Standard and Transmission-Based Precautions

Shasta Infection Preventionist Training

Healthcare-Associated Infections Program
Center for Health Care Quality
California Department of Public Health



Standard Precautions



Objectives

- Describe the 6 elements of Standard precautions
- Review adherence monitoring results and tools for select Standard precautions care practices.



What are the Standard Precautions?

Part of Core practices – Use all the time, in all settings

- 1. Hand hygiene
- 2. Environmental cleaning and disinfection
- 3. Injection and medication safety
- 4. Assess the risk of transmission in task to be performed to select appropriate personal protective equipment (PPE) including gloves, gowns, face masks
- 5. Minimizing potential exposures
 - Using respiratory hygiene and cough etiquette
- 6. Reprocessing of reusable medical equipment between each patient and when soiled

(https://www.cdc.gov/infection-control/hcp/core-practices/index.html)



Standard Precautions Element 1 Hand Hygiene

 Unwashed hands of health care workers are the most common way transmission of pathogens occur

Many healthcare-associated infections (HAI) are preventable with simply using proper hand hygiene!





Efforts to Improve Hand Hygiene

- Hand hygiene has been known to prevent the spread of infection for 150 years
- CDC, the World Health Organization, and many other authorities have promulgated hand hygiene guidelines
- Healthcare facilities must have hand hygiene policies and procedures

Hand hygiene adherence in health care remains inconsistent Look for opportunities for improving hand hygiene



Alcohol-based Hand Rub or Soap and Water Handwashing?

- Use alcohol-based hand sanitizer rubs (ABHR) if hands are not visibly soiled
 - The recommended and preferred method for routinely decontaminating hands of health care workers
- Handwashing with soap and water should occur
 - When hands are visibly soiled or dirty
 - When hands are known to be contaminated with blood or body fluids
 - Before and after eating
 - After toileting
- During outbreaks of certain infection types or pathogens, consider using handwashing with soap and water (with universal gloving)
 - Examples: Norovirus, Clostridioides difficile (C. diff)

(https://www.cdc.gov/clean-hands/hcp/clinical-safety/index.html)



Efficacy of Hand Hygiene Products



*less effective in presence of organic material

(https://apic.org/Resource_/TinyMceFileManager/Practice_Guidance/cdiff/C.Diff_Digital_Toolkit_GNYHA.pdf)



Recommended Hand Hygiene Technique

Hand rub

- Apply to palm of one hand, rub hands together covering all surfaces until dry
- Volume based on manufacturer recommendation



Handwashing

- Wet hands with water, apply soap, rub hands together, paying close attention to between the fingers and nails, for at least 15-20 seconds
- Rinse and dry with disposable towel
- Use towel to turn off faucet





Fingernails

- Artificial nails and gel polishes should not be worn by health care personnel
 - Hand hygiene policy and procedure for facility should address this
- Polish may be worn but must be intact (not chipped)
- Nail tips should be kept to ¼ inch in length





Hand Hygiene for Patient/Resident Care

Before

- Patient/resident contact
- Touching medical equipment
- Donning gloves
- Accessing indwelling devices
- Giving medications

After

- Contact with a patient's/resident's skin and/or environment
- Contact with body fluids or excretions, non-intact skin, wound dressings
- Removing gloves



Gloving and Hand Hygiene

- Always wear gloves when contact with blood or infectious material is possible
- Remove gloves after caring for each patient
 - Remove gloves, perform hand hygiene, and re-glove when transitioning care from a soiled area to a clean area
 - Example: Remove a soiled dressing, remove gloves, perform hand hygiene, reapply clean gloves to replace with new dressing
- Perform hand hygiene upon removing gloves
- Never wash gloves to reuse
- Never reuse gloves
- Do not double glove



Improving Hand Hygiene Compliance

- Make hand hygiene a facility priority
 - Ensure competency
- Encourage patients/residents and families to remind health care workers to clean their hands
- Make hand rubs easily available (e.g., place at entrance to patient/resident room, at bedside)
- Monitor adherence to hand hygiene and provide feedback of gaps
 - Train/re-train secret shoppers
 - Explore electronic hand hygiene monitoring systems

