

Indwelling urinary catheter insertion 2: procedure for adults

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Abstract This second article on indwelling urinary catheter insertion outlines the procedure for adults in both a community and acute setting. It looks at indications for insertion and the professional responsibility of the nurse when undertaking such a procedure, and explores ethical issues, cultural norms and religious beliefs, which should be considered. It also reflects on gender and sexuality, and how health professionals must consider these when providing care. It describes the correct insertion technique, preparation of patients and how to safely secure the catheter. Placement of urethral urinary catheters can present a potential risk to patients, so nurses must demonstrate competence in practice and display awareness of the complications associated with the procedure.

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Urethral urinary catheterisation involves the insertion of a tube into the bladder via the urethral tract (Dougherty and Lister, 2015), which may be clinically indicated in the following situations:

- Monitoring urine output when a person is critically unwell;
- Acute urinary retention (AUR);
- Chronic urinary retention – only if symptomatic and/or with renal compromise;
- During and after certain surgical procedures;
- To enable bladder irrigation;
- To enable medications to be administered directly – for example, chemotherapy;
- To bypass an obstruction or for someone who is experiencing voiding difficulties;
- To enable bladder-function tests;
- As a last-resort treatment for urinary incontinence when all other conservative treatment methods have failed;
- To obtain a sterile specimen of urine (Royal College of Nursing (RCN), 2021).

Health professionals must make sure the decision to undertake catheterisation is based on a comprehensive individual assessment which, where possible, is done in consultation with the patient. This assessment should also consider an individual's clinical history and the health professional should be aware of certain situations in which the patient may be more vulnerable. While not an exhaustive

list, this might include those who are immunosuppressed, have had an organ transplant, or have an artificial heart valve (RCN, 2021). The decision to appropriately catheterise would be reached if the benefits to the individual patient outweigh the risks (Zhao et al, 2022).

The Nursing and Midwifery Council (NMC) (2018a) includes catheter insertion and management for all genders as procedures that a registered nurse must be able to effectively undertake to provide safe evidence-based care for patients. However, the procedure is not without risks.

Indwelling catheters (IDCs) are often linked with catheter-associated urinary tract infections (CAUTIs) (Percival et al, 2022) and there are also risks that are less commonly reported, including injury to the urethra or bladder, and other potential complications – such as bladder spasms or blockages of the catheter system – that may cause the patient discomfort (NHS, 2020). Due to these risks, catheterisation should only be performed by a competent practitioner after consideration of alternative methods and with the ongoing clinical need being reviewed regularly (National Institute for Health and Care Excellence (NICE), 2017).

Nurses undertaking this procedure should:

- Have received appropriate education and training;
- Have demonstrated the appropriate level of competency;
- Be working within their scope of practice, and within local policies and guidelines (Davis, 2019).

Professional, cultural and ethical responsibilities

Gaining consent

Gaining valid, voluntary and informed consent is an important aspect in the provision of any care, and a detailed explanation of the procedure should be given to the patient before an IDC is passed (Box 1).

Consent for treatment in England and Wales is advised by the Mental Capacity Act 2005. To apply it in practice, refer to the Department for Constitutional Affairs' (2007) *Mental Capacity Act 2005: Code of*

Box 1. Gaining consent

When gaining patient consent, information should include the following:

- Rationale for insertion
- Information about how the indwelling catheter is inserted and how it works
- How to position the bag/valve for comfort
- How to manage the bag/valve on a daily basis
- Hygiene and self-care
- Information on oral intake
- How to problem solve in the event of problems, such as infection, blockages or leaks (Prinjha and Chapple, 2013)
- Clear verbal and written information for the patient, in a format that uses language they can understand (Royal College of Nursing, 2021).

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Practice. Practice in Scotland and Northern Ireland is advised by region-specific acts.

Consent for catheter insertion can be obtained orally, but inferred consent should not be applied. It is, therefore, important to identify any barriers that may affect the ability to gain consent – for example, language – and provide a resolution to ensure appropriate consent is gained.

When a patient is unable to consent, there must be clear rationale for catheter use and it must be in the patient's best interests. The RCN (2021) recommends that this should include multidisciplinary team (MDT) involvement and consultation with the patient's next of kin. It is important to remember that specific patient consent is required from the patient if another health professional is present in either an observational role or in the event of chaperoning. Consent is also required for any ongoing catheter care, such as cleaning or monitoring (RCN, 2021).

