

## Insertion and Management of Urethral Catheters for Adult Patients

**Summary** The purpose of this Guideline is to provide the best practice principles for inserting and managing urethral catheters for adult patients in NSW Public Health Organisations (PHOs), to reduce unnecessary catheterisation and to minimise the risk of catheter-associated urinary tract infection (CAUTI).

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**Audience** All Clinical Staff;All Medical and Nursing Staff;Directors Clinical Governance;Hospital Administration

# INSERTION AND MANAGEMENT OF URETHRAL CATHETERS FOR ADULT PATIENTS

## GUIDELINE SUMMARY

This Guideline provides best practice principles for inserting and managing urethral catheters for adult patients in NSW Health Organisations (HOs) with the aim of reducing unnecessary catheterisation and minimising the risk of catheter-associated urinary tract infection (CAUTI).

This document will support trained and credentialed health workers (HW) who are competent in urinary catheter practice for acute care settings.

## KEY PRINCIPLES

To minimise the risk of a patient acquiring a CAUTI, clinicians are to ensure that indwelling urethral catheters are always:

- Inserted only if clinically indicated
- Inserted and maintained using aseptic technique
- Removed as soon as the clinical need has been resolved.

Catheter insertion, routine care and catheter removal are to be documented in the patient's healthcare record.

## USE OF THE GUIDELINE

The Chief Executives of NSW HOs are responsible for the implementation of this Guideline within their services/facilities to ensure that local protocols or operating procedures are in place, aligned and consistent with the Guideline.

All clinicians working in adult acute care settings and who are involved in the care of patients with catheters should be aware of the Guideline and actively participate in its implementation.

The Clinical Excellence Commission will have responsibility for producing resources for NSW HOs to support the implementation of this Guideline.

## REVISION HISTORY

Version	Approved by	Amendment notes
August-2021 (GL2021_015)	Deputy Secretary, Patient Experience and System Performance	Revised guideline with minor update
December 2015 (GL2015_016)	Deputy Secretary, System Purchasing and Performance	New guideline

## ATTACHMENTS

1. Insertion and Management of Urethral Catheters for Adult Patients: Guideline

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## 1 BACKGROUND

Urinary tract infection (UTI) refers to an infection affecting the bladder, urethra, ureters or kidneys. Hospital-acquired UTIs are one of the most common hospital-acquired complications (HACs) that occurs in Australian hospitals and a longer length of stay increases the likelihood of developing a UTI. Catheter-associated UTIs (CAUTI) are the most prevalent of all hospital-acquired UTIs in Australia, accounting for 80% hospital-acquired UTIs.

### 1.1 About this document

The purpose of this Guideline is to provide the best practice principles for inserting and managing urethral catheters for adult patients in NSW Health Organisations (HOs), to reduce unnecessary catheterisation and to minimise the risk of CAUTIs.

To support all trained and credentialed health workers (HW) who are competent in urinary catheter practice for acute care settings. It is the responsibility of the HO to ensure clinicians whose role involves the insertion, maintenance or removal of urethral catheters are trained and credentialed. This Guideline is not intended for people who self-catheterise.

This Guideline addresses the insertion, care and removal of urethral catheters in adults during acute care.

This Guideline does not address suprapubic catheterisation, paediatric catheterisation or care and use of chronic or long-term catheters for adult patients. This document provides limited advice for maternity and birth settings. These units are to refer to local procedures for further information.

### 1.2 Key definitions

#### Autonomic dysreflexia

Autonomic dysreflexia occurs in people with spinal cord injury at or above the sixth thoracic (T6) level. It is a sudden and severe rise in blood pressure resulting from overactivity of an isolated sympathetic nervous system below the lesion, triggered by a nociceptive stimulus that can result in intracranial haemorrhage, fits, arrhythmias, hypertensive encephalopathy and even death.<sup>1</sup>

#### Aseptic technique

Aseptic technique consists of a set of practices aimed at minimising contamination and is particularly used to protect the patient from infection during clinical procedures.

#### Clean intermittent self-catheterisation

Catheterisation performed by the patient or their carer using a clean technique.

#### Closed system

A closed urinary drainage system consists of a catheter inserted into the urinary bladder and connected via tubing to a drainage bag. The catheter is retained in the bladder by an inflated balloon.<sup>2</sup>

## Credentialing

A process used to verify the qualifications and experience of primarily medical practitioners to determine their ability to provide safe, high quality health care services within a specific health care setting.<sup>3</sup>

## Hand hygiene

A general term applying to processes aiming to reduce the number of microorganisms on hands. This includes application of a waterless antimicrobial agent (e.g. alcohol-based hand rub) to the surface of dry unsoiled hands or use of soap/ solution (plain or antimicrobial) and running water (if hands are visibly soiled), followed by patting dry with single-use towels.

