CMS RULE TOOLKIT FOR LONG-TERM CARE FACILITIES: (INFECTION CONTROL)

Arizona Department of Health Services
Office of Infectious Disease Services
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Acronyms

ABHR	Alcohol-based hand rub
ADHS	Arizona Department of Health Services
AIIR	Airborne infection isolation room
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare and Medicaid Services
HAI	Healthcare-associated infection
IP	Infection preventionist
IPCP	Infection prevention and control program
LTCF	Long-term care facility
MDRO	Multi-drug resistant organisms
MRSA	Methicillin resistant *Staphylococcus aureus*
NHSN	National Healthcare Safety Network
PPE	Personal protective equipment
VRE	Vancomycin resistant Enterococcus

Definitions

"Airborne precautions": actions taken to prevent or minimize the transmission of infectious agents/organisms that remain infectious over long distances when suspended in the air. These infectious particles can remain suspended in the air for prolonged periods of time and can be carried on normal air currents in a room or beyond, to adjacent spaces or areas receiving exhaust air.

"Alcohol-based hand rub (ABHR)": a 60-95 percent ethanol or isopropyl alcohol containing preparation base designed for application to the hands to reduce the number of viable microorganisms.

"Antibiotic": a medication used to treat bacterial infections. They are not effective for infections caused by viruses (e.g., influenza or most cases of bronchitis).

"Antibiotic Stewardship": refers to a set of commitments and actions designed to optimize the treatment of infections while reducing the adverse events associated with antibiotic use.62 This can be accomplished through improving antibiotic prescribing, administration, and management practices thus reducing inappropriate use to ensure that residents receive the right antibiotic for the right indication, dose, and duration.

"Cleaning": removal of visible soil (e.g., organic and inorganic material) from objects and surfaces and is normally accomplished manually or mechanically using water with detergents or enzymatic products.

"Cohorting": the practice of grouping residents infected or colonized with the same infectious agent together to confine their care to one area and prevent contact with susceptible residents (cohorting residents). During outbreaks, healthcare staff may be assigned to a specific cohort of residents to further limit opportunities for transmission (cohorting staff). The terms "cohort or cohorting" is standardized language used in the practice of infection prevention and control; the use of this terminology is not intended to offend residents or staff.

"Colonization": the presence of microorganisms on or within body sites without detectable host immune response, cellular damage, or clinical expression.

"Communicable disease" (also known as [a.k.a.] "Contagious disease"): an infection transmissible (e.g., from person-to-person) by direct contact with an affected individual or the individual's body fluids or by indirect means (e.g., contaminated object).

"Community-acquired infections" (a.k.a. "present on admission"): infections that are present or incubating at the time of admission, and which generally develop within 72 hours of admission.

"Contact precautions": measures that are intended to prevent transmission of infectious agents which are spread by direct or indirect contact with the resident or the resident's environment.

"Contaminated laundry": laundry which has been soiled with blood/body fluids or other potentially infectious materials or may contain sharps.

"Decontamination": the use of physical or chemical means to remove, inactivate, or destroy pathogenic organisms on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

"Disinfectant": usually a chemical agent (but sometimes a physical agent) that destroys disease-causing pathogens or other harmful microorganisms but might not kill bacterial spores. It refers to substances applied to inanimate objects.

"Disinfection": thermal or chemical destruction of pathogenic and other types of microorganisms. Disinfection is less lethal than sterilization because it destroys most recognized pathogenic microorganisms but not necessarily all microbial forms (e.g., bacterial spores).

"Droplet precautions": actions designed to reduce/prevent the transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions.

"Hand hygiene": a general term that applies to hand washing, antiseptic hand wash, and alcohol-based hand rub.

"Hand washing" is the vigorous, brief rubbing together of all surfaces of hands with plain (i.e., nonantimicrobial) soap and water, followed by rinsing under a stream of water.

"Healthcare-associated infection (HAI)": an infection that residents acquire, that is associated with a medical or surgical intervention (e.g., podiatry, wound care debridement) within a nursing home and was not present or incubating at the time of admission.

"Hygienically Clean": being free of pathogens in sufficient numbers to cause human illness."

"Infection": the establishment of an infective agent in or on a suitable host, producing clinical signs and symptoms (e.g., fever, redness, heat, purulent exudates, etc.).

"Infection preventionist (IP)": term used for the person(s) designated by the facility to be responsible for the infection prevention and control program. NOTE: Designation of a specific individual, detailed training, qualifications, and hourly requirements for an infection preventionist are not required until implementation of Phase 3.

"Isolation": the practices employed to reduce the spread of an infectious agent and/or minimize the transmission of infection.

"Isolation precautions": see "Transmission-Based Precautions"

"Medical waste": any solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining to, or in the production or testing of biologicals (e.g., blood-soaked bandages, sharps).

"Multi-drug resistant organisms (MDROs)": microorganisms, predominantly bacteria that are resistant to one or more classes of antimicrobial agents. Although the names of certain MDROs describe resistance to only one agent, these pathogens are frequently resistant to most available antimicrobial agents.

"Outbreak": the occurrence of more cases of a particular infection than is normally expected, the occurrence of an unusual organism, or the occurrence of unusual antibiotic resistance patterns.

"Personal protective equipment" (PPE): protective items or garments worn to protect the body or clothing from hazards that can cause injury and to protect residents from cross-transmission.

"Standard precautions" (formerly "Universal Precautions"): infection prevention practices that apply to all residents, regardless of suspected or confirmed diagnosis or presumed infection status. Standard precautions is based on the principle that all blood, body fluids, secretions, excretions except sweat, regardless of whether they contain visible blood, non-intact skin, and mucous membranes may contain transmissible infectious agents. Furthermore, equipment or items in the patient environment likely to have been contaminated with infectious body fluids must be handled in a manner to prevent transmission of infectious agents. Standard precautions include but are not limited to hand hygiene; use of gloves, gown, mask, eye protection, or face shield, depending on the anticipated exposure; safe injection practices, and respiratory hygiene/cough etiquette. Also, equipment or items in the patient environment likely to have been contaminated with infectious body fluids must be handled in a manner to prevent transmission of infectious agents (e.g., wear gloves for direct contact, properly clean and disinfect or sterilize reusable equipment before use on another patient).
"Surveillance" refers to the ongoing, systematic collection, analysis, interpretation, and dissemination of data to identify infections and infection risks, to try to reduce morbidity and mortality and to improve resident health status.

"Transmission-based precautions" (a.k.a. "Isolation Precautions"): actions (precautions) implemented, in addition to standard precautions that are based upon the means of transmission (airborne, contact, and droplet) in order to prevent or control infections.

Infection prevention and control program

Healthcare-associated infections (HAIs) can cause significant pain and discomfort for residents in nursing homes and can have significant adverse consequences. The facility must establish and maintain an IPCP designed to provide a safe, sanitary, and comfortable environment and to help prevent the development and transmission of communicable diseases and infections. This program must include, at a minimum, a system for preventing, identifying, reporting, investigating, and controlling infections and communicable diseases for all residents, staff, and visitors. The IPCP must follow national standards and guidelines.

Program Development and Oversight

Program development and oversight emphasize the prevention and management of infections. Program oversight involves establishing goals and priorities for the program, planning, and implementing strategies to achieve the goals, monitoring the implementation of the program (including the interdisciplinary team's infection control practices), and responding to errors, problems, or other identified issues. Additional activities involved in program development and oversight may include but are not limited to:

- Identifying the staff's roles and responsibilities for the routine implementation of the program as well as in case of an outbreak of a communicable disease, an episode of infection, or the threat of a bio-hazard attack;
- Developing and implementing appropriate infection control policies and procedures, and training staff on them;
- Monitoring and documenting infections, including tracking and analyzing outbreaks of infection as well as implementing and documenting actions to resolve related problems;
- Defining and managing appropriate resident health initiatives, such as:
    - The immunization program (influenza, pneumonia, etc.); and
    - Tuberculosis screening on admission and following the discovery of a new case, and managing active cases consistent with State requirements;
- Providing a nursing home liaison to work with local and State health agencies; and
- Managing food safety, including employee health and hygiene, pest control, investigating potential food-borne illnesses, and waste disposal.

