Transmission-Based Precautions

Last Updated 2019

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

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 9-2018)
  - 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

    (https://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

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

- Hospitals and SNF 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 patient 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

Contact Precautions

- Intended to prevent transmission of infectious agents via contact with a patient or contaminated environment
- Examples when needed:
  - *C. difficile*, MDRO colonized wound, scabies
- Used for epidemiologically important microorganisms
- Places a barrier between the HCP and infectious agent
- Used in addition to Standard precautions

How to Implement Contact Precautions

- Don gown and gloves prior to entry into room and discarded prior to exit
  - Perform hand hygiene prior to donning gloves and after removing gloves
- Single room preferred
  - Alternatives include spatial separation or cohorting

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

- 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*

Airborne Precautions

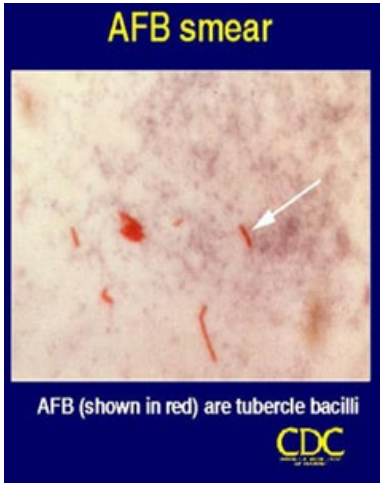
- Intended to prevent transmission by inhalation of infectious agents that can remain suspended in the air
- Examples:
  - Herpes zoster, varicella zoster, tuberculosis
- Requirements include
  - Increased ventilation rate
  - Air exhausted directly to the outside or through HEPA filtration
  - Facility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

How to Implement Airborne Precautions

- 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

Pulmonary Tuberculosis (TB)

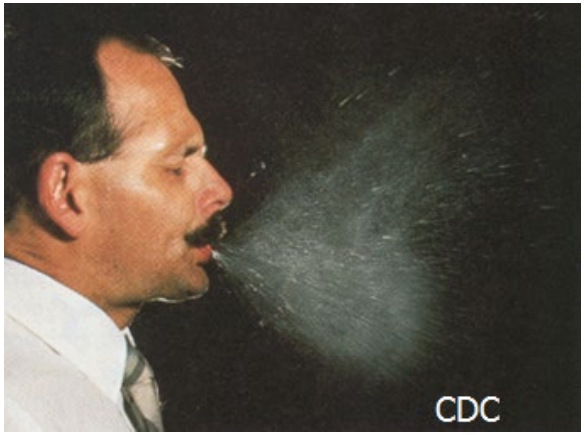
- Serious chronic illness caused by bacteria *Mycobacterium tuberculosis;* can be fatal if untreated
  - **A**cid **F**ast **B**acilli can be seen on a stained slide
- Transmitted by airborne route
  - Exposure occurs without patient contact
  - Small particle droplets can stay afloat for hours and travel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

Highest Risk for Infection

- 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

Enhanced Standard Precautions for California Skilled Nursing Facilities

- Developed by CDPH and the California Association of Health Facilities (CAHF), 2010 **(Revision Coming in March 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
- Intended to facilitate communication about patients on Contact precautions when transferring between acute care hospitals and SNF

