INFECTION CONTROL

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INFECTION CONTROL

HANDWASHING/HAND HYGIENE

Policy

Proper handwashing and hygiene will be performed by staff, practitioners, visitors and residents to help prevent the spread of infections.

Objectives

To prevent and control the spread of infectious diseases.

General Guidelines

1. All personnel shall be trained and regularly in-serviced on the importance of hand hygiene in preventing the transmission of healthcare-associated infections.
2. All personnel shall follow the handwashing/hand hygiene procedures to help prevent the spread of infections to other personnel, residents, and visitors.
3. Hand hygiene products and supplies (sinks, soap, towels, alcohol-based hand rub, etc.) shall be readily accessible and convenient for staff use to encourage compliance with hand hygiene policies.
4. Resident, family members and/or visitors will be encouraged to practice hand hygiene through the use of fact sheets, pamphlets and/or other written materials provided at the time of admission and/or posted throughout the facility.
5. Do not wear artificial nails or extender tips when working with immunocompromised or severely ill residents.
6. Keep natural nail tips less than ¼ inch long.
7. Hand hygiene is always the final step after removing and disposing of personal protective equipment.
8. The use of gloves does not replace handwashing or hand hygiene.

Handwashing

1. All personnel must wash their hands for at least fifteen (15) seconds using antimicrobial or non-antimicrobial soap and water under the following conditions:
    a. When coming on duty;
    b. When hands are visibly soiled (hand washing with soap and water);
    c. Before and after direct resident contact (for which hand hygiene is indicated by acceptable professional practice);
    d. Before and after performing any invasive procedure (e.g., fingerstick blood sampling);
    e. Before and after entering isolation precaution settings;
    f. Before and after eating or handling food;
    g. Before and after assisting a resident with meals;
    h. Before and after assisting a resident with personal care (e.g., oral care, bathing);
    i. Before and after handling peripheral vascular catheters and other invasive devices;
    j. Before and after inserting indwelling catheters;
    k. Before and after changing a dressing;
    l. Upon and after coming in contact with a resident's intact skin, (e.g., when taking a pulse or blood pressure, and lifting a resident);

m. After personal use of the toilet;
n. Before and after assisting a resident with toileting;
o. After contact with a resident with infectious diarrhea including, but not limited to infections caused by norovirus, salmonella, shigella and C. difficile *(Note: Alcohol-based* hand rubs are inactive against spores. For effective mechanical removal of spores, wash hands for 30 to 60 seconds with soap and water or 2% chlorhexidine gluconate.);
p. After blowing or wiping nose;
q. After contact with a resident's mucous membranes and body fluids or excretions;
r. After handling soiled or used linens, dressings, bedpans, catheters and urinals;
s. After handling soiled equipment or utensils;
t. After performing your personal hygiene;
u. After removing gloves or aprons; and
v. After completing duty.

2. If bar soap is used for handwashing, it will be kept on a strainer that allows for drainage to insure that the soap does not remain in a puddle of water.
3. If liquid soap is used, reservoirs will be discarded when empty. If refillable, they will be emptied and cleaned, rinsed and dried, and never topped off with additional soap.

Alcohol-Based Hand Rubs

1. In most situations, the preferred method of hand hygiene is with an alcohol-based hand rub. If hands are **not** visibly soiled, use an alcohol-based hand rub containing 60 to 95% ethanol or isopropanol for any of the following situations:
    a. Before and after direct contact with residents;
    b. Before donning sterile gloves (the use of gloves does not replace handwashing/hand hygiene);
    c. Before performing any non-surgical invasive procedures;
    d. Before preparing or handling medications;
    e. Before handling clean or soiled dressings, gauze pads, etc.;
    f. Before moving from a contaminated body site to a clean body site during resident care;
    g. After contact with resident's intact skin;
    h. After handling used dressings, contaminated equipment, etc.;
    i. After contact with inanimate objects (e.g., medical equipment) in the immediate vicinity of the resident; and
    j. After removing gloves.

Equipment and Supplies

The following equipment and supplies will be necessary when performing this procedure:

1. Running water;
2. Soap (liquid or bar; anti-microbial or non-antimicrobial);
3. Paper towels;
4. Trash can;
5. Lotion; and
6. Alcohol-based hand rub containing 60 to 95% ethanol or isopropanol.

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Procedure

Handwashing

1. Vigorously lather hands with soap and rub them together, creating friction to all surfaces, for at least fifteen (15) seconds under a moderate stream of running water, at a comfortable temperature. Hot water is unnecessarily rough on hands.
2. Rinse hands thoroughly under running water. Hold hands lower than wrists. Do not touch fingertips to inside of sink.
3. Dry hands thoroughly with paper towels and then turn off faucets with a clean, dry paper towel.
4. Discard towels into trash.
5. Use lotions throughout the day to protect the integrity of the skin.

Alcohol-Based Hand Rubs

1. Apply product to palm of hand and rub hands together.
2. Cover all surfaces of hands and fingers until hands are dry.
3. Follow manufacturers' directions for volume of product to use.

INFECTION CONTROL

PERSONAL PROTECTIVE EQUIPMENT – USING FACE MASKS

Policy

Personal protective equipment, and training on the proper use of such, will be provided to all staff with direct resident contact.

Objectives

1. To prevent transmission of infectious agents through the air.
2. To protect the wearer from inhaling droplets.
3. To prevent transmission of some infections that are spread by direct contact with mucous membranes.
4. To prevent the splashing of blood or body fluids into the mouth or nose.
5. To prevent exposure to bloodborne of airborne pathogens.

Equipment and Supplies

1. High-efficiency disposable masks
2. Cotton gauze or paper tissue masks
3. Eyewear (e.g., goggles) (Note: When the use of a mask is indicated, appropriate eyewear will also be worn.)