The facility identifies personnel responsible for overall program oversight, which may involve collaboration of the administrator, the medical director or his/her designee, the director of nursing, and other appropriate facility staff as needed. This group may define how and when the program is to be routinely monitored and situations that may trigger a focused review of the program. The group communicates the findings from collecting and analyzing data to the facility's staff and management, and directs changes in practice based on identified trends, government infection control advisories, and other factors.

Components of an Infection Prevention and Control Program

An effective IPCP incorporates, but is not limited to, the following components:

- Policies, procedures, and practices which promote consistent adherence to evidence-based infection control practices;

- Program oversight including planning, organizing, implementing, operating, monitoring, and maintaining all of the elements of the program and ensuring that the facility's interdisciplinary team is involved in infection prevention and control;
- Infection preventionist (IP), a person designated to serve as coordinator of the IPCP;
- Surveillance, including process and outcome surveillance, monitoring, data analysis, documentation and communicable diseases reporting (as required by State and Federal law and regulation);
- Education, including training in infection prevention and control practices, to ensure compliance with facility requirements as well as State and Federal regulation; and
- Antibiotic review including reviewing data to monitor the appropriate use of antibiotics in the resident population.

Examples of activities related to the IPCP may include but are not limited to:

- Undertaking process and/or outcome surveillance activities to identify infections that are causing, or have the potential to cause an outbreak;
- Conducting data analysis to help detect unusual or unexpected outcomes and to determine the effectiveness of infection prevention and control practices;
- Documenting observations related to the causes of infection and/or infection trends; and
- Implementing measures to prevent the transmission of infectious agents and to reduce risks for device and procedure-related infections.

(a)(1) A system for preventing, identifying, reporting, investigating, and controlling infections and communicable diseases for all residents, staff, volunteers, visitors, and other individuals providing services under a contractual arrangement based upon the facility assessment conducted according to §483.70(e) and following accepted National Standards

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National Standard based on the Centers for Medicare and Medicaid Services (CMS) State Surveyor Guidance (F441) 42CFR 483.80
Infection Control

Summary:

- §483.80 Infection Control
- §483.80 (a) Infection Prevention and Control Program
- §483.80 (b) Infection Preventionist
- §483.80 (c) IP Participation on Quality Assessment and Assurance
- §483.80(d) Influenza and Pneumococcal Immunizations
- §483.80 (e) Linens
- §483.80 (f) Annual Review

- Revision to State Operations Manual (SOM) Appendix PP (as of 11/28/2017)
- Guidelines for Hand Hygiene on Healthcare Settings

- Guidance for the Selection and Use of Personal Protective Equipment (PPE) in Healthcare settings
- Guidelines for Environmental Infection Control in Healthcare Facilities
- Guidelines for Prevention of Catheter-Associated Urinary Tract Infections 2009
- Clostridium difficile Infections (CDI) Prevention Toolkit
- Facility Guidance for Control of Carbapenem-resistant *Enterobacteriaceae* (CRE)
- AHRQ Carbapenem-resistant *Enterobacteriaceae* (CRE) Control and Prevention Toolkit
- Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008
- Nursing Homes and Assisted Living (Long-Term Care Facilities [LTCFs]) Prevention Tools

(a)(2) Written standards, policies and procedures for the program

Policies and procedures are the foundation of the facility's IPCP. Policies and procedures are reviewed periodically and revised as needed to conform to current standards of practice or to address specific facility concerns.

Written policies establish the program's expectations and parameters. For example, policies may specify the use of standard precautions facility-wide and use of transmission-based precautions when indicated, define the frequency and nature of surveillance activities, require that staff use accepted hand hygiene after each direct resident contact for which hand hygiene is indicated, or prohibit direct resident contact by an employee who has an infected skin lesion or communicable disease.

Procedures guide the implementation of the policies and performance of specific tasks. Procedures may include, for example, how to identify and communicate information about residents with potentially transmissible infectious agents, how to obtain vital signs for a resident on contact precautions and what to do with the equipment after its use, and essential steps and considerations (including choosing agents) for performing hand hygiene.

i. Surveillance

The facility must establish a system for surveillance based upon national standards of practice and the facility assessment, including the resident population and the services and care provided. The facility must establish routine, ongoing, and systematic collection, analysis, interpretation, and dissemination of surveillance data to identify infections (i.e., HAI and community-acquired), infection risks, communicable disease outbreaks, and to maintain or improve resident health status. As part of the system of surveillance, identification and prevention, the facility should determine how it will track the extent to which staff are following the facility's IPCP policies and procedures, and facilities would want to particularly address any areas that are related to a corrective action.

The facility's surveillance system must include a data collection tool and the use of nationally-recognized surveillance criteria such as but not limited to CDC's National Healthcare Safety Network (NHSN) Long Term Care Criteria to define infections or updated McGeer criteria. Furthermore, the facility must know when and to whom to report communicable diseases, healthcare-associated infections (as appropriate), and potential outbreaks (e.g., list of communicable diseases which are reportable to local/state public health authorities). The facility must document follow-up activity in response to important surveillance findings (e.g., outbreaks).

In addition, the facility must establish and implement a system, including whom to notify (e.g. IP), for early detection and management of a potentially infectious/symptomatic resident at the time of admission. This includes the identification and use of appropriate transmission-based precautions. Transmission-based precautions should be incorporated into the resident's baseline care plan that must be developed within 48 hours of admission and include the minimum healthcare information necessary to properly care for a resident, including physician orders (e.g., medication orders). See §483.21, Comprehensive Person-Centered Care Planning for further information.

Furthermore, the facility must have a process for communicating information at the time of transfer (e.g., CDC, state, or other standardized inter-facility infection transfer form) when a resident has an infection or is colonized. When a resident is transferred, the information provided to the receiving facility must include special instructions or precautions for ongoing care and other necessary information including a discharge summary. When a resident is discharged, the discharge summary must include the resident's disease diagnoses and health conditions, course of illness/treatment or therapy, medications, and pertinent lab, radiology, consultation results, and instructions or precautions for ongoing care. See §483.21(c)(2), Discharge Summary (F661) and §483.15(c)(2)(iii), Transfer and Discharge (F622) for further information on these requirements.

Additionally, as part of the overall IPCP for surveillance, the facility shall establish process and outcome surveillance.

Process surveillance

Process surveillance is the review of practices by staff directly related to resident care. The purpose is to identify whether staff implement and comply with the facility's IPCP policies and procedures. Some areas that facilities may want to consider for process surveillance are the following:

- Hand hygiene;

- Appropriate use of personal protective equipment (e.g., gowns, gloves, facemask);
- Injection safety;
- Point-of-care testing (e.g., during assisted blood glucose monitoring);
- Implementation of infection control practices for resident care such as but not limited to urinary catheter care, wound care, injection/IV care, fecal/urinary incontinence care, skin care, respiratory care, dialysis care, and other invasive treatments;
- Managing blood borne pathogen exposure;
- Cleaning and disinfecting products and procedures for environmental surfaces and equipment;
- Appropriate use of transmission-based precautions; and
- Handling, storing, processing, and transporting linens so as to prevent the spread of infection.

Outcome Surveillance

Another component of a system of identification is outcome surveillance. For example, this addresses the criteria that staff would use to identify and report evidence of a suspected or confirmed HAI or communicable disease. This process consists of collecting/documenting data on individual resident cases and comparing the collected data to standard written definitions (criteria) of infections.

