Transmission-Based Precautions

Infection Preventionist Training for Skilled Nursing Facilities
Healthcare-Associated Infections Program
Center for Health Care Quality
California Department of Public Health

California Department of PublicHealth

Objectives

- Describe Transmission-based (isolation) precautions
- Discuss Enhanced Standard precautions used in California skilled nursing facilities
- Review adherence monitoring results and tools for Transmission-based precautions care practices

What are Transmission-based Precautions?

- Isolation based on modes of disease transmission
- Updated regularly by CDC (last updated 7-2019)
  - 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (PDF) (www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf)
- Describes care precautions for infected/colonized patients/residents
- Using proper Transmission-based precautions prevents the spread of infection and transmission of organisms

Infection/Condition	Type of Precaution	Duration of Precaution	Precautions/Comments
Chlamydia pneumoniae	Standard		Outbreaks in institutionalized populations reported, rarely [1051, 1052].
Cholera (see Gastroenteritis)			
Closed-cavity infection Open drain in place; limited or minor drainage	Standard		Contact Precautions if there is copious uncontained drainage.
Closed-cavity infection No drain or closed drainage system in place	Standard		
Clostridium botulinum	Standard		Not transmitted from person to person.
Clostridium difficile (see Gastroenteritis, *C. difficile*)	Contact + Standard	Duration of illness	
Clostridium perfringens	Standard		Not transmitted from person to person.

Appendix A: 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (PDF) (www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf)

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

- All hospitals **and skilled nursing facilities** must be capable of implementing Transmission-based 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

Transmission-based Precautions Training

- Healthcare facilities are expected to **train** staff on
  - Disease transmission
  - Correct use of Transmission-based Precautions
- Train staff upon hire and at least annually
- Training should include assessment of **competency**
  - With return demonstration

Types of Transmission-based Precautions

1. **Contact** precautions
   - Mode of transmission is direct contact with resident or contaminated environment
   - Examples when needed: *C. difficile*, scabies
2. **Droplet** precautions
   - Mode of transmission is respiratory droplets
   - Examples when needed: Influenza, pertussis
3. **Airborne** precautions
   - Mode of transmission is small aerosolized particles
   - Examples when needed: Tuberculosis, measles

How to Implement Transmission-Based Precautions

- Implement Transmission-based precautions
  - Based on the patient's clinical presentation and **likely** 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 who may need transmission-based precautions into a single-patient room while awaiting clinical assessment (as possible)
- Adjust or discontinue precautions when more clinical information becomes available (such as laboratory results)
- Notify accepting facilities and the transporting agency about suspected infections and the need for transmission-based precautions when patients are transferred

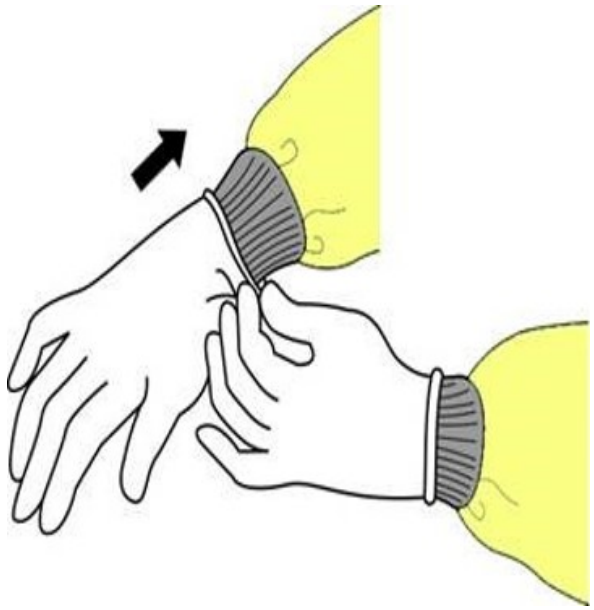
How to Implement Contact Precautions

- Ensure appropriate signage at the entrance to the room
- Perform hand hygiene before donning PPE
- Don gown and gloves prior to entry into room and discard prior to exit
  - Perform hand hygiene prior to donning gloves and after removing gloves
- Single room preferred
  - Alternatives include spatial separation or cohorting

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 Gloves



- Don gloves last
- Select correct type and size
- Insert hands into gloves
- Extend gloves over isolation gown cuffs
- Provide different size gloves for staff
  - Using too small-sized gloves will lead to glove ripping, or too big-sized gloves slipping off, and may end up exposing the staff to blood and/or body fluids

Droplet Precautions

- Intended to prevent transmission of pathogens via respiratory or mucous membrane contact with respiratory secretions
  - Examples when needed: Influenza, pertussis, mumps, Meningococcal disease
- No special air handling or ventilation required
- Used in addition to Standard precautions

How to Implement Droplet Precautions

- Ensure appropriate signage at the entrance to the room
- Perform hand hygiene before donning PPE
- Don surgical or procedure mask prior to entry into room and discard prior to exit
- Single room preferred
- Transport patients in a surgical mask
- Note: some diseases may require both Contact and Droplet Precautions
  - Examples of when needed: Pneumonia adenovirus, group A *Streptococcus*

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 (ear loops)
- Adjust to fit
  - Don’t touch the outside of the mask. If adjusting to keep it out of your eyes, pull down from the chin, and keep your fingers away from your eyes
- If wearing a respirator (N95), ***do not*** put a mask under the N95.

