

Basics of Infection Prevention  
2-Day Mini Course  
*November 2017*

# Standard Precautions and Hand Hygiene in Healthcare

---

# Objectives

- Describe impact of Standard Precautions and hand hygiene on infection prevention
- Review standard, enhanced and transmission-based isolation precautions
- Describe proper hand hygiene techniques
- Cite indications for appropriate use
- Select appropriate agents
- Monitor healthcare personnel adherence
- Relationships and improving hand hygiene practices

# Standard Precautions



## Basic principles

- Designed to reduce risk of transmission from both recognized and unrecognized sources of infection
- Considers all body fluids infectious (except sweat)
- Used for care of all patients

# Standard Precautions

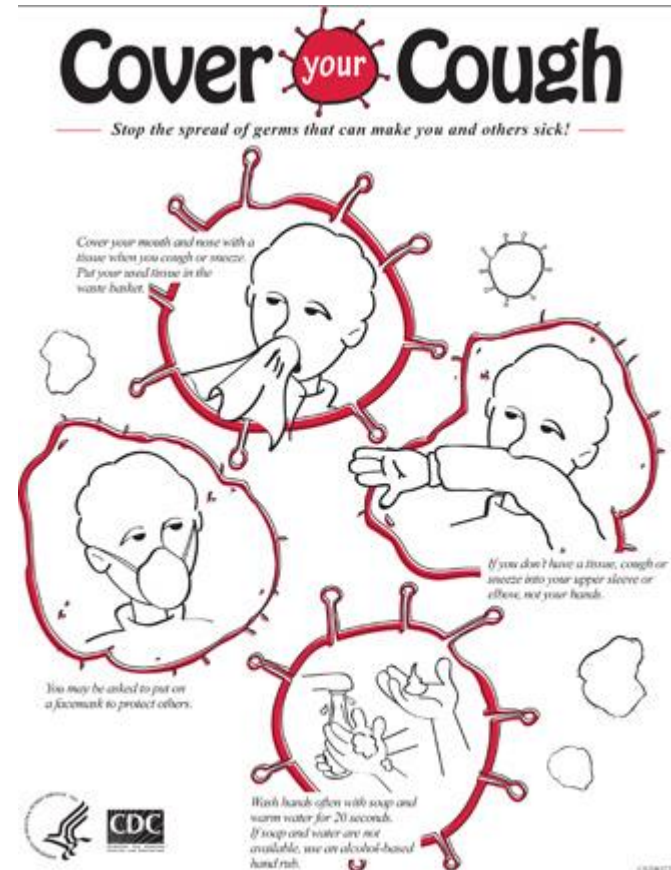
Include

- Hand hygiene
- Barrier protective equipment
  - Gloves for anticipated contact with blood, body fluids (except sweat)
  - Mask and eye protection if splash, splatter, or sprays reasonably anticipated
  - Gloves and gown for open, draining wounds, fecal incontinence
  - Mask for new onset or increasing respiratory secretions



# Standard Precautions - continued

- Proper...
  - use and handling of patient care equipment
  - environmental cleaning and disinfection
  - handling of linen
  - patient placement to minimize disease transmission
- Respiratory Hygiene/Cough Etiquette
- Safe injection practices




# Prevent Infection. Prevent Transmission.

- **Prevent Infection:** Avoid introduction of pathogens into sterile body sites, such as during placement of a medical device or during surgery
  - Avoid introducing patient's own flora into a sterile site
  - Avoid introducing any pathogens acquired in the hospital
- **Prevent Transmission:** Avoid the transfer of pathogens from person-to-person
  - Avoid HCP-to-patient transmission, such as via contaminated hands of HCP
  - Avoid patient-to-HCP transmission of infectious diseases, such as by using appropriate isolation precautions


# LTCF Enhanced Standard Precautions

Enhanced standard precautions guidance specific to Long-term care facilities in California: AFL 10-27



MARK B HORTON, MD, MSPH  
Director

State of California—Health and Human Services Agency  
California Department of Public Health



ARNOLD SCHWARZENEGGER  
Governor

September 7, 2010

AFL 10-27

**TO:** Long-Term Care Facilities and General Acute Care Hospitals

**SUBJECT:** Enhanced Standard Precautions (ESP) for Long-Term Care Facilities

The purpose of this All Facility Letter is to distribute the accompanying "Enhanced Standard Precautions for California Long-Term Care Facilities, 2010." This guideline is provided jointly by the California Department of Public Health and the California Association of Health Facilities.