Different types of infections include: respiratory tract infections (RTI), urinary tract infections (UTIs) (with or without indwelling catheter), skin, soft tissue and mucosal infections, and gastrointestinal tract infections (gastroenteritis, norovirus, *Clostridium difficile* infection). The IP or other designated staff reviews data (including residents with fever or purulent drainage, and cultures or other diagnostic test results consistent with potential infections) to detect clusters and trends. Other sources of relevant data may include antibiotic orders, laboratory antibiograms (antibiotic susceptibility profiles), medication regimen review reports, and medical record documentation, such as physician progress notes and transfer summaries accompanying newly admitted residents. The facility's program should choose to either track the prevalence of infections (existing/current cases both old and new) at a specific point, or focus on regularly identifying new cases during defined time periods. When conducting outcome surveillance, the facility may choose to use one or more of the automated systems and authoritative resources that are available and include definitions.

Documentation

Facilities may use various approaches to gathering, documenting, and listing surveillance data. The facility's infection control reports describe the types of

infections and are used to identify trends and patterns. Descriptive documentation provides the facility with summaries of the observations of staff practices and/or the investigation of the causes of an infection and/or identification of underlying cause(s) of infection trends. It is important that the IPCP define how often and by what means surveillance data will be collected, regardless of whether the facility creates its own forms, purchases preprinted forms, or uses automated systems.

Monitoring

Monitoring of the implementation of the program, its effectiveness, the condition of any resident with an infection, and the resolution of the infection and/or an outbreak is considered an integral part of infection surveillance in a long-term care facility (LTCF). The facility monitors practices (e.g., dressing changes and transmission-based precaution procedures) to ensure consistent implementation of established infection prevention and control policies and procedures based on current standards of practice. All residents are monitored for current infections and infection risks.

Data Analysis

Determining the origin of infections helps the facility identify the number of residents who developed infections within the LTCF. Comparing current infection control surveillance data (including the incidence or prevalence of infections and staff practices) to past data enables detection of unusual or unexpected outcomes, trends, effective practices, and performance issues. The facility can then evaluate whether it needs to change processes or practices to enhance infection prevention and minimize the potential for transmission of infections.

It is important that surveillance reports be shared with appropriate individuals including, but not limited to, the director of nursing and medical director. In addition, it is important that the staff and practitioners receive reports that are relevant to their practices to help them recognize the impact of their care on infection rates and outcome.

Infections can be tracked by several ways:

1. Revised McGeer Criteria (2012)
   - Definition of infection for LTCFs
   - A consistent way to judge each possible infection event
     - http://www.jstor.org/stable/pdf/10.1086/667743.pdf
2. NHSN
   - https://www.cdc.gov/nhsn/ltc/
3. National Nursing Home Quality Improvement Campaign

- https://www.nhqualitycampaign.org/goalDetail.aspx?g=inf#tab2

ii. When and to whom possible incidents of communicable disease or infections should be reported

It is important for each facility to have processes that enable them to consistently comply with State and Local Health Department requirements for reporting communicable diseases.

These webpages provide you useful information needed to report communicable disease to the public health

- Arizona Communicable Disease Reporting-Healthcare Providers
- Reportable Disease List
- Communicable Disease Report Form

Report should be sent to local health agency by mail, telephone, or fax.

Arizona County Contact Information

County	Day Time Hours	After Hours
Apache	928-337-4364	928-337-4321
Cochise	520-432-9400	800-423-7271
Coconino	928-679-7272	928-255-8715
Gila	928-402-8811	928-701-1610
Graham	928-428-1962	928-965-8921
Greenlee	928-865-2601	928-865-4149
La Paz	928-669-1100	928-669-2281
Maricopa	602-506-6767	602-747-7111
Mohave	928-753-0714	928-718-4927
Navajo	928-524-4750	928-241-0960
Pima	520-724-7770	520-743-7987
Pinal	520-866-7325	520-866-6239
Santa Cruz	520-375-7900	877-202-0586
Yavapai	928-771-3134	928-442-5262
Yuma	928-317-4450	928-317-4624

iii. Standard and transmission-based precautions to be followed to prevent spread of infections

A facility's infection control practices are important to preventing the transmission of infections. Infection control precautions used by the facility include two primary tiers: "Standard Precautions" and "Transmission-Based Precautions."

Standard Precautions

Standard precautions represent the infection prevention measures that apply to all resident care, regardless of suspected or confirmed infection status of the resident, in any setting where healthcare is being delivered. These evidence-based practices are designed to protect healthcare staff and residents by preventing the spread of infections among residents and ensuring staff do not carry infectious pathogens on their hands or via equipment during resident care. As mentioned in the definitions section, standard precautions include hand hygiene, use of PPE (e.g., gloves, gowns, facemasks), respiratory hygiene and cough etiquette, safe injection practices, and safe handling of equipment or items that are likely contaminated with infectious body fluids, as well as cleaning and disinfecting or sterilizing of potentially contaminated equipment.

In order to perform hand hygiene appropriately, soap, water, ABHR, and a sink should be readily accessible in appropriate locations including but not limited to resident care areas, and food and medication preparation areas. Staff must perform hand hygiene (even if gloves are used):

- Before and after contact with the resident;
- Before performing an aseptic task;
- After contact with blood, body fluids, visibly contaminated surfaces or after contact with objects in the resident's room;
- After removing personal protective equipment (e.g., gloves, gown, facemask);
- After using the restroom; and
- Before meals

If residents need assistance with hand hygiene, staff should assist with washing hands after toileting, before meals, and use of ABHR or soap and water at other times when indicated.

The use of PPE during resident care is determined by the nature of staff interaction and the extent of anticipated blood, body fluid, or pathogen exposure to include contamination of environmental surfaces. Furthermore, appropriate use of PPE includes but is not limited to the following:

- Gloves worn before and removed after contact with blood or body fluid, mucous membranes, or non-intact skin;
- Gloves changed and hand hygiene performed before moving from a contaminated-body site to a clean-body site during resident care;

- Gown worn for direct resident contact if the resident has uncontained secretions or excretions or with contaminated or potentially contaminated items;
- Appropriate mouth, nose, and eye protection (e.g., facemasks, face shield) is worn for procedures that are likely to generate splashes or sprays of blood or body fluids;
- PPE appropriately discarded after resident care prior to leaving room followed by hand hygiene; and
- Supplies necessary for adherence to proper PPE use (e.g., gloves, gowns, masks) are readily accessible in resident care areas (i.e., nursing units, therapy rooms) although, equipment supply carts should not be brought into the resident's room.

Transmission-based Precautions

Transmission-based precautions are used for residents who are known to be, or suspected of being, infected or colonized with infectious agents, including pathogens that require additional control measures to prevent transmission. In LTCFs, it is appropriate to individualize decisions regarding resident placement (shared or private), balancing infection risks with the need for more than one occupant in a room, the presence of risk factors that increase the likelihood of transmission, and the potential for adverse psychological impact on the infected or colonized resident.

It is essential to communicate transmission-based precautions to all healthcare personnel, and for personnel to comply with requirements. Pertinent signage (i.e., isolation precautions) and verbal reporting between staff can enhance compliance with transmission-based precautions to help minimize the transmission of infections within the facility.

It is important to use the standard approaches, as defined by the CDC, for transmission-based precautions: airborne, contact, and droplet precautions. The category of transmission-based precaution determines the type of PPE to be used. Communication (e.g., verbal reports, signage) regarding the particular type of precaution to be utilized is important. When transmission-based precautions are in place, PPE should be readily available. Proper hand washing remains a key preventive measure, regardless of the type of transmission-based precaution employed.

Transmission-based precautions are maintained for as long as necessary to prevent the transmission of infection. It is appropriate to use the least restrictive approach possible that adequately protects the resident and others. Maintaining isolation longer than necessary may adversely affect psychosocial well-being. The facility

should document in the medical record the rationale for the selected transmission-based precautions.

Contact Precautions

Contact precautions are intended to prevent transmission of infections that are spread by direct (e.g., person-to-person) or indirect contact with the resident or environment, and require the use of appropriate PPE, including a gown and gloves upon entering (i.e., before making contact with the resident or resident's environment) the room or cubicle. Prior to leaving the resident's room or cubicle, the PPE is removed and hand hygiene is performed.

