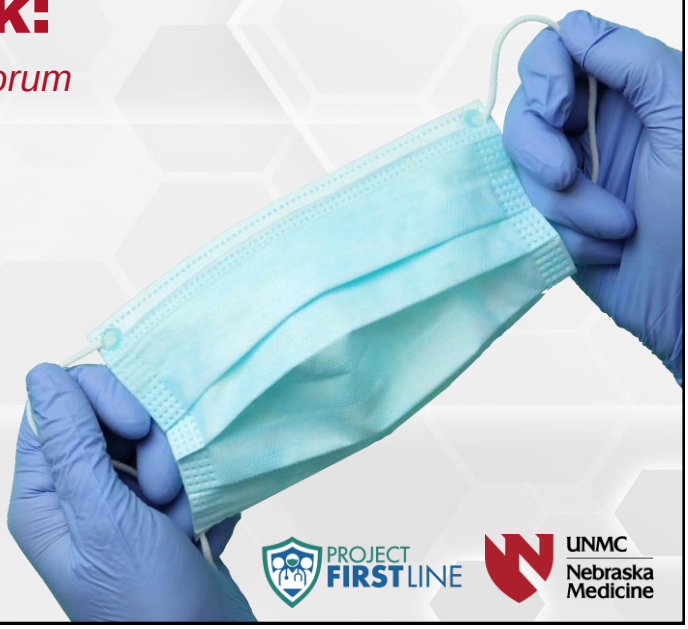
Behind the Mask:

Infection Preventionist Practice Forum



Lauren Musil BSN, RN
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PROJECT FIRSTLINE

UNMC Nebraska Medicine

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Office Hours

- This session is NOT being recorded but please be aware of confidentiality as you share experiences and challenges.
- CE Credits are now available for Office Hours
  - You will receive an email within 2 business days with instructions on how to claim credit.
- If you have a questions
  - Raise hand and our admin will take you off mute *OR*
  - Enter your question into the Q&A
- If you have additional questions that are not answered, you can email us at ***infoforipslice@nebraskamed.com***

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Submitted Topics

- *C. diff* cleaning practices
- IFU Challenges
- IPC Practice & PPE use in the OR
- 2025 updated Guide to Preventing CAUTIs
- Processes for cleaning/disinfection/ sterilization of optometry instruments
- PPE Donning and Doffing

NHSN Assistance

- **Email us at infoforipslice@nebraskamed.com**

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Submitted Questions

1. Do you share non-device related infections to managers for improvement?
2. Do you continue Isolation of patients with MRSA and VRE?
3. I'm looking for evidence to support or refute the separation of "clean and dirty" assignments for nursing. Leadership wants me to find an article that says PPE is sufficient protection so that nursing can go into every room, but oddly enough I can't find a good one. CDC has one clause in their Transmission Based Precautions Guideline about keeping staff separate if you can, but their reference article is from 1995 and only concerns VRE... Would love to know what others are doing.

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Patient Assignments*

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"All patients are potential reservoirs of pathogens, and Standard Precautions must be applied consistently"

Practical Recommendations

- **Avoid rigid staff separation** in routine care to maintain workflow efficiency in small, shared units.
- **Cohort patients**, not staff, during outbreaks or for high-risk pathogens (e.g., *C. difficile*), as staffing constraints often limit dedicated assignments. Reserve cohorting for outbreak response or pathogens with environmental persistence.
- **Audit workflow burdens**: Consider the increased workload from frequent PPE changes under TBP when assigning patient acuity or staff ratios.
- **Focus on competency training and regular audits** of PPE and cleaning protocols.

