

# Infection Prevention in the Home-like Environment

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# Goals for Infection Prevention (IP)

- ▶ Resident safety–priority for staff and for CMS
  - ▶ Providing care in a homelike environment but still maintaining IP guidelines and standards
  - ▶ Antibiotic stewardship and culturing stewardship
  - ▶ Educating those who provide care, and the residents and families
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# What are we talking about today?

- ▶ Basic infection prevention—why is this important?
  - ▶ CDC Guidelines—adapting them to your environment
  - ▶ How to use a risk assessment to determine safe practice in your facility and create a homelike environment.
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# Background

Between 1.6 and 3.8 million Healthcare Associated Infections (HAIs) in nursing homes each year

150,000 hospitalizations and 388,000 deaths annually

There is a push to change the nursing home environment from institutional to home-like, resident centered care

# Background

Meta-analysis of studies done between 2005–2016 was completed

- Findings suggested an increase risk of Multi-Drug Resistant Organisms (MDRO) colonization in nursing home residents
- 27% of residents in the study colonized with MDRO (range from 11.2–59.1%)
- Findings suggest a high prevalence of MDR-GNB colonization
- There is a need to enhance policies for infection prevention in NHs.

Aliyu, S. Prevalence of multidrug-resistant gram-negative bacteria among nursing home residents: A systematic review and meta-analysis. *AJIC*. 2017; 45: 512–518

# Challenges / Opportunities for Improvement

- ▶ IP has little to no resources / evidence-based practice guidelines
  - ▶ IP has little to no training in some facilities
  - ▶ High turnover of IP staff
  - ▶ IP is not always the priority if other tasks need done (Multiple “hats”)
  - ▶ Residents are more complex and have higher acuity now
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# Challenges / Opportunities for Improvement

- ▶ Infection definitions
    - Not standardized in LTC and not tracked in Assisted Living
  - ▶ Accountability for prevention
    - Facility practices to prevent infection need to be monitored for adherence
    - Prevention practices need to be monitored for effectiveness
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# Basic review of Infection Prevention

