Aims and intended learning outcomes
The aim of this article is to discuss why female urinary catheterisation is undertaken. After reading this article, you should be able to:

- Identify reasons for catheterisation of female patients.
- Understand the importance of holistic patient assessment.
- Outline the principles of catheter selection, materials, types, use and insertion.
- Educate the patient regarding catheter care.

Introduction
Urinary catheterisation is the insertion of a hollow tube into the bladder using an aseptic technique to enable drainage of urine or instillation of fluids as part of medical treatment. It dates to 3,000 years BC when onion reeds were used to drain the bladder. Later metal catheters were developed from bronze, copper and gold (Bloom et al 1994). These early metal catheters were inserted into the urethra to drain the bladder of urine, removed, washed and stored until needed again. This is probably the earliest form of what is known today as intermittent self-catheterisation (Robinson 2007). In the mid-1800s a new type of rigid rubber catheter was developed. This early latex catheter had no inflating balloon to keep it in place and was intended for single use only. If it had to remain in place it was either taped or sutured to the patient’s body. The first indwelling self-retaining catheter was developed by Reybard in 1853 but the modern Foley catheter was developed by Dr Frederick Foley in the 1930s (Bloom et al 1994).

Urinary catheterisation should not be undertaken unless it is medically required and the catheter should remain in place for as short a time as possible (Pratt et al 2007). Urinary catheterisation is sometimes undertaken without a specific medical indication (Holroyd-Leduc et al 2005). Indwelling urethral catheterisation carries risks of morbidity and mortality. Bacteriuria develop in 20-30% of catheterised patients resulting in 2-6% developing a urinary tract infection (UTI) (Pratt et al 2007). Bacteraemia affects 1-4% of patients who develop a UTI with an associated mortality of 13-30% (Pratt et al 2007). Indwelling catheterisation can be unpleasant (Devine 2003, Pratt et al 2007) and the longer a urinary catheter is left in place, the greater the risk of patients developing a catheter-associated problem, for example, UTI, bypassing of urine down the side of the catheter, encrustation and blockage (Lowthian 1998, Pomfret 1999, Robinson 2004).

Most nurses are aware of the risks concerning male catheterisation, for example, soreness, irritation and, in some cases, difficulty in inserting the catheter. However, female
catheterisation may be considered a simple task (de Courcy-Ireland 1993, Devine 2003).

Reasons for female catheterisation

Female patients may require urinary catheterisation in the short, medium or long term (Pomfret 1996, Getliffe 2003, Association for Continence Advice (ACA) 2007). Short-term insertion may be required for the following reasons:

- Investigations, for example, urodynamics.
- Pre and post-operative bladder drainage.
- During labour and delivery.
- Monitoring of urinary output in renal units and intensive care units.
- Instillation of cytotoxic drugs into the bladder, for example, papillary carcinoma.
- To clear the bladder of blood clots or debris following trauma.

Medium to long-term insertion may be required for the following reasons:

- To drain the bladder as a result of urinary obstruction until treatment or surgery is undertaken.
- Patient is not well enough to undergo surgery.
- Patient declines treatment or surgery and

indwelling urinary catheterisation is the only option available to drain the urinary bladder.

- Patients who cannot undertake clean intermittent self-catheterisation (CISC) or do not have anyone to undertake CISC for them.
- Management of urinary incontinence as a last resort after other methods have failed.

Patient assessment

An holistic pre-catheterisation patient assessment should always be undertaken except in emergency situations, for example, acute urinary retention and in certain surgical procedures where an indwelling catheter is required. If possible and if staff are trained in its use, a bladder ultrasound scan could first be undertaken to assess pre-voiding bladder volume (Addison 2000a). This should be followed by a post-voiding bladder scan to assess urinary residual levels. This procedure is safe, non-invasive, painless, accurate, carries no risk of trauma or inducing infection and may also determine if an indwelling catheter is required (Addison 2000b). A pre-catheterisation holistic assessment should include the components listed in Box 1.