Miscellaneous

1. Put the mask on before entering the room, and after cleaning hands.
2. Be sure that face mask covers the nose and mouth while performing treatment or services for the resident.
3. If the face mask becomes wet, change it. Masks become ineffective when moist.
4. Do not hang the face mask around the neck.
5. Before changing a face mask, wash hands.
6. Do not remove the mask while performing treatment or services for the resident.
7. Use a mask only once and then discard it.
8. Handle mask only by the strings (ties).
9. Never touch the mask while it is in use.
10. Follow established handwashing techniques.
11. Always dispose of PPE prior to leaving the resident's room or treatment area.

When to Use a Mask

1. When providing treatment or services to a resident who has a communicable respiratory infection.
2. When providing treatment or services to a resident and the use of a mask is indicated.
3. When performing a task that may involve the splashing of blood or body fluids into the mouth or nose.

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Procedure

Putting on the Mask

1. Obtain a mask.
2. Wash hands.
3. Remove the mask from its container. (Note: If gowning procedures are necessary, put the mask on before putting on gown.)
4. Unfold the mask. Do not touch the part of the mask that will cover the face. Hold the mask by the strings only.
5. Place the mask over the nose and mouth. Using a shoelace bow, tie the top strings over the ears, then tie the lower strings.
6. Avoid any unnecessary handling of the mask.

Removing the Mask

1. Wash hands.
2. Untie the lower strings of the mask first. Hold the strings of the mask only.
3. Untie the top strings of the mask. Remove the mask from the face. Handle strings only.
4. Discard the mask into the designated waste receptacle inside the room.
5. Wash hands.

INFECTION CONTROL

PERSONAL PROTECTIVE EQUIPMENT – USING GLOVES

Policy

Personal protective equipment, and training on the proper use of such, will be provided to all staff with direct resident contact.

Objectives

1. To prevent the spread of infection.
2. To protect wounds from contamination.
3. To prevent exposure to bloodborne pathogens and other potentially infectious material (OPIM).

Equipment and Supplies

1. Gloves

Miscellaneous

1. When gloves are indicated, use disposable single-use gloves.
2. Discard used gloves into the waste receptacle inside the examination or treatment room.
3. Use sterile gloves for invasive procedures to prevent contamination of the resident, and to decrease the risk of infection when changing dressings.
4. Use non-sterile gloves primarily to prevent the contamination of the staff's hands when providing treatment or services to the resident and when cleaning contaminated surfaces.
5. Wash hands after removing gloves. (Note: Gloves do not replace handwashing.)
6. Remove gloves before removing the mask and gown and discard them into the designated waste receptacle inside the room.

When to Use Gloves

1. When touching excretions, secretions, blood, body fluids, mucous membranes or non-intact skin.
2. When the staff's hands have any cuts, scrapes, wounds, chapped skin, dermatitis, etc.
3. When cleaning up spills or splashes of blood or body fluids.
4. When cleaning potentially contaminated items.
5. Whenever in doubt.

Procedure

Putting on Sterile Gloves

1. Wash hands.
2. Obtain gloves. (Note: If gowning procedures are used, put gloves on after putting on the gown so that the cuff of the gloves can be pulled over the sleeve of the gown.)

3. Open the package. Do not touch the gloves.
4. With one hand, grasp a glove by the inside of the cuff. Insert the opposite hand into the glove. Leave the cuff turned down.
5. Pick up the remaining glove with gloved hand. Insert ungloved hand into the second glove.
6. Pull up cuffs of the glove.

Removing Gloves

1. Using one hand, pull the cuff down over the opposite hand turning the glove inside out.
2. Discard the glove into the designated waste receptacle inside the room.
3. With the ungloved hand, pull the cuff down over the opposite hand, turning the glove inside out.
4. Discard the glove into the designated waste receptacle inside the room.
5. Discard the glove package into a waste receptacle inside the room.
6. Wash hands.

INFECTION CONTROL

PERSONAL PROTECTIVE EQUIPMENT – USING GOWNS

Policy

Personal protective equipment, and training on the proper use of such, will be provided to all staff with direct resident contact.

Objectives

1. To prevent the spread of infections.
2. To prevent soiling of clothing with infectious material.
3. To prevent splashing or spilling blood or body fluids onto clothing or exposed skin.
4. To prevent exposure to bloodborne and airborne pathogens.

Equipment and Supplies

1. Disposable gowns.
2. Clean and laundered gowns when disposable gowns are not used.

Miscellaneous

1. Use gowns only once and then discard into an appropriate receptacle inside the exam or treatment room.
2. Clean reusable or disposable gowns may be worn in most circumstances.
3. Use gowns only when indicated or as instructed.
4. Follow established handwashing procedures.
5. Reusable gowns shall be laundered after each use in accordance with established laundry procedures.
6. When use of a gown is indicated, all staff must put on the gown before treating or touching the resident.
7. Gowns shall be large enough to cover all of the wearer's clothing, and they must be tightly cuffed at the sleeves.
8. After completing the treatment or procedure, gowns must be discarded in the appropriate container located in the room.
9. If blood or another potentially infectious material penetrates a garment(s) (e.g., gown, apron, lab coat, etc.), the garment(s) must be removed immediately or as soon as possible.
10. Soiled gowns must not be worn in break rooms, lobbies, or into any area in which contamination of equipment is likely to occur.
11. Always dispose of PPE prior to leaving the resident's room or treatment area.

Procedure

Putting on the Gown

1. Obtain the gown (disposable or reusable).
2. If long sleeves are being worn, roll the sleeves above the elbows.
3. Wash hands.
4. Unfold the gown so that the opening is at the back.

5. Put arms into the sleeves of the gown.
6. Fit the gown at the neck.
7. Secure at the neck (tie or Velcro).
8. Overlap the gown at the back. Be sure clothing is completely covered.
9. Secure at the waste (tie or Velcro).