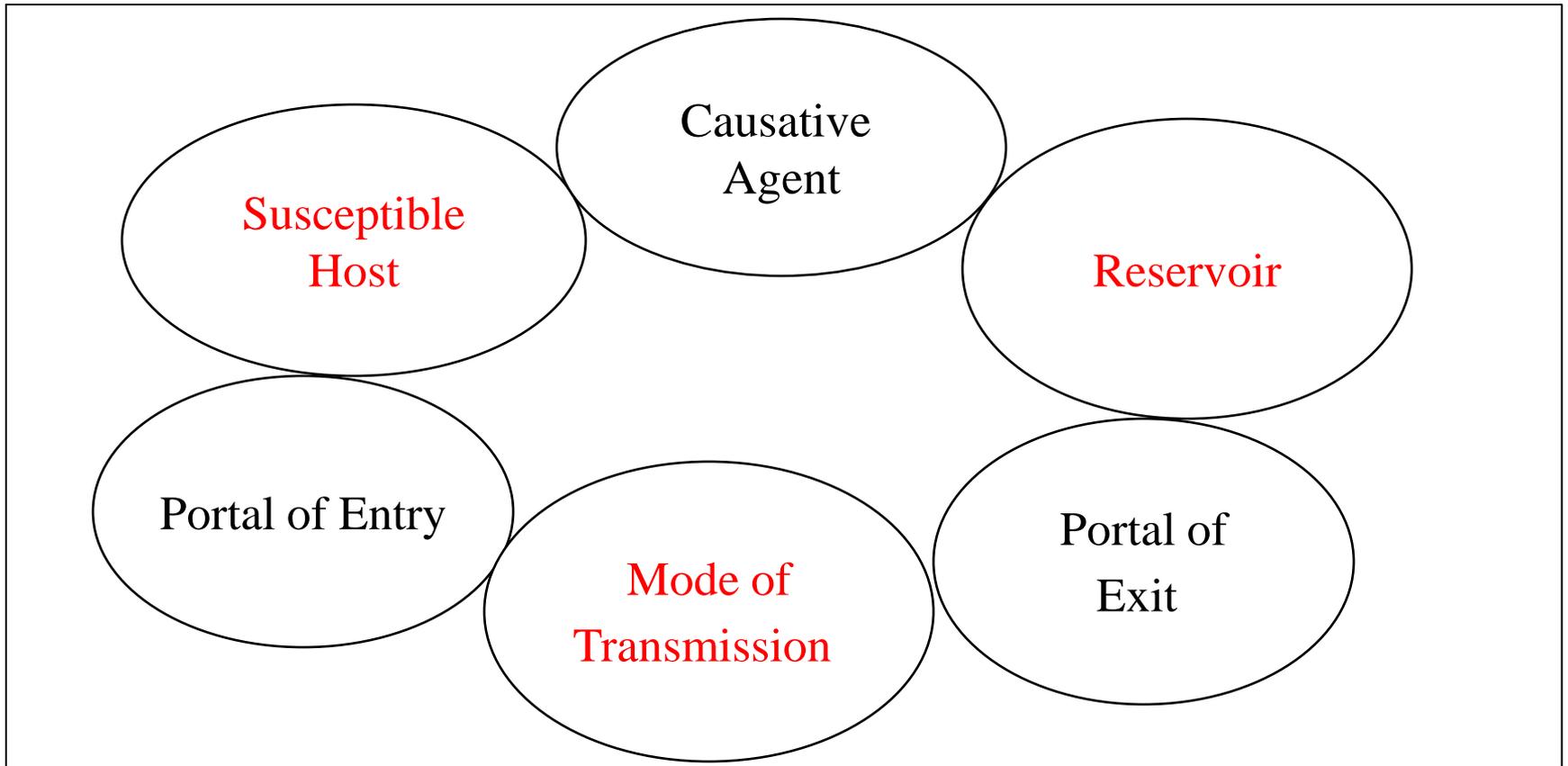


**Centers of Disease Control  
Guideline for Isolation Precautions:  
Preventing Transmission of  
Infectious Agents  
in Healthcare Settings  
2007**

<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>



# Chain of Infection (Infectious Disease Process)



# CDC Guideline for Isolation Precautions

Risk Factors (susceptible host) for infection in LTC:

- Age
  - Immobility
  - Incontinence
  - Dysphagia
  - Underlying chronic illness
  - Poor functional status
  - Age related skin changes
- 

# CDC Guideline for Isolation Precautions

The guidelines ask that facilities assess their programs for:

- Effectiveness of infection prevention and the processes to prevent transmission of infection
  - Does the facility have a “safety climate” or “safety culture” for the resident and the HCW?
  - Is there adequate staffing for the type of residents admitted?
  - Do HCWs adhere to recommended practices to decrease transmission of infection?
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# CDC Guideline for Isolation Precautions

LTC settings have unique circumstances and population risks to consider when designing and implementing an infection prevention program

The principles and strategies in the guidelines should be adapted to the settings

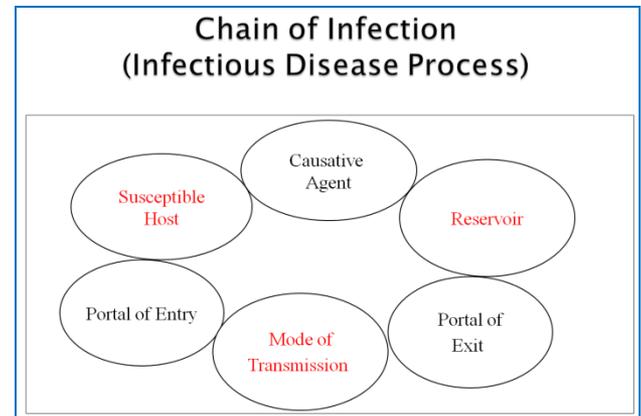
# CDC Guideline for Isolation Precautions

