Obtaining a catheter specimen of urine

**Author** Rachel Gilbert, BSc, DipHE, RN, is continence nurse specialist, Kingston PCT, Surrey.

A catheter specimen of urine (CSU) is collected for bacteriological examination if a patient’s symptoms suggest the presence of a urinary tract infection. The sampling technique used in catheter specimen of urine collection is important (Baillie and Arrowsmith, 2005). An incorrect sampling technique could introduce infection and cause inaccuracy in results, diagnosis and treatment.

**Bacteriuria and the catheterised patient**

Bacteriuria (the presence of bacteria in urine) is unavoidable with the use of indwelling urinary catheters (Plowman et al, 2001) and a catheter inevitably becomes colonised with micro-organisms (Getliffe, 2003). However, bacteriuria alone does not always mean that the patient has a urine infection requiring treatment with antibiotics (Pratt et al, 2001). Cravens and Zweig (2000) highlight that the signs and symptoms associated with a urine infection also need to be present. Symptoms of a urinary tract infection in a catheterised patient may include:

- **Pyrexia**;
- **Uncharacteristic confusion or worsening confusion**;
- **Pain** (lower back, loin, lower abdominal or suprapubic area);
- **Visible blood in the urine**.

**Evidence-base**

Collection of a catheter specimen of urine is included in guidance on the prevention of healthcare-associated infection (NICE, 2003). Clinical guidance states that a catheter specimen of urine must be obtained via the sampling port only using an aseptic technique. Almost all drainage bags on the UK health products market have an integral sampling port for specimen collection. Any that do not should be avoided. Many ports also allow for needleless sampling to reduce the risk of a sharps injury.

**Contamination**

It is important that samples are not taken from the bag (tap) because of multiplication within this reservoir causing higher numbers of micro-organisms (Baillie and Arrowsmith, 2005). The drainage system should not be disconnected because this increases the risk of bacterial contamination (NICE, 2003). Contamination is more likely to occur if practitioners do not comply with the standard infection control principles; handwashing and using protective equipment (gloves and apron).

**Procedure**

A local policy or procedure for collecting a catheter specimen of urine may be available. The collection procedure should be discussed with the patient and informed consent obtained. The practitioner should be aware if the sampling port is needleless.

- Ensure a suitable, private location, protective equipment, an alcohol-impregnated swab, a sterile syringe, a needle if necessary, and a sterile laboratory container are available.
- Decontaminate hands and wear a new pair of clean, non-sterile gloves before manipulating the catheter (Fig 1). Hand
decontamination involves washing hands with warm water and soap and drying thoroughly, or applying alcohol rub to visibly clean hands ensuring both hands are covered and allowed to dry.

● If no urine is visible in the tubing clamp it a few centimetres below the sampling port. Wait until sufficient urine collects before proceeding (Figs 2–3). Never clamp the catheter itself.

Insufficient amounts of urine (usually<10ml) can impede laboratory testing. Local guidance should be sought regarding containers and volumes required.

● Clean the sample port with an alcohol-impregnated swab and allow to dry (Figs 2–3).

● In needle collection insert the needle into the port following manufacturer’s instructions. Aspirate the urine and remove the needle from the port (Fig 5). Many ports now include a rigid plastic cuff in order to reduce the risk of going through the tubing.

● Transfer the catheter specimen of urine into the appropriate sterile container immediately to avoid contamination. Dispose of any needles into a sharps box. Swab the port again to reduce the risk of contamination and remove any clamp used. Then, decontaminate hands again, label the specimen, place into the specimen bag and seal securely (Fig 6).

● Complete the microbiology request form to include all relevant clinical details, such as signs and symptoms of infection present and any antibiotic therapy. Record details of the collection into the patient’s clinical notes.

● Send the catheter specimen of urine to the laboratory immediately or refrigerate according to local policy if this is not possible.

REFERENCES