Removing the Gown

1. Untie/unfasten the back of the gown.
2. Remove gloves and discard them into a waste receptacle in the room.
3. Untie/unfasten the neck band. While still holding the neck strings, pull the gown off the shoulders.
4. Remove the gown by rolling it away from the body. Handle the inside of the gown only.
5. Fold the outside (contaminated portion) of gown inward, and roll the gown into a bundle.
6. If the gown is disposable, discard it into the waste receptacle inside the room. If the gown is reusable (washable), discard it into the soiled laundry container inside the room.
7. Wash hands.
8. If a mask was used during the procedure(s) or service, remove it at this time and discard it into the waste receptacle inside the room.
9. Wash hands.

INFECTION CONTROL

PERSONAL PROTECTIVE EQUIPMENT – USING PROTECTIVE EYEWEAR

Policy

Personal protective equipment, and training on the proper use of such, will be provided to all staff with direct resident contact.

Objectives

1. To protect staff from splashes, spattering, spraying, or droplets of blood, body fluids, or other potentially infectious materials.
2. To protect the staff's eyes, nose, and mouth from bloodborne pathogens and potentially infectious materials.

Equipment and Supplies

1. Protective eyewear (disposable or reusable)
2. Goggles (disposable or reusable)
3. Face shield (disposable or reusable)
4. Masks (disposable or reusable)

Miscellaneous

1. Masks and eye protection devices, such as goggles or glasses with solid side shields or chin-length face shields, will be worn together whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be expected.
2. Personal eyeglasses should not be considered as adequate protective eyewear.
3. Protective eyewear will have adequate side and top coverage and will fit the staff properly.
4. Hands should be washed after removal of protective eyewear.
5. Always dispose of PPE prior to leaving resident's room or treatment area.

Procedure

1. Put on masks.
2. Put on eyewear, goggles, or face shield per manufacturer's instructions.
3. Adjust the eyewear to fit properly.
4. Dispose of, or clean, eyewear as applicable.
5. Dispose of masks in a designated container.
6. Wash hands after removing the mask and eyewear.

INFECTION CONTROL

NEEDLE HANDLING AND/OR DISPOSAL

Policy

Staff will be trained in the safe handling and disposal of used needles.

Objectives

To prevent needlestick injuries and exposure to the HIV (AIDS) and hepatitis B (HBV) viruses or other bloodborne infections through contact with blood or tissues.

Equipment and Supplies

1. Needle box;
2. Recapping device (if a needle box is not available);
3. Gloves (as indicated); and
4. Other as necessary or appropriate.

Procedure

1. After using a needle, if the needle disposal box is directly available, discard the needle without recapping.
2. Place used needles in the needle disposal box. Do not bend, break, or cut needles. When the disposal box is three-quarter filled or at fill line, seal the box and store it in a closed, puncture-resistant container marked "Biohazard" until incinerated or picked up by a licensed vendor for proper disposal.
3. Do not discard used or unused needles into trash receptacles.
4. In the event of a needlestick injury, the staff should:
    a. immediately wash the wound vigorously with soap and running water;
    b. if desired, apply alcohol or hydrogen peroxide to the wound; and
    c. notify the Supervisor or Infection Preventionist of the incident as soon as practical.

INFECTION CONTROL

CLEANING SPILLS OR SPLASHES OF BLOOD OR BODY FLUIDS

Policy

Environmental contamination and the possible spread of bloodborne infections, including the AIDS (HIV) and hepatitis B (HBV) viruses, to staff and residents while cleaning up spills of blood or body fluid splashes will be minimized.

Preparation

Assemble the equipment and supplies as needed.

General Guidelines

1. Hands must be washed as soon as practical after an exposure to blood.
2. As all residents' blood and body fluids are considered potentially infectious, all exposures to blood/body fluids will be reported to the Infection Preventionist (or designee) or Supervisor.
3. Do not pick up broken glass by hand. Use forceps, tongs, or brush and dustpan.
4. Report spills of blood or body fluids to the Infection Preventionist (or designee) so that an investigation into the cause of the spill can be initiated and the corrective measures identified to prevent similar spills from occurring.

Equipment and Supplies

The following equipment and supplies will be necessary when performing this procedure.

1. Nonsterile gloves (exam or heavy-duty);
2. Bleach (EPA registered sodium hypochlorite 5.25%);
3. Spray bottle;
4. Water;
5. Cloth or paper towels;
6. Plastic bag (Note: If a red bag is not used, a "biohazard" label will be affixed to the bag);
7. Forceps, tongs, or brush and dustpan (as applicable if picking up broken glass);
8. Personal protective equipment (e.g., gowns, gloves, mask, etc., as needed); and
9. Other as appropriate or as may be needed.

Procedure

1. Arrange the supplies so they can be easily reached.
2. Using appropriate personal protective measures, mix and label the following disinfectant solutions:
    a. One (1) part bleach and ten (10) parts water (written as 1:10); and/or
    b. One (1) part bleach and one hundred (100) parts water (written as 1:100).
3. Put on nonsterile exam gloves or heavy-duty gloves.

4. If the spill involves large amounts of blood (two cups or more), spray the area with 1:10 disinfectant solution until thoroughly saturated.
5. Use forceps, tongs, or brush and dustpan to pick up broken glass.
6. Place contaminated items, including equipment used to pick up glass fragments, in properly labeled receptacle for decontamination.
7. Wipe up the spill or splash with a cloth or paper towels or use granules to absorb spill.
8. Discard the saturated cloth or paper towels into the plastic "biohazard" bag.
9. Repeat as necessary until the spill or splash area is dry.
10. Disinfect the area by swabbing with a cloth or paper towel which has been moderately saturated with a 1:100 bleach solution. Allow to air dry.
11. Discard the contaminated cleaning cloth or paper towels into the plastic "biohazard" bag.
12. Spray disinfectant solution onto the discarded cloth or paper towels inside the plastic bag.
13. Tie the bag. If the outside of the plastic bag becomes contaminated with blood, body fluids, secretions, or excretions, place the contaminated bag into a clean plastic bag.
14. Place the plastic bag into a designated container for medical waste.
15. Remove gloves and place them into designated container. Wash and dry hands thoroughly.
16. Return unused supplies or equipment to the designated storage areas.
17. Wash and dry hands thoroughly.