(https://www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/AdherenceMonitoringHandHygiene Approved101516.pdf)

Standard Precautions Element 2 **Environmental Cleaning and Disinfection**

- Ensure routine cleaning of environmental surfaces as indicted by level of patient/resident contact and degree of soiling
 - Clean high touch areas more frequently
 - Promptly clean and decontaminate spills of blood and other potentially infectious materials
- Select EPA-registered disinfectants with activity against pathogens most likely to contaminate the patient area
 - Follow disinfectant manufacturers' instructions for proper cleaning and disinfecting products

(More details will be provided in another session)

Standard Precautions Element 3 Injection Safety

- Injection safety, or safe injection practices, is a set of measures taken to perform injections in an optimally safe manner for patients/residents, healthcare personnel, and others.
 - Injection safety protects patients
 - Injection safety protects health care workers



Aseptic Technique for the Preparation and Administration of Injected Medications

 Hand hygiene should be performed prior to medication preparation and administration of injected medications

Medications should be drawn up into syringes in a designated clean medication area

Area must <u>not</u> be adjacent to areas where potentially contaminated items are

placed

Away from splash zones around sinks





Needles and Syringes: One Time Use ONLY

- Needles used for only one patient
- Syringes used for only one patient
 - Includes manufactured prefilled syringes
 - Cartridge devices
 - Insulin pens



(https://stacks.cdc.gov/view/cdc/31801)



Single-Dose Vials: One Patient/Resident Only Once

- Carefully read the vial label to determine if it is single-use
- Never enter a medication vial with a used syringe or needle
- If the vial says "single-dose" and has already been accessed, throw it away

- Single use medications should not be stored for future use
- Discard according to the manufacturer's expiration date after use
- When in doubt, throw it out!

SINGLE-DOSE OR MULTI-DOSE? (cdc.gov)

(https://stacks.cdc.gov/view/cdc/140849)

Multi-Dose Vials

- Limit the use of multi-dose vials
 - When possible, dedicate them to a single patient
 - Use a new needle and syringe when accessing
- Multiple–dose vials for vaccines is acceptable
- Date when first opened
- Only good for a certain amount of days per pharmacy policy
 - If manufacturer's expiration is before pharmacy use by date, throw it away
- Watch for suspicious behavior by healthcare workers who may be diverting drugs
- Keep medications in a dedicated space and locked if no staff are present

Dangerous misperceptions (cdc.gov)

(https://stacks.cdc.gov/view/cdc/31803)

Injection Safety for Persons with Diabetes

- Insulin pens containing more than one dose of insulin are only meant for one person
- For glucose testing, clean the glucometer after every use







Medication Vials Must be Cleaned Before Entry

Manufacturers guarantee sterility of medications and IV solutions but not the **outside** of medication vials or containers

- Cleanse access diaphragms (septums) of medication vials using friction with 70% isopropyl alcohol
- Allow the alcohol to dry before inserting a device into the vial
- Disinfect the tops of vials after removing dust cover, with alcohol, even if they have lids or caps
 - Fungi have been cultured from underneath those caps



Outbreaks Associated with Unsafe Infection Practices

- In one clinic exposure, 50,000 persons exposed, only 1,000 notified
 - Outbreak of hepatitis B, C, and HIV
- Outbreaks due to injection safety breaches
 - Reuse of syringes
 - Contaminated medication vials used for more than one patient
 - Use of single-dose vials for more than one patient
 - Drug diversion by HCP/employees

(https://stacks.cdc.gov/view/cdc/31802)



Sharps Safety

- Sharps injuries occur most frequently due to inappropriate sharps disposal by healthcare workers, including
 - Insufficient maintenance of sharps containers
 - Improper design of sharps disposal container
 - Inappropriate placement of sharps disposal container
 - Overfilling sharps disposal container