Consent for treatment

Each healthcare provider or organisation should have its own policy on obtaining patient consent

Components of a pre-catheterisation holistic assessment

1. Discussion of alternative options. Some patients may view having a catheter as the ‘beginning of the end’ when this should not be the case (Getliffe 2003).
2. Daily fluid intake, voiding amount and times to estimate if fluid input and output are adequate.
3. Bowel history: regular bowel action, constipation or diarrhoea.
4. Any recent or past urological, gyna-urology, or gynaecology investigations or treatments, or any investigations being arranged.
5. Urine test: leucocytes, nitrates, protein, pH, blood, specific gravity, ketones and glucose to eliminate undiagnosed medical problems such as diabetes or urinary tract infection.
6. Allergies: latex materials (urinary catheters or gloves), soaps, lidocaine or other drugs.
7. Medication being taken, for example, aspirin or warfarin which may cause bleeding or diuretics which can cause frequency of micturition.
8. Patient’s mobility, dexterity and mental ability to undertake self-care of the catheter and drainage system.
9. Support required by spouse or carer and whether it is available.
10. Sexual function: patients with catheters in place can still be sexually active.
undertake the procedure, had it fully explained to them, received adequate training from a qualified practitioner and feel confident and competent. An example is a spouse or carer looking after a spinal injury patient at risk of developing autonomic dysreflexia, a life-threatening condition, caused by a blocked catheter (Vaidyanathan 2000).

Catheter selection

Selecting a urinary catheter is important before insertion and consideration should be given to length, material, Charrière (Ch) size and balloon infill volume. All urinary catheters are licensed for urethral insertion, however, not all catheters are licensed for suprapubic insertion. Lists of the various urinary catheters can be found in the NHS Drug Tariff for England and Wales (2007), NHS Logistics Catalogue (NHS Logistics 2007) or by contacting the catheter manufacturers. The following points should be considered when selecting a urinary catheter (Robinson 2001, 2006).

Catheter length for adult patients

The standard length catheter is 40-45cm and is often termed a ‘male’ catheter which is confusing as it can be used for female catheterisation, especially in obese women. However, it is mostly used for male urethral catheterisation. Until the development of the female length catheter in the 1980s, the standard length catheter was the only length available to catheterise both sexes. It can also be used for suprapubic catheterisation if licensed.

The female length catheter is 20-26cm long. It is intended for female urethral catheterisation only. It may be used for suprapubic catheterisation in either sex if it is licensed, provided that mobility, obesity and the drainage system used are taken into consideration.

Catheter material, bonding and lifespan

There are two main types of catheter material used in Foley catheters, latex and 100% silicone (non-latex). The bonding or coating determines how long the catheter can remain in place according to the manufacturer’s recommendations:

- Polytetrafluoroethylene (PTFE) or Teflon: applied to a commonly used medium-term latex catheter which has a lifespan of 28 days. However, Bard Urology (UK) (Bard 2006) now lists the PTFE latex catheter as having a lifespan of seven to 21 days.

before any procedure such as urinary catheterisation is undertaken. This policy should cover the following (Department of Health 2001, Nursing and Midwifery Council 2004):

- Clinical justification why a procedure is required, for example, acute retention of urine. In cases of urinary incontinence, it should be documented what treatment or appliances have been tried and why they have failed.
- Authorisation to be given by a doctor or, in some health authorities, by a nurse practitioner responsible for that patient’s care (record the professional’s name) after the doctor has examined the patient before catheter insertion.
- Explanation to the patient by a doctor why urethral catheterisation is required (record the professional’s name).
- Patient consent to be given by the patient following explanation of why urethral or suprapubic catheterisation is required. Allow the patient to ask questions and give honest answers. Document whether the patient understands the reason why urethral catheterisation is required and whether she gave verbal or written consent freely. Verbal or written consent must be obtained voluntarily from the patient, without pressure. If the patient is unable to give verbal or written consent, for example, because she is unconscious, consent must be given by the doctor authorising urethral catheterisation.
- The patient should be treated with respect, dignity and privacy.
- The patient should be catheterised by a competent doctor or nurse trained in the procedure.
- If requested, the patient should be catheterised by someone of the same sex.