Reporting

1. Notify Environmental Services of spills of blood or body fluids and/or incidents that result in broken glass.
2. Report other information in accordance with facility policy and professional standards of practice.

INFECTION CONTROL

ASEPTIC AND STERILE TECHNIQUES

Policy

Staff will strictly adhere to aseptic and sterile technique as applicable to help prevent the spread of infection.

Principles of Aseptic Technique

Aseptic technique may also be called clean technique. The areas designated "aseptic" or "clean" are kept free from cross-contamination with microorganisms. Aseptic technique encompasses:

1. Proper handwashing – 15 second soap and water wash, rinsing using warm water.
2. Using hand gels if appropriate.
3. Wearing non-sterile gloves (the gloves in the box in the resident's room).
4. Following Standard Precautions (use of mask, gowns, etc. if chance of contamination).
5. Equipment that is going to be used (tubing, fluid bags, syringes) starts sterile and then is kept as close to sterile as possible. A sterile field is not maintained.
6. Cleaning the area to be used (such as the end of the catheter) with alcohol or other cleaning agents approved for aseptic technique.
7. Taking care not to cross-contaminate "dirty" surfaces or objects and the aseptic area.

Principles of Sterile Technique

Sterile technique means to keep the designated area free from any type of contamination or microorganisms until procedure is completed. Sterile technique encompasses:

1. Establishing and maintaining a sterile field throughout the procedure.
2. Wearing a mask, sterile gloves, and possibly a gown or cap throughout the procedure.
3. Removing equipment and supplies that come in sterile packaging and placing them on a sterile field in such a way that prevents contamination.
4. Taking care not to cross-contaminate sterile objects (including gloves) with non-sterile objects.
5. Cleaning the designated sterile area from the center outward in circular motion if using alcohol and povidone iodine. If using other types of cleaners, follow manufacturer's instructions.
6. Air drying sterile areas that have been cleaned. (Not waving or blowing over cleaned area.)

INFECTION CONTROL

MANAGEMENT OF MULTIDRUG-RESISTANT ORGANISMS

Policy

Appropriate precautions will be taken when caring for individuals known or suspected to have infection or colonization with a multidrug-resistant organism. (Note: **Infection** means that the organism is present and is causing illness. **Colonization** means that the organism is present in or on the body but is not causing illness.)

General Guidelines

1. Multidrug-resistant organisms (MDROs) are bacteria and other microorganisms that have developed resistance to one or more classes of antimicrobial medications.
2. Common examples of MDROs in long-term care facilities include MRSA (methicillin/oxacillin-resistant *Staphylococcus aureus*) and VRE (vancomycin-resistant Enterococci). In addition, gram-negative bacilli (GNB) (e.g., *Escherichia coli*, or *Klebsiella pneumoniae*, Resistant Acinetobacter baumanniia) and multidrug-resistant *Streptococcus pneumoniae* have been identified as emerging MDRO threats in long-term care.
3. Persons who have *Staphylococcus aureus* resistant to nafcillin, oxacillin, or methicillin will be considered to have MRSA, no matter what other antibiotic sensitivities are identified for the organisms.

Standard Precautions

1. Staff will use Standard Precautions as the primary approach to preventing transmission of MDROs.
2. Caregivers should perform hand hygiene as indicated in the hand hygiene policy
3. Masks are not recommended for routine use in caring for residents with MDRO infection or colonization except as indicated by Standard Precautions when there is a risk of splashing body fluids.

Contact Precautions

1. The staff and practitioner will evaluate each individual known or suspected to have infection or colonization with a multidrug-resistant organism for room placement and initiation of Contact Precautions on a case-by-case basis. Standard Precautions will be adequate for some.
2. The Centers for Disease Control and Prevention does not have recommendations for pre-screening residents prior to or upon admission. However, the Infection Control Committee or Medical Director may implement or consider the following to determine the need for Contact Precautions and/or room placement:
    a. The individual's ability to contain infected/colonized body fluids or body site.
    b. Personal hygiene of the resident (e.g., handwashing, keeping hands away from infected/colonized areas).
    c. Risks for transmission including uncontrolled secretions, stool incontinence, draining wounds, diarrhea, and total dependence for activities of daily living or behaviors that may increase the risk of transmission may indicate the need for Contact Precautions.
3. Should a resident be placed on Contact Precautions, implement the facility Contact Precautions policy.

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Room Placement

1. A resident with a multidrug-resistant organism may need to be separated from a roommate who has any of the following: a device such as an indwelling urinary catheter, gastrostomy feeding tube, or intravenous access line, a pressure ulcer or other open skin wound including a postoperative wound, or significant immunosuppression (due to malignancy, chemotherapy, etc.).
2. The resident need not be moved from his/her room until after screening is done and the need for Contact Precautions is determined.
3. Depending on the situation, placement may include the following:
    a. Placement in a room with someone else who is colonized or infected with the same organism, but does not have any other infection (cohorting).
    b. Placement with someone who does not have invasive devices or wounds.
    c. Placement in a private room, if possible.
4. A resident who is infected or colonized with a multidrug-resistant organism will be permitted to participate in group meals and activities if draining wounds are covered, bodily fluids are contained, and he/she observes good hygiene practices.
5. Personnel with open skin lesions should ensure they are covered. If uncovered skin and immuno-compromised, the personnel will not care for a resident with MRSA or other MRDO infection.

Discontinuing Contact Precautions

1. Residents who are placed on Contact Precautions will remain so until a clear culture report has been obtained or until it is determined that they no longer present a risk of transmission.
2. CDC no longer provides specifics on the number of cultures required to discontinue precautions for a resident with a MDRO.
    a. If a resident is asymptomatic and has a positive culture he or she is considered colonized and does not require precautions.
    b. If resident is symptomatic and has a positive culture, a case by case decision will be made on whether precautions are needed.
    c. If resident is considered colonized but there are other factors such as behaviors that increase the risk of transmission, precautions may be continued.
3. Contact precautions or isolation may not be discontinued until the Infection Preventionist/designee reviews the situation and the Attending Physician approves the discontinuation.
4. Upon approval from the Infection Preventionist/designee and Attending Physician, a resident who has had a multidrug-resistant organism at a site that has healed (or who has recovered from bacteremia or sepsis due to a multidrug-resistant organism) may be removed from Contact Precautions without having a repeat culture of the site.