When a catheter is used for long-term management, health professionals should consider the impact it will have on body image, social life, and intimate relationships (Chapple et al, 2014). Information should also, therefore, include education around sexual activity and management of the catheter (Prinjsa et al, 2016).

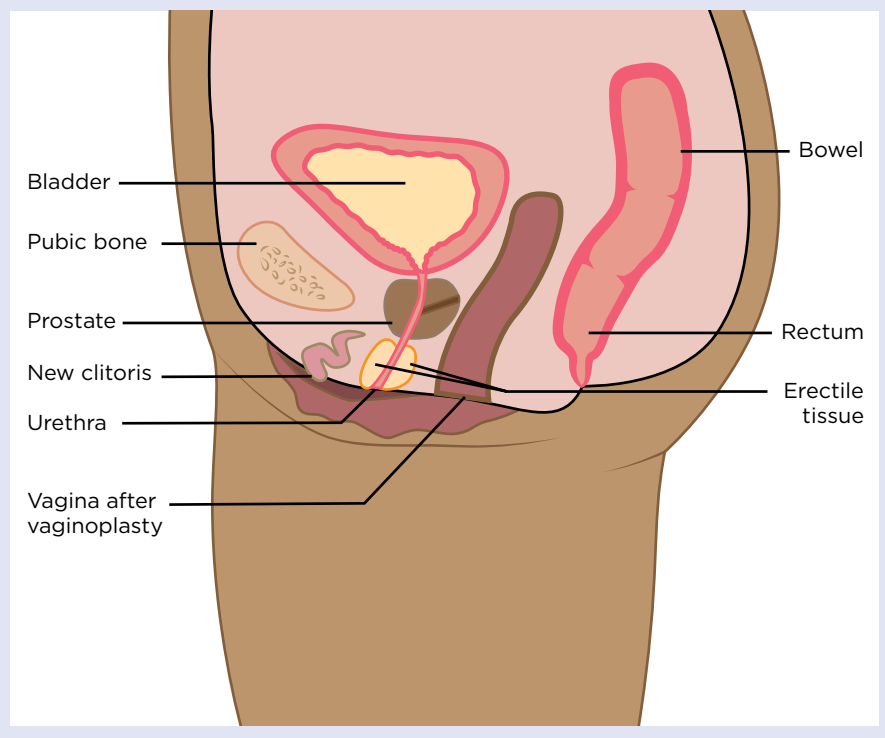
Ethical considerations and inclusivity

Provision of holistic, patient-centred care is essential and health professionals should be aware of the patient's specific needs. Urethral stricture from causes such as congenital conditions, intersex presentation at birth, trauma, chronic inflammation or sexually transmitted infections may be present and may affect the process of passing the catheter.

Individuals who undergo urethroplasty for congenital or acquired urethral strictures, as well as transgender people undergoing gender-affirming surgery (GAS), may have alterations to the urethral tract and, so, the choice of catheter may be affected (RCN, 2021).

It is important to note that the prostate is not removed as part of GAS for trans females, due to the risk of side-effects, such as urinary problems and nerve damage. As such, health professionals must take care when inserting a catheter as a means of bladder management for a trans female, as resistance may be felt when passing the prostate gland (Fig 1). In contrast, for trans males there may be a distinct lack of resistance in the absence of a prostate. In these cases, catheterisation should be carried out under direction of the urology team.

Fig 1. Anatomical structure post male-to-female gender affirmation surgery



Other surgeries, such as phalloplasty, metoidioplasty and vaginoplasty, will also alter the anatomical structure and appearance of the genitalia; health professionals need to take this into consideration when discussing the procedure with the patient and when inserting the catheter.

Historically, many clinical procedures have been gender binary and heteronormative in their design (Röndahl, 2011). Catheterisation is one such procedure that has been labelled using binary gender terms. When passing a catheter, the procedure should be carried out in accordance with the patient's genital presentation (RCN, 2020).

Lack of access to properly trained health professionals, who possess an understanding of the patient's unique medical needs, has been reported in the LGBTQ+ community, with practitioners showing ambivalence and uncertainty in providing care (Poteat et al, 2013). This can lead to a breakdown in trust and communication, limiting the ability to engage with health professionals and share important health history. It is important that health professionals do not make assumptions based on the patient's physical appearance, specifically in relation to sex and gender.