Depending on the situation, options for residents on contact precautions may include the following: a private room, cohorting, or sharing a room with a roommate with limited risk factors (e.g., without indwelling devices, without pressure ulcers and not immunocompromised).

Droplet Precautions

The use of droplet precautions applies when respiratory droplets contain viruses or bacteria particles which may be spread to another susceptible individual. Respiratory viruses can enter the body via the nasal mucosa, conjunctivae and less frequently the mouth. Examples of droplet-borne organisms that may cause infections include, but are not limited to *Mycoplasma pneumoniae*, influenza, and other respiratory viruses.

Respiratory droplets are generated when an infected person coughs, sneezes, talks, or during procedures such as suctioning, endotracheal intubation, cough induction by chest physiotherapy, and cardiopulmonary resuscitation. The maximum distance for droplet transmission is currently unresolved, but the area of defined risk based on epidemiological findings is approximately 3-10 feet. In contrast to airborne pathogens, droplet-borne pathogens are generally not transmitted through the air over long distances.

Facemasks are to be used upon entry (i.e., within three feet of a resident) into a resident's room or cubicle with respiratory droplet precautions. If substantial spraying of respiratory secretions is anticipated, gloves and gown as well as goggles (or face shield in place of goggles) should be worn. The preference for a resident on droplet precautions would be to place the resident in a private room. If a private room is not available, the resident could be cohorted with a resident with the same infectious agent, or share a room with a roommate with limited risk factors. Spatial separation of at least 3 feet and drawing the curtain between resident beds is especially important for residents in multi-bed rooms with infections transmitted by the droplet route.

Airborne Precautions

Airborne transmission occurs when pathogens are so small that they can be easily dispersed in the air, and because of this, there is a risk of transmitting the disease through inhalation. These small particles containing infectious agents may be dispersed over long distances by air currents and may be inhaled by individuals who have not had face-to-face contact with (or been in the same room with) the infectious individual. Staff caring for residents on airborne precautions should wear a fit-tested N95 or higher level respirator that is donned prior to room entry.

Preventing the spread of pathogens that are transmitted by the airborne route requires the use of special air handling and ventilation systems such as an airborne infection isolation room (AIIR) to contain and then safely remove the infectious agent. Residents with infections requiring an AIIR must be transported to an acute care setting unless the facility can place the resident in a private AIIR room with the door closed. In cases when AIIR is required, such as for a resident with TB, it is important for the facility to have a plan (e.g., public health notification and exposure workup) in place to effectively manage a situation involving a resident with suspected or active TB while awaiting the resident's transfer to an acute care setting.

More information about standard and transmission-based precautions can be found at the CDC website below:

- Precautions to Prevent Transmission of Infectious Agents

iv. When and how isolation should be used for a resident

It is important that facility staff clearly identify the type of precautions and the appropriate PPE to be used in the care of the resident. The PPE should be readily available near the entrance to the resident's room. Signage can be posted on the resident's door instructing visitors to see the nurse before entering.

It is not always possible to prospectively identify residents needing transmission-based precautions (presumptive precautions). The diagnosis of many infections is based on clinical signs and symptoms but often requires laboratory confirmation. However, since laboratory tests (especially those that depend on culture techniques) may require two or more days to complete, transmission-based precautions may need to be implemented while test results are pending, based on the clinical presentation and the likely category of pathogens. The use of appropriate transmission-based precautions when a resident develops signs or symptoms of a transmissible infection, or arrives at a LTCF with symptoms of an infection, (pending laboratory confirmation) reduces transmission opportunities. However, once it is confirmed that the resident is no longer a risk for transmitting the

infection, removing transmission-based precautions avoids unnecessary social isolation.

The following document helps to know when and how isolation should be used for a resident.

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

v. The circumstances under which the facility must prohibit employees with a communicable disease or infected skin lesions from direct contact with residents or their food, if direct contact will transmit the disease

Facility staff who have direct contact with residents or who handle food must be free of communicable diseases and open skin lesions, if direct contact will transmit the disease. It is important that the facility maintain documentation of how they handle staff with communicable infections or open skin lesions.

It is important that all staff involved in direct resident contact maintain fingernails that are clean, neat, and trimmed. Wearing intact disposable gloves in good condition and that are changed after each use helps reduce the spread of microorganisms. It is important for dietary staff to wear hair restraints (e.g., hairnet, hat, and/or beard restraint) while in the kitchen areas to prevent their hair from contacting exposed food. Since jewelry can harbor microorganisms, it is recommended by the FDA that dietary staff keep jewelry to a minimum and remove or cover hand jewelry when handling food.

The following document provides summary of suggested work restrictions for health care personnel exposed to or infected with infectious diseases of importance in healthcare settings.

- Guideline for infection control in health care personnel, 1998

vi. The hand hygiene procedures to be followed by staff involved in direct resident contact

Hand hygiene continues to be the primary means of preventing the transmission of infection. The following is a list of some situations that require hand hygiene:

- When coming on duty;
- When hands are visibly soiled (hand washing with soap and water);
- Before and after direct resident contact (for which hand hygiene is indicated by acceptable professional practice);

- Before and after performing any invasive procedure (e.g., fingerstick blood sampling);
- Before and after entering isolation precaution settings;
- Before and after eating or handling food (hand washing with soap and water);
- Before and after assisting a resident with meals;
- Before and after assisting a resident with personal care (e.g., oral care, bathing);
- Before and after handling peripheral vascular catheters and other invasive devices;
- Before and after inserting indwelling catheters;
- Before and after changing a dressing;
- Before and after coming in contact with a resident's intact skin, (e.g., when taking a pulse or blood pressure, and lifting a resident);
- After personal use of the toilet (hand washing with soap and water);
- Before and after assisting a resident with toileting;
- After contact with a resident with infectious diarrhea including, but not limited to infections caused by norovirus, salmonella, shigella, and *C. difficile* (hand washing with soap and water);
- After blowing or wiping nose;
- After contact with a resident's mucous membranes and body fluids or excretions;
- After handling soiled or used linens, dressings, bedpans, catheters and urinals;
- After handling soiled equipment or utensils;
- After performing personal hygiene (hand washing with soap and water);
- After removing gloves or aprons; and
- After completing duty.

Consistent use by staff of proper hygienic practices and techniques is critical to preventing the spread of infections. It is necessary for staff to have access to proper hand washing facilities with soap (regular or anti-microbial), warm water, and disposable towels and/or heat/air drying methods available. Alcohol based hand rubs (ABHR) cannot be used in place of proper hand washing techniques in a food service setting.

Recommended techniques for washing hands with soap and water include wetting hands first with clean, running, warm water; applying the amount of product recommended by the manufacturer to hands; rubbing hands together vigorously for

at least 15 seconds, covering all surfaces of the hands and fingers; then rinsing hands with water; drying thoroughly with a disposable towel; and turning off the faucet on the hand sink with the disposable paper towel.

Except for situations where hand washing is specifically required, antimicrobial agents such as ABHR are also appropriate for cleaning hands and can be used for direct resident care. Recommended techniques for performing hand hygiene with an ABHR include applying product to the palm of one hand; and rubbing hands together, covering all surfaces of hands and fingers, until the hands are dry. Gloves or the use of baby wipes are not a substitute for hand hygiene.

Please visit following website for more hand washing resources

- ADHS Hand Hygiene Poster
- Hand Washing: When and How to Wash Hands
- Hand Hygiene in Healthcare Settings
- CDC Hand Hygiene Courses for Healthcare Providers
- Guideline for Hand Hygiene in Health-Care Settings

(a)(3) An antibiotic stewardship program that includes antibiotic use protocols and a system to monitor antibiotic use

Because of increases in multi-drug resistant organisms (MDROs), reviewing the use of antibiotics (including comparing prescribed antibiotics with available susceptibility reports) is a vital aspect of the IPCP. It is the physician's (or other appropriate authorized practitioner's) responsibility to prescribe appropriate antibiotics and to establish the indication for use of specific medications. As part of the medication regimen review, the consultant pharmacist can assist with the oversight by identifying antibiotics prescribed for resistant organisms or for situations with questionable indications, and reporting such findings to the director of nursing and the attending physician.