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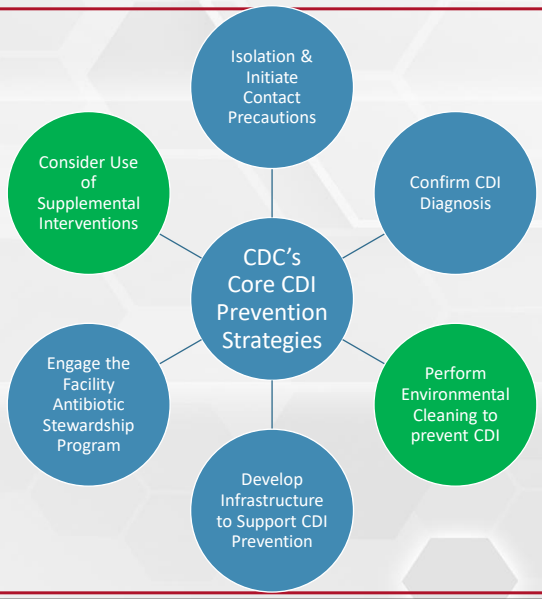
C.Diff Cleaning & Disinfection

- **Daily/ Routine Cleaning-**
  - The regular cleaning (and disinfection, when indicated) when the room is occupied to remove organic material, reduce microbial contamination, and provide a visually clean environment.
  - Emphasis is on surfaces within the patient zone.
- **Terminal Cleaning-**
  - Cleaning and disinfection that is performed after the patient is discharged or transferred.
  - Includes the removal of organic material and significant reduction and elimination of microbial contamination.



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C.diff

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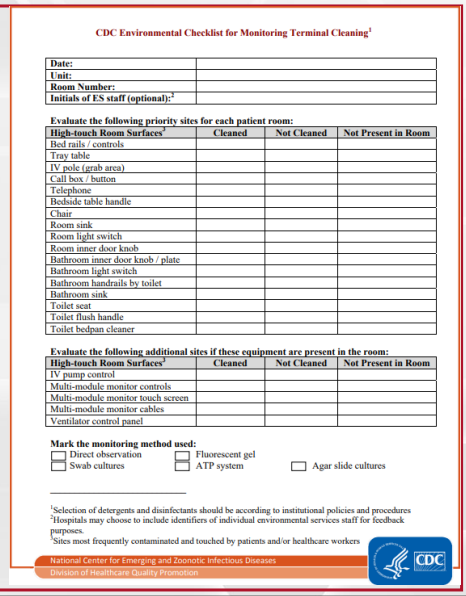
1. Utilize *C.difficile* sporicidal agent (Use EPA List K)

2. Create daily and terminal cleaning protocols and checklists for patient care areas and equipment
   1. Daily Cleaning:
      1. Clean and disinfect the patient-care environment (including the immediate vicinity around a CDI patient and high-touch surfaces) at least once a day
   2. PRN:
      1. Dedicate equipment when possible.
      2. If not feasible, clean and disinfect all shared equipment prior to use with another patient, including toilets, wheelchairs and gurneys.
   3. Terminal
      1. Perform terminal clean after CDI patient transfer or discharge with sporicidal agent
      2. Clean other areas that are contaminated during transient visits by patients with suspected or confirmed CDI like radiology, emergency departments and physical therapy with a *C. difficile* sporicidal agent
3. Utilize supplemental interventions
   1. Conduct additional disinfection of CDI rooms with no-touch technologies (e.g., UV light)
   2. Expand use of sporicidal agents for all rooms in affects units (outbreaks or elevated SIRs)



CDC Environmental Checklist for Monitoring Terminal Cleaning[1]

Date:	
Unit:	
Room Number:	
Initials of ES staff (optional):[2]	

Evaluate the following priority sites for each patient room:

High-touch Room Surfaces[3]	Cleaned	Not Cleaned	Not Present in Room
Bed rails / controls			
Tray table			
IV pole (grab area)			
Call box / button			
Telephone			
Bedside table handle			
Chair			
Room sink			
Room light switch			
Room inner door knob			
Bathroom inner door knob / plate			
Bathroom light switch			
Bathroom handrails by toilet			
Bathroom sink			
Toilet seat			
Toilet flush handle			
Toilet bedpan cleaner			

Evaluate the following additional sites if these equipment are present in the room:

High-touch Room Surfaces[3]	Cleaned	Not Cleaned	Not Present in Room
IV pump control			
Multi-module monitor controls			
Multi-module monitor touch screen			
Multi-module monitor cables			
Ventilator control panel			