Trans individuals are not required to reveal their trans status to health

professionals, so questions relating to this should be dealt with sensitively. In the event the patient discloses this information, sharing of this disclosure should be kept to a minimum – namely, only when it affects the provision of care and only when consent has been gained from the patient. Disclosure of someone's trans or non-binary status without permission is a criminal offence (RCN, 2020) and does not align with the NMC's (2018b) code of conduct. The one exception to this is when life-saving treatment is needed and the patient is unable to give consent (RCN, 2020).

Health professionals should demonstrate cultural competence in their practice and be able to address questions around biological sex, sexuality and gender when providing bladder management options (McCann and Brown, 2018). This can be done through:

- Careful assessment;
- Use of inclusive language;
- Appropriate use of pronouns;
- Sensitive questioning (RCN, 2021).

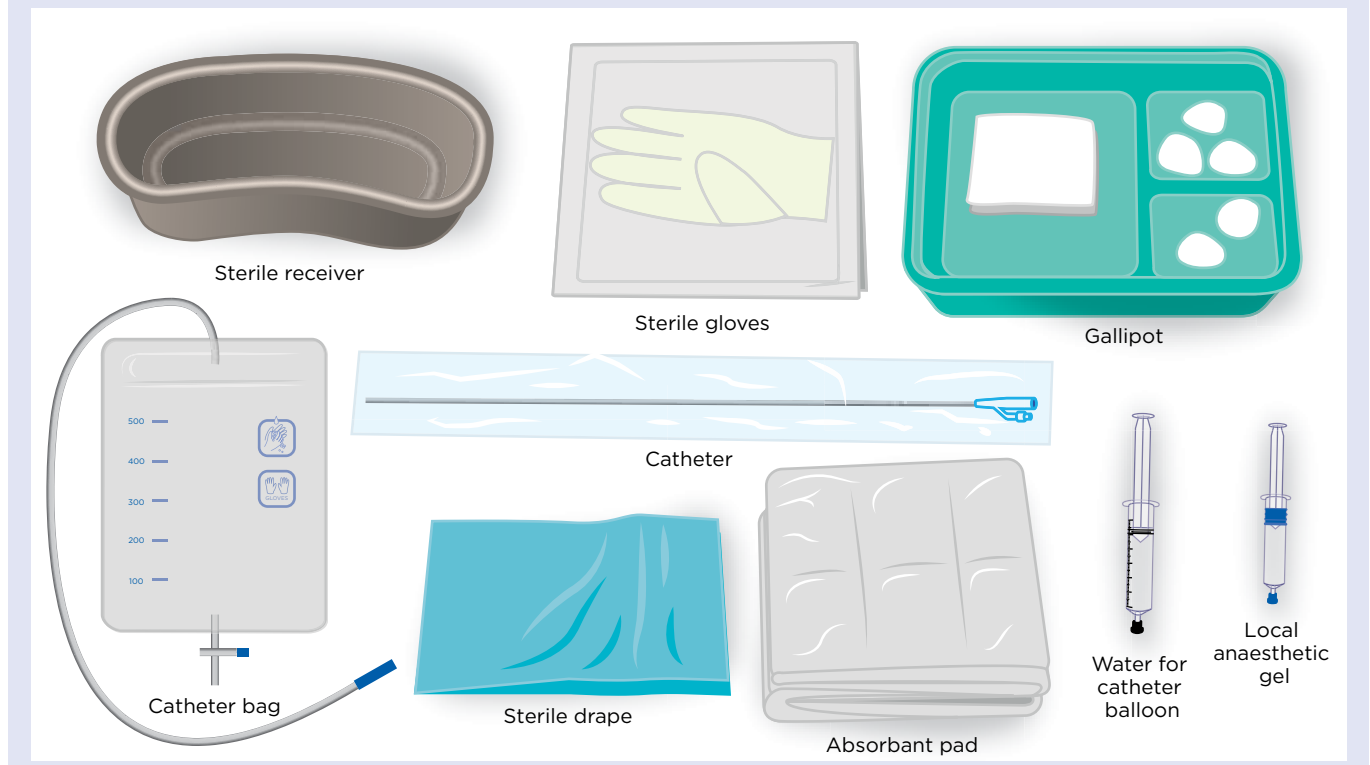
Religious and cultural considerations

Religious, cultural and traditional practices, along with social norms, can also affect catheterisation choices. Although exact numbers are unknown, individuals who have undergone female genital mutilation (FGM) access health services regularly