Any person who has undertaken training and supervision on urinary catheterisation, feels confident and competent, has agreed to undertake this procedure and has been authorised by his or her employer to do so can undertake urinary catheterisation. Such people include (ACA 2007):

- Medical staff.
- Any qualified nurse.
- Other healthcare professionals.
- Patients or carers. They must have agreed to undertake the procedure, had it fully explained to them, received adequate training from a qualified practitioner and feel confident and competent. An example is a spouse or carer looking after a spinal injury patient at risk of developing autonomic dysreflexia, a life-threatening condition, caused by a blocked catheter (Vaidyanathan 2000).
Hydrophilic polymer: a bonding or coating (sometimes termed encapsulated) applied to long-term latex and 100% silicone catheters. It may also be applied to specialised urological and short to medium-term catheters. Once the catheter is in place, the catheter surface absorbs a small amount of bodily fluid to enable the catheter surface to remain slightly lubricated, reducing surface friction between the catheter and urethral wall. Hydrophilic polymer is more compatible with body tissue than other catheter coatings and is claimed by manufacturers to resist bacterial colonisation and encrustation.

Silicone-elastomer: applied to latex catheters. This should not be confused with 100% silicone. It has a lifespan of 84 days.

100% silicone (non-latex). May be bonded with or without hydrophilic polymer. It has a lifespan of 84 days. This should not be confused with silicone-elastomer.

Charrière (Ch) Ch denotes the catheter size being used. It is also identified as French gauge (Fg) or French (F). Ch size is the external circumference of any catheter, for example, 14Ch = 14 mm external circumference/4.7 mm diameter. Therefore, the greater the Ch size, the more the urethra is dilated. The greater the Ch size used the greater the risk of urethral irritation, urethritis and blockage of the paraurethral glands. Urinary catheter balloon inflation valves are all colour coded to identify the Ch size being used (Table 1).

The smallest size Ch size should be selected, for example, 12-14Ch for women or 12-16Ch for men (Pomfret 1996, Robinson 2006). However, higher Ch sizes may be required in certain situations to drain and clear the urinary bladder. If using high Ch sizes, once the bladder is cleared of debris or clots and the urine is clear, reduce to a smaller Ch size if the catheter is still required. Indications for Ch size are outlined in Table 1.

Catheter balloon infill volume Catheter balloon inflation valves on all indwelling self-retaining catheters are designed for single inflation and single deflation only, as recommended by the manufacturers. The balloon infill volumes may vary from 10-30ml in standard and female length catheters (usually 10ml) to 20-80ml in urology catheters used post-operatively (usually 20-30ml). The catheter balloon should only be inflated using sterile water for both latex and 100% silicone catheters. However, 5% aqueous glycerine in 10ml sterile water may be used instead of sterile water to inflate the balloon of a 100% silicone catheter to help reduce catheter balloon diffusion. This is a common occurrence in this type of catheter (L.I.N.C Medical 2007). The catheter balloon should be inflated to its correct level as indicated on the packaging and not under or over-inflated (Robinson 2004). Sodium chloride 0.9%, tap water or air should not be used.

Catheter packaging Catheter packaging varies. Examples of the contents of catheter packaging are shown in Box 2.

Lubrication The female urethra is approximately 4cm in length. In the past female urethral catheterisation was undertaken without lubrication (de Courcy-Ireland 1993, Colley 1997). However, the female urethra must have adequate lubrication, including the catheter surface, to avoid surface friction, which may cause trauma to the urethral wall during insertion (de Courcy-Ireland 1993, Colley 1998, Doherty 1999, Barsley 2005).

### TABLE 1

<table>
<thead>
<tr>
<th>Charrière (Ch) size</th>
<th>Valve colour</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>12Ch/4mm</td>
<td>White</td>
<td>Initial catheterisation (female or male). Clear urine containing no grit (encrustation), debris or haematuria.</td>
</tr>
<tr>
<td>14Ch/4.7mm</td>
<td>Green</td>
<td>Initial catheterisation (female or male). Clear urine containing no grit (encrustation), debris or haematuria.</td>
</tr>
<tr>
<td>16Ch/5.3mm</td>
<td>Orange/brown</td>
<td>Initial catheterisation (male). Clear or slightly cloudy urine, no grit or mild grit (encrustation), light debris, light haematuria containing no or small blood clots.</td>
</tr>
</tbody>
</table>

Seek guidance before inserting the following Ch sizes or consider if urological intervention is required.