\*The level of ability of the residents to care for themselves and the dependence on staff for ADLs/care may put them at greater risk for infection

# CDC Guideline for Isolation Precautions

## *Standard Precautions*

- All HCW must assume that every resident is potentially infected or colonized with an organism that could be transmitted in the health care setting
- Standard Precautions must be used with all residents
- Standard Precautions are meant to protect you as well as your residents



# CDC Guideline for Isolation Precautions

## Horizontal Approaches to IP

- Can help keep a resident from isolation and confinement

## Standard Precautions

- Hand hygiene and PPE
  - Gloves, Gowns, Mask/Face shield
- Respiratory Hygiene/Cough Etiquette
- Clean equipment and environment

# CDC Guideline for Isolation Precautions

## *Standard Precautions*

- Hand Hygiene
- Hand hygiene must be done to remove transient flora from hands.
- Studies show that only 52–60% of HCW wash their hands following proper procedure
- Time is a big factor in hand hygiene
- Alcohol hand rinses are quicker, more convenient, and kill more pathogens on our hands

# CDC Guideline for Isolation Precautions

## *Standard Precautions*

- Hand hygiene
- Need to perform before and after resident contact of any kind (lifting/moving, BP, etc)
- After removing gloves
- After touching inanimate objects in the immediate resident area
- Teach residents to use alcohol hand rinse or wash their hands

# CDC Guideline for Isolation Precautions

Hand hygiene is one of the most important ways to stop the spread of pathogens

- ✓ Wash with soap and water
- ✓ Use alcohol hand rinse

Artificial nails and jewelry

- ✓ Don't wear them

# CDC Guideline for Isolation Precautions

## *Standard Precautions*

### Gloves

- Must be worn if you think you may come in contact with blood or body fluids
- Gloves need to be changed often during care

### Gowns

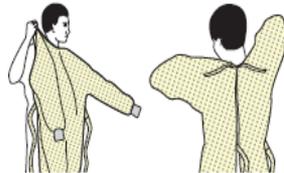
- Wear when providing care if the resident has blood or body fluids that cannot be contained
- Be sure staff know how to don and doff the correct way.

## SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

### 1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



### 2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



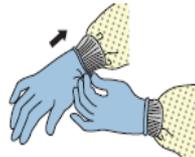
### 3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



### 4. GLOVES

- Extend to cover wrist of isolation gown



## USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

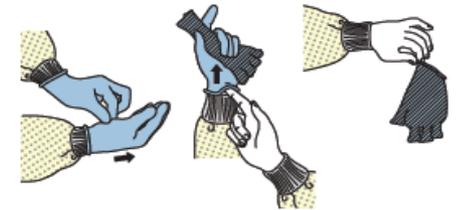


## HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

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

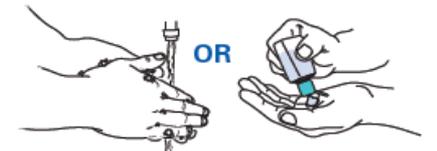


### 4. MASK OR RESPIRATOR

- 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



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



# CDC Guideline for Isolation Precautions

## Cleaning and disinfecting shared equipment

- ▶ Any equipment that is shared between residents must be disinfected between use and deep cleaned regularly
  - Lifts, scales, Vital sign machines, commodes, shower stalls and wand, wheelchairs/gurneys, therapy equipment, computers on wheels, stethoscopes, etc, etc,...
- ▶ Pathogens live for days, weeks, and months on surfaces
- ▶ Equipment should be wiped with disinfectant unless visibly soiled with body fluid—then needs deep cleaned

# CDC Guideline for Isolation Precautions

Most contaminated items in patient environment:

remote control      call light      door handles  
resident cell phone      staff cell phone      room phone  
computer or laptop      wheelchairs

Environmental Services—what do they clean

Many facilities do not allow ES staff to clean residents  
personal items

Get the resident involved whenever possible!