Mark the monitoring method used:

☐ Direct observation ☐ Fluorescent gel
☐ Swab cultures ☐ ATP system ☐ Agar slide cultures

[1]Selection of detergents and disinfectants should be according to institutional policies and procedures
[2]Hospitals may choose to include identifiers of individual environmental services staff for feedback purposes.
[3]Sites most frequently contaminated and touched by patients and/or healthcare workers

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

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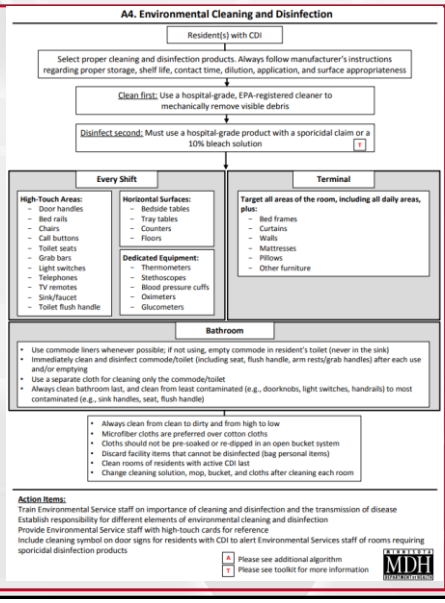

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C.diff

Source	Link
CDC CDI Implementation Guide	CDI Implementation Guide: Links to Resources
CDC ICAR Assessment EVS	ICAR Tool for General Infection and Control (IPC) Across Settings - Module 4: Environmental Services Facilitator Guide
CDC CDI TAP Assessment	Clostridioides difficile Infection (CDI or C. diff) Targeted Assessment for Prevention (TAP) Facility Assessment Tool
CDC EVS Training	Training: EVS and the Battle Against Infection | Infection Control | CDC Clostridium Difficile Training for Environmental Cleaning Staff
APIC Implementation Guide to Preventing CDI	2013CDiffFinal.pdf
CDC Environmental Infection Control	E. Environmental Services | Infection Control | CDC

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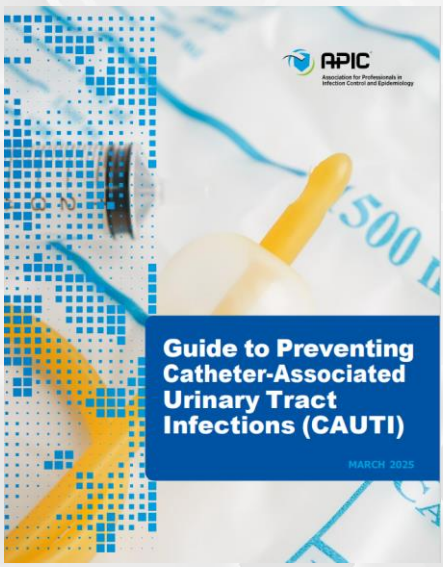
New CAUTI Resource

- New APIC Implementation Guide Release
- https://apic.org/wp-content/uploads/2025/04/2025_CAUTI_Implementation_Guide_FINAL.pdf



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IFU Challenges

- Healthcare facilities should follow the manufacturer's Instructions for Use (MIFUs)
  Unless alternative validated instructions are provided by the manufacturer
- FDA requests that device manufacturers include at least one validated cleaning and disinfection/sterilization protocol in the labeling for their devices.
- Do not "risk assess out" of following IFUs