Airborne Precautions

- Intended to prevent transmission by inhalation of infectious agents that can remain suspended in the air
- Examples:
  - Herpes zoster, varicella zoster, tuberculosis
- Requirements include
  - Door to room must remain closed
  - Increased ventilation rate
  - Air exhausted directly to the outside or through HEPA filtration
  - Facility respiratory protection program: education, fit-testing
- Use in addition to Standard precautions

A note about Airborne Transmission-Based Precautions and TB and other ATD

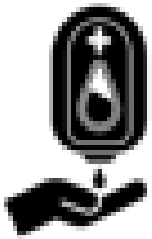
- Airborne transmission-based precautions for TB and other airborne transmissible diseases (ATD) require an airborne isolation infection room (AIIR) with negative air flow
- Very few SNF have this type of room – If TB or other ATD is suspected, the resident must be transferred to an appropriate facility with an AIIR within 5 hours
- Note: For Covid-19 HCP are required to use an N-95 respirator to protect from **short ranged aerosols**. AIIR is not required for most residents

§5199. Aerosol Transmissible Diseases

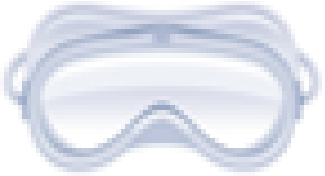
(www.dir.ca.gov/title8/5199.html)

Transmission-based Precautions for COVID-19

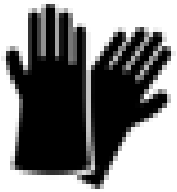
Respirator
Wear a NIOSH approved N95 respirator



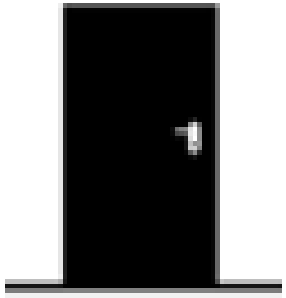
Clean hands
before entering and leaving the room



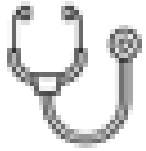
Eye Protection
Wear a face shield or goggles



Gown and Glove at door

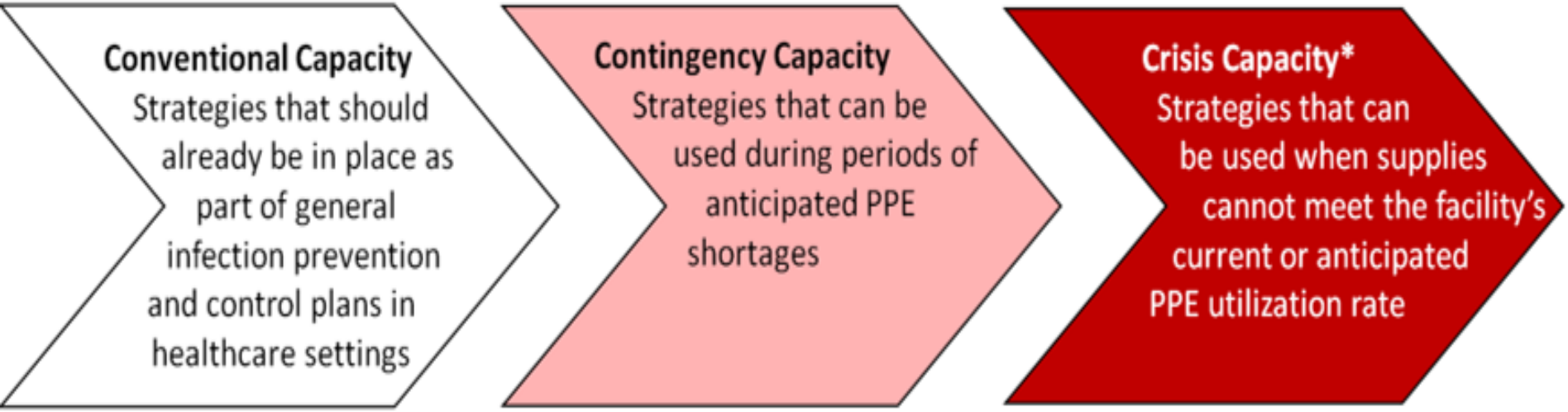


KEEP DOOR CLOSED



Use resident dedicated or disposable equipment.
Clean and disinfect shared equipment.

Summary for Healthcare Facilities: Strategies for Optimizing the Supply of PPE during Shortages



- SNF should know how to optimize their PPE
- The CDC Summary for Healthcare Facilities: Strategies for Optimizing the Supply of PPE during Shortages has more information

(www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/strategies-optimize-ppe-shortages.html)

If your facility is moving to contingency or crisis capacity, notify your local health department and L&C district office

California Department of PublicHealth

Cal/OSHA ATD Standard

- Healthcare facilities, including SNF are required to have a respiratory protection plan (details are outlined in the ATD Standard)
- The plan must incorporate **training** to include :
  a. An accessible copy of the ATD standard
  b. List of ATDs and signs and symptoms
  c. Modes of transmission of ATD
  d. A list of tasks and activities that may expose HCP
  e. Methods to reduce exposure to ATD
     - Work practice controls, decontamination, PPE
  f. How to select, don, remove, handle and dispose of PPE
  g. Description of employers TB surveillance procedures

§5199. Aerosol Transmissible Diseases

(www.dir.ca.gov/title8/5199.html)

This slide highlights the training for the ATD Standard.
The IP must become familiar with the entire document

N95 and Other Respirators

N95 Respirator- accepted by Cal/OSHA for ATD (KN95 is not acceptable as a respirator)

Reusable elastomeric respirators can be considered as an alternative for augmenting the total supply of respirators available for use by HCP