## Health Organisation (HO)

Health Organisation(s). This term refers to Local Health Districts, statutory health corporations or an affiliated health organisation in response of its recognised establishments and recognised services, as defined in the *Health Services Act 1997*.

## In/out catheterisation

Also known as intermittent catheterisation. Involves insertion of a non-balloon urethral catheter into the bladder through the urethra to drain urine<sup>4</sup> and it is not intended to remain in. May be performed once for a brief time or at intervals.

## Short term indwelling catheterisation

For the purposes of this Guideline, short term indwelling catheterisation is considered to be  $\leq 14$  days.<sup>5</sup>

## Standard precautions

Standard Precautions represent the minimum infection prevention measures that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where healthcare is delivered.

## 2 CONSIDERATIONS OF CATHETERISATION

### 2.1 Indications for catheter insertion

Clinicians are to **only** consider catheterisation if one or more of the following indications are present:

- Management of urinary retention or obstruction
- Clot retention associated with gross haematuria
- Monitoring for sepsis, trauma, renal function, electrolyte or fluid balance
- Injury or surgery affecting urinary function and/ or involving immobility (including injury, surgery or disease affecting the spinal cord)
- Investigation, diagnostic or treatment (including bladder irrigation or instillation)

- Urinary incontinence management associated with wound care, end-of-life care or chemotherapy if other options available adversely affect patient's comfort
- Urogenital or bladder management (e.g. management of fistula or haematuria)
- Need for accurate measurements of urinary output in critically ill patients.

With the exception of an existing clinical pathway, local protocols or crisis setting, the decision to insert a catheter must be made in consultation with a medical officer and the consumer (and their family, partner or carer) together.

### 2.1.1 Inappropriate reasons for catheter insertion

It is **not** appropriate for urinary catheterisation to be undertaken:

- As a substitute for the care of a patient with urinary incontinence, obesity, confusion, dementia or other reasons
- For a patient requiring bed rest or with decreased mobility that has no other clinical need for catheterisation
- For monitoring urinary output when the patient is able to void voluntarily or once the clinical need is no longer warranted
- For a prolonged duration in the post-operative period in the absence of an appropriate clinical indication for ongoing catheterisation.

### 2.1.2 Confirming urinary retention

Catheterisation can only be performed if retention is confirmed. Retention can be confirmed by using a bladder scanner or if not available, through palpation and percussion of the bladder.

Clinicians are to refer to manufacturer's instructions on how to use a bladder scanner, how to interpret the scan, how to clean and disinfect after each patient use and the contraindications associated with specific models. Where the results of a non-real-time bladder scan are inconsistent with the patient's clinical picture, further consultation with a senior nurse or medical officer is required.

Bladder volume can be measured accurately with bladder scanning, but abdominal fluid remains a confounding factor limiting accuracy of bladder scanning.

## 3 USE OF CATHETER

### 3.1 Intermittent 'in/ out' catheterisation

Intermittent 'in/ out' catheterisation is to be considered when a urinary catheter is required to be inserted and removed immediately after the completion of drainage.

Intermittent 'in/ out' catheterisation is appropriate for the alleviation of urinary retention or obstruction (e.g. neurogenic bladder) or for certain investigations (e.g. collection of a catheter urine specimen). Clinical contraindications for intermittent 'in/ out' catheterisation are:

- Urethral stricture

- Urethral reconstruction
- Clot retention
- Known or suspected urethral trauma
- Thrombolytic therapy for stroke
- Conditions where continuous drainage is required
- Urethral orifice cannot be identified or accessed due to injury, obstruction or urogenital atrophy.

Repeated intermittent catheterisation may be undertaken, however repeated insertions may increase the risk of trauma to the insertion site and urethra<sup>6</sup> and may increase the risk of introducing microorganisms into the bladder. Ensure that the catheter is well lubricated to minimise insertion trauma.

Intermittent catheterisation is an aseptic procedure and is different to clean intermittent self-catheterisation, which is normally done by the patient or their carer and is not an aseptic procedure.

### 3.2 Short-term indwelling catheterisation

Short-term indwelling catheterisation is to be used when bladder drainage is required for up to 14 days.<sup>5</sup>

Clinical contraindications for short-term catheterisation are:

- Urethral stricture
- Urethral orifice cannot be identified or accessed due to injury, obstruction or urogenital atrophy
- Urethral reconstruction
- Known or suspected urethral trauma
- Trauma and/ or fractured pelvis with bleeding from the urethral meatus.