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

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**

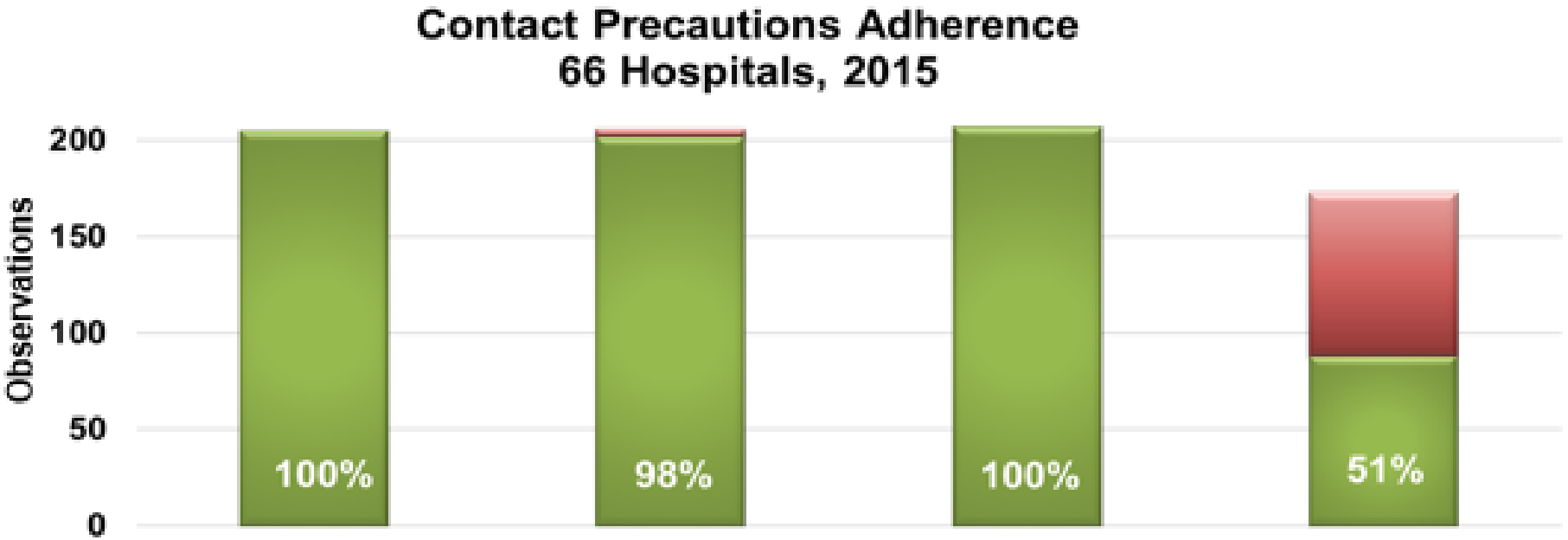
If yes, specify: Date(s):

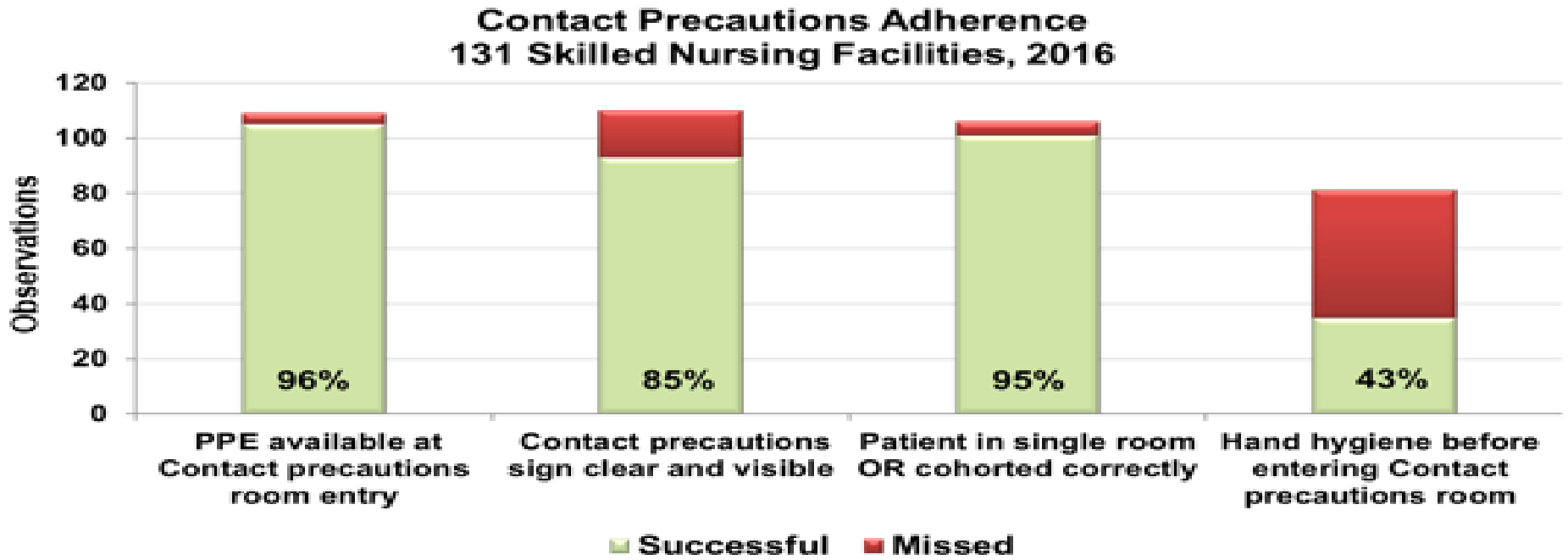
Are Transmission-based Precautions Performed Routinely?