Environmental Precautions

1. In general, healthy visitors and volunteers will be encouraged to wear disposable gowns and gloves during visitation. If refused, visitors will be asked to perform hand hygiene before leaving the room and will be requested to not visit with other residents.
2. For residents with colonization or infection with MDROs, non-critical resident-care items will be dedicated for individual use or decontaminated prior to use with another resident.
3. Towels used for drying hands after contact should be used only once.
4. Disposable gloves should be worn if contact with body fluids is expected and hand hygiene performed after removing the gloves.

5. Linens should be changed and washed if they are soiled and on a routine basis.
6. The resident's environment should be cleaned routinely and when soiled with body fluids.

Surveillance and Communication

1. Complete surveillance documentation (e.g., line history, reports) for residents who have a multidrug-resistant organism infection/colonization.
2. The nursing staff and/or Infection Preventionist will ensure that staff is aware of a resident with a MDRO infection.
3. If there is a first case or outbreak of an epidemiologically important MDRO (MRSA, VRE, ESBL, resistant A. *baumanni*), surveillance of target MDRO infection will be initiated.
4. If a resident who is colonized or infected with a MDRO is transferred to another facility, the information will be included on the transfer form sent to the receiving facility.
5. Notify Physicians and other healthcare personnel who provide care for the resident that the resident is colonized/infected with a MDRO.

Enhanced MDRO Control Efforts

1. If prevalence of MDROs are not controlled through the use of routine control measures, the Infection Preventionist will initiate enhanced control efforts, which may include the following:
    a. Consulting with persons with experience in the infection control and epidemiology of MDROs.
    b. Reviewing facility systems and staffing patterns that may be contributing to the spread of MDROs.
    c. Intensifying training of staff and personnel.
    d. A clinical review of the use of antimicrobial medications.
    e. Active surveillance cultures from residents at risk.
    f. Intensifying surveillance of targeted MDROs.
    g. Initiating Contact Precautions for all residents infected or colonized with MDROs.
    h. Implementing policies for resident admission and placement as needed.
    i. Implementing resident-dedicated use of non-critical care items.
    j. Monitoring environmental services for compliance with cleaning and disinfecting procedures.
    k. Obtaining environmental cultures.
    l. Consulting with experts on decolonization therapies for residents and staff.

INFECTION CONTROL

DISINFECTION OF DURABLE MEDICAL EQUIPMENT FOR INTRAVENOUS THERAPY

Policy

Infusion-related durable medical equipment (DME) will be cleaned and disinfected before and after each resident use.

General Guidelines

1. Disinfection solutions will be high level germicides and will be used in accordance with manufacturers' labeled use and directions. Solutions will be Environmental Protection Agency (EPA) registered.[1]
2. Protocols for disinfection of DME should be in accordance with organizational policy, procedure, and practice guidelines.
3. Disinfection is to remove foreign material, prevent cross contamination, transmission of disease, and to eliminate microorganisms.
4. Cleaning and disinfection of DME should be performed prior to and after resident use.
5. DME is for SINGLE RESIDENT USE and then it must be cleaned/disinfected.
6. Intravenous therapy equipment that will be cleaned/disinfected should include (but not limited to):
    a. IV poles;
    b. electronic and mechanical infusion devices; and
    c. non-disposable infusion related equipment.
7. The disinfection solution should not cause damage that could alter the integrity or performance of the equipment. Avoid the sensor areas on electronic pumps.
8. The assignment of cleaning/disinfection responsibility (facility, pharmacy, or outside company) should be outlined in facility policy/procedure.

[1] INS 2011 Standard 23

INFECTION CONTROL

GUIDELINES FOR PREVENTING INTRAVENOUS CATHETER-RELATED INFECTIONS

Policy

The purpose of this procedure is to maximally reduce the risk of infection associated with indwelling intravenous (IV) catheters.

General Guidelines

1. Facility staff who manage infusion catheters will have training and demonstrated clinical competency in intravenous therapy, including:
    a. indications for IV catheter use;
    b. proper procedures for the insertion and maintenance of IV catheters; and
    c. appropriate infection control measures to prevent IV catheter-related infections.
2. Staff may only insert catheter types for which they have adequate training and demonstrated skill.
3. Aseptic technique shall be observed at all times when working with IV equipment.
4. All infusion equipment shall be sterile when first opened. At all times equipment shall remain aseptic. If it becomes contaminated it must be changed.
5. Resident complaints of pain or problems regarding the catheter or treatment shall be investigated immediately. Interventions shall be initiated as soon as the appropriate measure is identified.

Overview of Catheter-Related Infections

1. Potential risk factors associated with central venous access device (CVAD) and infusion-related infections include:
    a. catheter dwell time, sutures;
    b. frequent manipulation of CVAD;
    c. multi-lumen catheters; and
    d. presence of immunosuppression.
2. Signs and symptoms that can indicate infection include:
    a. fever, chills;
    b. hypotension, hyperventilation;
    c. altered mental status;
    d. tenderness at insertion site;
    e. erythema, induration, purulent drainage;
    f. positive blood cultures or catheter tip; and
    g. phlebitis.
3. Infections can be local, systemic, or both.

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Nursing Practice Guidelines to Prevent Catheter-Related Infections

Surveillance

1. Observe the insertion site (and sutures if present) on every shift, on admission, and with dressing changes.
2. Observe visually or by palpation through the intact dressing.
3. If signs and symptoms of catheter-related infection are present, contact the Physician.
4. Obtain an order for culture if there are signs of drainage, expanding redness, tenderness at insertion site, and/or fever without obvious source.
5. Cultures may be taken from the site of drainage, the catheter, peripheral blood samples, or any other suspected source as ordered.
6. Any time that dressing is not intact or end caps are missing, the catheter has potential for contamination.
7. The Infection Preventionist is responsible for documenting, reporting, and retaining infection rate statistics.