The duration of catheterisation is patient and procedure dependent. Refer to the treating clinician for further advice.

Catheterisation is to be avoided if the patient has acute prostatitis.

If catheterisation cannot be avoided, seek a urology/ medical consult to confirm the need for catheter insertion and to review antibiotic therapy (See [Section 8](#)).

### 3.3 Suprapubic catheterisation.

The first insertion of a suprapubic catheter (SPC) is an invasive procedure where the catheter accesses the bladder directly through the skin of the abdomen. Consult with a senior medical officer when deciding whether a SPC is necessary. Suprapubic catheterisation is outside the scope of this document; please refer to the [ACI Urology Network guidelines: Supra Pubic Catheter \(SPC\) - Adult](#) for further advice.



### 3.4 Catheter material

Use of latex-free catheters is recommended. Latex materials may elicit a significant allergic or sensitisation reaction. In addition, a larger latex catheter is usually needed to achieve the same drainage rate as a smaller latex-free catheter. Using a larger size catheter may unnecessarily increase the risk of trauma, haematuria and infection.

Compared with latex catheters, silicone catheters have larger internal diameters, are usually clear and have been associated with reduced rates of bacterial colonisation. Long-term use of silicone catheters is associated with a lower risk of urethritis and urethral strictures, making them the preferred material.<sup>6a</sup>

Urinary catheters impregnated with antimicrobial agents are not routinely used but may be available in certain NSW HOs. There is equivocal evidence to support the use of these catheters to minimise CAUTI.<sup>7</sup> Clinicians are to consult with infectious diseases and urology teams prior to ordering antimicrobial impregnated catheters.

### 3.5 Catheter size

The patient’s anatomy and clinical presentation will influence the size of the catheter and the catheter tip (round, curved, open-ended) required. The most appropriate size for the individual patient is to be based on clinical assessment, however clinicians must select the smallest sized catheter that will enable adequate access and drainage. Refer to Table 1 for further guidance.

**Table 1. Catheter size guide (selection may vary depending on patient’s condition and availability of local resources)**

Patient presentation*	Gender	Minimum catheter size (Fr)	Urology advice required before insertion
Clear urine with no sediment, encrustation, debris or haematuria	Female	12**	No
	Male	16	No
Clear or slightly cloudy urine with no or mild sediment. Light haematuria with no or small clots	Female	14***	No
	Male	16	No
Moderate to heavy sediment or haematuria with moderate clots	Female	16	Yes
	Male	18	Yes
Very cloudy urine with heavy sediment or haematuria with moderate to heavy clots. Usually used post-operatively following bladder / prostatic surgery or trauma	Both	20	Yes
Severe haematuria containing large blood clots. Usually used post-operatively following bladder / prostatic surgery or trauma	Both	22-24	Yes

\* Where possible, spinal cord injury clients are to be managed with an open tip catheter. This will assist with the drainage of sediment and reduce the risk of blockage.

\*\* 14 Fr may be required in obstetric settings.

\*\*\* Use of an open tip catheter may enable use of a smaller sized catheter.

Use of a Coude tip (curved tip) catheter may enable easier catheter insertion if attending

to a male patient with an enlarged prostate.

The use of three-way catheters is beyond the scope of this guideline. The decision to use a three-way catheter is to be made in consultation with urologist and/ or treating medical officer.

### 3.6 Clinical procedure safety

Urethral catheter insertion is a Level 1 procedure. Prior to catheter insertion, the clinician(s) performing the insertion must:

- Confirm patient identification
- Confirm that the patient requires catheterisation
- Check for any allergy/ adverse reactions and other relevant medical or surgical history (e.g. latex or lignocaine allergy, previous urology history, autonomic dysreflexia risk)
- Consider the planned procedure, critical steps and risk factors (e.g. enlarged prostate), anticipated events and equipment requirements. In rare circumstances, consider whether medication (e.g. light sedation or pain relief) is required prior to catheter insertion.
- If patient is on an anti-coagulant medication, consult patient and seek medical instructions if there are any concerns for increased risk of bleeding, such as haematuria at the last catheter change, or, patient with intermittent haematuria or on a NOAC (Non-Vitamin-K-antagonist Oral anticoagulant, for which there is no current antidote). Adequate lubrication is required for inserting urethral catheters in these situations to reduce the risk of patient trauma and bleeding.

## 4 INSERTING A URETHRAL CATHETER

### 4.1 Personal protective equipment

Inserting a urethral catheter requires standard aseptic technique or in surgical settings, surgical aseptic technique.<sup>8</sup> Always maintain the aseptic field, adhere to non-touch technique including protecting the key sites and key parts.