# CDC Guideline for Isolation Precautions

## Expanded Precautions (Contact, Droplet)

Use only if needed, least restrictive to promote quality of life

- ✓ Is the resident showing signs of infection?
- ✓ Can body fluids be contained?
- ✓ Can resident and family follow good hand hygiene?



# When to use Expanded Precautions

Consider the following:

- the individual resident's clinical situation
- prevalence or incidence of MDRO in the facility
- weigh risk of transmission with resident need

If infected secretions **can be contained**:

- use Standard Precautions
- educate resident about hand hygiene

If infected secretions **cannot be contained**:

- use Contact or Droplet Precautions in addition to SP
- establish use of common areas (dining/activities area) based on risk to other residents and the ability of colonized or infected resident to observe proper hand hygiene/recommended precautions/contain body fluids

# CDC Guideline for Isolation Precautions

In most nursing homes the need for isolating residents with infection must be balanced with their psychosocial needs

HOWEVER...outbreaks can result in substantial morbidity and mortality as well as increased medical costs.

SO...prompt detection of potential outbreaks and implementation of infection prevention procedures are required.



# Regulatory Changes

- ▶ Designate specific infection prevention and control officers called IPCOs or Infection Preventionists
  - ▶ These IPCOs will have specific training related to the infection control program
  - ▶ Facility must have an Antibiotic Stewardship Program and a system for monitoring use
  - ▶ **Have written policies and procedures for IP and perform risk assessments for IP**
  - ▶ Have a system in place to prevent, identify, report, investigate and control infections for residents, staff, volunteers, other services
- 

# So, how “home-like” is your facility?



VS



# Infection Prevention Risk Assessment

## Risk Assessment or IPRA

- A thoughtful examination of what could cause harm to residents, staff, families, visitors.

## Purpose of doing an IPRA:

- To identify if a known or potential risk is likely to occur and if it will be significant if it does occur.
  - Helps the facility know if it is adequately prepared to handle the risk so that the negative effects are eliminated or minimized.
  - To determine the resources needed to care for the residents day-to-day and in an emergency
- 

# Infection Prevention Risk Assessment

The IPRA needs to be based on:

- the type of care and services provided
  - specific programs provided
  - the analysis of surveillance activities
  - current infection issues in the facility
  - current infection issues in the community
  - CMS and State regulations
- 

# Risk Assessment

Include types of infection in the prevention plan

- Urinary tract infections (UTIs and CAUTIs)
- Lower respiratory tract infections
- Skin and soft tissue infections
- Gastroenteritis

Include issues that may pose a safety risk

- planning for placement of alcohol dispensers
  - storage of disinfecting wipes
- 

# Infection Prevention Risk Assessment

1. Start with a tool to assess:
    - general IP practices in the facility
    - if staff are following those practices
    - risk for infection if the practices are not followed
  2. Then prioritize the problem areas
  3. Next, develop a plan that identifies the problem areas, goals and methods needed to fix the problem.
    - include front line staff!
  4. Evaluate the plan and update/revise as needed
- 

Program Components	Probability		Current Systems	Risk Score Average
<p>Decide the risk score that the facility wants to maintain. Anything over that score will need an action plan.</p> <p>Best Risk Score is a 2. Worst Risk Score is a 6.</p> <p>During analysis be sure to identify areas that have shown improvement in order to track progress.</p>	<p>What is the likelihood that this activity or process will be followed</p> <p>3= process does not occur 2= process is likely to occur 1= process always occurs</p>		<p>Rate the current system in place to track or manage the occurrence of activity or process</p> <p>3=no system to track process 2= fair system 1=reliable system to track/manage process</p>	<p>Add the Probability score to Current System score. Goal: a low Risk Score. (indicates low risk to residents and facility)</p>
<b>EMPLOYEE</b> (direct care staff reps to gather from nursing and therapies)				
Complete hand hygiene as defined per department guideline	2		2	4
Clean/disinfect <i>shared</i> equipment between uses	2		2	4
Employees receive recommended immunization	1		1	2
Standard Precautions are used with every resident	2		3	5
Transmission-based/expanded precautions followed as needed	1		2	3
<p>Answer this question: If we could change one thing at Madonna to keep our resident's safe from infections, what would that be?</p>	<ol style="list-style-type: none"> <li>1. Hand hygiene-better processes, dispenser placement</li> <li>2. Private rooms</li> <li>3. Cleaning shared equipment</li> </ol>			
<b>Infection Prevention</b>				
Outbreaks of symptoms recognized and managed To prevent further spread	1		1	2
Maintain effective surveillance program for resident chart review and documentation of: Symptomatic UTI and CAUTI	1		1	2
CLABSI	1		1	2
VAP	1		1	2

