Aseptic technique in the community: key principles

The term 'asepsis' means an absence of potentially pathogenic microorganisms (Loveday et al., 2014). The term "aseptic technique" can be defined as a set of practices and procedures for ensuring asepsis and for preventing the transfer of potentially pathogenic microorganisms to a susceptible site on the body, or to sterile equipment/devices (Loveday et al., 2014), or as the practice of carrying out a procedure using a method that minimises the risk of introducing contamination into a vulnerable area or onto an invasive device (Weaving, 2015). An aseptic technique ensures that susceptible body sites (such as an open wound or insertion site for an invasive medical device) and the sterile parts of devices in contact with susceptible sites, are not contaminated during procedures such as dressing wounds, urethral catheterisation or insertion of an intravenous cannula (Loveday et al., 2014).

An effective aseptic technique requires strict application of guidance on hand hygiene and correct use of personal protective equipment (for detailed guidance on these aspects, see clinicalskills.net procedures on "Routine hand hygiene" and "Standard precautions: use of personal protective equipment"). When deciding whether to wear sterile or non-sterile gloves, assess the risk of your gloves being in contact with non-intact skin or mucous membranes during the procedure, as well as the potential for exposure to blood, body fluids, secretions and excretions (Loveday et al., 2014). A clean rather than sterile procedure may be sufficient for dressing chronic wounds, which are likely to be colonised with bacteria (Ashton, 2014). However, a sterile technique must be used if the patient is immunocompromised or has undergone surgery, which carries a high infection risk (Ashton, 2014). When using a sterile technique, the equipment, fluids and dressings used are sterile, whereas for a "clean technique", clean but non-sterile single-use gloves are used with tap water (that is safe enough to drink) for cleansing (Fernandez & Griffiths, 2012). (See clinicalskills.net procedure on “Cleansing chronic wounds”.)

The principles of aseptic technique can be applied to many different procedures. See, for example, the clinicalskills.net procedures on urethral catheterisation and venous access devices. Refer to these procedures for more specific guidance.

When working remotely, you will need to ensure you take all the necessary equipment with you, including a tray, gloves of the correct size, paper towels and orange infectious waste bags. An additional challenge to undertaking an aseptic technique in the community is that, before carrying out any procedure, you will need to ensure that you have a safe and clean immediate environment for your patient (Unsworth et al., 2011).

This guideline focuses on the key principles of aseptic technique. Note that individual organisations may have their own guidelines on aseptic technique: always follow local policy. Loveday et al. (2014) recommend that organisations should provide education to ensure that healthcare workers are competent in aseptic technique. Contents of sterile packs vary according to the manufacturer, so you will need to adapt the procedure shown accordingly.

Explain the procedure to the patient
Perform hand hygiene
Put on an apron

Explain the procedure to the patient and gain consent. Refer to the patient's notes as necessary. For example, read the wound dressing plan.

If your hands are visibly clean, use alcohol-based hand sanitiser (NICE, 2017). If you need to wash your hands with soap and water, ensure you dry them thoroughly with paper towels that you have brought with you. (See clinicalskills.net procedure on “Routine hand hygiene” for guidance on washing and drying hands.)

Put on an apron. Put the neck strap over your head and then tie the straps up at the back (see clinicalskills.net procedure on “Standard precautions: use of personal protective clothing”).
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### Clean the working area
Take a large plastic or metal tray with you, onto which you can open your sterile dressing pack. The tray should be clean and dry. Use detergent or alcohol-based wipes to clean all areas effectively, then allow the surface to dry. You may need to declutter the surface before you clean the tray. Exclude any pets from the room. Close any open windows to prevent draughts.

### Select and check equipment
Select the equipment you will need, depending on the procedure. For example, the appropriate sterile pack (e.g., for wound care or catheterisation), sterile cleaning fluid if required, a sterile syringe if wound irrigation will be needed, and any other equipment (e.g., wound dressing or sterile scissors). Check the expiry dates of sterile packs and fluids and check that the packaging is intact.

### Gather equipment
Gather the equipment and place it close to your patient. Sterile packs usually contain medium-sized gloves: if these do not fit you, use a pack of larger- or smaller-sized sterile gloves, which you will have brought with you. You need alcohol-based hand sanitiser. You may also need non-sterile gloves for patient preparation before starting the aseptic procedure. In addition to the small waste bag that may be included in the sterile pack, you will need an orange (infectious) waste bag. The most effective healing takes place at body temperature (36–38°C); delayed healing is seen when the temperature falls below core body temperature or rises above 42°C (Lloyd-Jones, 2013). Ensure that any solution used is, where possible, warmed to body temperature.