<table>
<thead>
<tr>
<th>Ch size</th>
<th>Valve colour</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18Ch/6mm</td>
<td>Red</td>
<td>Initial catheterisation (male). Moderate to heavy grit (encrustation) or debris, haematuria with moderate blood clots.</td>
</tr>
<tr>
<td>20Ch/6.7mm</td>
<td>Yellow</td>
<td>Very cloudy urine with heavy grit (encrustation) or debris.</td>
</tr>
<tr>
<td>22Ch/73mm</td>
<td>Violet</td>
<td>Haematuria with moderate to heavy blood clots.</td>
</tr>
<tr>
<td>24Ch/8mm</td>
<td>Blue</td>
<td>Usually used post-operatively following bladder surgery or trauma to the bladder.</td>
</tr>
</tbody>
</table>

### BOX 2

**Catheter packaging**

- Pre-filled (10ml): only one manufacturer produces pre-filled catheters, but only in polytetrafluoroethylene, silicone-elastomer and hydrogel latex catheters.
- Pre-loaded sterile 10ml syringe of sterile water.
- Pre-loaded sterile 10ml syringe of sterile water and an empty sterile syringe to deflate the used catheter balloon.
- Pre-loaded sterile 10ml syringe of 5% aqueous glycerine in 10ml sterile water and an empty sterile syringe. Found in some 100% silicone catheters.
- Sterile 10ml syringe and plastic ampoule of 10ml sterile water.
- The catheter only.
**Learning Zone: Continence Focus**

Woodward (2005). The lubrication gel selected may contain a local anaesthetic (lidocaine), for example, Instillagel* or Cathejell Lidocaine*. Both contain a sterile water-soluble lubricant (lubrication), 2% lidocaine hydrochloride (anaesthetic) and chlorhexadine (antibacterial). For patients with an allergy to lidocaine or chlorhexadine a sterile, water-soluble lubricant is available that does not contain these ingredients, that is, Cathejell Mono*. Insertion of the lubricating gel directly into the urethra helps to dilate the urethral orifice for easier identification before inserting the catheter.

**The Procedure**

Healthcare providers may have a catheterisation algorithm. This is a formula or step-by-step guide and instructions to the procedure (Booth and Clarkson 2007). A urinary catheterisation algorithm is designed to guide the nurse through the process safely and efficiently. By using the steps provided by the algorithm, any risk to patients and healthcare professionals should be minimised (Booth and Clarkson 2007).

The procedure should be undertaken with good lighting. Where possible, a bladder ultrasound scan should first be undertaken for pre-voiding bladder volume and post-voiding bladder residual (Addison 2000a, b). The equipment required for urinary catheterisation may slightly vary between trusts (Box 3). All products used should be sterile and within expiry dates. The procedure for female catheterisation is outlined in Table 2.

**Complications of the Procedure** Two common problems on inserting a urethral catheter in a female patient are:

1. The catheter enters the vagina. Do not remove the catheter and attempt to insert it into the urethra as this risks transferring any vaginal infection to the urethra and bladder. Leave the catheter inside the vagina and recommence the procedure. The wrongly inserted catheter then acts as a guide to inserting the new catheter (Robinson 2004). Once inserted correctly, remove the catheter from the vagina.

2. Difficulty identifying the urethral orifice. In this situation good lighting is required to use a digital guidance technique. With the patient in the supine position, the perineum is cleansed with appropriate cleansing solution. With patient consent following an explanation, the index finger is inserted into the vagina. This allows the urethral orifice to be palpated on the anterior wall of the vagina and acts as a guide to inserting the catheter (Jenkins 1998).

**Time Out 4**

With colleagues, discuss the factors to consider when selecting a suitable drainage system (drainage bags or catheter valves) for a female patient with an indwelling urinary catheter.

**Drainage Bags and Catheter Valves**

Patients with an indwelling urethral catheter or suprapubic catheter can use one of two methods to drain the urinary bladder:

- **Drainage bags:** continual drainage of urine using leg and overnight drainage bags (total closed link system).
- **Catheter valves:** intermittent drainage of urine from the urinary bladder with or without use of overnight drainage bag.