## Infection Prevention Program Plan 2017

Topic	Process or Plan	Goal/Action	Date Action Due	Eval and Objective Met	Continue in FY 18
<b>Standard Precautions</b>	<p>Processes are in place for use of Standard Precautions with all residents and care.</p> <p>Residents come from many different facilities and have an increase in the factors that place them at risk for pathogens that may be resistant to antibiotics</p> <p>Residents need to be able to attend activities in hall and activity room and interact freely with each other at group and meal times as needed.</p> <p>Standard Precautions need to be used with all residents at all times. If expanded precautions are needed they are applied in a manner that weighs the risk of transmission with the individual needs of the residents who share common areas, interact freely with each other and participate in groups and activities together.</p>	<p>Evaluate residents on admission and if there is a change in health and function to discuss/determine the need to follow Expanded Precautions in addition to Standard Precautions.</p> <p>Remind direct care staff of the importance of use of Standard Precautions</p> <p>Perform direct observations of care to observe for use of Standard Precautions.</p>	<p>By October 5, 2016 and ongoing</p> <p>October 5, 2016 and ongoing</p> <p>Complete by June 30, 2017</p>	<p>4/30/17 Met. Will continue process to monitor resident needs on admission and monitor for symptoms of infection and need for expanded precautions.</p> <p>4/30/17 Will set up observations with recommendations based on the results</p>	<p>Yes</p>
<b>Shared Equipment</b>	<p>Proper disinfectants are available and processes are in place to regularly check/track compliance with cleaning and/or disinfecting shared equipment that is used between residents.</p>	<p>Set expectations and clarify when equipment needs to be disinfected between resident use.</p> <p>Monitor equipment cleanliness and perform regular direct staff observation and interview to determine if process is being followed.</p>	<p>Will educate staff on expectation per Standard Precautions Guide and policy</p> <p>Oct 5, 2016 and ongoing</p>	<p>6/1/17 Met. Will monitor residents for increase in infection symptoms-ongoing</p> <p>Will monitor equipment for brackets and check to be sure disinfecting wipes are present.</p>	<p>Yes</p>
<b>Environmental Services (ES)</b>	<p>Regular rounds for environmental cleaning and cleanable surfaces are completed.</p>	<p>Flat surfaces, high touch areas and floors will be clean when inspected on regular rounds</p>	<p>Weekly rounds completed since Oct 5, 2016 with EVS Supervisors or Manager. Rooms found with compliance issues are re-cleaned and</p>	<p>4/30/17 Met and ongoing. Monitor for resident transmission of same pathogens per lab reports. Weekly spot check and direct observation of discharge</p>	<p>Yes</p>

# Healthcare-associated Infections

Healthcare-associated Infections (HAI)	
Data and Statistics	+
Types of Infections	+
Diseases and Organisms	+
Preventing HAIs	-
Targeted Assessment for Prevention (TAP)	+
Toolkits	+
Basic Infection Control and Prevention Plan for Outpatient Oncology Settings	+
Outpatient Care Guide	
Tools for Protecting Healthcare Personnel	+
<b>Infection Control Assessment Tools</b>	
Map: HAI Prevention Activities	
Research	+
Patient Safety	
Outpatient Settings	
Laboratory Resources	+
Outbreak and Patient Notifications	+
Widgets, Buttons and Badges	

CDC > [Healthcare-associated Infections \(HAI\)](#) > [Preventing HAIs](#)

## Infection Control Assessment Tools



The basic elements of an infection prevention program are designed to prevent the spread of infection in healthcare settings. When these elements are present and practiced consistently, the risk of infection among patients and healthcare personnel is reduced.

