash hands with soap and water or use an alcohol-based hand rub

* Ensure that hand hygiene facilities are available at the point needed, e.g., sink or alcohol-based hand rub

PPE Use in Healthcare Settings: When to Use PPE

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Standard and Expanded Isolation Precautions

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Standard Precautions

- Previously called Universal Precautions
- Assumes blood and body fluid of ANY patient could be infectious
- Recommends PPE and other infection control practices to prevent transmission in any healthcare setting
- Decisions about PPE use determined by type of clinical interaction with patient

PPE for Standard Precautions (1)

- **Gloves** – Use when touching blood, body fluids, secretions, excretions, contaminated items; for touching mucus membranes and nonintact skin
- **Gowns** – Use during procedures and patient care activities when contact of clothing/ exposed skin with blood/body fluids, secretions, or excretions is anticipated

PPE for Standard Precautions (2)

- **Mask and goggles or a face shield** – Use during patient care activities likely to generate splashes or sprays of blood, body fluids, secretions, or excretions

What Type of PPE Would *You* Wear?

- Giving a bed bath?
- Suctioning oral secretions?
- Transporting a patient in a wheel chair?
- Responding to an emergency where blood is spurting?
- Drawing blood from a vein?
- Cleaning an incontinent patient with diarrhea?
- Irrigating a wound?
- Taking vital signs?

What Type of PPE Would *You* Wear?

- Giving a bed bath?
  - Generally none
- Suctioning oral secretions?
  - Gloves and mask/goggles or a face shield – sometimes gown
- Transporting a patient in a wheel chair?
  - Generally none required
- Responding to an emergency where blood is spurting?
  - Gloves, fluid-resistant gown, mask/goggles or a face shield
- Drawing blood from a vein?
  - Gloves
- Cleaning an incontinent patient with diarrhea?
  - Gloves w/wo gown
- Irrigating a wound?
  - Gloves, gown, mask/goggles or a face shield
- Taking vital signs?
  - Generally none

PPE for Expanded Precautions

- Expanded Precautions include
  - Contact Precautions
  - Droplet Precautions
  - Airborne Infection Isolation

Use of PPE for Expanded Precautions

- Contact Precautions – Gown and gloves for contact with patient or environment of care (e.g., medical equipment, environmental surfaces)
  - In some instances these are required for entering patient's environment
- Droplet Precautions – Surgical masks within 3 feet of patient
- Airborne Infection Isolation – Particulate respirator*

*Negative pressure isolation room also required

Hand Hygiene

- Required for Standard and Expanded Precautions
- Perform…
  - Immediately after removing PPE
  - Between patient contacts
- Wash hands thoroughly with soap and water or use alcohol-based hand rub

PPE Use in Healthcare Settings: Final Thoughts

- PPE is available to protect you from exposure to infectious agents in the healthcare workplace
- Know what type of PPE is necessary for the duties you perform and use it correctly

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