Hand Hygiene

1. Observe proper hand hygiene procedures either by washing hands with conventional soap and water, or with waterless alcohol-based hand rubs.
2. Observe hand hygiene before and after palpating catheter-insertion sites, as well as before and after inserting, replacing, accessing, repairing, or dressing an IV catheter.
3. Palpate insertion site after hand hygiene and non-sterile gloves are applied.
4. Palpation of the insertion site should not be performed after the application of an antiseptic, unless aseptic technique is maintained.

Selection of IV Catheters

1. Select the appropriate type of catheter to accommodate the resident's vascular access needs based on the intended purpose and duration of use, known infectious and non-infectious complications, and experience of individual catheter operators.
2. Select the smallest and shortest length catheter that will accommodate the prescribed therapy.
3. Select the catheter with the fewest number of lumens possible.
4. Therapies that are not appropriate for peripheral or midline catheters include vesicant therapy, parenteral nutrition, infusate with pH less than 5 or greater than 9, or osmolality of greater than 600mOsm/L.
5. Use steel winged infusion sets for single dose administration of medication only. These catheters cause vein irritation and cannot be kept in place.
6. Use a midline or PICC catheter if duration of treatment will likely exceed 6 days.
7. Catheters that are placed in the femoral veins are at higher risk of infection due to their proximity to urinary and rectal areas. These catheters require vigilant care and usually have short stay-in-place times.

Aseptic Technique During Catheter Insertion and Care

1. Peripheral short catheters
    a. Maintain aseptic technique during catheter insertion and care.
    b. Wear clean gloves when inserting a peripheral IV catheter.
    c. Wear clean gloves during dressing changes for peripheral catheters.

   d. Before peripheral catheter insertion, prepare the site with an antiseptic.
      1) Use seventy percent (70%) alcohol, alcoholic chlorhexidine gluconate solution, or povidone-iodine tincture for skin antisepsis.
      2) Clean the area with a circular motion moving from the insertion site outward, and allow it to air dry.
      3) Antiseptics should be left to air dry according the manufacturer's instructions.
2. Midline Catheters
   a. Wear sterile gloves for the insertion of midline catheters.
3. Central Venous Catheters
   a. Use maximal sterile barrier precautions (e.g., cap, mask, sterile gown, sterile gloves, and large sterile drape) when inserting or assisting in the insertion of central venous catheters (CVCs).
   b. Wear sterile gloves for the insertion of arterial and central catheters.
   c. Maintain sterile technique when changing midline and central catheter dressings or performing site care.
   d. Remove hair near the insertion site with scissors or electric clippers, not razors, before catheter is inserted (hair removal requires resident consent).
   e. Before central venous catheter and peripheral arterial catheter insertion and during dressing changes, prepare the site with greater than 0.5% chlorhexidine preparation with alcohol. (If there is a contraindication to chlorhexidine, use tincture of iodine, an iodophor, or 70% alcohol as an alternative.)
   f. Avoid using the femoral vein for central venous access.
4. Use only one catheter for each cannulation attempt.
5. Do not attempt more than two catheter insertions per Nurse.

Catheter Site Dressing Regimens

1. Change initial dressing after catheter placement within 24 hours.
2. Use either sterile gauze or sterile transparent, semi permeable membrane (TSM) to cover central or peripheral catheter sites.
3. If the patient is diaphoretic or the site is bleeding or oozing, use gauze dressing until resolved.
4. Change TSM dressings on CVADs every 5 to 7 days or PRN if damp, loosened, or visibly soiled. This does not require a physician's order.
5. Do not use antibiotic ointments or creams on the insertion site.
6. Gauze dressings covered with TSM dressing should be considered a gauze dressing and changed at least every 48 hours.
7. Change the TSM dressing on a peripheral short catheter when site is rotated or compromised.
8. Chlorhexidine-impregnated sponge dressing is recommended for temporary, short-term catheters if the central line associated bloodstream infection (CLABSI) rate is not decreasing despite adherence to basic prevention measures (i.e., skin antisepsis, education, training).
9. Monitor the catheter site visually during dressing changes. Palpate catheter-skin junction site for tenderness at least daily through the intact dressing.
10. Do not use topical antibiotic ointments or creams on insertion sites.
11. Do not submerge the catheter or catheter site in water. Patients may shower if the catheter and connecting device can be protected with an impermeable cover. If the dressing becomes wet, change immediately.

INFECTION CONTROL

Replacement of IV Catheters

1. Promptly obtain physician order for the removal of any peripheral or central IV catheter that is no longer essential.
2. Remove a peripheral venous catheter if the resident develops signs of phlebitis or infection, or if the catheter malfunctions.
3. A peripheral short catheter can stay in place up to 96 hours in an adult resident unless there is suspected contamination, complication, or if therapy is discontinued.
    a. If catheter is left in place longer than 96 hours, obtain a physician's order to keep catheter in place and document rationale for leaving the catheter in place.
4. If a catheter is placed under emergency conditions, and aseptic technique cannot be ensured, replace the catheter as soon as possible (within 48 hours).
5. Do not routinely replace midline catheters, CVC or arterial catheters solely for the purpose of reducing the incidence of infection.
6. Any time the resident complains of discomfort or pain related to the catheter, or there are signs and symptoms of complications, assess the resident and catheter site and intervene as appropriate. CVCs and PICCs should not be removed on the basis of fever alone.
7. If a catheter-related bloodstream infection is suspected and a culture is ordered, cultures of catheter and site are obtained before removing catheter.
8. Removal of a midline or any central line is to be performed upon the order of a Physician or authorized prescriber in accordance with State Nurse Practice Act.
9. Never re-advance a catheter that is found out of place.
10. When a new site is selected for cannulation, the site should be proximal to the previous site.
11. Remove midlines or central lines if tip has incorrect placement.
12. Remove catheters at the end of a treatment if there are no further plans for use of the catheter.

