

# What to Wear

Personal Protective Equipment,  
because it works!



Nebraska  
Infection Control  
Network

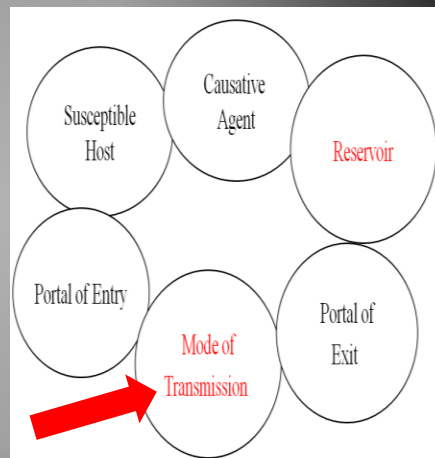
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## Standard Precautions

The goal of Infection Prevention is to break the chain of infection

In healthcare we can break the chain by decreasing the pathogens in the environment, on the patient, and on the healthcare worker's hands, clothing

Standard precautions help to decrease transmission of an infectious agent from a reservoir to a susceptible host  
–Contact is most common mode of transmission (hands and equipment)



<https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html>

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## CDC Guidelines

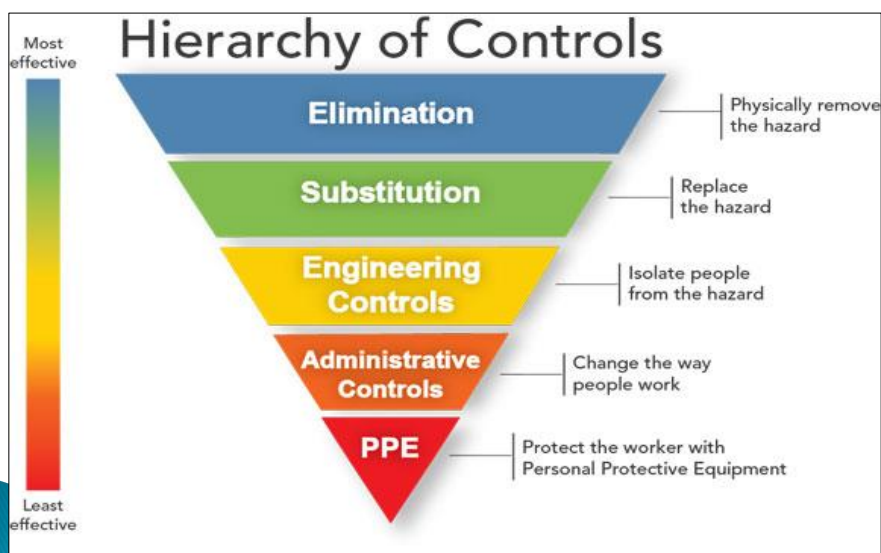
### CDC Standard Precautions for all patient care:

- Hand hygiene
- Personal Protective Equipment (PPE)**
- Respiratory hygiene/cough etiquette
- Appropriate room placement
- Proper handling, cleaning, disinfecting of equipment, instruments/devices, environment
- Proper handling of linens
- Safe injection practices, proper handling of sharps

[www.cdc.gov/infectioncontrol/basics/standard-precautions.html](http://www.cdc.gov/infectioncontrol/basics/standard-precautions.html)

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## Hierarchy of Safety and Health Controls



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## What is PPE?



- ▶ “...specialized clothing or equipment, worn by an employee for protection against infectious materials.”  
– Occupational Safety and Health Administration
- ▶ “...refers to protective clothing, helmets, gloves, face shields, goggles, facemasks and/or respirators or other equipment designed to protect the wearer from injury or the spread of infection or illness.”  
– US Food and Drug Administration



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## OSHA requires employers to:

- ▶ Identify and provide appropriate PPE for employees.
- ▶ Train employees in the use and care of the PPE.
- ▶ Maintain PPE, including replacing worn or damaged PPE.
- ▶ Periodically review, update and evaluate the effectiveness of the PPE program.