Clinicians are to wear gloves, mask, eye protection and apron/ gowns commensurate with the level of protection required to maintain asepsis and/or protection from blood and body fluid exposure during catheter insertion.<sup>8</sup>

### 4.2 Equipment for catheter insertion

Clinicians must consider using the following equipment when inserting a urethral catheter:

- Set up an aseptic field/trolley
- 5 gauze squares (in theatre settings only raytec gauze is to be used)
- 1 syringe, 10mL Luer Slip concentric

- 1 sterile paper towel
- 1 large (fenestrated) drape
- 1 sachet water soluble lubricant
- Sterile lubricant\*
- 2 sterile trays
- 1 x 10mL sterile water for injection
- 1 x 30mL sterile 0.9% sodium chloride squeeze pack
- 1 batch tracking patient label
- 1 catheter securing device
- 3 plastic disposable forceps.

\* Use of sterile anaesthetic lubricating gel for the procedure on a male patient to minimise urethral trauma, mucosal irritation and patient discomfort.

The choice to add or remove items to this list is at the discretion of the HO.

**Note:** Additional equipment may be required when inserting catheter in operating theatre environment e.g. prepacked catheterisation pack or prefilled syringes. Refer to local procedure for more information.

### 4.3 Catheter insertion procedure

Where possible, use a two-clinician buddy system to carry out the procedure. The patient's ethical, religious and cultural beliefs and personal history must be considered when appointing clinicians to perform a catheterisation. A chaperone may also be required to observe the procedure.

It is recommended that the patient's genital area is washed with soap and water prior to catheterisation. If unable to insert a catheter after two attempts (includes changing to different catheter size), seek further assistance from a senior clinician. A new catheter is to be used for each attempt.

Where practical, patients and/or person(s) responsible are to be provided with appropriate information on why a catheter is inserted, how long it is expected to be in for and how to care for the catheter while it is *in situ*.

Testing of the catheter balloon prior to insertion may compromise the integrity of some catheters. Refer to manufacturer's instructions to see if pre-insertion testing is required.

The following procedure for insertion is suggested.

1. Perform hand hygiene on entry into the patient zone. Adhere to *Five Moments for Hand Hygiene* throughout the procedure.<sup>8</sup>
2. Explain the procedure to the patient and gain verbal consent from patient or person responsible (consider using the interpreter service and communication aids if necessary). Wash the genital area with soap and water before the procedure. If the patient or environment was touched, perform hand hygiene.

Male Patient	Some clinicians may prefer to insert lignocaine (Step 14) before Step 3. Before inserting lignocaine, clean the urethral meatus and ensure that hand hygiene is performed before and after this step
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3. Clean the trolley. Perform hand hygiene. Gather equipment and PPE required for the procedure. Ensure that a suitable receptacle for rubbish is available nearby. Perform hand hygiene.
4. Apply manual handling principles and set the bed at a suitable height for the procedure. Position patient in supine position.

Female Patient	Ensure supine position with the knees flexed and separated and feet flat on the bed, about 60 cm apart. If uncomfortable, instruct the patient either to flex only one knee and keep the other leg flat on the bed, or to spread legs as far apart as possible. The left lateral position may need to be considered
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Ensure adequate privacy is maintained (e.g. draw screens, cover patient) and, if available, adequate light is focused on the perineal area. Place protective sheet under the patient.

5. Perform hand hygiene.

*If an **existing catheter is being replaced**, do the following before **Step 6**:*

- Don PPE (gown/apron, mask, eye protection and non-sterile gloves)
  - Deflate balloon with a 10mL syringe
  - With the dominant hand remove catheter
  - Discard used catheter
  - Remove non-sterile gloves and perform hand hygiene
  - Remove gown/apron and perform hand hygiene.
6. Assemble the aseptic field (see [Section 4.2](#) for equipment). Add any additional sterile equipment required to the aseptic field (e.g. catheter, drainage device, sterile water and syringe if not included in catheter pack).
  7. Open sterile gloves onto the aseptic field or a clean surface e.g. dressing trolley, maintaining the sterility of the gloves.
  8. Perform hand hygiene, don PPE (gown/ apron, mask and eye protection).
  9. Perform hand hygiene for aseptic procedures and don sterile gloves.
  10. Fill syringe with 5-10mL of sterile water (maintain sterility of the gloves).
  11. Remove catheter from the sterile inner plastic sleeve, protecting the catheter key part using a non-touch technique ensuring to maintain sterility of the catheter at all times.

Male Patient	If lignocaine was not inserted at step 2 - Attach nozzle to lignocaine syringe.
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12. Lubricate catheter tip and place into an empty tray. This is the drainage tray.