### Prepare the patient and environment
As you cannot control the environment in someone’s home, take appropriate steps to reduce contamination. This may include advising the patient to move to a different room for the procedure, and stopping any cleaning activities in the immediate vicinity while the procedure is being performed (Ayliffe et al., 2000). Explain the steps in the procedure. Position the patient as required, exposing only the relevant body area. If dressing a wound, loosen the dressing now. Depending on the procedure and the risk of contact with body fluids (e.g., wound exudates), you may need to wear non-sterile gloves for this: after loosening the dressing, remove the gloves carefully and dispose of them in the orange (infectious) waste bag.

### Perform hand hygiene
Clean your hands by decontaminating with alcohol-based hand sanitiser, or wash with soap and water and dry afterwards with paper towels. If the sink does not have elbow-operated taps, use a paper towel to turn off the taps.

### Open the sterile pack
Open the outside of the sterile pack and let the inner sterile pack slide out onto the tray surface with the folded sides uppermost. Avoid contaminating the clean surface of the tray or sterile field with any part of your body.

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**Do not undertake or attempt any procedure unless you are, or have supervision from, a properly trained, experienced and competent person.**
**Always first explain the procedure to the patient and obtain their consent, in line with the policies of your employer or educational institution.**

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**Adults**

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**Unfold the sterile pack**
Unfold the sterile paper, holding the paper by the corner edges only. If the sterile pack you are using does not contain a waste bag, attach a waste bag to the side of the tray or other suitable surface now (see below).

**Open any other equipment**
Carefully open any other sterile equipment (e.g., wound dressing, catheter) onto the sterile field, without touching the sterile field with the equipment’s non-sterile outer packaging.

**Arrange the pack contents on the sterile field**
Arrange the items on the sterile field using a pair of sterile forceps. Alternatively, if a plastic disposal bag is included in the pack, you can place your hand inside it, to use it as a sterile ‘glove’ to arrange the items on the sterile field (Weaving, 2015).

**Removing a dressing**
Likewise, if carrying out a wound dressing, you can keep the sterile bag over your hand to remove a loosened, soiled dressing, and then invert the bag so that the dressing is inside it. Alternatively, if you used forceps to arrange the sterile field, you can use these to remove the dressing and discard these with the dressing into the waste bag. If you need greater dexterity, you can wear non-sterile gloves to remove the dressing; having done so, remove these gloves and perform hand decontamination before proceeding.

**Attach the waste bag to the tray**
Attach the bag to the side of the tray or other suitable surface between you and the patient so that you will not need to stretch across the tray to dispose of waste. Pull the edge of the bag open so that you can easily drop in used items.

**Open any cleaning solution**
If opening a saline sachet, clean the perforation area with an alcohol swab first, allowing it to dry.

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**Pour the cleaning solution**

Then tear the perforation and pour the fluid into the sterile container on the sterile field, avoiding splashing.

**Clean your hands**

Clean your hands using alcohol-based hand sanitiser. Refer to clinicalskills.net procedure on “Routine hand hygiene”.

**Put on sterile gloves**

Put on sterile gloves (refer to clinicalskills.net procedure on “Standard precautions: use of personal protective clothing”).

**Use of a sterile towel**

You can use the paper towel enclosed in the sterile pack to surround the working area.

**Avoid contaminating sterile gloves or other sterile items**

Avoid contaminating your sterile gloves during the procedure; for example, do not touch any part of the patient’s body. Do not touch the bed, other furniture, your own face or hair, or any other non-sterile areas. Once any sterile equipment has been contaminated, you must discard it and not return it to the sterile field.

**Carry out the aseptic procedure**

Carry out the aseptic procedure following agreed guidelines. You can find useful guidance in the appropriate clinicalskills.net procedures on, for example, catheterisation and wound care. Observe the patient throughout. Drop used items into the waste bag during the procedure so that the sterile field remains as clean as possible.
After the procedure

When the procedure is complete, check that the patient is comfortable before leaving the bedside.

Dispose of waste

At the end of the procedure, put all remaining disposable items (including the sterile field and the small waste bag) into the infectious (orange) waste bag.

Remove and dispose of gloves

Remove and dispose of gloves in the infectious (orange) waste bag.

Remove and dispose of apron

Break the apron’s ties. Lift the apron away from your neck and shoulders, rolling or folding down while taking care to touch the inside only (not the contaminated outer side). Continue to fold or roll inwards to create a bundle with the inner side outermost. Dispose into the infectious (orange) waste bag (RCN, 2016; Weaving, 2015).

Decontaminate your hands

Use alcohol-based hand sanitiser to disinfect your hands and allow to dry (or wash with soap and water, drying with paper towels afterwards). Document the procedure and any observations in the patient’s records.

Clean the tray

Clean the trolley or tray using an alcohol-based wipe (or in accordance with local policy). Seal the orange waste bag and either dispose of it in the patient’s bin, or take it away and dispose of it at the clinic (depending on local policy and whether adequate waste disposal facilities are available).