This guideline is intended to be advisory only and has been developed to assist long-term care facility infection control programs in the development of a rational approach to reducing the potential for transmission of pathogens among California long-term care facility residents. It replaces the 1996 "Guideline Prevention and Control of Antibiotic Resistant Microorganisms California Long-Term Care Facilities." It is also intended to facilitate the transfer of patients who have been placed on contact precautions in acute care hospitals to long-term care facilities (see also AFL 10-21 Placement of Patients with Positive *Clostridium difficile* Tests in Skilled Nursing Facilities). While much of the focus on infection control in long-term care facilities is on multi-drug resistant organisms, implementation of these recommendations will also limit the transmission of other pathogens, including viruses.

# Expanded Isolation Precautions

- Used in addition to Standard Precautions when SP may be insufficient to prevent transmission
- Include
  - **Contact precautions**
  - **Droplet precautions**
  - **Airborne precautions**



# Contact Precautions

- Intended to prevent transmission of infectious agents via direct or indirect contact
- Used for “epidemiologically important” microorganisms
- Places a barrier between the HCW and infectious agent
- Gown and gloves should be donned prior to entry into room, discarded prior to exit
- Single room preferred; alternatives are spatial separation or cohorting (after consultation with IP)

# Droplet Precautions

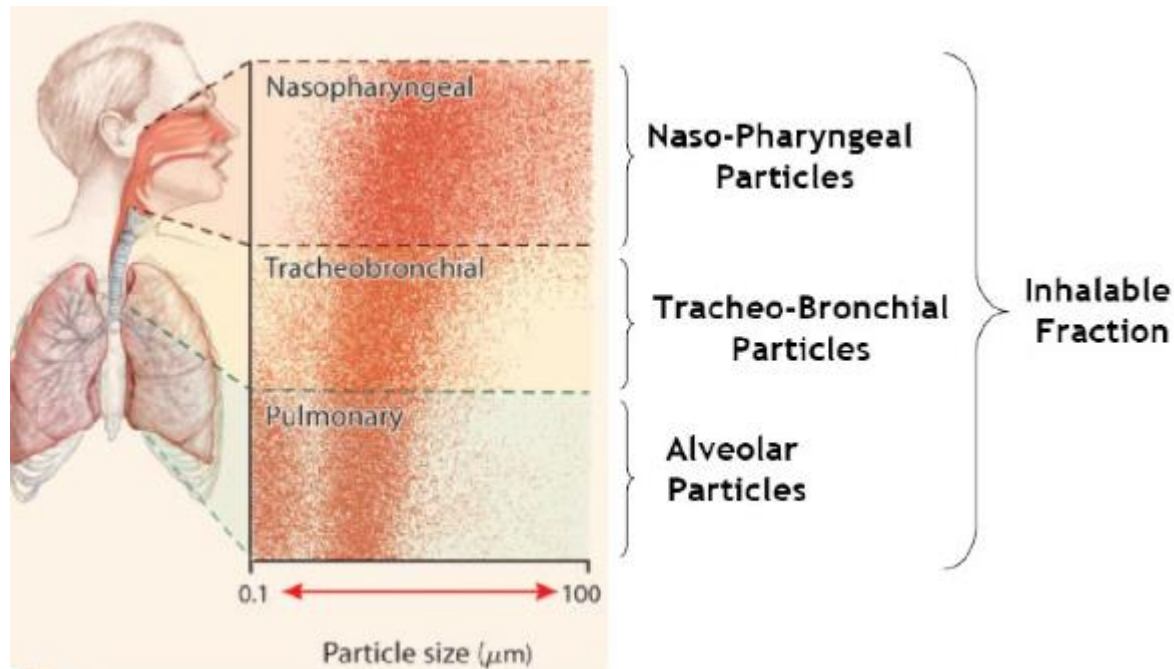
- Intended to prevent transmission of pathogens via respiratory or mucous membrane contact with respiratory secretions
- No special air handling or ventilation required
- Surgical or procedure mask should be donned prior to entry into room, discarded prior to exit
- Single room preferred; alternatives are spatial separation or cohorting (after consultation with IP)
- Patient should be transported in a mask