13. Open the fenestrated sterile drape and place it over patient’s genitals. If gloves are contaminated during cleaning, remove gloves and discard. Perform hand hygiene for aseptic procedures and don new sterile gloves. Then progress to Step 14.
14. Cleaning method 1: Using non-touch technique, pour 0.9% sodium chloride into an empty tray. This is the cleaning tray. Add gauze squares to 0.9% sodium chloride and discard forceps if used.

Female Patient	With non-dominant hand, use the saline swabs to separate the labia minora exposing the urethral meatus. Using dominant hand, clean the labia minora and urethral orifice with gauze soaked with 0.9% sodium chloride, performing one downward stroke per square.
Male Patient	With non-dominant hand and using a saline swab, hold the patient’s penis. Retract foreskin if uncircumcised. Using dominant hand, clean penis with saline swabs from penis tip downwards, one stroke per swab

Discard saline swab after each stroke - do not re-use. When cleaning is completed, discard cleaning tray.

**OR**

*Cleaning method 2:* Irrigate the insertion site with 30 mL of 0.9% sodium chloride [9].

15. Open fenestrated drape and place it over patient’s genitals.

Male Patient	<i>If lignocaine was not inserted at step 2</i> - Hold the penis at right angle to the body and insert the lignocaine nozzle into urethral meatus. Inject the lignocaine gel into the urethra ensuring firm seal around the meatus. Compress the penis and hold for 3-5 minutes to contain the gel within the urethra.
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16. Pick up catheter with the dominant hand and ensure that the drainage end of the catheter is in the tray. Place drainage tray on the fenestrated drape between patient’s legs.

Female Patient	Use non-dominant hand and gauze square to separate the labia minor and expose urethral meatus. Use the dominant hand to gently insert catheter 5 – 7 cm of the catheter into the urethral meatus. When urine flows into the tray, advance the catheter 2 – 3 cm then inflate balloon with sterile water in accordance with manufacturer’s recommendations and with clinical discretion
Male Patient	Hold penis at a 90° angle (slight traction upwards also helps) then gently insert catheter into urethral meatus. When resistance is felt, lower penis and continue inserting until the start of the Y junction of catheter. When urine flows, inflate balloon with sterile water in accordance with manufacturer’s recommendations and with clinical discretion.

If there is no urine flow following insertion, **do not inflate balloon**. Examine patient to ensure catheter is in the urethra. If unable to advance the catheter with firm pressure, abort the procedure and notify team leader, specialist nurse and/or medical officer.

Always use a new catheter and reset the aseptic field if a subsequent insertion attempt is required.

**Note:** Once you have a grip on the penis/labial with your non-dominant hand, it cannot move position, otherwise the area becomes re-contaminated and needs recleaned.

If catheter has been incorrectly inserted into the vagina, keep initial catheter *in situ* until the second catheter is correctly placed in the urethra.

Observe patient for any signs of discomfort. Gently withdraw catheter until resistance is felt.

17. Securely connect catheter to drainage device (e.g. catheter bag or catheter valve) on the aseptic field. Advise patient to relax their legs. Remove drainage tray, drape and protective sheet and discard.

Male Patient	Reposition foreskin, if uncircumcised
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18. Before securing the catheter in place e.g. with Statlock-catheter securing device, the clinician must check if there is enough slack and that there's no undue tension on the catheter. If the catheter is to have traction applied ensure that a written order is provided and that the clinician also documents this on the progress notes.
19. Secure catheter and drainage device. Position drainage bags securely, ensuring that it is below the level of the bladder and is not touching the floor. Ensure that the patient is dry, covered and in a comfortable position.
20. Dispose of waste in accordance with local waste policy.
21. Remove gloves and perform hand hygiene.
22. Remove apron/gown. Perform hand hygiene. Remove eye protection then mask and perform hand hygiene.
23. Document catheter insertion in the patient's healthcare record (See Section 4.4).

**Note:** if a urine sample is required, that it is to be free dripped directly into the specimen cup. Not taken from the drainage tray (which would have some amount of gel in it from the procedure, might affect your sample).

#### 4.4 Documenting catheter insertion

The insertion of a urinary catheter must be documented in the patient's health care record. At a minimum, the following information must be included:

- How consent was obtained and whom it was obtained from
- Indication for catheterisation
- Catheter option used (in/out, IDC, SPC)
- Size and type of catheter
- Time and date of insertion
- Balloon volume in
- Total urine volume drained on insertion (refer to the fluid balance chart)
- Any abnormalities observed during or after catheter insertion (e.g. pain, bleeding)

- Any clinical complications during insertion (e.g. false passage, haematuria)
- Presence of UTI signs and symptoms
- Colour of urine, sediment or abnormality
- Whether a urine specimen for urinalysis/culture was collected
- Post procedure tests that are clinically relevant (See [Section 3.6](#)); and
- Follow up actions (e.g. review of catheter, catheter removal).