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## Appropriate PPE – Clothing & Equipment

- ▶ 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



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## Appropriate PPE

- ▶ Standard Precautions
  - For every patient and resident, every interaction
  - Used to protect staff from blood and body fluids
  - Can help with decreasing transmission of pathogens
  - Based on the risk of contact with body fluids
- ▶ Enhanced Barrier Precautions
  - Used in nursing home setting to help decrease the transmission of resistant pathogens
- ▶ Transmission Based Precautions
  - For those patients/residents who require Contact, Droplet, or Airborne precautions
  - Required based on type of precautions



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## PPE–Standard Precautions

### Gloves

- Should be worn if you think you may come in contact with blood or body fluids
- Gloves should be **changed with every task** you do in each room (minimum after dirty task)
- Gloves are only as clean as the last thing you touched

### Gowns

- Wear when providing care if the patient or resident has blood or body fluids that cannot be contained



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## PPE–Standard Precautions

### Mouth, Nose, Eye Protection

- Cover your face, (mucous membranes) if splashing or spraying may be anticipated–this is for all patients/residents
- During procedures that generate coughing and sprays of respiratory secretions, use face protection that fully covers mucous membranes.
- \*\*This includes suctioning orally or by vent or trach



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# Sequence for Donning PPE

- ▶ Hand Hygiene
- ▶ Gown first – tie/stick it on
- ▶ Mask or respirator – over nose and mold to face
- ▶ Goggles or face shield
- ▶ Gloves – select correct size and type

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**SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)**

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

- 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**

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# Sequence for Doffing PPE

- ▶ Gloves – technique is important
- ▶ Goggles or face shield
- ▶ Gown
- ▶ Mask
- ▶ Hand Hygiene

*If PPE is not doffed correctly, you risk contaminating yourself and/or the environment*


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### HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

- GLOVES**
  - Outside of gloves are contaminated!
  - If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
  - Hold removed glove in gloved hand
  - Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
  - Discard gloves in a waste container
- GOGGLES OR FACE SHIELD**
  - Outside of goggles or face shield are contaminated!
  - If your hands get contaminated during goggles or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Remove goggles or face shield from the back by lifting head band or ear pieces
  - If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container
- GOWN**
  - Gown front and sleeves are contaminated!
  - If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
  - Pull gown away from neck and shoulders, touching inside of gown only
  - Turn gown inside out
  - Fold or roll into a bundle and discard in a waste container
- MASK OR RESPIRATOR**
  - Front of mask/respirator is contaminated — **DO NOT TOUCH!**
  - If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Grasp bottom ties or elastic of the mask/respirator, then the ones at the top, and remove without touching the front
  - Discard in a waste container
- WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE**

PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE




### HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

- GOWN AND GLOVES**
  - Gown front and sleeves and the outside of gloves are contaminated!
  - If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
  - While removing the gown, fold or roll the gown inside-out into a bundle
  - As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container
- GOGGLES OR FACE SHIELD**
  - Outside of goggles or face shield are contaminated!
  - If your hands get contaminated during goggles or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
  - If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container
- MASK OR RESPIRATOR**
  - Front of mask/respirator is contaminated — **DO NOT TOUCH!**
  - If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
  - Grasp bottom ties or elastic of the mask/respirator, then the ones at the top, and remove without touching the front
  - Discard in a waste container
- WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE**

PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE



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## Key Points About PPE


- ▶ Perform hand hygiene before donning 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 inside patient room; remove respirator outside room
- ▶ Immediately perform hand hygiene



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## Recent Research: Auditing

- ▶ The study found that only about half of health care workers correctly remove their PPE, and very few remove their PPE in the correct order and dispose of it in the proper location.
- ▶ Ongoing education, direct observation and monitoring, written documentation of compliance and type of action for non-compliance are key components of an infection prevention program.



N. Safdar, et al, Variation in health care worker removal of personal protective equipment, *American Journal of Infection Control*, Volume 43, Issue 7 (July 2015)

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# Improving Compliance

▶ “Healthcare facilities should use this opportunity of heightened interest (Ebola) to undertake practice improvement focused on PPE removal protocol, including technique, for all healthcare-associated conditions that require the donning and doffing of PPE.”

▶ “There needs to be further education and collaboration within hospitals to improve compliance.”

~ N. Safdar

▶ This is true with COVID pandemic as well



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# Education–PPE

- ▶ Educating staff members on how and when to wear PPE is important
  - how to select PPE for Standard Precautions
  - where to find PPE on unit
  - how to don and doff
  - where to dispose of PPE
  - where to find isolation protocols/procedures
  - where to find isolation flag in EMR
  - where to find isolation signage on unit
  - who to call if unsure of isolation/PPE need



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## CDC Assessment Tools

- ▶ Acute Care: Supplies necessary for adherence to personal protective equipment recommendations specified under Standard and Transmission-based Precautions (e.g., gloves, gowns, mouth, eye, nose, and face protection) are available and located near point of use.
- ▶ Long-term Care: Supplies necessary for adherence to proper PPE use (e.g., gloves, gowns, masks) are readily accessible in resident care areas (i.e., nursing units, therapy rooms).

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## CMS Survey Tool and PPE

2.C.1 Supplies for adherence to Standard Precautions using personal protective equipment (e.g., gloves, gowns, mouth, eye, nose, and face protection) are available and located near point of use.