used in addition to Standard Precautions

# Airborne Precautions

- Intended to prevent transmission by inhalation of infectious agents that can remain suspended in the air
- Requirements include
  - Increased ventilation rate
  - Air exhausted directly to the outside or through HEPA filtration
  - Facility respiratory protection program (education, fit-testing, user seal checks in place)
- Respirator should be donned prior to entry into room, discarded after exit
- Single room preferred; alternative is cohorting
- Patient should be transported in a mask

# Particulates deposited in respiratory tract according to size



## Relationship of pressure on droplet size and dispersion

Low pressure produces large droplets



Increasing pressure produces more of a range of droplet sizes that travel further from the source

Higher pressure produces sprays of varying sizes including very small particles that can travel even further from the initial source



# Impact of Hand Hygiene on HAIs

- 722,000 patients acquire HAI every year<sup>1</sup>
  - 75,000 die as a direct result
- Most common mode of transmission is via hands of HCP<sup>2</sup>
- Studies show that some healthcare personnel (HCP) perform hand hygiene less than half the times they should<sup>2</sup>

<http://www.cdc.gov/hai/surveillance/index.html>

<http://www.cdc.gov/features/handhygiene/>

# Colleagues in Action

- <https://www.youtube.com/watch?v=zTWZtElvMAU>

# Reasons for Poor Adherence

- Both individual and system factors contribute to poor adherence with hand hygiene
  - Lack of knowledge/value of handwashing
  - Increased demands with less time
  - Irritated and/or dry hands
  - Shortage of soap, paper towels, and/or sinks
  - Forgetfulness / “patient needs come first”
  - Belief that wearing gloves avoided need for handwashing
  - *No consequences for not performing hand hygiene*





# Federal and State Requirements

- TJC National Patient Safety Goal 7.01.01:
  - requires participating facilities to comply with one of the following:
    - CDC Hand Hygiene Guideline (CDC) <sup>1</sup>
    - WHO's Clean Care is Safer Care Campaign<sup>2</sup>
- CMS PP/§483.65(b)/Infection Control/Tag F441:  
Facility must require staff to wash hands after each direct patient/resident contact (for which hand washing is indicated by accepted professional practice)<sup>3</sup>
- California Code, Health and Safety Code - HSC § 1279.7:
  - (a) A health facility, as defined in subdivision (a), (b), (c), or (f) of Section 1250, shall implement a facility-wide hand hygiene program.

# California Code, Health and Safety Code - HSC § 1279.7

- (a) A health facility, as defined in subdivision (a), (b), (c), or (f) of Section 1250, **shall implement a facility wide hand hygiene program.**

## Centers for Medicare & Medicaid Services

### Hospital Infection Control Worksheet

## Section 2.A. Hand Hygiene

Elements to be assessed		Surveyor Notes
Hand hygiene is performed in a manner consistent with hospital infection control practices, policies, and procedures to maximize the prevention of infection and communicable disease including the following:		
Note: Observations for compliance with hand hygiene elements should be assessed throughout the hospital.		