Document in patients record. If using electronic medical record (eMR) use the iView and then click on “Tubes and Drains”.

## 5 CARE FOR THE CATHETER

### 5.1 Shift tasks

- Check if the drainage device requires emptying.
- Check there are no loops or kinks in the drainage bag tubing and that urine is draining continuously.
- Check that the catheter and drainage device are securely connected.
- Check that the urine drainage bag is supported on a stand or hook that avoids loops in the tubing and keeps the outlet and tubing off the floor.
- Check the drainage bag is always below the level of the bladder, including when the patient is being transported or ambulating.
- Check the catheter remains secured to the patient with a securing device.
- Check the drainage device is kept closed unless it is being emptied.

#### 5.1.1 Drainage

- If the patient has a drainage bag, the bag is to be emptied when  $\frac{3}{4}$  full and prior to any patient transport.
- If the patient has a catheter valve, clinically assess whether drainage is required prior to opening the valve.
- A clean receptacle to drain urine must be used for each patient - a used receptacle must not be shared between consecutive patients. When draining into the receptacle, avoid contact between the device’s outlet and the receptacle. Clean the device outlet with an alcohol wipe after closing.

### 5.2 Daily tasks

- Review the need for the catheter.
- Perform insertion site and periurethral care (see [Section 5.2.1](#)).
- Ensure other members of the patient’s multidisciplinary team (e.g. physiotherapist, occupational therapist) are kept aware of the need for catheterisation and the requirements for catheter care.

- Ensure ongoing education and support to patient and/or their carer with regards to catheter care and infection prevention.

### 5.2.1 Insertion site and periurethral care

Nursing staff must promote insertion site and periurethral care to patients and where possible enable self-care (i.e. where patient is not unconscious, not intubated, not cognitively impaired). As part of the patient's normal daily hygiene routine, the insertion site is to be washed using soap and warm water, and checked for discharge, inflammation and ulceration.

Female Patient	Separate the labia minora and gently wash the area including the urethral meatus, labia minora, catheter and perineum.
Male Patient	Retract the foreskin, if not circumcised, and gently wash the genital area including meatus, glans penis, catheter and perineum. Reposition the foreskin to minimise risk of paraphimosis.

Antiseptic solutions or ointments are not recommended. Dressings are not required unless discharge is present. After washing, ensure the catheter is secured to the patient for patient comfort and to minimise the risk of catheter-associated complications such as dislodgement, insertion site pressure injury and urinary tract infection. Urethral catheters are normally secured to the thigh.

## 5.3 Other tasks

### 5.3.1 Changing drainage devices

The drainage device is to be changed in accordance with manufacturer's recommendations only and for clinical needs such as if the device becomes disconnected from the catheter, or if the device fails. Always use aseptic technique when changing the drainage device.

The following procedure for changing drainage devices is suggested:

1. Explain the procedure to the patient and gain verbal consent from patient / person responsible
2. Ensure patient privacy
3. Perform hand hygiene
4. Select and assemble the appropriate drainage device and alcohol wipes
5. Put on apron / gown, mask and eye protection
6. Perform hand hygiene
7. Don non-sterile gloves
8. Place a protective sheet under the connecting point of the catheter and device
9. Compress the opening of the catheter to avoid urine leakage
10. Remove catheter from the securing device
11. Disconnect the used device and place into a clean receptacle e.g. bedpan for drainage bags



12. Clean the catheter lumen thoroughly with an alcohol wipe and allow to dry
13. Attach the replacement device using non touch technique to avoid contamination of the catheter lumen and drainage device
14. Secure the catheter with the securing device
15. Attach the urine drainage bag to urine bag stand or hook
16. Dispose of waste in accordance with local policy
17. Remove non-sterile gloves and perform hand hygiene
18. Remove other PPE and perform hand hygiene
19. Document device change and volume in drainage bag in the patient's healthcare record (see [Section 5.4](#)).

At night, an additional single-use drainage bag (also referred to as a 'night bag') can be attached to the open outlet tap of an existing leg bag or catheter valve to increase drainage capacity. The closed system is not to be broken when attaching a night bag.

### 5.3.2 Changing catheters

Aseptic technique must always be used when changing catheters. Changing catheters at routine intervals is not recommended and must be avoided unless<sup>4</sup>:

- The closed system has been breached
- Drainage is obstructed (e.g. tubing is kinked or blocked, catheter is encrusted) or
- A urinary tract infection has been detected
- The catheter has reached its maximum timeframe of 12 weeks depending on the manufacturers recommendations or as specified by the medical team or certified nurse practitioner/ senior urology nurse.