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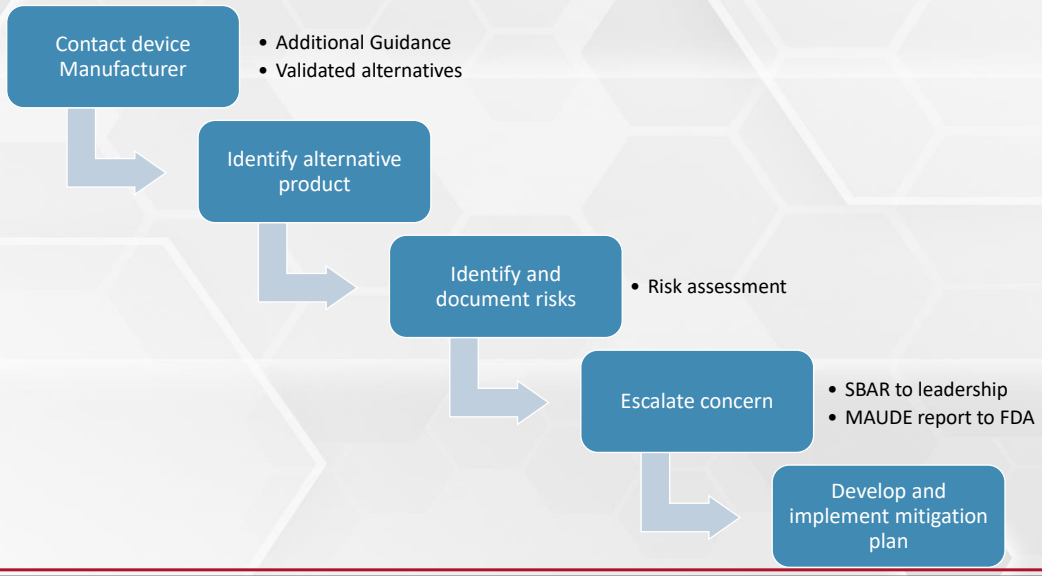
IFU Challenges



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IFU Challenges

Use only soft, damp cloths to clean, wipe and disinfect the [redacted] and the accessories, e.g. electrode cable. Water or soap are particularly suitable for this purpose. Ensure that no moisture penetrates the [redacted]

Use only wipe disinfection, no spray disinfection! Avoid condensation!

White spirit or commercially available methanol-free disinfectant in an ethyl alcohol base can be used for disinfection.

Meliseptol® or white spirit can be used for wipe disinfection.

Caution! The following substances must not be used: trichloroethylene, acetone, butanone, benzene methyl ethyl ketone, benzene, methanol, cellulose thinner, and 2-propanol or any other organic solvents, acids and sodium hydroxide solution. Disinfectants containing iodine or dyes can discolor the housing and should not be used.

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IFU Challenges

Hazards Identified	**Current Risk Value (High, medium, or low)**	**Controls already in place or can be added to eliminate or reduce the risk** (Include Engineering, Administrative and PPE)	**Remaining Risks**	**What controls could further reduce the risk?**
Potential or actual: The IFU for the XXXXXXXX are unclear and do not have recommendations for a specific type of disinfectant that is available in the United States.	Without putting controls in place, this practice is a _____Medium_____ *(low/medium/high)* risk.	**Engineering Controls** Hospital currently uses **** disinfectant which is a quaternary ammonium/Isopropyl alcohol-based solution. This disinfectant is methanol free and no spray. **Minimization of the hazard** **Action plan:** The manufacturer recommended solution is called Meliseptol which is a quaternary ammonium compound/n-propanol (isopropyl alcohol) based solution. Users will clean and disinfect using a two step process per the IFU.	Possible equipment compatibility issues.	**Next steps include:** Education will be conducted for all end users on proper chemical selection and disinfection of this device. End users will implement the use of a two step cleaning process utilizing ****** End users will monitor for equipment degradation or signs of incompatibility.

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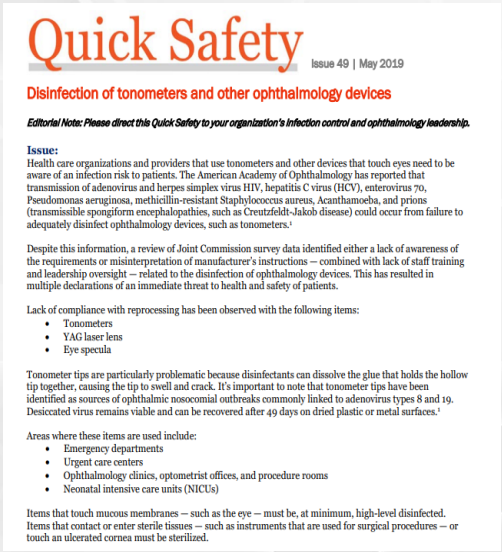
Opthamology