**Drainage Bags** Drainage bags come in a variety of different capacities and tubing lengths, fitting positions and operating mechanisms. In the past, some drainage bag taps were prone to developing bacterial colonisation (Kennedy et al 1983), however, modern drainage bags have non-return reflux valves to reduce this risk (Wilson and Coates 1996). The different types of drainage bags, tubing lengths, capacity and positioning are indicated in Table 3. The height and build of the patient determines which bag size to use, for example, a patient with thin legs will encounter fitting difficulties using a 750ml capacity bag. Stomach bags and holsters are also available on prescription. It is essential that patients using drainage bags or catheter valves are shown how to fit them and operate them as soon as they are catheterised, and educated on mental hygiene. All leg bags are sterile and pre-packed in boxes containing ten bags, including one pair of elastic.
<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify why urinary catheterisation is required.</td>
<td>To avoid unnecessary catheterisation.</td>
</tr>
<tr>
<td>2. Obtain authorisation from doctor who is responsible for the patient's care and check that the patient has been examined by that doctor.</td>
<td>Obtain medical authorisation before procedure is undertaken. Document name of doctor.</td>
</tr>
<tr>
<td>3a. Explain to the patient why a urinary catheter is required.</td>
<td>Patient understands why a urinary catheter is required. Allow patient to ask questions and give clear understandable answers. Document name of person undertaking this task.</td>
</tr>
<tr>
<td>b. Gain patient's verbal or written consent before the procedure.</td>
<td>Patient to give consent before procedure. If an emergency procedure is being undertaken and the patient is unable to give consent, it must be given by the doctor responsible for her care (document name of doctor). Document if patient understands and gave consent.</td>
</tr>
<tr>
<td>4. Patient requires urethral catheterisation.</td>
<td>To drain the urinary bladder. The patient has the right to be catheterised by someone of her gender and cultural background if available.</td>
</tr>
<tr>
<td>5. Ask the patient to bathe, shower or wash genitalia, if possible.</td>
<td>To clean genitalia and reduce risk of infection. Be prepared to do this task if patient is unable and gives permission.</td>
</tr>
<tr>
<td>6. Put on disposable plastic apron.</td>
<td>To reduce risk of cross-infection.</td>
</tr>
<tr>
<td>7a. Lay the patient on a bed in a comfortable position. Close curtains and doors.</td>
<td>To ensure patient comfort, dignity and privacy.</td>
</tr>
<tr>
<td>b. Provide good lighting.</td>
<td>To assist in viewing the anatomy of genitalia.</td>
</tr>
<tr>
<td>c. Remove the patient's clothing.</td>
<td>Cover the patient with a sheet to maintain dignity while preparing the equipment for procedure.</td>
</tr>
<tr>
<td>8. Wash and dry hands thoroughly using bactericidal soap and alcohol hand rub.</td>
<td>To reduce the risk of infection during the procedure.</td>
</tr>
<tr>
<td>9a. Clean and prepare suitable work surface.</td>
<td>Top shelf acts as a work surface. All equipment being used is within the expiry date. To prevent latex allergy reactions.</td>
</tr>
<tr>
<td>b. Place all equipment required on bottom shelf or other work surface checking all expiry dates on equipment being used.</td>
<td></td>
</tr>
<tr>
<td>c. If using latex catheters or gloves, ask if patient is allergic to latex.</td>
<td></td>
</tr>
<tr>
<td>10a. Remove sheet from the patient's genitalia.</td>
<td>To expose genitalia for the procedure. Area can be clearly seen.</td>
</tr>
<tr>
<td>b. Switch on light and position to area.</td>
<td>To prevent soiling of bedding if leakage occurs.</td>
</tr>
<tr>
<td>c. Place disposable sheet under patient's buttocks and thighs.</td>
<td></td>
</tr>
<tr>
<td>11. Open all equipment using aseptic technique.</td>
<td>All equipment required and is on the work surface.</td>
</tr>
<tr>
<td>12a. Put on sterile gloves (be aware of latex allergy).</td>
<td>Prevent cross-infection during procedure. Patient is aware of what you are doing.</td>
</tr>
<tr>
<td>b. Proceed to explain to patient what you are doing.</td>
<td>Prevent cross-infection during procedure. Patient is aware of what you are doing.</td>
</tr>
<tr>
<td>13. Place towel(s) across thighs.</td>
<td>To create a sterile area.</td>
</tr>
<tr>
<td>14. Using low-lint sterile swabs, separate labia minora so that the urethral orifice can be identified.</td>
<td>This provides access to the urethral orifice to prevent labial contamination of the catheter during insertion. One hand to maintain separation until procedure is completed.</td>
</tr>
<tr>
<td>15. Clean the labia majora and minora in single downward strokes. In a single downward stroke clean around the urethral orifice with sodium chloride 0.9% or other antiseptic solution.</td>
<td>Inadequate preparation is a cause of infection.</td>
</tr>
<tr>
<td>16. Place a small amount of anaesthetic gel on to the sterile field.</td>
<td>Catheter being inserted has adequate surface lubrication to avoid urethral friction.</td>
</tr>
<tr>
<td>17a. Place nozzle of anaesthetic gel near the urethral orifice and squirt on some gel. Gently place nozzle into the urethra and slowly squeeze gel into the urethra. Inform the patient she may experience some stinging.</td>
<td>Adequate lubrication prevents urethral trauma and enables urethral anaesthesia.</td>
</tr>
</tbody>
</table>
Velcro straps. However, patients with circulatory problems or swollen ankles are best fitted with a leg bag sleeve holder, using either:
- **Aquasleeve** – small, standard, medium, large and extra large (sizing required).
- **Urilex** – small, medium, large and extra large (sizing required).
- **Leg bag holsters** – small, medium and large (sizing required).