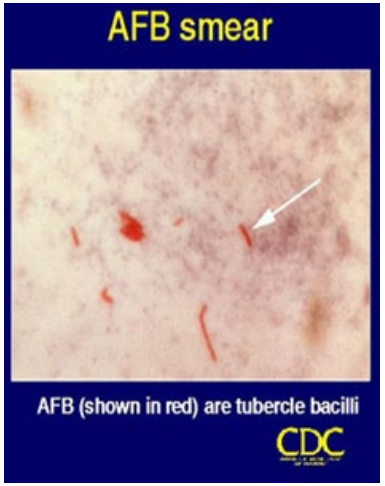
A PAPR is an air-purifying respirator that can be used to protect HCP who cannot be fit tested for N95 respirator, or for use during high hazard aerosol generating procedures such as intubation

CDC, N95 and Other Respirators

(www.cdc.gov/coronavirus/2019-ncov/hcp/n95-other-respirators.html)

Pulmonary Tuberculosis (TB)

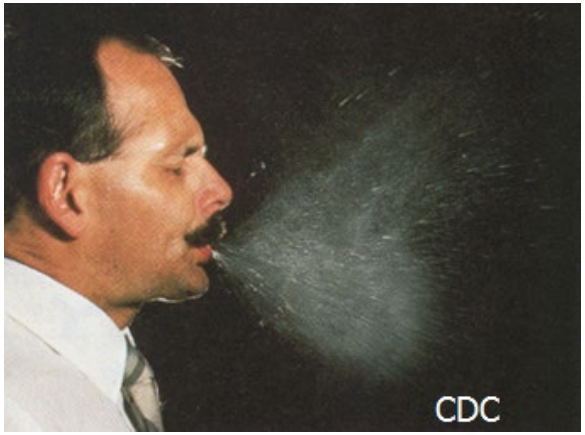
- Serious chronic illness caused by bacteria *Mycobacterium tuberculosis;* can be fatal if untreated
  - **A**cid **F**ast **B**acilli can be seen on a stained slide
- Transmitted by airborne route
  - Exposure occurs without patient contact
  - Small particle droplets can stay afloat for hours and travel on air currents
- Likelihood of transmission affected by
  - Infectiousness of patient
  - Environmental conditions
  - Duration of exposure



Transmission of TB

Increased risk of transmission from infected patients:

- With forceful cough
- With laryngeal disease
- When Acid-fast bacilli (AFB) in seen sputum
- When chest x-ray shows cavitation
- When fails to cover nose/mouth when coughing
- Undergoing cough-inducing procedures
- In small closed spaces with poor ventilation



Who is at Risk For TB Infection and Disease

Who is at Risk For TB Infection and Disease

- Medically under-served, low income
- High-risk minority populations
- Persons who inject drugs
- Close contacts to suspect/ known cases
- Foreign-born from high prevalence areas
- Health care workers serving high risk patients

Highest Risk for Progression to Disease

- HIV infected, or otherwise immune compromised
- Recently infected with TB
- Certain chronic medical conditions
- IV drug abusers
- History of inadequately treated TB
- Stressors, such as recent immigration

How to Implement Airborne Precautions

- Perform hand hygiene before donning PPE
- Don respirator (N-95 or PAPR) prior to entry into room and remove after exit
- Place only in single room with required air handling capacity
- Transport patient in a surgical mask

How to Don a Respirator

- **Select a respirator, preferably the size an the staff was fit tested for**
- Place over nose, mouth, and chin
- Fit flexible nose piece over nose bridge
- Secure on head with elastic
- Adjust to fit
- Perform a seal check (next slide)

N95 Respirator Seal Check

- Perform N95 seal check every time donning N95 respirator
- This must be done even if fit testing was completed
- If not sealing well, adjust straps

Instructions for seal check

(www.cdc.gov/niosh/docs/2018-130/)

Seal Check Your Respirator

- Perform a “seal check” every time a respirator is put on to make sure it is protecting you!
- When doing a seal check, hands are placed around the edges of the respirator and kept there until these steps are completed:
  - Inhale (breath in), the respirator should collapse on the face
  - Exhale (breathing out), there should **not** be any air felt escaping from around the respirator edges, and no air felt blowing into the eyes
  - If air leaks, readjust the respirator and recheck the seal
  - If air continues to be felt after readjusting, throw away the respirator and get a new one. Seal check the new respirator before going into the room

CDC/NIOSH User Seal Check (PDF)

(www.cdc.gov/niosh/docs/2018-130/pdfs/2018-130.pdf)

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
- Wear either goggles or face shield. Face shield will keep mask or N95 respirator clean

Safely Remove (Doffing) PPE

- There are “Dirty” (contaminated) and “Clean” areas of PPE
- Dirty or Contaminated
  - PPE areas likely to have been in contact with body sites, materials, or surfaces with infectious organisms
  - Includes the outside and front of PPE
- Clean
  - PPE areas that are not likely to have been in contact with the infectious organism
  - Includes the inside and outside back of PPE