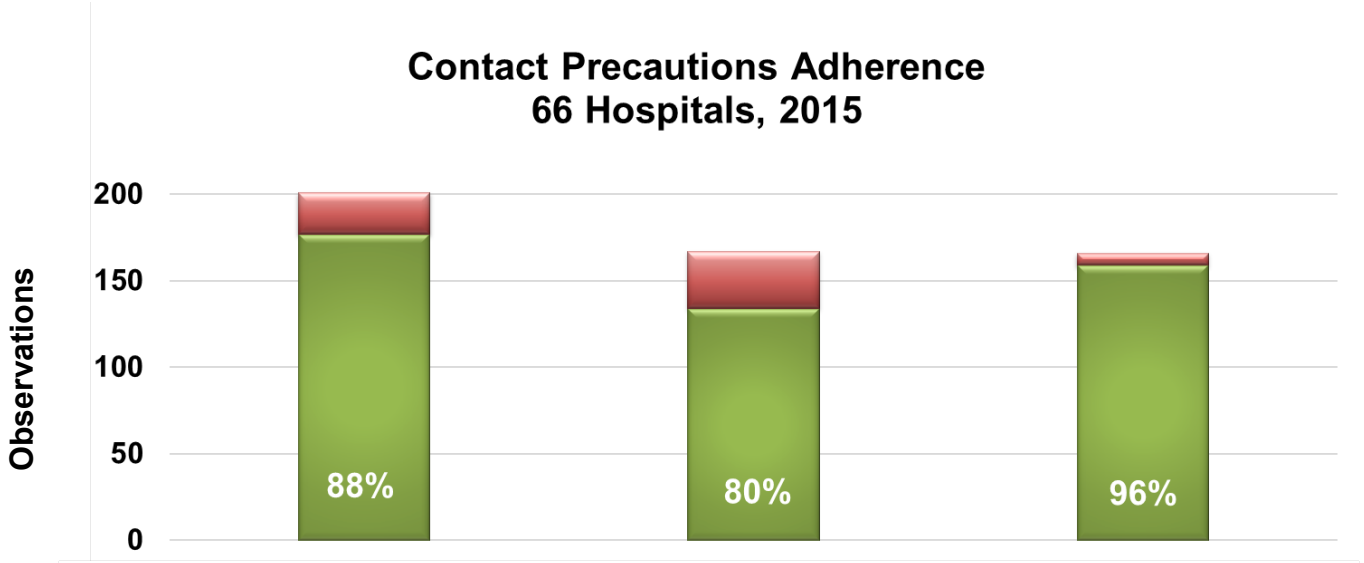
Results of CDPH HAI Program Observations