- May 2019- Joint Commission released a safety alert for Ophthalmology devices
  - Devices that touch the eye are semi-critical
  - Devices that enter sterile tissues or an ulcerated cornea are critical
- Improperly disinfected devices have led to transmission of adenovirus, hepatitis C, Pseudomonas aeruginosa, MRSA and CJD
- Review cleaning and disinfection instructions
- FDA approved high level disinfectants used for semi-critical items
- Have IFU readily available



Quick Safety

Issue 49 | May 2019

Disinfection of tonometers and other ophthalmology devices

Editorial Note: Please direct this Quick Safety to your organization's infection control and ophthalmology leadership.

Issue:

Health care organizations and providers that use tonometers and other devices that touch eyes need to be aware of an infection risk to patients. The American Academy of Ophthalmology has reported that transmission of adenovirus and herpes simplex virus HIV, hepatitis C virus (HCV), enterovirus 70, Pseudomonas aeruginosa, methicillin-resistant Staphylococcus aureus, Acanthamoeba, and prions (transmissible spongiform encephalopathies, such as Creutzfeldt-Jakob disease) could occur from failure to adequately disinfect ophthalmology devices, such as tonometers.[1]

Despite this information, a review of Joint Commission survey data identified either a lack of awareness of the requirements or misinterpretation of manufacturer's instructions -- combined with lack of staff training and leadership oversight -- related to the disinfection of ophthalmology devices. This has resulted in multiple declarations of an immediate threat to health and safety of patients.

Lack of compliance with reprocessing has been observed with the following items:

- Tonometers
- YAG laser lens
- Eye specula

Tonometer tips are particularly problematic because disinfectants can dissolve the glue that holds the hollow tip together, causing the tip to swell and crack. It's important to note that tonometer tips have been identified as sources of ophthalmic nosocomial outbreaks commonly linked to adenovirus types 8 and 19. Desiccated virus remains viable and can be recovered after 49 days on dried plastic or metal surfaces.[1]

Areas where these items are used include:

- Emergency departments
- Urgent care centers
- Ophthalmology clinics, optometrist offices, and procedure rooms
- Neonatal intensive care units (NICUs)

Items that touch mucous membranes -- such as the eye -- must be, at minimum, high-level disinfected. Items that contact or enter sterile tissues -- such as instruments that are used for surgical procedures -- or touch an ulcerated cornea must be sterilized.

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Opthamology

Common Issues

- Unclear IFUs
- Devices manufactured in other countries
- Need for quick turnover of instruments
- Widespread use of equipment

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DISINFECTION

1. Clean lens & surgical products first by following Cleaning Method A (See CLEANING METHODS TABLE)
2. Disinfect by selecting one of the solution types from the Table below:

Product Type ✓ OK to Use	Alkacide / Alkazyme	**Bleach Solutions (Sodium Hypochlorite)	Bode Mikorbac Tissues	CaviWipes	*Cidex OPA	*Glutaraldehyde	Perasafe	*Revital-Ox™ Resert XL® HLD	Tristel Duo
BIO Lenses (Black & All Colors)		✓	✓	✓	✓	✓	✓		✓
BIO Lenses (ACS)		✓	✓	✓	✓	✓	✓		✓
Classic Series Lenses (Black & All Colors)		✓	✓	✓	✓	✓	✓		✓
Super & Digital Series Lenses (Black & All Colors)		✓	✓	✓	✓	✓	✓		✓
Mirrored Lenses (3-Mirror Lenses, Mini 4-Mirror Lens, & SLT)	✓	✓	✓	✓	✓	✓		✓	✓
G-Series Gonio Lenses		✓	✓	✓	✓	✓		✓	✓
Contact Lenses		✓	✓	✓	✓	✓			✓
Research Lenses			✓	✓	✓	✓			
Vitrectomy Surgical Lenses - Traditional		✓	✓	✓	✓	✓			✓
Vitrectomy Surgical Lenses - ACS		✓	✓	✓	✓	✓			✓
Surgical Lens Access:		✓	✓	✓	✓	✓			✓
Sterilization Cases		✓	✓	✓	✓	✓			✓