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Fig 2. Equipment required



Box 2. Pre-catheterisation considerations

- Do I have a basic understanding of the anatomy and physiology of the urinary system?
- Have I received the correct education to carry out the procedure, working within local guidelines?
- Does the patient have an allergy or sensitivity to materials used in catheter insertion?
- Is this the right form of bladder management for the patient?
- What education do I need to provide to the patient?
- Does the patient have any specific cultural/personal/spiritual/religious needs?

in the UK (Clarke, 2016). In the acute stage, patients can experience painful micturition caused by swelling, leading to urinary retention, and so may require catheterisation. Long-term effects include urinary strictures, urethral meatus obstruction and urethral fistulas (Velia et al, 2015), which can make insertion of the catheter difficult. In acute presentations of FGM, Clarke (2016) suggested that catheter insertion should not be attempted until the extent of the injury had been ascertained.

It is important for health professionals to remember that these practices are often seen as a rite of passage and are linked to ancestral and sociocultural roots, gender identity, virginity, hygiene and assurance of marriage (Velia et al, 2015). As such, care should be taken when discussing catheterisation in these cases. Health professionals need to also be aware that the practice of FGM is illegal in the UK under the Female Genital Mutilation Act (2003) and, under Section 5B, they have a legal duty to report presentation of cases or at-risk cases in girls aged <18 years to the police (RCN, 2021). Practitioners should follow local policy and safeguarding practices when considering reporting.

Genital piercings are often commonly seen and, where they are present, care should be taken when inserting catheters. A piercing can be a source of infection, and penile piercings in particular can cause obstruction of the meatus.

It is important that all health professionals performing catheterisation are competent practitioners. Nurses are expected to practise in accordance with the NMC's (2018b) professional standards, participate in continuous education and work within their scope of practice.

Box 2 outlines things to consider before catheterisation is performed.

Cautions and contraindications

Contraindications for catheterisation are rare; however, if urethral trauma is suspected, the procedure should be carefully considered by the medical and nursing team. Such an example would be trauma secondary to pelvic fracture, indicated by one or more of the following:

- Blood at the urethral meatus;
 - Difficulty or inability to void;
 - Palpable bladder;
 - Perianal bruising;
 - Penile swelling;
 - Scrotal haematoma;
 - High-riding prostate on examination.
- Caution is also advised for:
- Known urethral strictures;
 - Post-operative urological patients (always discuss with consultant);
 - Previously documented difficulties in insertion.

In these situations, concerns should be escalated and discussed with the nursing and medical teams.

If a urinary catheter is inappropriately or accidentally removed, it can cause significant trauma to the internal and external genitalia. If this happens, examine the patient for signs of trauma or bleeding, check the catheter and ensure it has all been removed. If you have any concerns, ask a urologist to review the patient before reinsertion (if appropriate).

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If the patient is complaining of pain around the insertion site, check for signs of trauma (such as haematuria or bleeding around the catheter) and consider whether a catheter is necessary. The pain may be caused due to insertion, or the catheter may not be in situ correctly.

It is possible that the patient has an allergic reaction to the catheter itself, or some of the equipment or medication used during insertion. Assess the severity of the reaction and follow local policy.

If the patient has haematuria or a lot of debris in their urine, their catheter may become blocked and it may start bypassing (urine 'leaks' around the catheter). Follow your local policy on catheter flushing. The patient may benefit from a larger size catheter or may require a triple-lumen catheter to allow for bladder irrigation.

Equipment needed

- Catheter (see below);
- Sterile catheterisation pack;
- Sterile lubricating gel or anaesthetic gel lubricant containing 2% lidocaine hydrochloride (check local policy: commonly, 6ml female; 10ml male. This will need prescribing);
- Sterile gloves – two pairs;
- Cleaning fluid (check local policy, commonly 0.9% normal saline);
- Pre-filled 10ml syringe with sterile water, or syringe, sterile water and blunt-fill needle (appropriate to catheter balloon size);
- Apron and personal protective equipment (PPE) as per local policy;
- Drainage bag/catheter valve;
- Stand/holder for drainage bag;
- Securing device for catheter (according to local policy).

Check integrity of all equipment and expiry dates (Fig 2).