**Overnight drainage bags** These can be sterile or non-sterile, drainable or non-drainable.

### Procedure for female urethral catheterisation (continued)

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Remove nozzle and discard tube of gel. To prevent contamination to sterile work area.</td>
<td>Adequate anaesthesia prevents patient discomfort during the procedure.</td>
</tr>
<tr>
<td>c. Leave patient for about five minutes to allow maximum urethral anaesthesia.</td>
<td>|</td>
</tr>
<tr>
<td>18. Place the catheter selected in receiver between the patient’s legs. If no receiver available, attach sterile drainage bag to catheter.</td>
<td>To provide container into which urine can drain.</td>
</tr>
<tr>
<td>19. Add anaesthetic gel to tip of catheter.</td>
<td>To provide lubrication to catheter tip before insertion into the urethra.</td>
</tr>
<tr>
<td>20a. Introduce the tip of the catheter gently into the urethral orifice. b. Slowly advance the catheter up the urethra.</td>
<td>To prevent trauma during insertion. During insertion the urethra is being dilated and prevents risk of trauma.</td>
</tr>
<tr>
<td>21. Once urine commences, advance catheter to 6-8cm.</td>
<td>To ensure adequate length of catheter has been inserted.</td>
</tr>
<tr>
<td>22a. Inflate the catheter balloon to the correct balloon infill volume avoiding under or over-inflation. b. Ask patient if she is experiencing sudden pain or discomfort.</td>
<td>The balloon infill volume is at the correct level recommended by the manufacturer. To ensure the balloon is being correctly inflated inside the urinary bladder and not the urethra.</td>
</tr>
<tr>
<td>23a. Gently withdraw catheter to anchor on base of the bladder. b. Attach sterile drainage bag.</td>
<td>To ensure the catheter does not remain curled inside the bladder, restricting urinary flow. To contain urine drained from bladder.</td>
</tr>
<tr>
<td>24a. Support the catheter and drainage bag using leg bag straps or sleeve holder with or without catheter G-strap to the correct position on the patient’s leg depending on the length of tubing of drainage leg bag. b. Patient may benefit from using catheter valve on intermittent drainage, but needs physical and mental dexterity to operate the valve.</td>
<td>To maintain patient comfort and free drainage of urine. To ensure the drainage bag is secured in the correct position. A G-strap is a restraining strap attached to the catheter to avoid the catheter swaying. Helps to maintain bladder health.</td>
</tr>
<tr>
<td>25. Measure amount of urine drained and document its appearance.</td>
<td>To measure bladder volume of contained urine, and record its appearance, clear, cloudy, blood-stained if required for future reference.</td>
</tr>
<tr>
<td>26. Take a sample of urine, undertake ward test. If abnormal readings, send sample for culture and/or sensitivity.</td>
<td>To check urine for possible abnormalities.</td>
</tr>
<tr>
<td>27a. Ensure that the vulval area is dry. b. Dress patient and make comfortable.</td>
<td>To prevent dampness which may cause soreness or irritation to the skin. Patient no longer exposed and comfortable.</td>
</tr>
<tr>
<td>28a. Dispose of all used equipment as per local policy. b. Wash and dry hands thoroughly and put on disposable gloves.</td>
<td>The treatment area is left clean and dry. To reduce risk of cross-infection.</td>
</tr>
<tr>
<td>29a. Educate patient/carer on catheter care and management, including using and changing the drainage system. b. If available, issue ‘Care of your catheter’ booklet or local health authority information sheet on catheter care. c. Provide contact numbers.</td>
<td>Patient can be independent and self-caring. Patient has information to hand. Patient is aware of who to contact if problems occur.</td>
</tr>
</tbody>
</table>

(Adapted from Osenton et al 2005)
1. Drainable: pre-packed and sterile, 2,000ml capacity with drainage tap. It may be attached directly to the catheter, lifespan five to seven days.