As part of their IPCP programs, facilities must develop an antibiotic stewardship program that promotes the appropriate use of antibiotics and includes a system of monitoring to improve resident outcomes and reduce antibiotic resistance. This means that the antibiotic is prescribed for the correct indication, dose, and duration to appropriately treat the resident while also attempting to reduce the development of antibiotic-resistant organisms.

LTCF residents are at risk for adverse outcomes associated with the inappropriate use of antibiotics that may include but are not limited to the following:

- Increased adverse drug events and drug interactions (e.g., allergic rash, anaphylaxis or death);
- Serious diarrheal infections from *C. difficile*;
- Disruption of normal flora (e.g., this can result in overgrowth of Candida such as oral thrush); and/or

- Colonization and/or infection with antibiotic-resistant organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant Enterococus (VRE), and multidrug-resistant gram negative bacilli.

Implement an antibiotic stewardship program

The facility must develop an antibiotic stewardship program which includes the development of protocols and a system to monitor antibiotic use. This development should include leadership support and accountability via participation of the medical director, consulting pharmacist, nursing and administrative leadership, and the individual with designated responsibility for the infection control program, if different from the above.

The antibiotic stewardship program protocols shall describe how the program will be implemented and how antibiotic use will be monitored. Consequently protocols must:

- Be incorporated in the overall IPCP;
- Be reviewed on an annual basis and as needed;
- Contain a system of reports related to monitoring antibiotic usage and resistance data. Examples may include the following:
  - Summarizing antibiotic use from pharmacy data, such as the rate of new starts, types of antibiotics prescribed, or days of antibiotic treatment per 1,000 resident days;
  - Summarizing antibiotic resistance (e.g., antibiogram) based on laboratory data from, for example, the last 18 months; and/or
  - Tracking measures of outcome surveillance related to antibiotic use (e.g., *C. difficile*, MRSA, and/or carbapenem-resistant Enterobacteriaceae).
- Incorporate monitoring of antibiotic use, including the frequency of monitoring/review. Monitor/review when the resident is new to the facility; when a prior resident returns or is transferred from a hospital or other facility; during each monthly medication regimen review when the resident has been prescribed or is taking an antibiotic; or any antibiotic regimen review as requested by the review committee. In addition, establish the frequency and mode or mechanism of feedback (e.g., verbal, written note in record) to prescribing practitioners regarding antibiotic resistance data, their antibiotic use and their compliance with facility antibiotic use protocols. Feedback on prescribing practices and compliance with facility antibiotic use protocols may include information from medical record reviews for new antibiotic starts to determine whether the resident had signs or symptoms of an infection; laboratory tests ordered and the results; prescription documentation including the indication for use (i.e., whether or not an infection or communicable disease has been documented), dosage and duration; and clinical justification for the use of an antibiotic beyond the initial duration ordered such as a review of laboratory reports/cultures in order to determine if the antibiotic remains indicated or if adjustments to therapy should be made (e.g., more narrow spectrum antibiotic);

- Assess residents for any infection using standardized tools and criteria 63 (e.g., SBAR tool for urinary tract infection (UTI) assessment, Loeb minimum criteria for initiation of antibiotics); and
- Include the mode (e.g., verbal, written, online) and frequency (as determined by the facility) of education for prescribing practitioners and nursing staff on antibiotic use (stewardship) and the facility's antibiotic use protocols. NOTE: Prescribing practitioners can include attending physicians and non-physician practitioners (NPP) (i.e., nurse practitioners, clinical nurse specialists, and physician assistants).

The Core Elements of Antibiotic Stewardship for Nursing Homes

This document helps to initiate or expand antibiotic stewardship activities in nursing homes. Nursing homes are encouraged to work in a step-wise fashion, implementing one or two activities to start and gradually adding new strategies from each element over time. Any action taken to improve antibiotic use is expected to reduce adverse events, prevent emergence of resistance, and lead to better outcomes for residents in this setting.

More information about the core elements of antibiotic stewardship for nursing homes is provided in following resources:

- Core Elements of Antibiotic Stewardship – Seven core elements of antibiotic stewardship for nursing homes;
- Checklist – Checklist to review progress in expanding stewardship activities on a regular basis;
- Appendix A: Policy and Practice Actions to Improve Antibiotic Use – Detailed explanations of policy and practice actions that can be taken by nursing homes as part of their antibiotic stewardship activities;
- Appendix B: Measures of Antibiotic Prescribing, Use and Outcomes – Detailed explanations of antibiotic use process and outcome measures which can be tracked by nursing homes to monitor the impact of their antibiotic stewardship activities;
- Fact Sheets – Several factsheets for residents, families, medical leaders and administrators that can be used in nursing homes to improve prescribing;
- Infographic – Infographic showing importance of antibiotic stewardship in nursing homes.

AHRQ Nursing Home Antimicrobial Stewardship Guide/Toolkit

The Nursing Home Antimicrobial Stewardship Guide provides toolkits to help nursing homes optimize their use of antibiotics. This Guide provides information and tools that nursing homes can use to make antimicrobial stewardship a priority and to select and implement interventions that address the specific needs of their facilities.

- Entire Toolkits
- Implement, Monitor, and Sustain an Antimicrobial Stewardship Program

        - Start an Antimicrobial Stewardship Program
            - Identify champions and gather a team
            - Conduct a readiness assessment
            - Plan for implementation
            - Introduce new policies and procedures to staff
        - Monitor and Sustain Stewardship
            - Convene a meeting of the antimicrobial stewardship program team to discuss how and what to monitor.
            - Use the Antibiotic Use Tracking Sheet.
            - Use and evaluate progress through the Monthly Summary Reports
            - Communicate results to prescribing clinicians
            - Review and update guidelines.
- Determine Whether It Is Necessary To Treat a Potential Infection With Antibiotics
    - Suspected UTI SBAR Toolkit
    - Common Suspected Infections: Communications and Decision making for Four Infections
    - Minimum Criteria for Common Infections Toolkit
- Help Prescribing Clinicians Choose the Right Antibiotic
    - Working With Your Lab To Improve Antibiotic Prescribing
    - Using Nursing Home Antibiograms To Choose the Right Antibiotic (Concise Antibiogram Toolkit)
    - The Nursing Home Antibiogram Program Toolkit: How To Develop and Implement an Antibiogram Program
    - Educate and Engage Residents and Family Members

ADHS Antimicrobial Stewardship Subcommittee

The Antimicrobial Stewardship Subcommittee is a group of medical, microbiology and nursing professionals dedicated to providing education on antibiotic use both to providers and the public. This panel of experts provides information, best practices for stewardship, and technical assistance to healthcare facilities.

- Antimicrobial Stewardship Homepage
- Antibiogram Toolkit
- Antimicrobial Stewardship Educational Slide sets
- Business Models to Support Antimicrobial Stewardship Program
- Resources created by the Antimicrobial Stewardship Subcommittee
- Resources and Reports from other professional organizations

(a)(4) A system for recording incidents identified under the facility's IPCP and corrective actions taken by the facility

A facility must develop and implement a system for recording incidents identified under the facility's IPCP and the corrective actions taken by the facility based on the investigation of the incidents. A facility-identified incident (e.g., HAI) may include the spread of disease due to errors in infection prevention and control. The facility's system should include defining, identifying, analyzing, and reporting incidents related to failures in infection control practices to the director of nursing, medical director, and the Quality Assessment and Assurance (QAA) committee. These may include but are not limited to the following:

- Identification of methods by which the facility would obtain information on incidents from residents, family, and direct care/direct access staff;
- A description of how the facility addresses and investigates the incident(s);
- Measures to be implemented for the prevention of incidents or potential incidents as they relate to infection prevention and control;
- Development and implementation of corrective actions;
- Monitoring for the effectiveness of its implemented changes; and
- Methods for feedback to appropriate individuals involved in the failed practices.