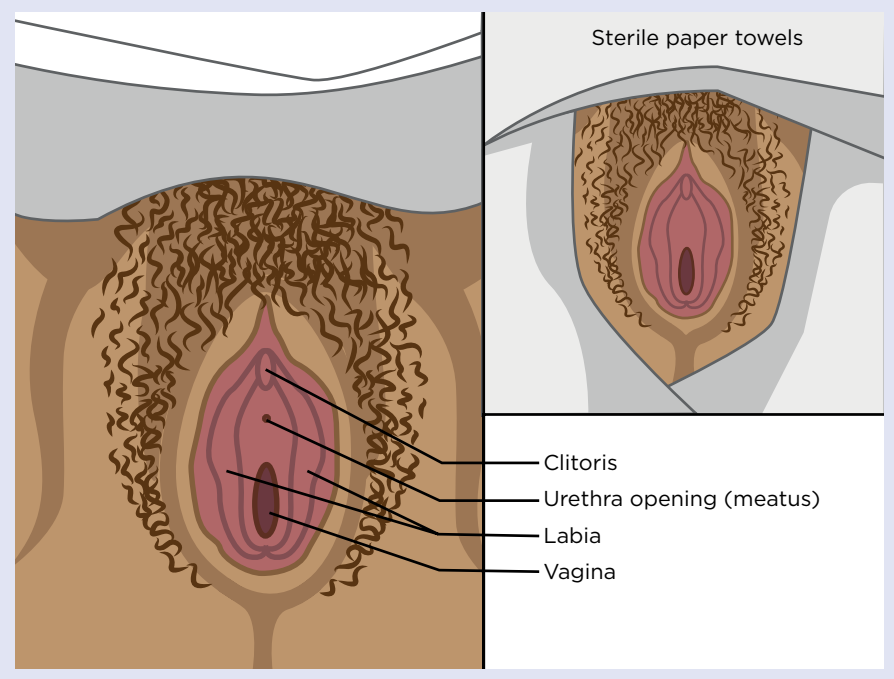
A variety of catheters is available. Your choice of catheter material should be influenced by several factors, including:

- Any allergies;
- Length of time it is to be in situ;
- Infection risk;
- Reason for catheterisation.

Nurses should always assess the patient carefully to be able to select the most appropriate catheter. Local policy and procedure will also guide and inform your choice.

Short and standard-length catheters are available. Standard-length catheters are suitable for most catheterisations and are often preferred, especially in patients who are more mobile. Short-length catheters often have limited availability in hospitals in non-specialised patient areas; this is to

Fig 3. Anatomical landmarks for female catheterisation



reduce the risk of using a short-length catheter in patients with anatomical male urethral structures, which can cause trauma and bleeding if the balloon is inflated in the longer urethra (National Patient Safety Agency (NPSA), 2009).

Catheter diameter will vary depending on the patient. Influences may include trauma, strictures, known enlarged prostate and reason for catheterisation. For routine drainage, the smallest diameter to effectively drain should be used; this is usually a 12 Charrière (12Ch) for patients with female anatomical structures and 12Ch or 14Ch for patients with male anatomical structures.

Preparation

- Ensure you have considered your local trust policy and guidelines with regard to patient catheterisation and met any local training requirements;
- Offer the patient a chaperone and consider local policy about the need for a chaperone;
- Gain and document informed consent;
- Consider your position and the height of the bed – avoid bending forwards for a long period of time;
- Position the patient appropriately and consider additional support requirements, such as an extra pillow;
- Wash your hands and clean the procedure trolley following local policy;
- Wash your hands again and prepare the sterile field using an aseptic non-touch technique;

- Decontaminate your hands and apply sterile gloves;
- Fill syringe with 10ml sterile water (if a pre-filled syringe is not already in the catheter pack).

The procedure

Patients with female anatomy

Anatomical landmarks for female catheterisation are shown in Fig 3.

1. Position and prepare the patient, ensuring privacy and dignity. Ensure they are laying on their back, with knees bent (approximately 60cm apart) and hips flexed. A disposable pad placed underneath the patient will protect the bed linen.
2. Carefully place a sterile paper towel under the patient's buttocks – alternatively, a hole can be made in a towel that is laid over the urethral area.
3. Gently part the labia minora using a sterile swab or your non-dominant hand. Maintaining this position, wipe downwards with sterile cleaning fluid and swab, using your dominant hand. You should use a fresh swab with each sweep and clean from the outside, moving inwards from the labia majora to the labia minora, and finally the urethral meatus.
4. Prime the lubricating gel syringe and gently insert the tip into the urethra. Maintain this position to avoid gel leakage, and

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slowly insert all 6ml into the urethra. Once complete, remove the syringe and dispose of it appropriately. Wait 3-5 minutes for the anaesthetic gel to take effect.