## Section 2.C. Personal Protective Equipment/Standard Precautions

Elements to be assessed		Surveyor Notes		Surveyor Notes
Personal protective equipment is utilized in a manner consistent with hospital infection control policies and procedures to maximize the prevention of infection and communicable disease including the following:				
Note: If possible, observe health care personnel use of personal protective equipment in two different patient care areas or settings in hospital.		<input type="radio"/> Second observation not available (If selected, questions 2.C.1 – 2.C.7 RIGHT column will be blocked)		
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.	<input type="radio"/> Yes  <input type="radio"/> No		<input type="radio"/> Yes  <input type="radio"/> No	

# Definition of Terms

- **Hand hygiene:**
  - Performing hand washing, antiseptic hand wash, alcohol-based hand rub, or surgical hand antisepsis
- **Handwashing:**
  - Washing hands with water and plain soap
- **Antiseptic hand wash:**
  - Washing hands with water and soap containing an antiseptic agent (i.e. alcohols, chlorhexidine, iodine, triclosan)
- **Alcohol-based hand rub:**
  - Rubbing hands with alcohol-containing solution (60-95%)
-

# Surgical Hand Antisepsis

- Perform one of the following preoperatively:
  - Antiseptic hand wash
  - Antiseptic hand rub:
    - Rub hands and forearms with solution containing antiseptic agent (antimicrobial soap)
    - Must pre-wash hands and forearms with water and plain soap\
    - No hand/arm jewelry or artificial nails

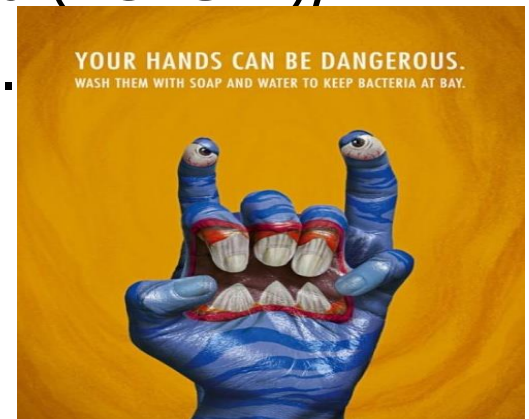


# Hand Hygiene Techniques

- **Alcohol-based rub:**
  - Apply product (per manufacturer's recommendation)
  - Rub all surfaces together until dry (15-20 seconds)
- **Soap and water:**
  - Wet hands with water
  - Apply product (per manufacturer's recommendation)
  - Rub all surfaces together vigorously (at least 15 seconds)
  - Rinse hands until no product remains
  - Dry hands with disposable towel (use to turn off faucet)
- <https://www.youtube.com/watch?v=LvRP3c5n3P8>

# Indications for Appropriate Hand Hygiene (I)

- Using soap and water:
  - Hands visibly soiled or contaminated
  - Before eating
  - After using the bathroom
  - Exposed to spore-forming bacteria (i.e. CDI), certain non-enveloped viruses (i.e. protozoan oocysts, and prions.



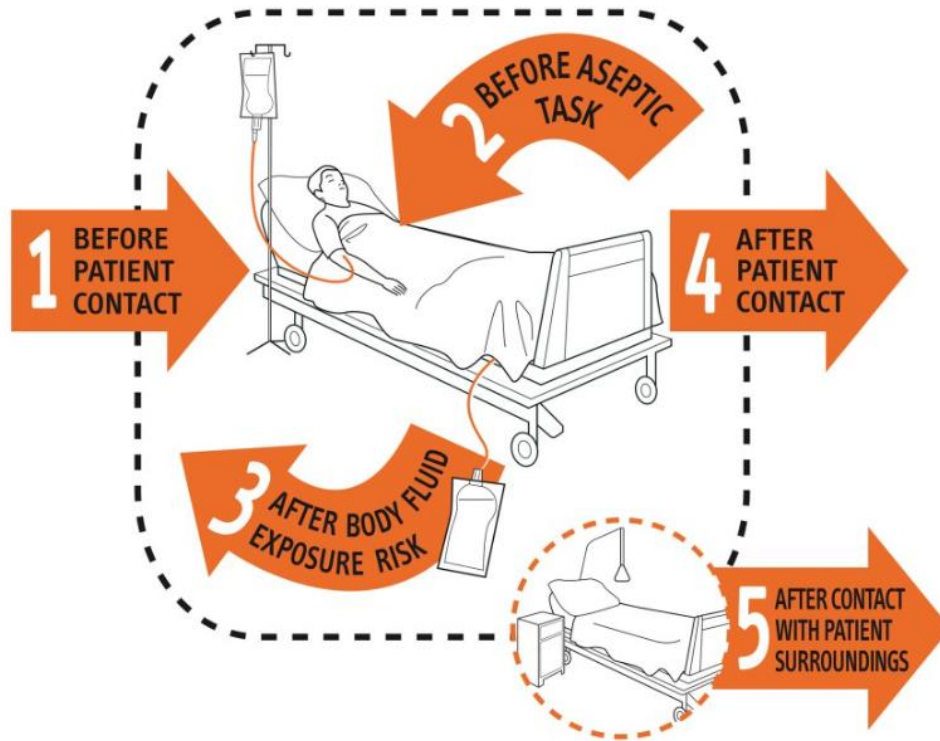
# Indications for Appropriate Hand Hygiene (II)