Clean and Dirty Areas of PPE

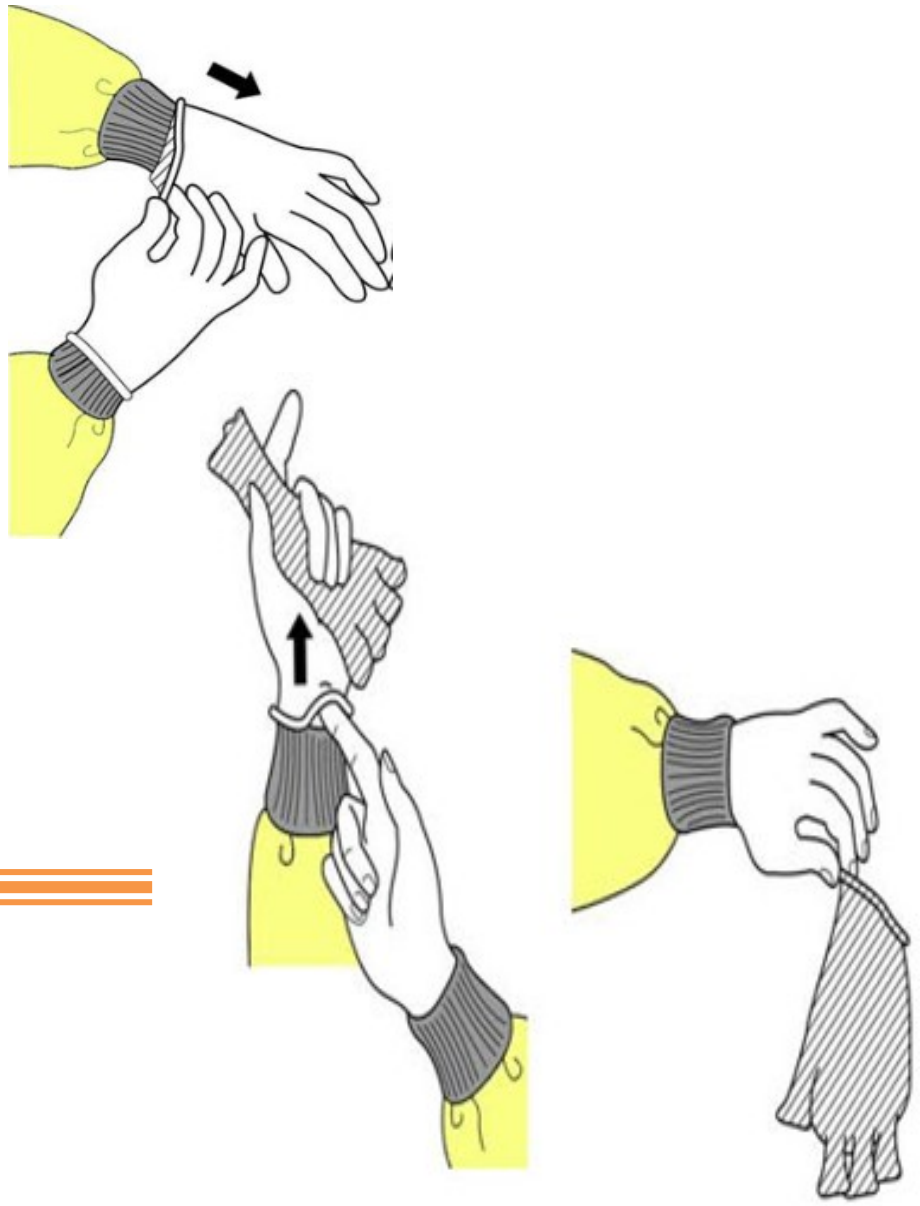
- The sleeve of the gown should not touch the face while untying neck ties
- Ask a 2nd person, if available, to help untie ties and watch for accidental self-contamination, helps keep the staff person safe during PPE removal

Sequence for Removing PPE

1. Remove gloves*
   - Perform hand hygiene
2. Remove gown*
   - Perform hand hygiene
3. Remove face shield/ goggles
   - Perform hand hygiene
4. Remove mask or respirator
   - Perform hand hygiene

* Gown and gloves may be removed together.

How to Remove Gloves



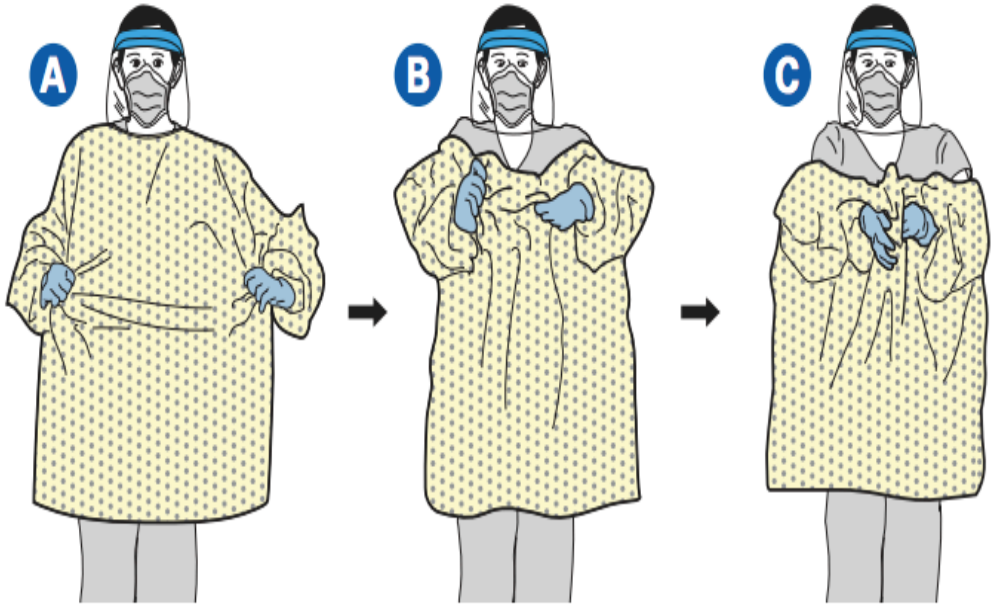
- Step 1: Grasp outside edge near wrist
- Step 2: Peel away from hand, turning glove inside-out while removing it
- Step 3: Hold in opposite gloved hand
- Step 4: Slide ungloved finger under the wrist of the remaining glove
- Step 5: Peel off from inside, creating a bag for both gloves
- Step 6: Discard and perform hand hygiene