5. Remove gloves, decontaminate hands and apply fresh, sterile gloves.

6. Place the sterile receiver between the patient's legs.

7. Remove/pull apart the packaging around the tip of the catheter.

8. Using your dominant hand, gently insert the tip of the catheter into the urethra, pulling back the packaging as you proceed and using it to ensure you do not handle the catheter directly. Proceed like this for approximately 5-6cm in a slightly upward direction

9. Once urine starts to drain, proceed another 2-5cm before inflating the balloon. This ensures the balloon is safely in the bladder and not inflated in the urethra, which would cause trauma.

10. As the balloon is inflated, check for discomfort in the patient, which may suggest the balloon is in the urethra. In this instance, immediately deflate the balloon and follow local policy. This may mean you have to remove the catheter and reattempt another insertion with a new one, or continue advancing the catheter further up into the bladder.

11. Once the balloon is inflated, gently pull

on the catheter, checking for resistance, which will be provided when the balloon is located safely in the bladder.

12. Attach the appropriate drainage system to the catheter and secure comfortably, checking the positioning when the patient mobilises. Educate the patient on cleaning the entry point of the catheter, if possible, and monitor the output.

Patients with male anatomy

1. Maintaining privacy and dignity, position the patient to lie in a supine position with their legs extended and clothes removed from the genitalia area. A disposable pad placed underneath them will protect the bed linen.

2. Once you have your sterile gloves on, create a sterile field around the penis, either by placing sterile towels above and below it, or by making a hole in the centre of a large sterile sheet and passing the penis through, while keeping the abdomen and thighs covered.

3. Using a sterile swab, clean the skin around the meatus using a cleansing agent (follow local policy to know which agent to use). Be mindful of whether your patient has been circumcised – you may need to retract the foreskin. Using sterile swabs, clean the top of the meatus, then swipe down over the meatus in one smooth movement. Use a second swab to clean under the meatus.

4. Place a few drops of the anaesthetic gel over the meatus opening and insert the

syringe tip into the meatal opening and push the gel into the urethra. The gel needs 3-5 minutes to take effect. During this time, hold the penis upright to avoid leakage and to encourage the gel to travel down the urethra.

5. Remove gloves, wash hands and put on clean sterile gloves.

6. Check the catheter is a standard length – normally 40-45cm – not shorter. Maintaining your sterile field, tear along the perforated end at the top of the catheter packaging. With your non-dominant hand, hold the penis straight and retract the foreskin (where applicable) enough to see the meatal opening. Using the remaining packaging to hold the catheter, insert the tip of the catheter into the urethra (Fig 4).

7. Maintaining smooth motions, advance the catheter. There may be some resistance as you reach the external sphincter; ask the patient to cough or bear down as if they were trying to pass urine. Resistance will be more prevalent with an enlarged prostate, but should still be possible to pass without too much discomfort for the patient. If, at this point, there is bleeding or the patient appears to be in any pain, stop the procedure and ask for senior support.

8. Insert at least 20-25cm, ideally all the way to the catheter's bifurcation (the Y-section). This will ensure the balloon is in the bladder; you should see urine in the catheter before then but do not stop inserting. Once you are certain the end of the catheter is in the bladder, slowly inflate the balloon with the required amount of sterile water, normally 10ml. If the patient expresses any pain at this point, stop and deflate the balloon, advance and try again. If resistance is still felt on inflation, remove and seek medical advice.

9. Attach the drainage bag and secure appropriately, checking the positioning when the patient mobilises.

10. If the patient is not circumcised (see step 3), replace the foreskin.

11. Educate the patient on cleaning the entry point of the catheter, if possible, and monitor the output.

Post catheterisation

- Ensure the patient is comfortable and repositioned as needed;
- Remove and dispose of equipment and