- Using alcohol-based hand rub:
  - Before and after patient care
  - Before donning sterile gloves
  - Before inserting invasive devices
  - After contact with patient's skin (intact and non-intact), body fluids, and wound dressings
  - After removing gloves
  - After contact with close objects/equipment
  - Moving from contaminated to clean site on same patient

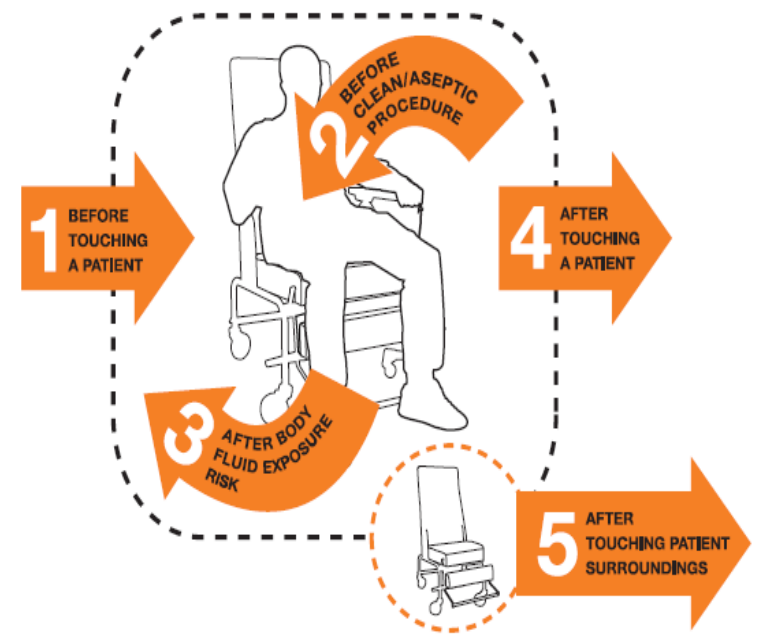


# 5 Moments for Hand Hygiene

## 5 moments for HAND HYGIENE



## Your 5 Moments for Hand Hygiene



# Selecting Appropriate Agents

- Required to provide both alcohol-based hand rub and plain lotion soap or antimicrobial soap
- Involve the users!
- Cost should not be primary factor
- Look for products with good efficacy and low irritancy
- Think of how to replace in dispensers
- *Unknown effect of non-alcohol based hand rubs*

# Skin and Nail Care

- Provide HCP with hand lotions or creams to minimize dryness/irritation
- Select products that do not decrease efficacy of alcohol-based hand rub or antimicrobial soaps
- No:
  - personal lotions/creams
  - artificial nails
- *Unknown effect of wearing rings in healthcare settings*

# Dispenser Location

- Must strategize placement for convenience and to improve compliance
- Use National Fire Protection Association Life Safety Code for safe placement of dispensers
  - Check with local authorities for restrictions
-

# Monitoring for Adherence

- TJC requires monitoring and feedback of HCP adherence
- Examples:
  - Direct observations by ward or service
    - “Secret shopper” method best
  - Monitor amount of product used per 1,000 patient days
  - Video-monitoring or sensing devices

# Data to Promote Conversations

- Hand Hygiene Compliance
  - Multidisciplinary
- Sinks
  - Blocked, water interruption / total sinks
- Product Availability: Soap, Gel, Paper Towel
  - Dispensers w/o product / total dispensers
  - Missing/broken dispensers / total dispensers

# Relationships

- C-Suite
  - CFO or COO: Supply Chain
  - CMO & CNO: Clinician Engagement
- Ancillary Leadership
  - EVS
  - Facilities

Did you hear the joke  
about the germ?  
Never mind.  
I don't want to spread  
it around.