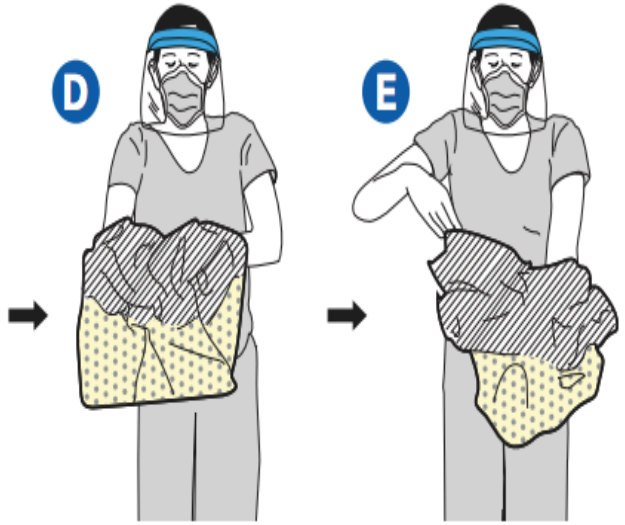
How to Remove Isolation Gown

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

How to Remove Gown and Gloves Together

- With gloved hands, grasp gown in front
- Pull gown away from body so ties break
- Fold or roll into a bundle; peel off gloves at same time
- Discard
- Perform hand hygiene





How to Remove Goggles or Face Shield

- Grasp ear or head pieces with ungloved hands
- Lift away from face
- Disinfect if reusing, starting with inside and then wiping the outside
- Place in designated receptacle for storing or disposal

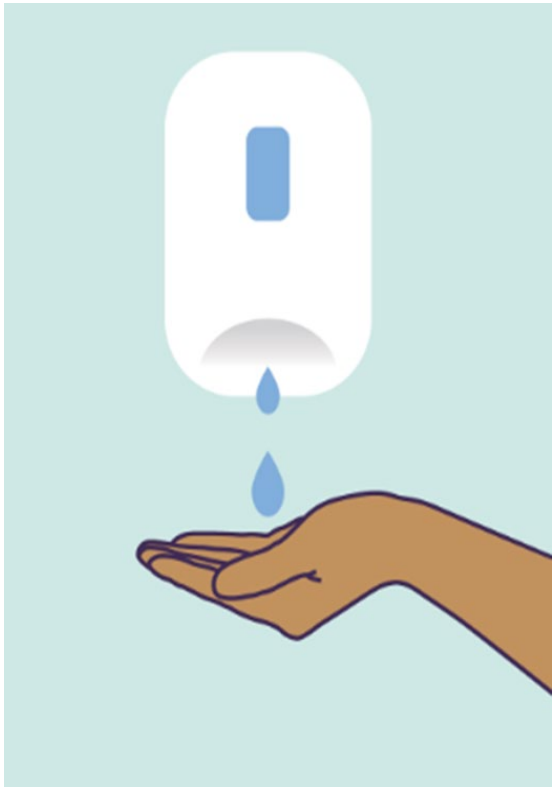
How to Remove a Respirator

- Remove **outside the room**
- Lift the bottom elastic over your head *first*
- Then lift off the top elastic
- Discard in trash
- Perform hand hygiene

Perform Hand Hygiene After Removing PPE

- Perform hand hygiene immediately after removing PPE and preferably after each step
- Use alcohol-based hand rub or wash with soap and water

  NOTE: If hands become visibly contaminated during PPE removal, wash hands with soap and water before continuing PPE removal



PPE Education Resources

Educational Materials Include:

- How to Safely Put On PPE Video
  (youtu.be/H4jQUBAlBrI)
- How To Safely Take Off PPE Video
  (youtu.be/PQxOc13DxvQ)
- How to Put On and Take Off PPE Fact Sheet (PDF)
  (www.cdc.gov/coronavirus/2019-ncov/downloads/A_FS_HCP_COVID19_PPE.pdf)
- How to Put On and Take Off PPE Poster (PDF)
  (www.cdc.gov/coronavirus/2019-ncov/downloads/A_FS_HCP_COVID19_PPE_11x17.pdf)
- PPE Illustrations (PDF)
  (www.cdc.gov/coronavirus/2019-ncov/downloads/COVID-19_PPE_illustrations-p.pdf)
- CDC- Using Personal Protective Equipment
  (www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html)

How to Safely Put on PPE

Demonstration of Donning (Putting On) Personal Protective Equipment (PPE)
(youtu.be/H4jQUBAlBrI)

How to Safely Take Off PPE

Demonstration of Doffing (Taking Off) Personal Protective Equipment (PPE)

(youtu.be/PQxOc13DxvQ)

Enhanced Standard Precautions for California Skilled Nursing Facilities

- Developed by CDPH and the California Association of Health Facilities (CAHF), in 2010, revised 2019
- Created to simplify precautions in SNF
  - Incorporates aspects of Contact, Droplet, and Airborne precautions
  - Use in addition to Standard precautions when Standard precautions may be insufficient to prevent transmission
  - Resident centered, rather than pathogen centered
- Enhance Standard Precautions will be discussed in a separate module