### 5.4 Documenting routine catheter care and maintenance

Information about routine catheter care and maintenance must be documented in the patient's health care record. Clinicians must also continue to maintain an accurate fluid balance chart. At a minimum, the following information is to be documented:

- Whether the indication for catheterisation has resolved or is still present
- Presence of UTI signs and symptoms
- Whether a urine specimen has been collected for urinalysis/ culture
- Confirmation that the catheter is secured and is patent (i.e. no visible blockages or obstructions)
- Any abnormalities that have been observed during care
- Follow up actions (e.g. review of catheter, catheter removal)
- Whether patient education was provided.

## 6 REMOVAL OF THE CATHETER

The risk of urinary tract infection will increase with increased duration of catheterisation.<sup>10</sup> Therefore, it is critical that indwelling catheters are removed as soon as the clinical need for catheterisation has abated.

When planning catheter removals consider whether access to senior clinicians may be required.

After catheter removal, encourage patient to shower and remove any remaining discharge or debris from the urethra.

### 6.1 Criteria-led catheter removal

Clinicians must follow any standing medical order for catheter removal. If no such medical order exists, a clinician is to consider the following criteria to determine whether it is suitable to remove the catheter:

- Is there a documented reason for the catheter to remain in situ?
- Is there any clinical indication for catheterisation still present?

### 6.2 Key principles for trial of void

#### Before catheter removal

- Assess patient's clinical history for:
  - Constipation in past 24 hours. Severe constipation should be corrected before catheter removal
  - Medications that affect the ability to void (e.g. anticholinergics, Beta3-adrenergic agonist, alpha-blocker, opioids)
  - Any clinical conditions that may affect catheter removal (e.g. immunological disease with low white cell count, bleeding tendency, UTI, congestive cardiac failure, sacral or perineal wound, falls risk etc). Discuss with senior clinicians on required precautions.
- Explain the trial of void care plan to patient.
- Ensure adequate privacy for the patient.
- Provide patient with pain relief if required.

#### During catheter removal

- Establish the amount of fluid in the balloon.
- Perform hand hygiene before the procedure.
- Don apron/ gown, mask and protective eyewear. Perform hand hygiene then don non-sterile gloves.
- Attach syringe onto catheter balloon valve and observe drainage of water by passive deflation. When water stops draining, withdraw plunger to ensure balloon is complete deflated.

- Remove the catheter slowly and gently.
- Discard waste.
- Remove gloves and perform hand hygiene.
- Remove other PPE and perform hand hygiene.
- Document the procedure (see [Section 6.3](#)).

### After catheter removal

- Clean and dry the genital area and ensure patient is comfortable.
- Provide patient with urine receptacle.
- Educate patient on:
  - How to collect urine, if urine output is being measured
  - Fluid intake requirements
  - Use of continence pads, if urinary incontinence is anticipated
  - Need for mobilisation, if appropriate
  - What to do if any abnormal or suprapubic pain arises.

### 6.3 Documenting catheter removal

Information about the catheter removal must be documented in the patient's health care record. Clinicians must also continue to maintain an accurate fluid balance chart. At a minimum, the following information is to be included:

- Date and time of removal
- Amount voided after removal
- Presence of pain during voiding
- Any bladder scan results from the trial of void
- Any complications during removal (e.g. incomplete balloon deflation, catheter broken)
- Abnormalities observed during removal (e.g. patient bleeding or pain)
- Trial of void outcome and clinical care plan.

## 7 SPECIMEN COLLECTION

### 7.1 Rationale for urine specimen collection for culture

All indwelling urinary catheters will be colonised by a bacterial biofilm over time.<sup>11</sup> Any urine collected from an indwelling urinary catheter is likely to contain bacteria from the biofilm as well as an elevated leucocyte count, regardless of whether an active urinary tract infection is present.<sup>12,13</sup>

Routine urine culture screening must not be done for any patient with a catheter. A urine specimen for culture **only be** collected if the patient has signs and symptoms of a UTI (e.g. including fever ( $\geq 38^{\circ}\text{C}$ ), rigors, acute mental state change, flank pain, acute haematuria, or pelvic discomfort) or requires a septic work-up. Bacteriuria, pyuria, and cloudy or malodourous urine are not reliable signs of CAUTI in the absence of genitourinary symptoms.

The exceptions to this are:

- pregnant women
- pre-operatively for urological procedures that enter the urinary tract (except for uncomplicated cystoscopic diagnostic procedures).