The Infection Control Assessment Tools were developed by CDC for awardees under the [Epidemiology and Laboratory Capacity \(ELC\) Infection Control Assessment and Response \(ICAR\) Program](#) to assist health departments in assessing infection prevention practices and guide quality improvement activities (e.g., by addressing identified gaps). These tools may also be used by healthcare facilities to conduct internal quality improvement audits.

Assessment tools were developed for the following healthcare settings: acute care (including hospitals and long-term acute care hospitals), outpatient, long-term care, and hemodialysis. Select the assessment tool below that is specific to your setting:

- [Infection Control Assessment Tool for Acute Care Hospitals](#)  
 [PDF - 433 KB]
- [Infection Control Assessment Tool for Long-term Care Facilities](#)  
 [PDF - 104 KB]
- [Infection Control Assessment Tool for Outpatient Settings](#)  
 [PDF - 337 KB]
- [Infection Control Assessment Tool for Hemodialysis Facilities](#)  
 [PDF - 278 KB]

*NOTE: For Outpatient settings, the previously released [Guide to Infection Prevention for Outpatient Settings](#) and its companion [Checklist](#) (available at: <https://www.cdc.gov/HAI/settings/outpatient/outpatient-care-guidelines.html>) have been revised and made consistent with the [Outpatient Settings Infection Control Assessment Tool](#). While the same infection*

*The following definitions have been developed to assist with the implementation of elements of the CDC ICAR assessment tools related to infection prevention competency, training, auditing and feedback.*

**Healthcare Personnel Infection Prevention (IP) Competency:**  
The proven ability to apply essential knowledge, skills, and abilities to prevent the transmission of pathogens during the provision of care.

**Healthcare Personnel IP Competency-Based Training:** The provision of job-specific education, training, and assessment to ensure that healthcare personnel possess IP competency.

**Competency Assessment:** The verification of IP competency through the use of knowledge-based testing and direct observation. If direct observation is not included as part of a competency assessment, an alternative method to ensure that healthcare personnel possess essential knowledge, skills, and abilities should be used.

**Audit:** Direct observation or monitoring of healthcare personnel adherence to job-specific IP measures.

**Feedback:** A summary of audit findings that is used to target performance improvement.

## **Infection Prevention and Control Assessment Tool for Long-term Care Facilities**

This tool is intended to assist in the assessment of infection control programs and practices in nursing homes and other long-term care facilities. If feasible, direct observations of infection control practices are encouraged. To facilitate the assessment, health departments are encouraged to share this tool with facilities in advance of their visit.

### **Overview**

#### **Section 1: Facility Demographics**

#### **Section 2: Infection Control Program and Infrastructure**

#### **Section 3: Direct Observation of Facility Practices (optional)**

#### **Section 4: Infection Control Guidelines and Other Resources**

### **Infection Control Domains for Gap Assessment**

- I. Infection Control Program and Infrastructure
- II. Healthcare Personnel and Resident Safety
- III. Surveillance and Disease Reporting
- IV. Hand Hygiene
- V. Personal Protective Equipment (PPE)
- VI. Respiratory/ Cough Etiquette
- VII. Antibiotic Stewardship
- VIII. Injection safety and Point of Care Testing
- IX. Environmental Cleaning

# Risk Assessments–QAPI

- ▶ IPRA should be completed annually and if there are substantial changes
- ▶ Engage front line staff to help develop plans to address priorities
- ▶ Don't make everything a priority!
  - ✓ Decide what will impact the resident the most
- ▶ Evaluate the plan and change as needed
  - ✓ Plan, Do, Check, Act

Use the risk assessment to determine what you can change in the environment to make it as homelike as possible.