Sharps Disposal Container Requirements

- Must be puncture-resistant, durable during installation and transport, and of appropriate size and shape for the sharps being inserted
- Must be see through with sharps clearly visible
- Must be easy to access by being placed in an upright position and easy to operate
- Must have ease of assembly, require minimal worker training requirements, easy to use
- Ensure used sharps boxes are locked away to prevent public access

(https://www.fda.gov/medical-devices/safely-using-sharps-needles-and-syringes-home-work-and-travel/sharps-disposal-containers-health-care-facilities)



Management of Needle Sticks and Other Exposures to Blood or Other Bodily Secretions

- Wash the needlestick site or cut with soap and water until clean
- Flush splashes to the nose, mouth, or skin with water
- Irrigate eyes with clean water, saline, or sterile irrigant
- Report the incident to your supervisor immediately
- Immediately seek medical evaluation per facility policy

(https://www.cdc.gov/nora/councils/hcsa/stopsticks/whattodo.html)



Standard Precautions Element 4 Personal Protective Equipment

- HCP need immediate access to PPE and <u>training</u> to be able to select proper PPE based on
 - The nature of the patient interaction
 - Potential for exposure to blood, body fluids or other infectious material
- Types of PPE
 - Gloves
 - Gowns
 - Face masks and respirators
 - Goggles and face shields

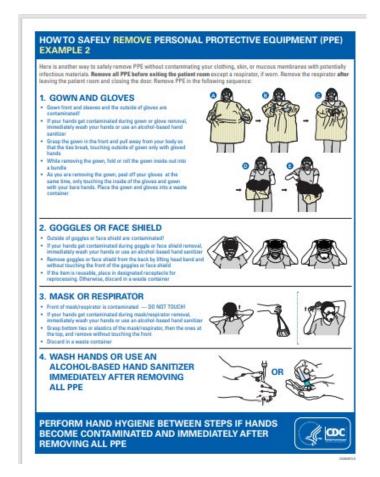




PPE Education Resources







(https://www.cdc.gov/infection-control/media/pdfs/Toolkits-PPE-Sequence-P.pdf)



Considerations for Safe Removal of PPE

- After use, areas of PPE are considered "Dirty" or "Clean(er)"
- Dirty or contaminated PPE areas
 - The outside and front of PPE
 - Likely to have been in contact with a patient, body fluids, medical materials, equipment, or surfaces with infectious organisms
- Clean(er) PPE areas
 - The inside and outside back of PPE
 - Less likely to have been in contact with infectious organisms





PPE Removal

- Remove and discard PPE, other than respirators, upon completing a task <u>before</u> leaving the patient/resident's room or care area
 - If a respirator is used, it should be removed and discarded (or reprocessed if reusable) after leaving the room or care area and closing the door
- <u>Do not</u> use the same gown or pair of gloves for care of more than one patient/resident
- Remove and discard disposable gloves upon completion of a task or when soiled during the process of care
 - Do not wash gloves for the purpose of reuse



COVER YOUR COUGH

Standard Precautions Element 5 Minimize Potential Exposure

- Use respiratory hygiene and cough etiquette
- Prompt patients/residents and visitors with symptoms of respiratory infection to contain their secretions and perform hand hygiene after contact with respiratory secretions
 - Provide tissues, masks, hand hygiene supplies and instructional signage or hand outs at point of entry and throughout the facility
- If possible, place patients/residents with respiratory symptoms into droplet precautions as soon as possible

Cover Your Cough Poster: (https://www.cdc.gov/flu/pdf/protect/cdc_cough.pdf)

(https://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm)



Standard Precautions Element 6 Reprocessing of Reusable Medical Devices

- Clean and reprocess (disinfect or sterilize) reusable medical equipment prior to use on another patient or resident
 - Blood glucose meters and other point-of-care devices
 - Blood pressure cuffs
 - Oximeter probes
 - Surgical instruments
 - Endoscopes
- Maintain separation between clean and soiled equipment to prevent cross contamination

(More details in another session)



Summary: Standard Precautions: Part of the Core Practices Apply to All Care Settings at All Times