AFL 19-22 Enhanced Standard Precautions (PDF) (www.cdph.ca.gov/Programs/CHCQ/LCP/CDPH%20Document%20Library/AFL-19-22.pdf)

California Department of PublicHealth

Why Inter-facility Communication is Important

- **Provides information to receiving facility so proper room placement and Transmission-based precautions can be implemented**
- Provides important information about a resident's current clinical status
- Gives both the transferring and receiving facility a way to share the resident's history of infection and vaccination
- Relays information about devices such as urinary catheters and central lines

Interfacility Communication Transfer Tool – Example

INFECTION CONTROL TRANSFER FORM

This form should be sent with the patient/resident upon transfer. It is NOT meant to be used as criteria for admission, only to foster the continuum of care once admission has been accepted.

Affix any patient labels here.

Demographics

Patient/Resident *(Last Name, First Name)*: ,		
Date of Birth:	**MRN:**	**Transfer Date:**
Sending Facility Name:		
Contact Name:	**Contact Phone:**	
Receiving Facility Name:		

⚠ **Currently in Isolation Precautions?** ☐ **Yes**
If Yes, check: ☐ Contact ☐ Droplet ☐ Airborne ☐ Other:

☐ **No** isolation precautions

Organisms

Did or does have (send documentation, e.g. culture and antimicrobial susceptibility test results with applicable dates):	Current (or previous) infection or colonization, or ruling out *
MRSA	☐
VRE	☐
Acinetobacter resistant to carbapenem antibiotics	☐
E coli, Klebsiella or *Enterobacter* resistant to carbapenem antibiotics (CRE)	☐
E coli or *Klebsiella* resistant to expanded-spectrum cephalosporins (ESBL)	☐
C difficile	☐
Other^: ^e.g. lice, scabies, disseminated shingles, norovirus, influenza, TB, etc.	☐ **(current or ruling out*)**
***Additional information if known:**	

☐ **No** known MDRO or communicable diseases

[CDPH Interfacility Transfer Form](www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/Interfacility%20Transfer%20Form%20061417.pdf) (PDF)

Interfacility Communication Transfer Tool – Example Page 2

Symptoms

Check yes to any that currently apply:**

- ☐ Cough/uncontrolled respiratory secretions
- ☐ Incontinent of urine
- ☐ Vomiting
- ☐ Acute diarrhea or incontinent of stool
- ☐ Draining wounds
- ☐ Other uncontained body fluid/drainage
- ☐ Concerning rash (e.g.; vesicular)

**NOTE: Appropriate PPE required ONLY if incontinent/drainage/rash NOT contained.

☐ No symptoms / PPE not required as "contained"

PPE

PERSONAL PROTECTIVE EQUIPMENT CONSIDERATIONS

☐ ☐ ☐

CHECK ALL PPE TO BE CONSIDERED AT RECEIVING FACILITY

Answers to sections above

ANY YES

ALL NO

Person completing form:

Role: Date:

Other MDRO Risk Factors

Is the patient currently on antibiotics? ☐ Yes ☐ No

Antibiotic:	Dose, Frequency:	Treatment for:	Start date:	Stop date:

Does the patient currently have any of the following devices? ☐ Yes ☐ No

- ☐ Central line/PICC, Date inserted:
- ☐ Hemodialysis catheter
- ☐ Urinary catheter, Date inserted:
- ☐ Suprapubic catheter
- ☐ Percutaneous gastrostomy tube
- ☐ Tracheostomy
- ☐ Fecal management system

IZ

Were immunizations received at sending facility? ☐ Yes ☐ No

If yes, specify: Date(s):

Are Transmission-based Precautions Performed Routinely?

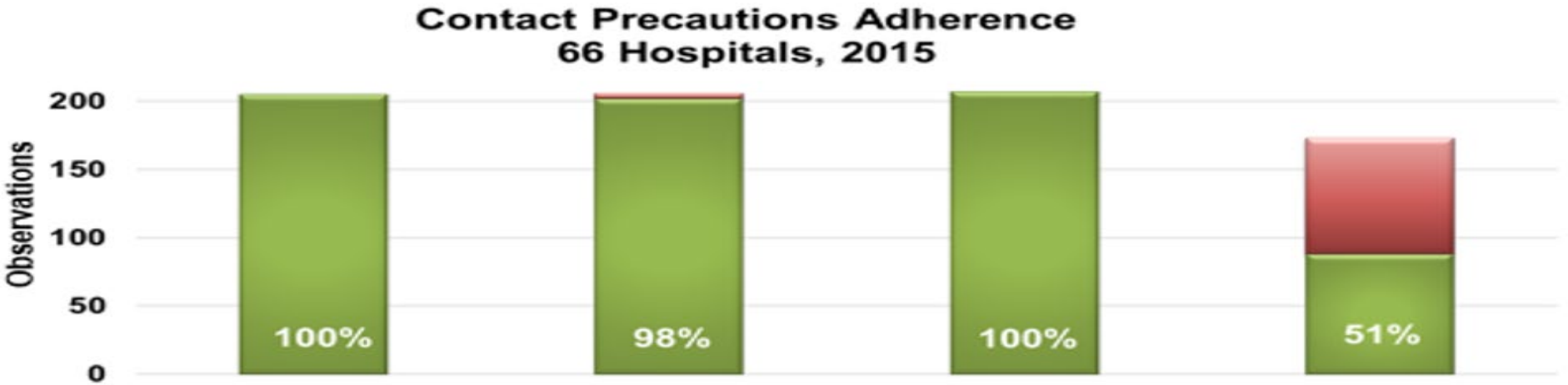
Results of CDPH HAI Program Observations