Replacement of Administration Sets, Needleless System Equipment

1. Administration Set Replacement
    a. Replace administration sets whenever the peripheral site is rotated.
    b. Change continuous primary and secondary administration sets (used for fluids other than blood, blood products, or lipids) no more frequently than every 96 hours, unless there is suspected contamination, or when integrity of the product or system has been compromised.
    c. Change intermittent sets every 24 hours, immediately upon suspected contamination, or when integrity of product or system has been compromised.
    d. Once a secondary administration set (piggyback) is detached from the primary set, it is considered an intermittent set.
    e. Change lipid-containing parenteral nutrition sets at least every 24 hours, when new bag is started, immediately upon suspected contamination, or when the integrity of the product or system has been compromised.
    f. Change administration sets and add on filters that are used for blood or blood components after administration of each unit or at the end of 4 hours, whichever comes first.
    g. Discard sets found without a sterile cap on the end of the tubing, or if not labeled.

2. Replacement of the Needleless System Equipment
    a. Use aseptic technique and observe standard precautions when changing all add-on devices. Add-on devices include, but are not limited to, stopcocks, extension sets, manifold set, extension loops, solid cannula caps, injection/access caps, filters, and any other needleless system equipment.
    b. Change needleless connection devices if there is blood or debris in the connector, before obtaining blood samples for culture, after blood draws, upon contamination, and in accordance with manufacturer recommendations.
    c. Change stabilization devices per manufacturer recommendation, usually weekly with dressing change.
    d. Change filters that are used with medication administration sets with each new dose of medication that is administered.
    e. Use new extension tubing with any new peripheral short catheter placement.

Cleaning Needleless Connection Devices

1. Keep administration sets and needleless devices aseptic between medication dosages.
2. Disinfect the needleless connector prior to each access using alcohol, tincture of iodine, or chlorhexidine gluconate/alchohol combination.

Preparation and Quality Control of IV Admixtures

1. Do not use any container of parenteral fluid that is visibly cloudy (turbid) or has leaks, cracks, or particulate matter, or if the manufacturer's expiration date has passed.
2. If any IV system is discarded because of suspected fluid contamination, the fluid should be cultured and the implicated bottle saved. If contamination is confirmed, notify the Infection Preventionist. The Infection Preventionist will report contamination that may be related to the manufacturing process to the local health department, Centers for Disease Control, and the U.S. Food and Drug Administration.
3. Use single-dose vials for parenteral additives or medications when practical. Do not combine leftover content of single-use vials for later use.
4. Vials labeled "single dose" or "single use" will not be used on multiple residents. Such vials will be used only for one resident in a single procedure.
5. Refrigerate multi-dose vials after they are opened, if recommended by the manufacturer.
6. Cleanse the access diaphragm of multi-dose vials with alcohol wipe before inserting a device into the vial.
7. Use a sterile device to access a multi-dose vial and avoid contaminating the device or the access diaphragm before penetrating. Discard a multi-dose vial if sterility is compromised.
8. When mixing medications in the facility, do so in an area that is away from traffic. A medication room with a door that closes is preferred. Clean countertop area with soap and water, alcohol, or use waterproof barrier. Use aseptic technique while mixing medicine.

Multi-Lumen Catheters

1. A catheter with the fewest number of lumens possible should be used for the infusion management of the resident.
2. Each lumen is a separate catheter. Flush each lumen at least once every 24 hours to avoid blood clot formation.
3. If catheter is found to have clotted blood in lumens or if catheter is found without needleless connection devices (end cap) or sterile dressing, the catheter should be considered contaminated and replacement is recommended.

4. Consider labeling each lumen as to purpose, to avoid cross contamination and medication interaction.
5. Follow manufacturer recommendations or facility policy for purpose and use of lumens.

Documentation

The following information should be recorded in the resident's medical record:

1. Objective information regarding appearance of insertion site, catheter, and dressing.
2. Any interventions that were done (dressing change, cultures, etc.).
3. Results of any laboratory tests, cultures.
4. Communication with Physician, Supervisor, oncoming shift.

Reporting

1. Report objective information, lab results, and interventions to Supervisor, Physician, and oncoming shift.
2. Any infection control information to Infection Preventionist, pharmacy, federal agencies if needed.

INFECTION CONTROL

CULTURING FOR CATHETER-RELATED INFECTIONS

Policy

Suspected sources of catheter contamination will be aseptically obtained and submitted to the microbiology lab for identification.

Preparation

1. A physician's order is required to draw blood for culture or to culture the catheter tip after removal of catheter.
2. Follow laboratory specific procedures for collection of specimen.
3. Verify with State Nurse Practice Act for RN/LPN scope of practice for this procedure.

General Guidelines

1. This is a sterile procedure.
2. Obtain two sets of blood cultures – one from the suspected access device (catheter) and at least one from a peripheral venipuncture site. This is to identify and compare the proliferation of infusion-related infections.
3. Cultures for suspected infusion-related and/or catheter-related infection should include catheter segments (the tip and/or subcutaneous segment), the delivery system, the access site, and infusate solution.
4. Culturing drainage from insertion site:
    a. Culture drainage before removing catheter.
    b. Do not clean area before culturing drainage.
    c. Keep the sterile swab that is used to collect culture from touching anything except the drainage.
5. To obtain specimen from suspected contaminated catheter, remove the catheter by holding the hub to avoid touching the portion of the catheter that has been under the skin.[1]
6. Only sterile scissors and collection container are to be used for specimen collection.
7. Routine culturing of all central vascular access device tips upon removal is not recommended. Presence of bacteria upon culturing may indicate colonization but is not necessarily indicative of bloodstream infection.[2]
8. Removal of a functioning CVAD based on temperature elevation alone is not recommended. Clinical findings such as temperature elevation, inflammation, or purulence are unreliable clinical indicators of bloodstream infection. [3]
9. The goal of salvaging the catheter should be a decision made by the practitioner, the nurse and the resident or representative based on the following criteria:
    a. The type of vascular access device;
    b. Anticipated difficulty of inserting a new device;
    c. Whether the resident has a bleeding disorder;
    d. The infecting organism, determined by blood cultures;