Core Infection Prevention Practices

For Use in <u>All</u> Health Care Settings At All Times

- ☐ Visible, tangible **leadership** support for infection control
- ☐ Infection prevention **training** for all HCP
- ☐ Patient, family, caregiver HAI prevention **education**
- ☐ Performance monitoring and feedback
- ☐ Early, prompt removal of invasive devices
- Occupational health

- ☐ Standard precautions
 - ☐ Hand hygiene
 - ☐ Environmental cleaning and disinfection
 - ☐ Injection safety, medication safety
 - ☐ Assess risk, use PPE appropriately
 - ☐ Minimize potential exposures
 - ☐ Clean and reprocess reusable medical equipment
- ☐ Transmission-based precautions as necessary

(https://www.cdc.gov/infection-control/hcp/corepractices/index.html)

Transmission-Based Precautions



Objectives

- Describe Transmission-based (isolation) precautions
- Review correct donning and doffing of personal protective equipment (PPE)
- Understand Enhanced Barrier precautions used in California skilled nursing facilities
- Review adherence monitoring to assess Transmission-based precautions practices in healthcare facilities



What are Transmission-based Precautions?

- Isolation based on modes of disease transmission
- Updated regularly by CDC
- Describes care precautions for infected/colonized patients/residents
- Using proper Transmission-based precautions prevents the spread of infection and transmission of organisms

(https://www.cdc.gov/infection-control/hcp/isolation-precautions/precautions.html#:~:text=Transmission-Based%20Precautions%20are%20for,measures%20to%20effectively%20prevent%20transmission.)



Types of Transmission-based Precautions

To prevent spread of infectious diseases and pathogens, use

1. Contact precautions

- When mode of transmission is direct contact with a patient or contaminated environment
- Examples when needed: *C. difficile*, high-concern multi-drug resistant organisms (MDRO)

2. Droplet precautions

- When mode of transmission is respiratory droplets
- Examples when needed: Influenza, pertussis

3. Airborne precautions

- When mode of transmission is small aerosolized particles
- Examples when needed: measles, tuberculosis (TB)

Infection/Condition	Type of Precaution	Duration of Precaution	Precautions/Comments					
Gastroenteritis C. difficile	Contact + Standard	Duration of illness	Discontinue antibiotics if appropriate. Do not share electronic thermometers; [853, 854] ensure consistent environmental cleaning and disinfection. Hypochlorite solutions may be required for cleaning if transmission continues [847]. Handwashing with soap and water preferred because of the absence of sporicidal activity of alcohol in waterless antiseptic handrubs [983].					

(https://www.cdc.gov/infection-control/hcp/isolation-precautions/appendix-a-type-duration.html)



Centers for Medicare and Medicaid Services (CMS) Requires Transmission-based Precautions

- All hospitals and skilled nursing facilities must be capable of implementing Transmissionbased precautions when needed to safely care for patients/residents.
 - Hospitals Part 42 Subpart C Basic Hospital Functions Section § 482.42
 - **SNF** Part 43 Subpart B Long Term Care Facilities Section § 483.65
- "Prevent and control outbreaks and cross-contamination using transmission-based precautions in addition to standard precautions"

(https://www.cms.gov/regulations-and-guidance/guidance/transmittals/downloads/r54soma.pdf)



How to Implement Transmission-Based Precautions

- Implement Transmission-based precautions
 - Based on the patient/resident's clinical presentation and <u>likely</u> infection diagnoses
 - Examples: Syndromes such as diarrhea, meningitis, fever and rash, respiratory infection
 - As soon as possible upon entry to the healthcare facility
 - Includes: Reception or triage areas in emergency departments, ambulatory clinics or physicians' offices
- Transmission-based precautions are ALWAYS used IN ADDITION to Standard Precautions



How to Implement Transmission-Based Precautions - 2

- Place patients/residents who may need transmission-based precautions into a single-patient room while awaiting clinical assessment if available
- Adjust or discontinue precautions when more clinical information becomes available (laboratory results, imaging)
- Notify accepting facilities and the transporting agency about suspected infections and the need for transmission-based precautions when patients are transferred