Fig 4. Passing the catheter into the urethral meatus

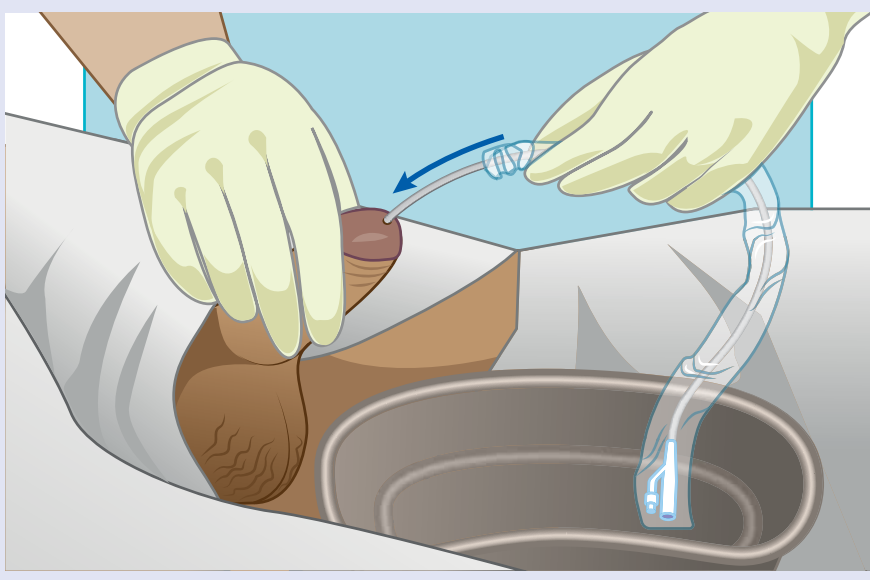


Table 1. Troubleshooting

Problem	Action
Undue pain/discomfort or bleeding	Stop the procedure and seek senior and medical assistance
Patient with female anatomical structures unable to assume position	Patients can lie on their side, with their upper leg bent over the lower leg. It will be more challenging to see but, by lifting the buttocks and parting the labia, you should be able to access the meatus. An assistant may be needed to help you and support the anatomy
Unable to see female anatomical structures	A folded towel or a pillow placed under the small of the patient's back may help as it will raise and tilt the pelvis

PPE appropriately;

- Document necessary information in the patient's notes (the NMC's (2018b) professional standards state that clear documentation of the procedure is required). Information should include:
 - Reason for catheterisation;
 - Catheter details (manufacturer, size, length, material, batch number, expiry date). Most catheter packaging will have this on a sticky label that can be attached to the patient's notes;
 - Volume of sterile water used in the balloon;
 - Anaesthetic gel used;
 - Date and time of insertion;
 - Patient consent;
 - Drainage system details (name, size, type);
 - Any difficulties or problems encountered – troubleshooting information is outlined in Table 1;
 - Review and change due dates (RCN, 2021).

Professional responsibilities

- Ensure local training requirements are adhered to. All health professionals performing the procedure must have successfully completed an appropriate proficiency-based programme;
- Ensure the practitioner is working within their own scope of practice in accordance with the NMC's (2018b) professional standards;
- Ensure familiarity with local policy on catheter insertion and management;
- Report and escalate poor practice if this is observed;
- Demonstrate cultural competence in practice.

The use of IDCs does not come without risk, so it is important that a careful assessment of the patient's needs is made. The risk of CAUTI increases with longer-term use of IDCs (Gould et al, 2010), so the IDC should be removed as soon as it is appropriate to do so.

Box 3. The HOUDINI tool

The HOUDINI protocol is used to assess the initial and ongoing need for an indwelling catheter.

- H** haematuria or clots
 - O** obstruction
 - U** urological surgery
 - D** decubitus ulcer – open sacral or perineal wound and incontinence
 - I** input/output management
 - N** not for resuscitation/end of life
 - I** immobility due to physical restraints
- If the above criteria do not apply, the catheter should not be inserted or should be removed.

Decision trees, such as the HOUDINI tool (Box 3), should be considered when opting for this management (Percival et al, 2022). HOUDINI protocols are often used when there is no specific medical instruction for catheter removal; it enables health professionals to identify indications for continued use of the catheter.

Conclusion

Although catheter insertion is a relatively common practice in healthcare, it is an invasive procedure and not without risk. Nurses performing it should make sure they are well informed about the decision for placement, and work within their scope of practice and in line with the NMC's (2018b) code of conduct and local policy.

Practice must adhere to a holistic, inclusive approach, addressing the patient's needs to maintain cultural safety. Appropriate assessments, which include a plan of management and anticipated removal date, must be carried out before undertaking the procedure. Insertion should be carried out as per local guidelines and, if there is any uncertainty, advice should be sought from more-experienced practitioners and/or the medical team. **NT**

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Professional responsibilities

This procedure should be undertaken only after approved training, supervised practice and competency assessment, and carried out in accordance with local policies and protocols.