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FDA cleared high level disinfectants

Commonly recommended disinfectants for tonometers	FDA cleared?
70% Alcohol	Not an FDA cleared High Level Disinfectant
1:10 Bleach	Not an FDA cleared High Level Disinfectant Sterilox is approved @ 650 ppm or 400-450 Active free chlorine
3% Hydrogen Peroxide	Not an FDA cleared High Level Disinfectant 2% Hydrogen peroxide Resert is approved

All approved high-level disinfectants have requirements for concentration (MEC) temperature and kill times.

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What is the device? → What is it used for? → What is the Spaulding class? → Does the IFU fit Spaulding? → Can I do what the IFU says?

3. CLEANING AND DISINFECTION INSTRUCTIONS

3.1 CLEANING TONOMETER BODY

Only manual non-immersion cleaning as described should be used for this instrument. Do not use corrosive products or alcohol. Do not autoclave or immerse in cleaning fluids.

1. Wipe the external surface with a clean absorbent, non-shedding cloth dampened with de-ionised water / detergent solution (2% detergent by volume) or water / isopropyl alcohol solution (70% IPA by volume). Avoid optical surfaces.
2. Ensure that excess solution does not enter the instrument. Use caution to ensure cloth is not saturated with solution.
3. Surfaces must be carefully hand-dried using a clean non-shedding cloth.
4. Safely dispose of used cleaning materials.

3. Immerse the Tonometer prism in the disinfectant fluid. Types of disinfectant fluid vary.
4. Rinse the disinfectant from the prism in running water for between 10 and 30 minutes.

Please follow disinfectant solution guidelines for instructions, concentration and time of immersion. (For example: Pantasept – 3% aqueous solution for 10 minutes, Hydrogen Peroxide 3% aqueous solution for 10 minutes, Sodium Hypochlorite, 10% aqueous solution for 10 minutes etc.).

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Infection Prevention in the OR

1 goal Support efforts for HAI prevention & patient safety

- Relationship building, collaboration, partnership
- Surgical scrub
- Patient prep
- Sterile field
- Surgical attire
- Aseptic and sterile technique
- Surgical Environment
- Instrument reprocessing
- Provide data for improvement opportunities

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Infection Prevention in the OR

Build relationship with perioperative staff

- Attend perioperative staff meetings
- Collaborate on improvement initiatives
- Perioperative team champion
  - Invite perioperative team members to report at ICC
- IP serves as a resource for OR issues

Build relationship with perioperative leadership

- Invite perioperative leadership to risk assessment to help determine program goals
- Leadership review of SSIs and other HAIs
- Understand how CMS CoPs relate to perioperative services

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Infection Prevention in the OR

Surgical Scrub

Before donning sterile gloves

1st scrub of the day

Dried with sterile towel

Follow MIFU

Surgical Prep

Pre-op bathing (1B)

Skin prep with alcohol-based antiseptic (1A)

Maintain sterile prep

Surgical Field

Maintain and monitor

Sterile technique

Minimize traffic

Instrument

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Infection Prevention in the OR

Surgical attire

- Laundered in healthcare accredited laundry
- Restricted area
  - All hair (head and face) covered in semi-restricted areas
  - Masks cover mouth and nose when sterile supplies are opened
  - Sleeves for non-scrubbed personnel
- Semi-restricted area
  - All hair (head and face) covered in semi-restricted areas
  - No draping masks

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PPE in the OR

- Personnel entering the semi-restricted and restricted (operating room, or OR) areas of the Surgery Suite should wear clean surgical attire,
- Must be laundered in a healthcare-accredited laundry in accordance with facility policy
- PPE in the OR includes:
  - Clean Hospital Issued Scrubs
  - Gowns (AAMI Level 4)
  - Sterile Gloves
  - Head Cover
  - Shoe Cover
    - Need process for shoes if they don't have shoe covers
  - Beard Cover
  - Jackets & Sleeves
    - Processes for items like cooling devices