Transmission-Based Airborne Precautions in California

- CAL OSHA requires facilities follow an airborne transmissible diseases (ATD) standard for diseases that require Airborne precautions
 - Includes placement of patients into airborne isolation infection rooms (AIIR)
 - Includes use of N95 or higher-level respirator
- For facilities without AIIR, patients must be transferred to an appropriate facility within 5 hours

(https://www.dir.ca.gov/dosh/dosh_publications/ATD-Guide.pdf) §5199. Aerosol Transmissible Diseases (www.dir.ca.gov/title8/5199.html)



Transmission-based Precautions Training

- Healthcare facilities are expected to <u>train</u> staff on
 - Disease transmission
 - Correct Transmission-based Precautions
- Staff must be trained upon hire and at least annually
 - May repeat if adherence monitoring rates are low
- Training must include assessment of <u>competency</u>
 - With return demonstration



Adherence Monitoring for Transmission-based Precautions

COMPU	Healthcare-Associated Infections Program Adherence Monitoring Contact Precautions Assess Date: Unit:								ment completed by:				
	or monitoring with feedback of results to staff ca tunities for improvement. Monitoring may be pe										gaps and		
	ctions: Observe 3-4 patients/residents on contact the total number of "Yes" for adherent practices w.												
	Contact Precautions Practices		Contact Precautions Patient/Resident 1		Contact Precautions Patient/Resident 2		Contact Precautions Patient/Resident 3		Contact Precautions Patient/Resident 4		#Yes #Observed		
CP1.	Gloves and gowns are available and located near point of use.	Yes	No	Yes	□No	Yes	No	Yes	□No	# 103	# Objetives		
CP2.	Signs indicating the patient/resident is on contact precautions are clear and visible.	Yes	□No	Yes	□No	Yes	□No	Yes	No				
CP3.	The patient/resident on contact precautions is housed in single-room or cohorted based on a clinical risk assessment.	Yes	No	Yes	□No	Yes	No	□Yes	□No				
CP4.	Hand hygiene is performed before entering the patient/resident care environment.	Yes	□No	Yes	□No	Yes	No	Yes	No				
CP5.	Gloves and gowns are donned before entering the patient/resident care environment.	Yes	□No	Yes	□No	Yes	No	Yes	No				
CP6.	Gloves and gowns are removed and discarded, and hand hygiene is performed before leaving the patient/resident care environment. Soap & water is used if it is hospital policy or if the patient/resident has C.difficile infection.	Yes	□No	Yes	□No	Yes	□No	Yes	□No				
CP7.	Dedicated or disposable noncritical patient-care equipment (e.g. blood pressure cuffs) is used; if dedicated/disposable equipment is unavailable, then equipment is cleaned and disinfected prior to use on another patient/resident according to manufacturers' instructions.	□Yes	□No	Yes	□No	□Yes	□No	□Yes	□No				

Version 2016.10.1

(https://www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/AdherenceMonitorin gContactPrecautionsApproved101516.pdf)

Enhanced Barrier Precautions (EBP) for Skilled Nursing Facilities

- Mandated by CMS in April 2024
 - QSO 24-08-NH
- EBP are indicated for residents with any of the following:
 - Infection or colonization with a CDC-targeted MDRO when Contact Precautions do not otherwise apply; or
 - Wounds and/or indwelling medical devices even if the resident is not known to be infected or colonized with a MDRO
- Alternative to keeping a resident in contact precautions for entire admission
- Hospitals may place residents transferring in contact precautions for MDROs

(https://www.cms.gov/files/document/qso-24-08-nh.pdf)



Summary

- Correct use of Standard and Transmission-based precautions prevents disease transmission
- May need a combination of transmission-based precaution types for prevention purposes
- Adherence monitoring for Transmission-based precautions and environmental cleaning provides feedback to staff to improve performance prevent the spread of infection
 - Measures competency of hand hygiene and PPE usage
 - Measures EVS cleaning efficacy
- Enhanced Barrier precautions in SNF is another type of precautions, that allow for individualizing necessary precautions



Questions?



For more information, please contact

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