



Prevention of Healthcare-associated Infection in Primary and Community Care

Guidelines of the National Institute for Clinical Excellence (NICE)*

Standard Principles

The recommendations on standard principles provide guidance on infection control precautions applicable to all healthcare personnel and other caregivers.

Hand Hygiene

- Decontaminate hands immediately before every episode of direct patient contact or care and after any activity or contact that could potentially result in hands becoming contaminated.
- If visibly soiled or potentially grossly contaminated with dirt or organic material, wash hands with liquid soap and water.
 - Remove jewelry. Keep fingernails trimmed and free of polish. Cover cuts and abrasions with water-proof dressings.
 - Wet hands under tepid running water *before* applying liquid soap or antimicrobial preparation. Be sure hand-wash solution contacts *all* surfaces of hands. Rub hands together vigorously for 10 to 15 seconds, paying particular attention to tips of fingers, thumbs, and areas between fingers. Rinse hands thoroughly and dry with paper towels.
- If not visibly soiled or contaminated, use an alcohol-based hand rub.
 - Be sure the alcohol rub solution contacts all surfaces of hands. Rub hands together vigorously, until solution has evaporated and hands are dry.
- Apply emollient hand cream regularly to protect skin from drying effects of regular hand decontamination. Consult occupational health team if particular soap, antimicrobial hand wash, or alcohol product causes skin irritation.

Use of Personal Protective Equipment (PPE)

- Base selection of PPE on assessment of microorganism transmission risk to the patient and contamination risk to the healthcare practitioner's clothing and skin by patients' blood, body fluids, secretions, or excretions.
- Wear gloves for invasive procedures, contact with sterile sites and nonintact skin or mucous membranes, and all activities that have been assessed as carrying a risk of exposure to blood, body fluids, secretions, or excretions, or to sharp or contaminated instruments.

- Wear gloves as single-use items. Put them on immediately before an episode of patient contact or treatment and remove them as soon as the activity is completed. Change gloves between different patients and between different care or treatment activities for the same patient.
- Do not use powdered gloves or polythene gloves.
- Dispose gloves as clinical waste and decontaminate hands after removing gloves.
- Wear disposable plastic aprons when there is a risk that clothing may be exposed to blood, body fluids, secretions, or excretions.
 - Plastic aprons are single-use items.
 - Dispose as clinical waste.
- Wear full-body fluid-repellent gowns when there is a risk of extensive splashing of blood, body fluids, secretions, or excretions, with the exception of sweat.
- Wear face masks and eye protection when there is a risk of blood, body fluids, secretions, or excretions splashing into the face and eyes. Use respiratory protective equipment (eg, a particulate filter mask) when clinically indicated.

Safe Use and Disposal of Sharps

- Do not pass sharps directly from hand to hand.
- Do not recap, bend, break, or disassemble needles before use or disposal.
- Discard used sharps into a sharps container and be sure the container is not filled above the full mark.
 - Locate sharps containers in safe positions and not on the floor.
 - Dispose of the container according to policy.
- Use needle safety devices when there are clear indications that they will provide safer systems of working for healthcare personnel.

Care of Patients with Long-term Urinary Catheters

Apply these guidelines in conjunction with Standard Principles.

Education of Patients, Caregivers, and Healthcare Personnel

- Educate patients and caregivers about and train them in techniques of hand decontamination, insertion of intermittent catheters when applicable, and catheter management before discharge from hospital. Train community and primary healthcare personnel in catheter insertion, including suprapubic catheter

replacement and catheter maintenance. Provide follow-up training and ongoing support.

Assessing the Need for Catheterization

- Use indwelling urinary catheters only when alternative management methods have been ruled out. Review the patient's clinical need for catheterization regularly. Remove the urinary catheter as soon as possible. Document insertion, changes, and care.

Catheter Drainage Options

- Following assessment, select the best approach to catheterization by accounting for clinical need, anticipated duration of catheterization, patient preference, and risk of infection.
 - Use intermittent catheterization in preference to an indwelling catheter if clinically appropriate and practical.
 - Assess the patient's individual characteristics and predisposition for blockage when choosing catheter material and gauge for urethral and suprapubic catheters.
- In general, inflate the catheter balloon 10 mL in adults and 3-5 mL in children.
- In patients for whom it is appropriate, use a catheter valve as an alternative to a drainage bag.

Catheter Insertion

- For urethral catheterization:
 - Clean the meatus (per policy and guidelines) before inserting the catheter.
 - Use an appropriate single-use lubricant during insertion to minimize trauma and infection.

Catheter Maintenance

- Connect indwelling catheters to a sterile closed urinary drainage system or catheter valve.
 - Ensure the connection is not broken except when changing the bag in line.
 - Position urinary drainage bags below the level of the bladder and not in contact with the floor.
 - Use a link system to facilitate overnight drainage.
 - Empty the drainage bag frequently enough to maintain urine flow and prevent reflux.
- Decontaminate hands and wear a new pair of clean, nonsterile gloves before manipulating a patient's catheter, and decontaminate hands after removing gloves.
- Wash the meatus daily with soap and water.
- Obtain urine samples from a sampling port using an aseptic technique.
- Design an individual care regimen for each patient to minimize blockage and encrustation. Document a tendency for blockage.