YES

NO

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# Auditing Use of PPE

You should audit the use of PPE:

- Proper PPE for task
- PPE accessibility, at point of care
- Proper doffing of PPE and disposal of PPE

Audit PPE use while rounding or monitoring IP practices

- Reprocessing
- Surgical procedures
- Blood glucose monitoring
- Foley insertion, maintenance and care
- Central line insertion, maintenance and care
- Environmental rounding

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## Auditing Tools– Competency

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: _____		
COMPETENT			YES	NO
<b>Donning PPE:</b>				
<b>1. Perform Hand Hygiene</b>				
<b>2. Don Gown:</b>				
<ul style="list-style-type: none"> <li>Fully covering torso from neck to knees, arms to end of wrists</li> <li>Tie/fasten behind neck and waist</li> </ul>				
<b>3. Don Mask/Respirator:</b>				
<ul style="list-style-type: none"> <li>Secure ties/elastic bands at middle of head and neck</li> <li>Fit flexible band to nose bridge</li> <li>Fit snug to face and below chin (Fit-check respirator if applicable)</li> </ul>				
<b>4. Don Goggles or Face Shield:</b>				
<ul style="list-style-type: none"> <li>Place over face and eyes; adjust to fit</li> </ul>				
<b>5. Don Gloves:</b>				
<ul style="list-style-type: none"> <li>Extend to cover wrist of gown</li> </ul>				
<b>Doffing PPE: Example 1</b>				
<b>6. Remove Gloves:</b>				
<ul style="list-style-type: none"> <li>Grasp outside of glove with opposite glove hand; peel off</li> <li>Hold removed glove in gloved hand</li> <li>Slide fingers of ungloved hand under remaining glove at wrist</li> <li>Peel glove off over first glove</li> <li>Discard gloves in waste container</li> </ul>				
<b>7. Remove Goggles or Face Shield:</b>				
<ul style="list-style-type: none"> <li>Handle by head band or earpieces</li> <li>Discard in designated receptacle if re-processed or in waste container</li> </ul>				
<b>8. Remove Gown:</b>				
<ul style="list-style-type: none"> <li>Unfasten ties/fastener</li> <li>Pull away from neck and shoulders, touching inside of gown only</li> <li>Turn gown inside out</li> <li>Fold or roll into bundle and discard</li> </ul>				
<b>COMPETENT</b>				
<b>9. Remove Mask/Respirator</b> (respirator removed after exit room/closed door):				
<ul style="list-style-type: none"> <li>Grasp bottom, then top ties or elastics and remove</li> <li>Discard in waste container</li> </ul>				
<b>10. Perform Hand Hygiene</b>				
<b>Doffing PPE: Example 2</b>				
<b>11. Remove Gown and Gloves:</b>				
<ul style="list-style-type: none"> <li>Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands</li> <li>While removing gown, fold or roll the gown inside-out into bundle</li> <li>While removing gown peel off your gloves at the same time, only touching inside of gloves and gown</li> <li>Discard in waste container</li> </ul>				
<b>12. Remove Goggles/Face shield</b>				
<ul style="list-style-type: none"> <li>Remove from back by lifting head band</li> <li>Discard in waste container</li> </ul>				
<b>13. Mask or Respirator</b>				
<ul style="list-style-type: none"> <li>Grasp bottom ties or elastic of mask/respirator, then top and remove</li> <li>Discard in waste container</li> </ul>				
<b>14. Perform Hand Hygiene</b>				
<b>Standard Precautions &amp; Transmission Based Precautions</b>				
<b>15. Staff correctly identifies the appropriate PPE for the following scenarios:</b>				
Additional PPE to be worn based on standard precautions guidelines (anticipated level of exposure) *				
<ul style="list-style-type: none"> <li>Contact/Contact Enteric Precautions (gown &amp; gloves)</li> <li>Droplet Precautions (surgical mask)</li> <li>Airborne Precautions (fit-tested respirator if applicable)</li> <li>Enhanced Barrier Precautions (gown &amp; gloves for high contact activities)</li> </ul>				
<b>RECOMMENDED IN NURSING HOME SETTINGS ONLY</b>				
*NOTE: Examples include mask for coughing/vomiting patient, goggles/face shield for irrigating draining wound, gown for dressing change if scrubs may touch patient, etc.,				
Comments or follow up actions:				
Employee Signature _____		Validator Signature _____		Date _____

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# Auditing Tools-Adherence to Policy