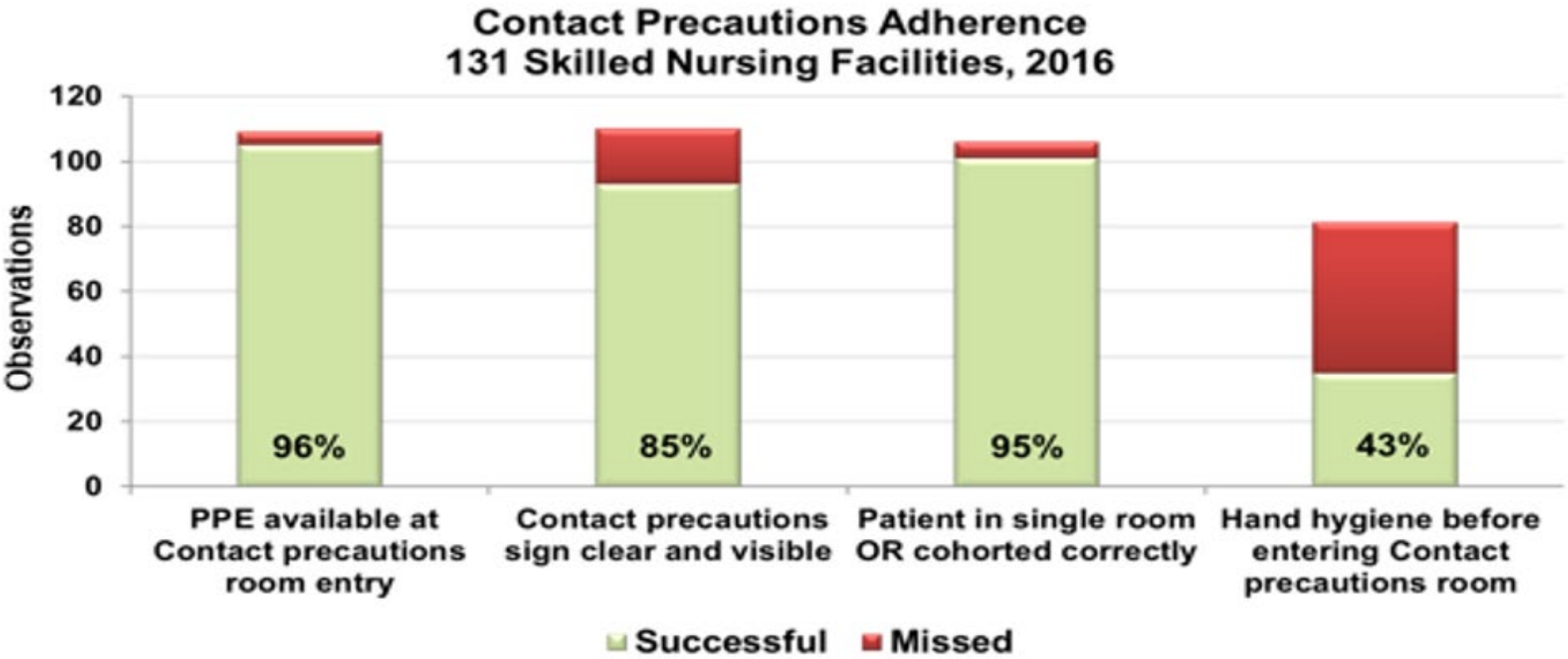
Monitoring Contact Precautions

Contact Precautions Practices	Pt/Res 1	Pt/Res 2	Adherence by Task	
			#Yes	#Obs
Gloves and gowns are available near point of use.	(Yes) No	(Yes) No	2	2
Signs indicating the patient/resident is on contact precautions are clear and visible.	(Yes) No	(Yes) No	2	2
The patient/resident housed in single-room or cohorted based on a clinical risk assessment.	(Yes) No	(Yes) No	2	2
Hand hygiene is performed before entering the patient/resident care environment.	(Yes) No	Yes (No)	1	2
Gloves and gowns are donned before entering the patient/resident care environment.	(Yes) No	(Yes) No	2	2
Gloves and gowns are removed and discarded, **and** hand hygiene is performed before leaving the patient/resident care environment. *Soap & water if C. difficile* infection.	Yes (No)	Yes (No)	0	2
Dedicated or disposable noncritical patient-care equipment (e.g. blood pressure cuffs) is used	(Yes) No	(Yes) No	2	2
Total #Yes **11** Total #Observed **14** Total #Yes/Total #Observed = % Adherence **79** %				