(b) Infection preventionist (IP)

The facility must designate one or more individual(s) as the infection preventionist(s) who is responsible for the facility's IPCP. Responsibilities may include collecting, analyzing, and providing infection data and trends to nursing staff and health care practitioners; consulting on infection risk assessment, prevention, and control strategies; providing education and training; and implementing evidence- based infection control practices, including those mandated by regulatory and licensing agencies, and guidelines from the CDC. The IP must

- Have primary professional training in nursing, medical technology, microbiology, epidemiology or other related field;
- Be qualified by education, training, experience or certification;
- Work at least part time at the facility;
- Have completed specialized training in infection prevention and control.

Some resources and trainings available are listed below:

CDC

https://www.cdc.gov/longtermcare/

https://www.cdc.gov/nhsn/pdfs/training/2016/ltcf-training-stone.pdf

Association for Professionals in Infection Control and Epidemiology (APIC)

http://www.apic.org/Resources/Topic-specific-infection-prevention/Long-term-care

http://www.apic.org/Resource_/ProductDownloadItemForm/d51339d0-47ad-42eb-bc20-cfd4895acaa4/File/LTC_Resources_flyer_12-13_1.pdf

Society for Healthcare Epidemiology of America (SHEA)/APIC Guideline: Infection Prevention and control in the long-term care facility

http://www.apic.org/Resource_/TinyMceFileManager/Practice_Guidance/id_APIC-SHEA_GuidelineforICinLTCFs.pdf

American Health Care Association

https://educate.ahcancal.org/products/infection-preventionist-specialized-training-ipco#tab-product_tab_overview

ADHS

Every year, ADHS organizes the annual training event for LTCFs. For more information about upcoming and past events, please check this webpage

http://azdhs.gov/preparedness/epidemiology-disease-control/healthcare-associated-infection/index.php#collaborative-home

(c) IP participation on quality assessment and assurance committee

The individual designated as the IP, or at least one of the individuals if there is more than one IP, must be a member of the facility's quality assessment and assurance committee and report to the committee on the IPCP on a regular basis.

(d) Influenza and pneumococcal immunizations

The facility must develop policies and procedures to ensure following:

1. Influenza:
    a. Before offering the influenza immunization, each resident or the resident's representative receives education regarding the benefits and potential side effects of the immunization;
    b. Each resident is offered an influenza immunization between October 1 through March 31 annually, unless the immunization is medically contraindicated or the resident has already been immunized during this time period;
    c. The resident or the resident's representative has the opportunity to refuse immunization; and
    d. The resident's medical record includes documentation that indicates, at a minimum, the following:

i. That the resident or resident's representative was provided education regarding the benefits and potential side effects of influenza immunization; and
ii. That the resident either received the influenza immunization or did not receive the influenza immunization due to medical contraindications or refusal.

2. Pneumococcal disease:
   a. Before offering the pneumococcal immunization, each resident or the resident's representative receives education regarding the benefits and potential side effects of the immunization;
   b. Each resident is offered a pneumococcal immunization, unless the immunization is medically contraindicated or the resident has already been immunized;
   c. The resident or the resident's representative has the opportunity to refuse immunization; and
   d. The resident's medical record includes documentation that indicates, at a minimum, the following:
      i. That the resident or resident's representative was provided education regarding the benefits and potential side effects of pneumococcal immunization; and
      ii. That the resident either received the pneumococcal immunization or did not receive the pneumococcal immunization due to medical contraindication or refusal.

   Please visit the following website for influenza and pneumococcal immunizations information:

   - ADHS Pneumococcal Vaccination Algorithms for Adults
   - ADHS Pneumococcal Vaccination for Adults Webinar
   - Influenza Toolkit for Long-Term Care Employers
   - Advisory Committee on Immunization Practices (ACPI) Vaccine Recommendations

(e) Linens

The facility must develop and follow practices on handling, storing, processing, and transporting laundry. The facility must monitor to ensure that the laundry practices are implemented, any deviations from practices must be identified, and corrective actions are put in place.

Laundry includes resident's personal clothing, linens, (i.e., sheets, blankets, pillows), towels, washcloths, and items from departments such as nursing, dietary, rehabilitative services, beauty shops, and environmental services. Laundry services may be provided onsite or the facility may have a written agreement in place for offsite laundry services. Regardless of the location where the laundry is processed, the facility must ensure that all laundry is handled, stored, processed and transported in a safe and sanitary method.

Handling Laundry

The facility staff should handle all used laundry as potentially contaminated and use standard precautions (i.e., gloves). Alternatively, if not all used linens are handled as potentially contaminated, staff would provide separation with special identification of bags and containers for contaminated linens with labels, color coding, or other alternative means of separation of the laundry for appropriate handling and processing. The facility should use the following practices:

- Contaminated laundry is bagged or contained at the point of collection (i.e., location where it was used);
- Leak-resistant containers or bags are used for linens or textiles contaminated with blood or body substances;
- Sorting and rinsing of contaminated laundry at the point of use, hallways, or other open resident care spaces is prohibited; and
- Staff should handle soiled textiles/linens with minimum agitation to avoid the contamination of air, surfaces, and persons.

Transport of Laundry

The facility practices must include how staff will handle and transport the laundry with appropriate measures to prevent cross-contamination. This includes but is not limited to the following:

- Contaminated linen and laundry bags are not held close to the body or squeezed when transporting;
- No special precautions (i.e., double bagging) or categorizing for linen originating in transmission-based precaution rooms is necessary;
- Double bagging of linen is only recommended if the outside of the bag is visibly contaminated or is observed to be wet through to the outside of the bag;[45]
- Contaminated linen carts must be cleaned and disinfected whenever visibly soiled and according to a schedule developed by the facility;
- Separate carts must be used for transporting clean and contaminated linen. If this is not possible, the contaminated linen cart should be thoroughly cleaned and disinfected per facility protocol before being used to move clean linens; and
- Clean linens must be transported by methods that ensure cleanliness and protect from dust and soil during intra or inter-facility loading, transport, and unloading

Linen Storage

Facility practices must address linen storage, and should include but are not limited to:

- Covers are not needed on contaminated textile hampers in resident care areas (unless state licensing rules require them); and
- Clean linen must always be kept separate from contaminated linen. The use of separate rooms, closets, or other designated spaces with a closing door provides the most secure methods for reducing the risk of accidental contamination.

Processing Laundry Including the Use of Laundry Equipment and Detergents in the Facility

The facility must have a process to clean laundry. Detergent and water physically remove many microorganisms from the linen through dilution during the wash cycle. Advances in laundry equipment technology allow modern-day detergents to be much more effective in removing soil and reducing the presence of microbes than those used in the past when much of the research on laundry processing was first conducted. Washing/drying processes includes the use of manufacturer's instructions for use (IFU) for laundry additives and equipment maintenance. The facility staff must prevent contamination of laundry in processing areas. The facility has laundry practices that includes but are not limited to the following:

- Availability and use of hand hygiene products, as well as appropriate PPE (i.e., gloves and gowns) while sorting and handling contaminated linens;
- The receiving area for contaminated textiles is clearly separated from clean laundry areas. Workflow should prevent cross-contamination;
- If using fans in laundry processing areas, prevent cross-contamination of clean linens from air blowing from soiled processing areas (i.e., the ventilation should not flow from soiled processing areas to clean laundry areas);
- Laundry equipment (e.g., washing machines, dryers) is used and maintained according to the manufacturer's IFU to prevent microbial contamination of the system;
- Damp laundry is not left in machines overnight;
- Laundry detergents, rinse aids or other additives are used according to the manufacturer's IFU's;
- Ozone cleaning systems are acceptable for processing laundry;
- If laundry chutes are used, they are designed and maintained so as to minimize dispersion of aerosols from contaminated laundry (e.g., no loose items in the chute and bags are closed before tossing into the chute); and
- The facility should be using the fabric manufacturer's recommended laundry cycles, water temperatures and chemical detergent products:
    - Recommendations for laundry processed in hot water temperatures is 160°F (71°C) for 25 minutes; and
    - For laundry that is not hot water compatible, low temperature washing at 71 to 77 °F (22-25 °C) plus a 125-part-per-million (ppm) chlorine bleach rinse has been found to be effective and comparable to high temperature wash cycles.