2. Non-drainable: non-sterile, 2,000ml capacity. To be attached to the connecting port at the base of the leg bag. To empty the bag needs to be cut and there is a risk of spillage. For single use only. It must not be attached directly to the catheter.

3. Drainable: non-sterile, 2,000ml capacity with single opening mechanism of drainage tap. For single use only. It must not be attached directly to the catheter.

**Catheter valves** A healthy bladder requires an intact nerve supply, blood supply and the ability to expand and store urine and constrict when voiding. Bladder health is important even when a patient is catheterised. Bladder health deteriorates in patients using continual drainage bags after six months (Addison 2001). This may be sooner, depending on the general condition of the patient’s physical and bladder health. A catheter valve comes pre-packed and sterile with a lifespan of five to seven days and is similar to the opening mechanism of a drainage bag which is attached directly to the catheter. Patients using catheter valves on intermittent drainage help to maintain bladder health (Box 4). Patients need to be able to operate the catheter valve to empty the bladder themselves on a regular basis. Catheter valves are not suitable for certain patients with the conditions indicated in Box 5.

**Documentation of procedure**

Documentation of any nursing intervention needs to be done accurately and contemporaneously. This is a record of what has been done, when and why it has been done and, in the case of urinary catheterisation, what plans there are to remove the catheter. If the patient is in hospital, this information needs to be forwarded to community staff or staff in nursing homes and hospices. Therefore, it is important to provide detailed information regarding the indwelling catheter. In the author’s experience this is often neglected. The use of the four ‘Ws’ is suggested to support good practice:

- **Why** was the patient catheterised?
- **When** was the patient catheterised: the date, document the name of the authorising person, patient’s consent or authorised consent (name the person), who explained why a catheter was required and who undertook the procedure?
- **What** type of catheter is in place – most catheters have a peel-off label which can be attached to the patient’s notes. This includes:
  - Make of catheter; type of catheter material;

<table>
<thead>
<tr>
<th>TABLE 3</th>
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<tbody>
<tr>
<td><strong>Drainage bags</strong></td>
</tr>
<tr>
<td><strong>Length and lifespan</strong></td>
</tr>
<tr>
<td>Direct, no tubing</td>
</tr>
<tr>
<td>Five to seven days</td>
</tr>
<tr>
<td>Short tube 10cm</td>
</tr>
<tr>
<td>Five to seven days</td>
</tr>
<tr>
<td>Long tube 30cm</td>
</tr>
<tr>
<td>Five to seven days</td>
</tr>
<tr>
<td>Extra-long tube 38cm</td>
</tr>
</tbody>
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<thead>
<tr>
<th>BOX 4</th>
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<tbody>
<tr>
<td><strong>Benefits of using a catheter valve</strong></td>
</tr>
<tr>
<td>› Helps maintain blood supply to the bladder wall.</td>
</tr>
<tr>
<td>› Helps maintain nervous supply to the bladder wall.</td>
</tr>
<tr>
<td>› Allows the bladder to expand and store urine.</td>
</tr>
<tr>
<td>› Allows the bladder to constrict following emptying.</td>
</tr>
<tr>
<td>› Can be used in short-term and long-term catheterisation. (Addison 2001)</td>
</tr>
</tbody>
</table>

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<tr>
<th>BOX 5</th>
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<tbody>
<tr>
<td><strong>Conditions unsuitable for use of catheter valves</strong></td>
</tr>
<tr>
<td>› Bladder (detrusor) instability or impaired bladder sensation.</td>
</tr>
<tr>
<td>› Hyper-reflexia.</td>
</tr>
<tr>
<td>› Ureteric reflux.</td>
</tr>
<tr>
<td>› Retrograde pressure and renal impairment.</td>
</tr>
<tr>
<td>› Haematuria (until urine clear).</td>
</tr>
<tr>
<td>› Confusion – avoid inserting catheters in confused patients due to the risk of them pulling it out causing possible trauma.</td>
</tr>
</tbody>
</table>

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Patient education, for example, patient information booklet.