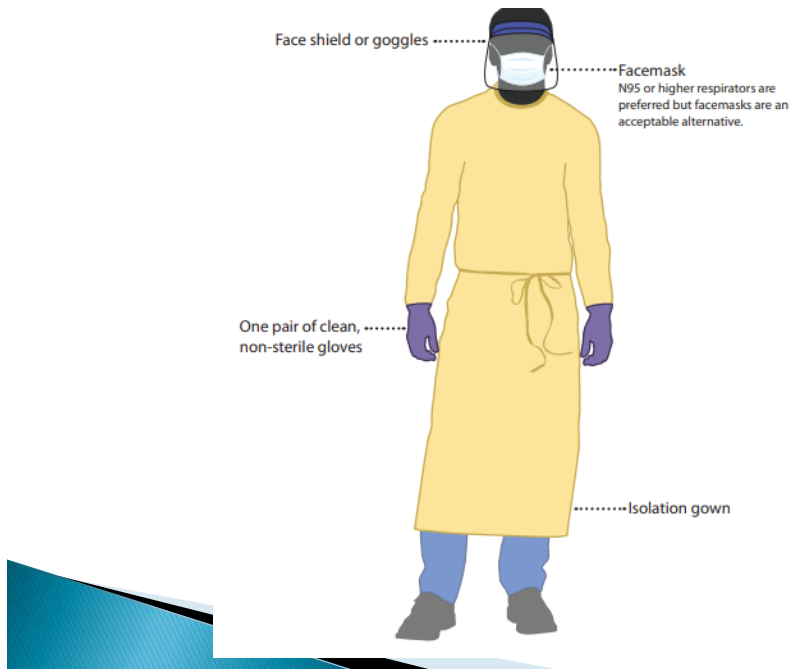
**Statewide Program for Infection Control and Epidemiology**  
*Education to prevent and control healthcare associated infections across the healthcare spectrum*

Personal Protective Equipment (PPE) Audit Tool

Date/Shift/Unit	Role	Compliant	Missed Opportunity	Observation Type
<small><b>Key:</b>                      P/Provider = Physician, resident, PA, NP, or student of role                      N/Nursing = RN, LPN, CNA, NA, CMT, MT, or student of role                      AH/Allied Health = PT/OT, Resp. Tech, Rad Tech, Lab Tech, or student                      SS/Support Staff (ancillary staff) =Dietary, Front Desk, House Keeping/ EVS</small>				
<small><b>Observation/Encounter type examples:</b>                      Glove use prior to contact or potential contact with blood &amp; body fluids, gown and glove use with contact isolation precautions, mask use with droplet precautions or potential exposure to infectious droplets, high level respirator with airborne precautions or potential exposure such as aerosolized generating.</small>				
	P N AH SS	<input type="checkbox"/>	<input type="checkbox"/>	
	P N AH SS	<input type="checkbox"/>	<input type="checkbox"/>	
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	P N AH SS	<input type="checkbox"/>	<input type="checkbox"/>	
	P N AH SS	<input type="checkbox"/>	<input type="checkbox"/>	

To calculate your PPE rate, add all the compliant observations that were made and divide that number by the total number of observations both compliant and missed opportunities. Example: If this whole sheet was filled out there would be 20 observations, if only half (10) were checked as compliant (compliant with PPE when indicated)  $10 \div 20$  then your rate would be .50 or 50% . You can also calculate compliance rate by role. Take the number of compliant observations by one role category and divide that number by total observations for that particular role.

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## Resources

Centers for Disease Control and Prevention: Occupationally–Acquired Infections in Healthcare Settings (2023) <https://www.cdc.gov/infectioncontrol/oai-hcp.html>

Centers for Disease Control and Prevention: Core Infection Prevention and Control Practices (2022) [www.cdc.gov/infectioncontrol/guidelines/core-practices/index.html](http://www.cdc.gov/infectioncontrol/guidelines/core-practices/index.html)  
[www.cdc.gov/infectioncontrol/basics/standard-precautions.html](http://www.cdc.gov/infectioncontrol/basics/standard-precautions.html)

US Food and Drug Administration, Personal Protective Equipment Infection Control (2020)

Occupational Safety and Health Administration webpage (2022)

APIC Text Online, Chapter 28 Standard Precautions and Chapter 29 Isolation Precautions (accessed 2023)

Mody L., Advani SD, Ashraf MS, et al. Multisociety guidance for infection prevention and control in nursing homes. *Infect Control Hosp Epidemiol* 2025. 46: 1069–1096.

Centers for Disease Control and Prevention: Infection Control Assessment Tools (ICAR), 2023 <https://www.cdc.gov/hai/prevent/infection-control-assessment-tools.html>

Centers for Medicare & Medicaid Services Hospital Infection Control Worksheet <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-15-12-Attachment-1.pdf>

The University of North Carolina SPICE (2022) [Statewide Program for Infection Control & Epidemiology – Education to prevent and control healthcare associated infections across the healthcare spectrum \(unc.edu\)](#)

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## Questions?



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