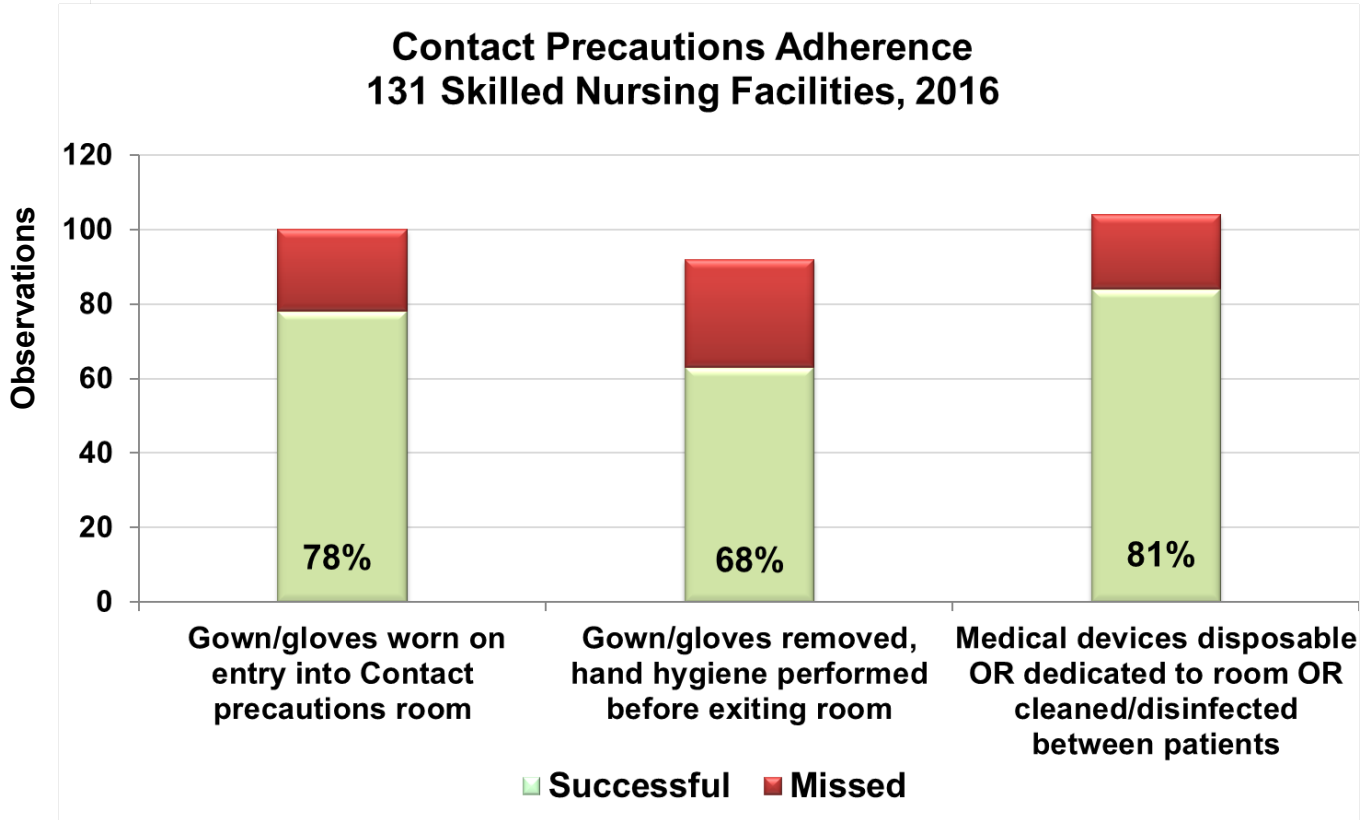
Monitoring Contact Precautions

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
66 Hospitals, 2015
Observations
200
150
100
50
0
100%
98%
100%
51%


Contact Precautions Adherence
131 Skilled Nursing Facilities, 2016
Observations
120
100
80
60
40
20
0
96%
85%
95%
43%
PPE available at Contact precautions room entry
Contact precautions sign clear and visible
Patient in single room OR cohorted correctly
Hand hygiene before entering Contact precautions room
Successful
Missed





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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

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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https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf

Questions?

For more information,
please contact any
HAI Program Liaison IP Team member

Or email
HAIProgram@cdph.ca.gov