NOTE: The facility is not required to monitor water temperatures during laundry processing cycles, unless specified by state rules. A chlorine bleach rinse is not required for all laundry items processed in low temperature washing environments due to the availability of modern laundry detergents that are able to produce hygienically clean

laundry without the presence of chlorine bleach. The facility should refer to the manufacturer's recommendations for the use of the detergent and items being laundered.

Offsite Professional Laundry Services

If linen is sent off-site to a professional laundry, the facility has practices that address how the service will be provided, including how linen is processed and handled to prevent contamination from dust and dirt during loading and transport. The facility should assure that this laundry service meets healthcare industry laundry standards.

Mattresses and Pillows

Standard mattresses and pillows can become contaminated with body substances during resident care if the integrity of the covers of these items is compromised. A mattress cover is generally a fitted, protective material, the purpose of which is to prevent the mattress from becoming contaminated with body fluids and substances. A linen sheet placed on the mattress is not considered a mattress cover. Patches for tears and holes in mattress covers do not provide an impermeable surface over the mattress. Therefore it is recommended that mattress covers with tears or holes be replaced. The facility must have practices that address the methods for cleaning and disinfecting items that are to be used for another resident after an individual resident's use such as but not limited to the following:

- Mattress covers with tears or holes are replaced;
- Moisture resistant mattress covers are cleaned and disinfected between use for different residents with an EPA-approved germicidal detergent to help prevent the spread of infections;
- Fabric mattress covers are laundered between use for different residents;
- Pillow covers and washable pillows are laundered in a hot water laundry cycle between use for different residents or when they become contaminated with body substances; and
- Mattresses are discarded if bodily fluids have penetrated into the mattress fabric.

Guidelines for Environmental Infection Control in Healthcare Facilities

(f) Annual review

The facility's IPCP and its standards, policies and procedures must be reviewed at least annually to ensure effectiveness and that they are in accordance with current standards of practice for preventing and controlling infections; the IPCP must be updated as necessary. In addition, the facility population and characteristics may change over time, and the facility assessment may identify components of the IPCP that must be changed accordingly.

PREVENTING SPREAD OF ILLNESS RELATED TO MDROS

MDROs found in LTCFs include, but are not limited to MRSA, VRE, and *Clostridium difficile* (*C. difficile*). Transmission-based precautions are employed for residents who are **actively infected** with MDROs. Aggressive infection control measures and strict compliance by healthcare personnel can help minimize the spread of MDROs to other susceptible individuals.

Staphylococcus is a common cause of infections in hospitals and nursing homes and, increasingly, in the community. Common sites of MRSA colonization include the rectum, perineum, skin and nares. Colonization may precede or endure beyond an acute infection. MRSA is transmitted person-to-person (skin-to-skin contact), and on inanimate objects.

MRSA infection is commonly treated with vancomycin, which in turn can lead to increased antibiotic resistance among enterococcus. Therefore, preventing infection with MRSA and the limited use of antibiotics for individuals who are only colonized can also help prevent the development of VRE. Enterococcus is an organism that normally occurs in the colorectal tract. VRE infections have been associated with prior antibiotic use.

C. difficile is a bacterial species of the genus clostridium, which are gram-positive, anaerobic, spore-forming rods (bacilli). The organism normally lives benignly in the colon in spore form. When antibiotic use eradicates normal intestinal flora, the organism may become active and produce a toxin that causes symptoms such as diarrhea, abdominal pain, and fever. More severe cases can lead to additional complications such as intestinal damage and severe fluid loss. Treatment options include stopping antibiotics and starting specific anticlostridial antibiotics, e.g., metronidazole or oral vancomycin. If a resident has diarrhea due to *C. difficile*, large numbers of *C. difficile* organisms will be released from the intestine into the environment and may be transferred to other individuals, causing additional infections.

Contact precautions are needed for residents with symptomatic *C. difficile* infection. Thorough hand washing with soap and water after caring for the resident reduces the risk of cross transmission. If possible, residents should be given their own toilet facilities that will not be shared by other residents.

C. difficile can survive in the environment (e.g., on floors, bed rails or around toilet seats) in its spore form for up to 6 months. Rigorously cleaning the environment removes *C. difficile* spores, and can help prevent transmission of the organism. Cleaning equipment used for residents with *C. difficile* with a 1:10 dilution of sodium hypochlorite (nine parts water to one part bleach) will also reduce the spread of the organism. Once mixed, the solution is effective for 24 hours.

- Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006

Guidance for controlling *C difficile*

- ADHS Clostridium difficile Infection (CDI) in Long-Term Care Facilities
- *Clostridium difficile* Infections (CDI) Prevention Toolkit
- ADHS CDI Letter

Guidance for controlling CRE

- Facility Guidance for Control of Carbapenem-resistant Enterobacteriaceae (CRE)
- AHRQ Carbapenem-resistant *Enterobacteriaceae* (CRE) control and prevention toolkit
- ADHS Carbapenem-resistant Enterobacteriacea Infection in Skilled Nursing Facilities

Preventing infections related to the use of specific devices

Medical devices may be used for administration of medications, point-of-care testing, or for other medical uses.

Point-of-Care Testing

Point-of-care testing is diagnostic testing that is performed at or near the site of resident care. This may be accomplished through use of portable, handheld instruments such as blood glucose meters or prothrombin time meters. This testing may involve obtaining a blood specimen from the resident using a fingerstick device. The guidance regarding fingerstick devices and blood glucose meters is applicable to other point-ofcare devices where a blood specimen is obtained (e.g., prothrombin time meters).

Fingerstick Devices

CDC recommends the use of single-use, auto-disabling fingerstick devices in settings where assisted blood glucose monitoring is performed. This practice prevents inadvertent reuse of fingerstick devices for more than one person. Additionally, the use of single-use, auto-disabling fingerstick devices protects healthcare staff from needlestick injuries. If reusable fingerstick devices are used for assisted monitoring of blood glucose, then they must never be used for more than one resident. Although the package instructions for some fingerstick devices may indicate or imply the potential for multiple resident use, CMS guidance, based upon nationally recognized standards of practice from the CDC and FDA, prohibits the use of fingerstick devices for more than one resident

Blood Glucose Meters

Blood glucose meters, can become contaminated with blood and, if used for multiple residents, must be cleaned and disinfected after each use according to manufacturer's instructions for multi-patient use. Additionally, staff must not carry blood glucose meters in pockets. The FDA has released guidance for manufacturers regarding

appropriate products and procedures for cleaning and disinfection of blood glucose meters. This guidance can be found at the FDA's website:

http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/InVitroDiagnostics/ ucm227935.htm

Furthermore, "healthcare personnel should consult the manufacturers of blood glucose meters in use at their facilities to determine what products, meeting the criteria specified by the FDA, are compatible with their meter prior to using any EPA-registered disinfectant for disinfection purposes. If manufacturers are unable to provide this information then the meter should not be used for multiple patients"

Blood glucose meters dedicated for single-resident use should be stored in a manner that will protect against inadvertent use of the device for additional residents and also cross contamination via contact with other meters or equipment.

Safe Medication Administration

All injectable medications must be prepared and administered in accordance with safe injection practices, including but not limited to the following:

- Injections are prepared using aseptic technique in a clean area, free from potential sources of contamination (e.g., blood, body fluids, contaminated equipment);
- Needles and syringes are used for only one resident (this includes manufactured prefilled syringes and cartridge devices such as insulin pens).
- Medication containers are entered with a new needle and a new syringe, even when obtaining additional doses for the same resident. If noncompliance is found, further investigation is warranted.
- Single dose (single-use) medication vials, ampules, and bags or bottles of intravenous solution are used for only one resident;
- Medication administration tubing and connectors are used for only one resident.
- Multi-dose vials to be used for more than one resident are kept in a centralized medication area (e.g., medication room or cart) and do not enter the immediate resident treatment area (e.g., resident room). If multi-dose vials enter the immediate resident treatment area, they should be discarded immediately after use.