Conclusion

Urinary catheterisation is an important aspect of patient care. Staff undertaking female catheterisation should have undergone appropriate teaching and training and have their employer’s permission to perform the procedure. Before catheter insertion the reasons why urinary catheterisation are required should be explained to the patient. The patient should be given the opportunity to ask questions and be provided with clear understandable answers. Urinary catheters should not be inserted for convenience. Careful thought is required before inserting a urinary catheter and alternative forms of management should be considered.

When choosing a urinary catheter, important issues regarding how long the catheter is to remain in place, catheter length, material, Ch size and balloon size should be considered. Following insertion, it is important to select the best type of drainage system to meet the patient’s individual needs. Patient education regarding self-management in caring for the catheter and drainage system should be commenced as soon as the catheter is inserted. If available a patient information leaflet on catheter care and management should be issued to patients, including contact telephone numbers.

### References

Female catheterisation

TEST YOUR KNOWLEDGE AND WIN A £50 BOOK TOKEN

HOW TO USE THIS ASSESSMENT

This self-assessment questionnaire (SAQ) will help you to test your knowledge. Each week you will find ten multiple-choice questions which are broadly linked to the learning zone article.

Note: There is only one correct answer for each question.

WAYS TO USE THIS ASSESSMENT

1. You could test your subject knowledge by attempting the questions before reading the article, and then go back over them to see if you would answer any differently.
2. You might like to read the article to update yourself before attempting the questions.

The answers will be published in Nursing Standard two weeks after the article appears.

Prize draw

Each week there is a draw for correct entries. Send your answers on a postcard to: Nursing Standard, The Heights, 59-65 Lowlands Road, Harrow, Middlesex HA1 3AW, or via email to: zena.latcham@rcnpublishing.co.uk

Ensure you include your name and address and the SAQ number. This is SAQ No 416. Entries must be received by 10am on Tuesday November 13 2007.

When you have completed your self-assessment, cut out this page and add it to your professional portfolio. You can record the amount of time it has taken you. Space has been provided for comments and additional reading. You might like to consider writing a practice profile, see page 60.

1. A reason for female urinary catheterisation is:
   a) Monitoring urinary output   b) Urodynamic investigations
   c) Draining the bladder because of urinary obstruction d) All of the above

2. What percentage of catheterised patients develops a urinary tract infection?
   a) 1-4 b) 2-6 c) 13 d) 20-30

3. How long is the female catheter?
   a) 20-26cm b) 30cm c) 40-45cm d) 50cm

4. Polytetrafluoroethylene-coated catheters usually have a lifespan of:
   a) Seven days b) 14 days c) 28 days d) 84 days

5. A local anaesthetic suitable to aid catheter insertion is:
   a) Chlorhexadine b) Lidocaine c) Hydrophilic polymer d) 0.9% sodium chloride

6. Equipment required for catheterisation includes:
   a) Good lighting b) Appropriate urinary catheter c) Cleansing solution d) All of the above

7. A benefit of using a catheter valve is:
   a) Maintenance of blood supply to the bladder wall b) It cannot be used for short-term catheterisation
   c) It does not allow the bladder to expand d) It does not allow the bladder to contract

8. A catheter of 40-45cm may be used to catheterise:
   a) Obese women

9. Why might catheters be unsuitable for use on confused patients?
   a) They may pull the catheter out causing trauma b) They have impaired bladder sensation
   c) They have renal impairment d) They have haematuria

10. What procedure might be useful if the urethral orifice cannot be easily identified?
    a) Suprapubic catheterisation b) Vaginal insertion c) Digital guidance d) Intermittent self-catheterisation

This self-assessment questionnaire was compiled by Lisa Berry

Answers

Answers to SAQ no. 414
1. a  2. d  3. d  4. b  5. d
6. d  7. c  8. d  9. c  10. a

Report back

This activity has taken me ____ hours to complete.

Other comments:

Now that I have read this article and completed this assessment, I think my knowledge is:

Excellent  Good  Satisfactory  Unsatisfactory  Poor

As a result of this I intend to:

NURSING STANDARD