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PPE in the OR

CMS
- Surgical attire (scrubs, surgical caps/hoods covering all head and facial hair worn by all personnel and visitors in the semi-restricted and restricted areas

CDC
- Wear a mask in OR when sterile field is opened *(1B)*
- Fully cover hair on head and face *(1B)*
- Laundering scrubs *unresolved*
- Shoe covers- OSHA not SSI
- Surgical gowns and drapes (1B) for the patient and scrubbed personnel should be used

AORN
- Tie of masks tightly to mitigate the risk of transfer of organisms from the mouth or nose
- When in the semi-restricted or restricted surgical areas, all personal clothing should be completely covered by the surgical attire.
- Launder scrubs by an approved company or home laundering
- All personnel should cover head and facial hair, including sideburns and the nape of the neck, when in the semi-restricted and restricted areas
- A clean, low-lint surgical head cover or hood that confines all hair and covers scalp skin should be worn

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Infection Prevention in the OR

Environmental Cleaning
- EPA registered hospital grade disinfectant
- Horizontal surfaces wiped before first case
- High touch surfaces cleaned between patient
- Terminal cleaning after last case and every 24 hours
- Anesthesia equipment (high touch, terminal and internal components

Air handling
- Ventilation requirements
- Positive
- >15 ach (3 are outside air)
- 90% filtration
- Temperature and humidity
- Self closing doors
- Air vents clean

Instrument Reprocessing
- Spaulding Classification
- Reprocessing steps
- Automated equipment
- Process Monitoring

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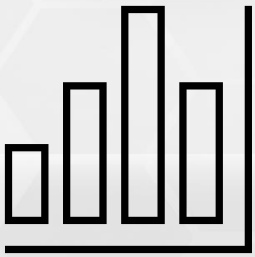
Infection Prevention in the OR

Provide data for improvement opportunities:

- SSI
- Environmental data
- Instrument reprocessing
- Hand Hygiene
- PPE compliance
- Antimicrobial stewardship and prophylaxis
- Outcome metrics



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Infection Prevention in the OR

Great Resources

- Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection
  - http://jamanetwork.com/journals/jamasurgery/fullarticle/10.1001/jamasurg.2017.0904
- Guideline for the Prevention of Surgical Site Infection (1999)
  - https://stacks.cdc.gov/view/cdc/7160
- AORN
- AAMI ST 79- Sterilization
- AAMI ST 91- High Level Disinfection
- Wisconsin Division of Public Health
  - DHS SSI Guidance
- APIC
  - APIC_ImplementationPreventionGuide_Web_FIN03.pdf

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PPE Donning & Doffing

Key Principles:

- Based route of transmission & nature of the patient interaction
- Used to protect the wearer from exposure
- The order of putting on (donning) PPE influences how PPE should be safely removed (doffed) to avoid contamination
- Hand hygiene should be performed prior to donning PPE
- Don PPE prior to contact with the patient (e.g., prior to entering the patient room)
- Doff PPE prior to exiting the patient care environment (except respirators)
  - Methodical doffing to minimize the risk of exposure to the healthcare worker
- After doffing immediately perform hand hygiene prior to moving on to other tasks