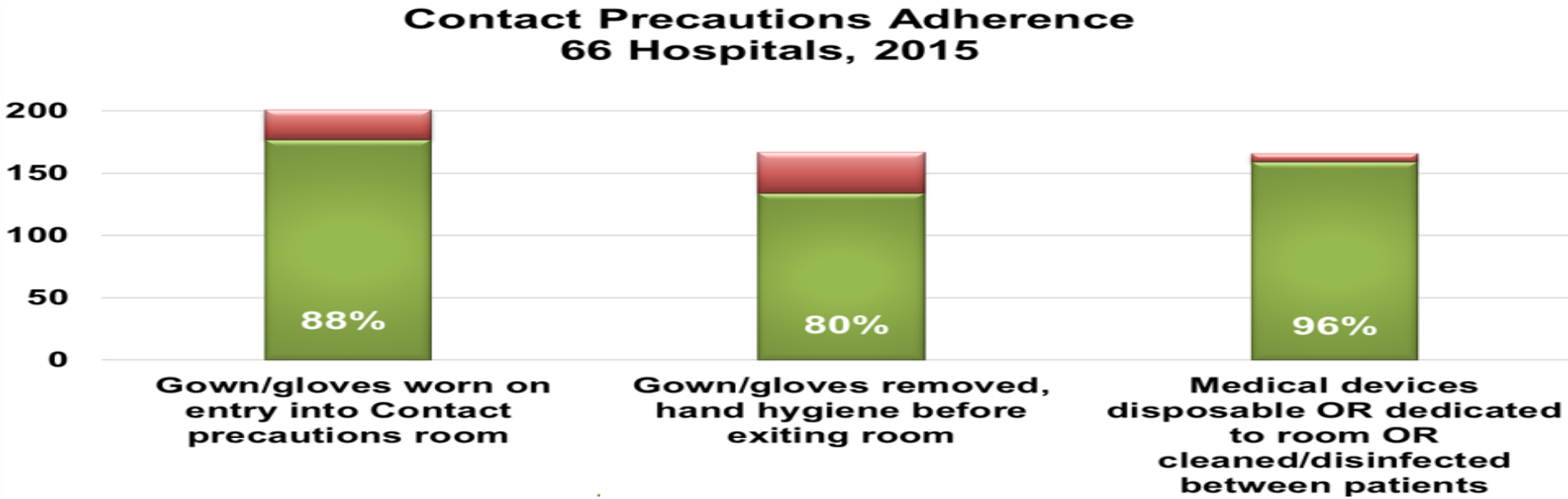
Contact Precautions Adherence Monitoring Form (PDF)
(www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/AdherenceMonitoringContactPrecautionsApproved101516.pdf)

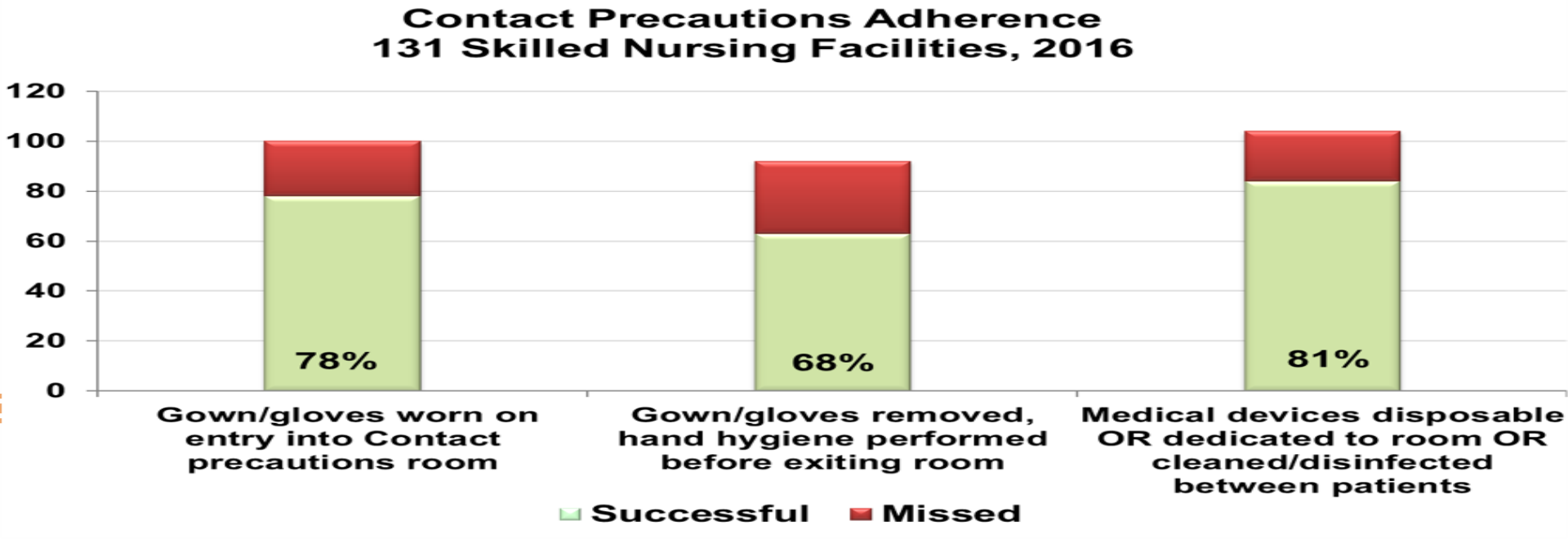
Contact Precautions Adherence





Contact Precautions Adherence





Reference

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

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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

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (PDF)
(www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf)

Additional Resources

Cal/OSHA Interim Guidance on COVID-19 for Health Care Facilities: Severe Respirator Supply Shortages (PDF)
(www.dir.ca.gov/dosh/coronavirus/Cal-OSHA-Guidance-for-respirator-shortages.pdf)

Note: This Interim Guidance is Subject to Change as the Situation Evolves

Summary

- Correct use of Standard and Transmission-based precautions prevents disease transmission
- Enhanced precautions in SNF allow for individualizing necessary precautions depending on each resident's ability to contain infectious body fluids
  - For many residents the SNF is their home
- Perform adherence monitoring to Transmission-based precautions and give feedback to staff to prevent the spread of infection

Questions

For more information,

please contact

HAIProgram@cdph.ca.gov

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