# Infection Prevention and Quality of Life

## There are benefits for the resident/family

Improved care and improved resident quality of life

- ✓ Fewer trips to ER and hospital
- ✓ Fewer medications
- ✓ Ability to attend activities and meals
- ✓ Residents stay well and don't have to be confined

Better understanding infection issues

- ✓ Knowledge of risks of unnecessary antibiotic use
  - ✓ Knowledge of symptoms of infection
  - ✓ Knowledge of prevention
- 

# Educate Families and Residents about IP

- ▶ Whenever possible, include families and residents in education about
  - ✓ Signs and symptoms of UTI
  - ✓ Antibiotic stewardship
  - ✓ Prevention of dehydration
  - ✓ Storing food appropriately
  - ✓ Hand hygiene
  - ✓ Visitation when ill
- ▶ Include the Ombudsman too!

# Educating the Caregivers

- ▶ Basics of IP–If staff members know why they have to do something they are more likely to do it!
  - ▶ Know the guidelines from the Centers for Disease Control and adapt them to the types of residents in your facility
  - ▶ Most common sites of infection–UTI prevention
  - ▶ What are the symptoms of infection and how are infections spread
  - ▶ Standard Precautions–why they are used
- 

# Case study

Mrs. Franks is admitted to Sunnyside Nursing Home with weakness and assistance with ADLs.

- She is 87, A/O
- She needs assist with toileting, dressing and mobility

She was positive for VRE in her urine while at the hospital about 2 months ago. She completed AB.

Sunnyside's MDRO policy:

- All residents with MDRO must be in contact precautions for at least 6 months following a positive test
- After 6 months of no VRE positive cultures, resident must have negative rectal swab x2 in order to be "cleared from the MDRO" and come out of precautions.

✓ What do you think about this policy?

# More information...

## Mrs. Franks

- She is able to learn about hand hygiene and understands why she needs to keep her hands clean.
  - She is continent of bowel and bladder for the most part but does dribble a little when she coughs or if she waits to go to the bathroom.
  - She has had a sore on her heel since being in the hospital that has been difficult to treat and drains occasionally.
- 
- ✓ How can we help Sunnyside provide a homelike environment for Mrs. Franks while keeping the other residents safe from transmission of VRE?
- 

- ▶ Assess the infection prevention risks among residents in your facility
  - ▶ Review and update current IP policies and base them on the risk assessment so you can help improve quality of life and the environment
  - ▶ Integrate IP into regular staff training and education
  - ▶ Incorporate IP activities into QAPI
  - ▶ Monitor staff to be sure basic infection prevention practices are being followed (Standard Precautions)
  - ▶ Use NHSN and a standard set of definitions
  - ▶ Attend IP training as often as possible and connect with IPs from other LTC and AC facilities
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# <https://www.cdc.gov/longtermcare/>

## Nursing Homes and Assisted Living (Long-term Care Facilities [LTCFs])



Nursing homes, skilled nursing facilities, and assisted living facilities, (collectively known as long-term care facilities, LTCFs) provide a variety of services, both medical and personal care, to people who are unable to manage independently in the community. Over 4 million Americans are admitted to or reside in nursing homes and skilled nursing facilities each year and nearly one million persons reside in assisted living facilities. Data about infections in LTCFs are limited, but it has been estimated in the medical literature that:

- 1 to 3 million serious infections occur every year in these facilities.
- Infections include urinary tract infection, diarrheal diseases, antibiotic-resistant staph infections and many others.
- Infections are a major cause of hospitalization and death; as many as 380,000 people die of the infections in LTCFs every year.



### CLINICAL STAFF INFORMATION

Fact sheets, guidelines, reports, and resources

### RESIDENT INFORMATION

Fact sheet, patient safety and other information

### PREVENTION TOOLS

Checklists, fact sheet, toolkits, and additional links

### HEALTH DEPARTMENT RESOURCES

State-developed resources and information



[The Core Elements of Antibiotic Stewardship for Nursing Homes](#)



The Department of Health and Human Services has developed a strategy to address infections in Long-term Care Facilities in Phase 3 of the [National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination](#) [↗](#)



# QUESTIONS?

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