Insulin pens are pen-shaped injector devices that contain a reservoir for insulin or an insulin cartridge. These devices are designed to permit self-injection and are intended for single-person use, using a new needle for each injection. Insulin pens are designed to be used multiple times by a single resident only and must never be shared. Facility staff must follow manufacturer's instructions for administration. Regurgitation of blood into the insulin cartridge after injection will create a risk of blood borne pathogen

transmission if the pen is used for more than one resident, even when the needle is changed. The FDA makes the following recommendations to prevent transmission of blood borne infections in residents who require insulin pens:

- Insulin pens containing multiple doses of insulin are meant for single-resident use only, and must never be used for more than one person, even when the needle is changed;
- Insulin pens must be clearly labeled with the resident's name and other identifiers to verify that the correct pen is used on the correct resident; and
- Facilities should review their policies and procedures and educate their staff regarding safe use of insulin pens.

Accessing Vascular Devices

Vascular access devices, especially central venous catheters (CVC), increase the risk for local and systemic infections as well as additional complications such as septic thrombophlebitis. Intravascular access devices such as implanted ports may be accessed multiple times per day, for hemodynamic measurements or to obtain samples for laboratory analysis, thus increasing the risk of contamination and subsequent clinical infection. Limiting access to CVCs for only the primary purpose may help reduce the risk of infection. The following CDC guidelines are provided as a reference for current standards of practice for the care of CVCs:

- Nursing Homes and Assisted Living (Long-Term Care Facilities Prevention Tools
- Basic Infection Prevention and Control Guidelines
- Hemodialysis Central Venous Catheter Scrub-the-Hub Protocol
- Catheter Exit Site Care Observations: Audit Tool

RECOGNIZING AND CONTAINING OUTBREAKS

It is important that facilities know how to recognize and contain infectious outbreaks. Once an outbreak has been identified, it is important that the facility take the appropriate steps to contain it. Plans for containing outbreaks usually include efforts to prevent further transmission of the infection while considering the needs of all residents and staff.

- Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities
- ADHS Norovirus Detection and Management: Guidance for Long-Term Care Facilities
- Infectious Disease Outbreak Investigation and Management
- Outbreak Threshold Guide for Healthcare Providers/Facilities

It is important that facility have processes that enable them to consistently comply with State and Local health department requirements for reporting outbreaks. Report should be sent to local health agency by mail, telephone, or fax.

LTC Resources

Component	Resources
INFECTION PREVENTION AND CONTROL **Preventing, identifying, reporting, investigating and controlling infections and communicable diseases and following accepted national standards**	Revision to State Operations Manual (SOM) Appendix PP Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008 Nursing Homes and Assisted Living (Long-Term Care Facilities [LTCFs]) Prevention Tools ADHS Injection Safety Toolkit
SURVEILLANCE **A system designed to identify possible communicable diseases outbreaks or infections**	Revised McGeer Criteria (2012) NHSN Tracking Infections in Long-Term Care Facilities National Nursing Home Quality Improvement Campaign
REPORTING **When and to whom possible incidents of communicable disease or outbreak should be reported**	Arizona Communicable Disease Reporting-Healthcare Providers Reportable Disease List Infectious Disease Outbreak Investigation and Management Communicable Disease Report Form Local Health Agency Contact Information

ISOLATION PRECAUTIONS **When and how isolation should be used for a resident, including but not limited to**	Precautions to Prevent Transmission of Infectious Agents 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006
OUTBREAK DETECTION AND MANAGEMENT **How to recognize and contain infectious disease outbreaks**	*Clostridium difficile* Infections (CDI) Prevention Toolkit Norovirus Outbreak and Detection Management Influenza-like illness Outbreak Control Guidelines for Assisted Living Facilities *Clostridium difficile* Infections (CDI) Prevention Toolkit Facility Guidance for Control of Carbapenem-resistant Enterobacteriaceae (CRE) AHRQ Carbapenem-resistant *Enterobacteriaceae* (CRE) control and prevention toolkit
EMPLOYEE AND OCCUPATIONAL HEALTH **The circumstances under which the facility must prohibit employees with a communicable disease or infected skin lesions from direct contact with residents or their food, if direct contact will transmit the disease**	Guideline for infection control in health care personnel, 1998

HAND HYGEINE **Hand hygiene procedures to be followed by staff involved in direct resident contact**	ADHS Hand Hygiene Poster Hand Washing: When and How to Wash Hands Hand Hygiene in Healthcare Settings Guideline for Hand Hygiene in Health-Care Settings
ANTIBIOTIC STEWARDSHIP **An antibiotic stewardship program should include antibiotic use protocols and a system to monitor antibiotic use**	The Core Elements for Antibiotic Stewardship in Nursing Homes CDC Checklist of Core Elements of Antibiotic Stewardship in Nursing Homes CDC Creating a Culture to Improve Antibiotic Use in Nursing Homes AHRQ Antimicrobial Stewardship Guide/Toolkit ADHS Antimicrobial Stewardship Homepage

INFECTION PREVENTIONIST TRAINING RESOURCES **The facility must designate one or more individual(s) as the infection preventionist(s) (IPs) who are responsible for the facility's IPCP. The IP must:** • **Have primary professional training in nursing, medical technology, microbiology, epidemiology, or other related field.** • **Be qualified by education, training, experience or certification.** • **Work at least part-time at the facility.** • **Have completed specialized training in infection prevention and control**	CDC https://www.cdc.gov/longtermcare/ https://www.cdc.gov/nhsn/training/index.html Association for Professionals in Infection Control and Epidemiology (APIC) http://www.apic.org/Resources/Topic-specific-infection-prevention/Long-term-care http://www.apic.org/Resource_/ProductDownloadItemForm/d51339d0-47ad-42eb-bc20-cfd4895acaa4/File/LTC_Resources_flyer_12-13_1.pdf Society for Healthcare Epidemiology of American (SHEA)/APIC Guideline: Infection Prevention and control in the long-term care facility http://www.apic.org/Resource_/TinyMceFileManager/Practice_Guidance/id_APIC-SHEA_GuidelineforICinLTCFs.pdf American Health Care Association https://educate.ahcancal.org/products/infection-preventionist-specialized-training-ipco#tab-product_tab_overview ADHS Every year ADHS organizes the annual training event for long term care facilities. For more information about upcoming and past events, please check this webpage http://azdhs.gov/preparedness/epidemiology-disease-control/healthcare-associated-infection/index.php#collaborative-home
INFLUENZA IMMUNIZATIONS **Policies and procedures that must be developed to ensure influenza immunizations are offered/administered to residents**	Influenza Toolkit for Long-Term Care Employers Recommended Immunization Schedule for Adults Advisory Committee on Immunization Practices: Vaccine Recommendations

PNEUMOCOCCAL IMMUNIZATIONS **Policies and procedures that must be developed to ensure pneumococcal immunizations offered/administered to residents**	ADHS Pneumococcal Vaccination Algorithms for Adults ADHS Pneumococcal Vaccination for Adults Webinar Recommended Immunization Schedule for Adults Advisory Committee on Immunization Practices: Vaccine Recommendations
LINENS **Practices related to linen handling, storage, process and transport to ensure they are consistent with preventing spread of infection**	Guidelines for Environmental Infection Control in Healthcare Facilities
WATER MANAGEMENT **Development and adherence to policies and procedures that inhibit microbial growth in building water systems to reduce the risk of growth and spread of *Legionella* and other opportunistic pathogens in water**	Toolkit: Developing a Water Management Program to Reduce *Legionella* Growth and Spread in Buildings Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD)
CARE TRANSITION **Processes for communicating information at the time of transfer**	Multi-drug-resistant Organisms (MDROs) and Other Organisms Requiring Notifications for Interfacility transfers