- Avoid bladder instillations or washouts to prevent catheter-associated infection.
- Change catheters only when clinically necessary or according to the manufacturer's current recommendations.
 - Use antibiotic prophylaxis when changing catheters only for patients with a history of catheter-associated urinary tract infection following catheter change or for patients who have a heart valve lesion, septal defect, patent ductus, or prosthetic valve.
- Clean reusable intermittent catheters with water and store dry in accordance with the manufacturer's instructions.

Care During Enteral Feeding

These guidelines should be used in conjunction with the guidance on Standard Principles.

Education of Patients, Caregivers, and Healthcare Personnel

- Educate and train patients and caregivers in the techniques of hand decontamination, enteral feeding, and the management of the administration system before discharge. Provide ongoing support and training. Train community staff in enteral feeding and management of the administration system.

Preparation and Storage of Feeds

- Wherever possible, use prepackaged, ready-to-use feeds in preference to feeds requiring decanting, reconstitution, or dilution.
- Select the system that requires minimal assembly and is compatible with the patient's enteral feeding tube.
- Decontaminate hands before starting feed preparation.
- Prepare a clean working area when decanting, reconstituting, or diluting feeds and use only equipment dedicated for enteral feed use.
- Mix feeds using cooled boiled water or freshly opened sterile water and a no-touch technique.
- Store feeds according to the manufacturer's instructions.
 - When ready-to-use feeds are not available and feeds are prepared in advance, store them in a refrigerator and use within 24 hours.

Administration of Feeds

- Minimally handle and use an aseptic no-touch technique to connect the administration system to the enteral feeding tube.
- Give ready-to-use feeds for a whole administration session up to a maximum of 24 hours. Give reconstituted feeds over 4 hours (maximum).

- Immediately discard administration sets and feed containers for single use.

Care of Insertion Site and Enteral Feeding Tube

- Wash stoma daily with water and dry thoroughly.
- To prevent blockage, flush the enteral feeding tube with fresh tap water before and after feeding or administering medications. Use cooled freshly boiled water or sterile water from a freshly opened container to flush enteral feeding tubes of patients who are immunosuppressed.

Care of Patients with Central Venous Catheters

These recommendations apply to the care of adults with central venous catheters (CVCs) that are being used for the administration of fluids, medications, blood components, or total parenteral nutrition (TPN) in conjunction with the recommendations on Standard Principles.

Education of Patients, Caregivers, and Healthcare Personnel

Before discharge from hospital, teach patients and their caregivers any techniques they may need to use to prevent infection and safely manage a CVC. Provide follow-up training and support. Train and assess community healthcare personnel caring for a patient with a CVC for competency in using and consistently adhering to these infection prevention practices.

General Asepsis

- Use an aseptic technique for catheter site care and accessing the system.
 - Decontaminate hands before accessing or dressing CVCs per Standard Principles.
 - Wear clean gloves and a no-touch technique or sterile gloves per Standard Principles.

Catheter Site Care

- Preferably, use a sterile, transparent, semipermeable polyurethane dressing to cover the catheter site.
 - If a patient has profuse perspiration or if the insertion site is bleeding or oozing, use a sterile gauze dressing instead.
 - Change gauze dressings when they become damp, loosened, or soiled, and assess the need for dressing daily. Replace a gauze dressing with a transparent dressing as soon as possible.
 - Change transparent dressings every 7 days or sooner if they are no longer intact or moisture collects under the dressing.
 - Replace dressings used on tunneled or implanted CVC sites every 7 days or sooner until the insertion site has healed.

- Use an alcoholic chlorhexidine gluconate solution to clean the catheter site during dressing changes, and allow to air dry. Use an aqueous solution of chlorhexidine gluconate if the manufacturer's recommendations prohibit the use of alcohol.
- Use individual sachets of antiseptic solution or individual packages of antiseptic-impregnated swabs or wipes to disinfect the dressing site.
- Ensure that that catheter-site care is compatible with catheter materials (tubing, hubs, injection ports, luer connectors, and extensions) and carefully check compatibility.

General Principles for Catheter Management

- Decontaminate the injection port or catheter hub using either alcohol or an alcoholic solution of chlorhexidine gluconate before and after use.
- Avoid in-line filters for infection prevention.
- Avoid routine use of antibiotic lock solutions to prevent catheter-related bloodstream infections (CRBSI). Avoid routine use of systemic antimicrobial prophylaxis to prevent catheter colonization or CRBSI.
- Preferably, use a single-lumen catheter to administer parenteral nutrition. If using a multilumen catheter, dedicate one port for TPN, and handle all lumens with an aseptic technique.
- Preferably, use a sterile 0.9 percent sodium chloride injection to flush and lock catheter lumens. When recommended by the manufacturer, flush and lock implanted ports or opened-ended catheter lumens with heparin sodium flush solutions.
- Avoid routine use of systemic anticoagulants.
- Follow manufacturer's recommendations for changing needleless device components. Ensure that all components of a needleless system are compatible and secured to minimize leaks and breaks in the system. Decontaminate the access port of needleless systems with alcohol or an alcoholic solution of chlorhexidine gluconate before and after use.
- Replace administration sets in continuous use every 72 hours unless they become disconnected or a catheter-related infection is suspected.
- Change administration sets for blood and blood components every 12 hours or according to the manufacturer's recommendations.
- Change administration sets used for TPN infusions every 24 hours. If the solution contains only glucose and amino acids, administration sets in continuous use can be replaced every 72 hours.

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**Adapted from National Collaborating Centre for Nursing and Supportive Care. Infection control. Prevention of healthcare-associated infections in primary and community care. London (UK): National Institute for Clinical Excellence (NICE); June 2003.*