# Effective Interventions

- Multimodal, multidisciplinary strategies more likely to create
- lasting change than single interventions
  - Motivation is key
- Examples:
  - Get administrative and departmental support
  - Role modeling of excellent hand hygiene practices
  - Incentive programs
  - “Bundles”
-



# Staff Education

- Required by TJC
- One-time education less effective than regular reminders
- CDC Hand Hygiene Training Course:
  - <https://www.cdc.gov/handhygiene/providers/training/index.html>

# Patient Involvement

- Encourage patients (and visitors) to:
  - Clean their hands
    - “I saw you clean your hands when you arrived some time ago, but would you mind cleaning them again?”
  - Remind staff to clean their hands
    - “I’m worried about germs spreading in the hospital. Will you please clean your hands once more before you start my treatment?”
  - Provide positive reinforcement for compliance



# World Health Organization

**May 5th is WORLD Hand Hygiene Day**



**Who should Wash?**

**Doctors**

**Nurses**

**Care providers**

**Friends**

**Family**

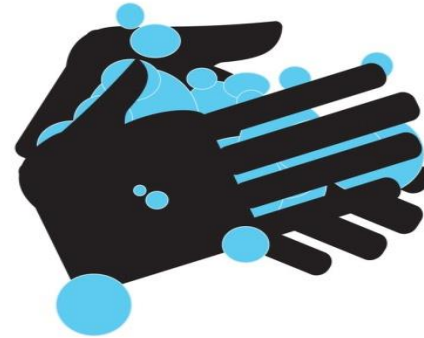
**Visitors**

**Patients**

**Everyone!**

**Hand Hygiene is important to us, to protect the health and safety of everyone!**

**WASHING YOUR HANDS**



**IS AWESOME**



An underwater photograph showing a large school of dark fish swimming in the upper right, and smaller, colorful fish swimming near a coral reef in the lower left. The water is clear and blue.

**In order to carry a positive  
action we must develop here  
a positive vision.**

Dalai Lama

# Resources

- APIC Text Online:
  - <http://text.apic.org/>  
Hand Hygiene Chapter 27  
Standard Precautions Chapter 28
- California Legislative Information:  
[http://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=1279.7.&lawCode=HSC](http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=1279.7.&lawCode=HSC)
- CDC Hand Hygiene in Healthcare Settings:
  - <https://www.cdc.gov/handhygiene/index.html>
- CDC Clean Hands Save Lives Campaign:
  - <http://www.cdc.gov/handwashing/index.html>
  - CMS Hospital Infection Control Worksheet
    - <https://www.cms.gov/medicare/provider-enrollment-and-certification/surveycertificationgeninfo/downloads/survey-and-cert-letter-15-12-attachment-1.pdf>
- WHO Save Lives: Clean Your Hands campaign:
  - <http://www.who.int/gpsc/5may/en/>
- YouTube for educational videos

# Resources

## 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

---

Jane D. Siegel, MD; Emily Rhinehart, RN MPH CIC; Marguerite Jackson, PhD;  
Linda Chiarello, RN MS; the Healthcare Infection Control Practices Advisory  
Committee

Acknowledgement: The authors and HICPAC gratefully acknowledge Dr. Larry Strausbaugh for his many contributions and valued guidance in the preparation of this guideline.

*Suggested citation: 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*  
<http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf>

# Time To Share



Thank you for  
your attention  
any  
questions or  
comments?



*Your Colleague,  
Latricia Harrison*