[1] Otto, Shirley. 2001. Mosby's Pocket Guide – Intravenous Therapy (4th Ed). Philadelphia: Elsevier Health Sciences.
[2] INS 2011 Standard 49, Practice Criteria C
[3] INS 2011 Standard 49, Practice Criteria D

e. Other complicating conditions, such as sepsis, suppurative thrombophlebitis, endocarditis, or the presence of any vascular hardware (i.e., pacemaker).[4]

10. Infection of the implanted port or a tunneled catheter requires removal of the CVAD. However, uncomplicated infection of the exit site (i.e., no systemic infection, positive blood culture, or purulence) may be treated with topical antimicrobial ointment, as indicated by the culture results[5] and practitioner order.

Equipment and Supplies

1. Central line dressing change kit;
2. Sterile scissors (suture removal kit);
3. Sterile container for placing culture to send to lab;
4. Sterile cotton swabs for drainage culture (this may come with culture tube);
5. Labels for sterile containers;
6. Venipuncture equipment, sterile gauze, tourniquet, antiseptic cleaning solution for blood cultures;
7. Normal saline[6], heparin flushes, sterile syringes, Vacutainer® lab tubes, alcohol wipes for catheter blood draws;
8. Culture tubes for drainage sample; and
9. Lab biohazard bags to place samples.

Procedure

1. Perform hand antisepsis. Wear non-sterile gloves.
2. Discontinue any infusions for at least two minutes before obtaining blood cultures. Flush with at least 5 mL of normal saline[7] to clear catheter of medications.
3. Remove old dressing if catheter insertion site drainage is to be cultured.
    a. **To obtain culture from drainage at catheter-skin junction:**
        (1) Do not cleanse the affected area.
        (2) Swab any drainage with sterile swab.
        (3) Uncap culture tube.
        (4) Drop swab into culture tube using aseptic technique.
        (5) Recap tube.
        (6) Label container with resident information, site location, date, time, and nurse's name.
    b. **To obtain culture from catheter tip:**
        (1) Verify order to remove catheter.
        (2) Verify with State Nurse Practice Act if LPN/RN with clinical competency is allowed to remove catheter.
        (3) Using sterile technique and supplies, remove catheter, avoiding contact with surrounding skin and environment.
        (4) Have second person uncap culture container, making sure that cap and container stay sterile.

[4] INS 2011 Standard 49, Practice Criteria F
[5] INS 2011 Standard 49, Practice Criteria G
[6] Preservative-free 0.9% sodium chloride
[7] Preservative-free 0.9% sodium chloride

(5) Place catheter tip into container and using sterile scissors cut approximately 2 inches of catheter tip into container.
(6) Replace container lid tightly.
(7) Finish placing pressure dressing to exit site of catheter.
(8) Label container with resident information, source of culture (catheter), date, time, and nurse's initials.
(9) Send to lab.

c. **To obtain blood culture (venipuncture):**
(1) Disinfect venipuncture site with anti-microbial solution. Repeat two more times.
(2) Allow to air dry.
(3) Apply tourniquet proximal to venipuncture site.
(4) Perform venipuncture:
a) Position resident with arm extended, in dependent position.
b) Select vein (antecubital fossa is preferred for blood specimen collection).
c) Insert phlebotomy needle (butterfly) in vein. The needle should be connected to a sterile syringe to collect blood.
d) Collect at least 20 mL of blood and put into two culture bottles (aerobic and anaerobic). This constitutes one blood culture. (Note: Split the 20 mL between the two bottles using a needleless transfer system.)
(5) Remove tourniquet.
(6) Remove needle and apply pressure to exit site.
(7) Apply sterile dressing to venipuncture site.
(8) Label bottles with resident information, site of blood draw, date, time, and the name of person drawing blood.
(9) Send to lab.

d. **To obtain culture from infusate container:**
(1) Disinfect access port of infusate container.
(2) Insert needle with syringe into access port.
(3) Withdraw 3 mL of infusion solution.
(4) Uncap culture tube.
(5) Inject contents of syringe.
(6) Recap tube.
(7) Label with resident information, type of infusate, date, time, and nurse's name.

e. **To obtain blood sample from central venous access device:**
(1) Refer to procedure for drawing blood from a central line.
(2) Follow instructions on how to transfer blood into culture bottles (See "To Obtain Blood Culture").
a) Note: When obtaining cultures from central line, the line should not be flushed and blood waste should not be discarded prior to obtaining sample.
(3) Do not draw cultures from peripheral or midline catheters.

f. **When culture(s) are obtained:**
(1) Label culture with:
a) resident's name;
b) resident's medical record number or ID;
c) date and time specimen was collected; and
d) contents of the culture tube.

(2) Place labeled cultures in lab biohazard bag and send to lab.
(3) Discard used supplies.
(4) Remove gloves. Perform hand antisepsis.
(5) Notify Physician when culture results are received.

Documentation

1. The following information should be recorded in the resident's medical record:
    a. The signs and symptoms of catheter-related infection, location of catheter and type of culture sent (tip, drainage, blood).
    b. When the signs and symptoms were first discovered.
    c. The condition of the resident, including vital signs.
    d. The date and time of the culture.
    e. Resident's response to the procedure.
    f. Notification of the Physician.
    g. Results of the culture and actions taken when the results are received.
    h. The signature and title of the person recording the data.
2. Complete an incident report if indicated by facility policy.

Reporting

1. Notify Physician, Supervisor, and oncoming shift of complications and type of culture sent.
2. When results are received, inform Physician, oncoming shift, and Infection Control Coordinator in facility.