SPECIAL PATHOGENS

NETEC.ORG
- IPC learning journey course
- PPE 101/102

UNMC HEROES

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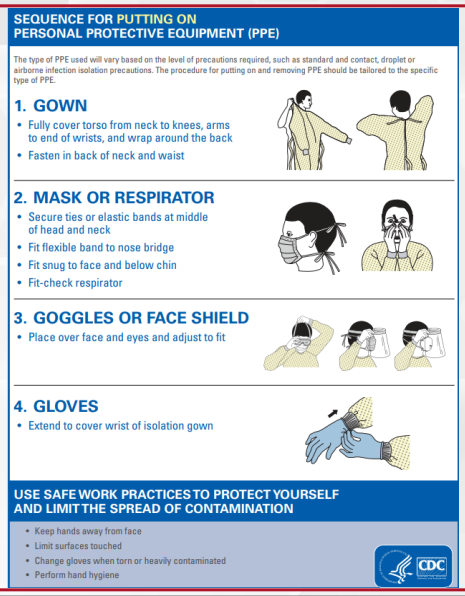
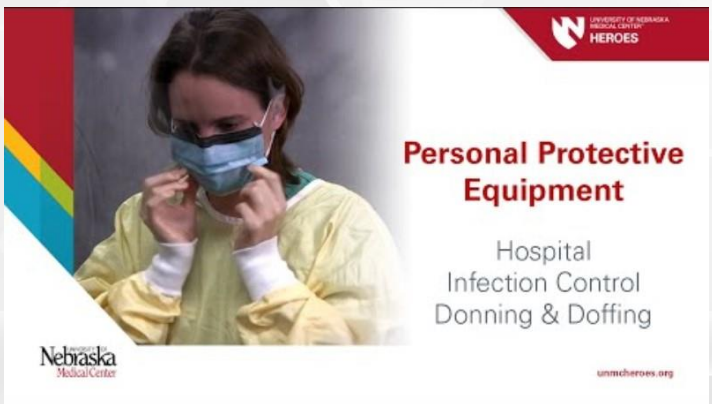
PPE Donning & Doffing Steps





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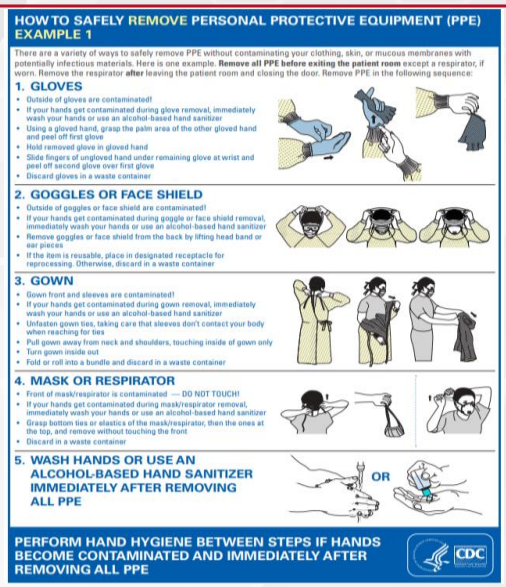
PPE Donning & Doffing Steps



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:

1. 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

2. GOGGLES OR FACE SHIELD
- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle 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

3. 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

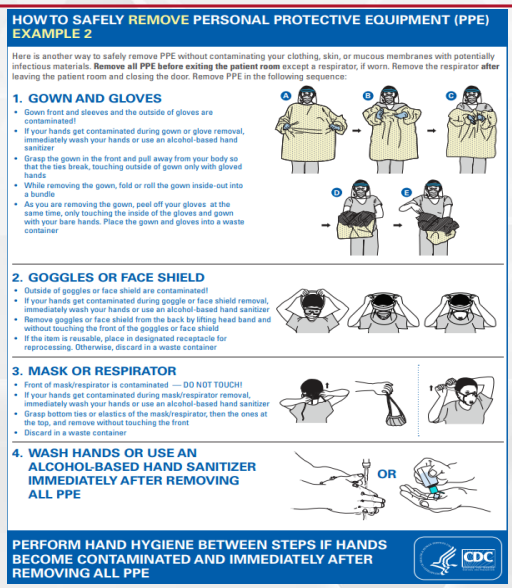
4. MASK OR RESPIRATOR
- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE

OR

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

CDC



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:

1. 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

2. GOGGLES OR FACE SHIELD
- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle 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

3. 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 elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE

OR

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

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Next Webinar:

- Semi-Critical Device and Endoscope Reprocessing
- May 15th from 12-1CST
  - 30 minutes of post webinar office hours

Next Office Hours:

- June 19th from 12-1 CST
- Submit topics to discuss

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