Urinary tract infections or asymptomatic bacteriuria in these patients may pose a significant clinical risk and must always be screened for.<sup>12,14</sup>

### 7.2 Urine specimen collection at catheter insertion

Follow the steps for catheter insertion described in [Section 4.3](#). Once the catheter has been inserted, use aseptic technique to drain urine from the catheter. A minimum specimen of 10mL is required for subsequent culturing. As soon as sufficient specimen has been collected, continue to drain the catheter into a catheter tray or connect the catheter with a drainage device (e.g. leg bag).

Label the specimen and pack it according to the Australian requirements for packaging and transport of pathology specimens.<sup>15</sup> Perform hand hygiene after packaging the specimen.

### 7.3 Urine specimens for culture

If catheterisation is no longer indicated and it is expected that the patient can produce a clean mid-stream urine (MSU) specimen, the catheter must be removed and a MSU specimen is to be collected.<sup>16</sup>

If catheterisation is still indicated, insert a new catheter, then collect a urine sample from the sampling port in the drainage system, or if this is not possible, by separating the catheter from the drainage system. The catheter must be replaced where possible before collecting the urine sample to avoid culture of bacteria present in the biofilm of the catheter but not in the bladder. Do not collect a urine sample for culture from the drainage bag. Catheter specimen of urine (CSU) is to be collected from the existing catheter via its sampling port.

A culture of a CSU collected from a catheter that has been in situ for  $\geq 48$  hours may reflect biofilm colonisation. As such, it will be difficult for the laboratory and/or clinician to interpret the urine culture result.

### 7.4 Urine specimen collection via a sampling port

This procedure outlines the steps for collecting a urine specimen from a sampling port using a needleless syringe.

1. Perform hand hygiene and don eye protection and surgical mask and perform hand hygiene immediately before donning non-sterile gloves.
2. Clamp or kink the drainage tube below the sampling port (if not contraindicated). Clean the sampling port with an alcohol-impregnated wipe and leave to dry.
3. Once dry, connect a sterile disposable slip tip syringe to the port.
4. Aspirate directly into a urine specimen container.
5. After sufficient specimen has been collected, quickly replace lid of the specimen container and discard used syringe into the appropriate waste stream.
6. Unclamp or unkink the drainage tube. Label the specimen and pack it according to the Australian requirements for packaging and transport of pathology specimens.<sup>15</sup>
7. Perform hand hygiene.
8. Remove PPE.
9. Perform hand hygiene.

## 7.5 Documenting urine specimen collection

The documentation requirements for urging specimen collection is set up in Table 2.

**Table 2. Documentation requirements for urine specimen collection**

Information	Healthcare record	Laboratory order
Indication for collection	<input type="checkbox"/>	<input type="checkbox"/>
Date and time of collection*	<input type="checkbox"/>	<input type="checkbox"/>
Type of specimen collected (MSU or CSU)	<input type="checkbox"/>	<input type="checkbox"/>
Catheter type and dwell time	Must already be documented	<input type="checkbox"/>
Start date and indication for catheterisation	Must already be documented	<input type="checkbox"/>
Presence of UTI symptoms	<input type="checkbox"/>	<input type="checkbox"/>
Recent antimicrobial use	Must already be documented	<input type="checkbox"/>

\* Record on laboratory order whether specimen was collected at time of catheter insertion.

## 8 APPROPRIATE ANTIMICROBIAL USE

### 8.1 Antimicrobial prophylaxis for catheterisation

As per [Therapeutic Guidelines](#): Do not give antibiotic prophylaxis to prevent CAUTIs. Antibiotic prophylaxis is not indicated at the time of catheter placement, removal or replacement. Antimicrobial prophylaxis must only be given to high risk patients (e.g. unplanned surgery, elevated risk of endocarditis with recent history of UTI or bacteriuria, immunosuppression) and those who are having urological procedures that require catheter insertion peri or post operatively.

## 8.2 Antimicrobial therapy for CAUTIs

If a CAUTI has occurred, antimicrobial therapy for the infection is to be guided by the results of urine cultures and antibiotic sensitivity testing. Antimicrobial therapy may be of limited effectiveness against infection if a urinary catheter remains *in situ*.

## 9 ADDITIONAL RESOURCES

For resources to assist with implementing this Guideline and for patient information materials, see:

- [Clinical Excellence Commission’s CAUTIs tools and resources](#)
- [Agency of Clinical Innovation Urology Network clinical practice guidelines](#)
- [Agency of Clinical Innovation \(ACI\) Emergency Care Institute clinical procedure](#)
- [NSW Health Safety Notice SN014/10 – Autonomic Dysreflexia](#)
- [Hospital-Acquired Complication – 3. Healthcare-Associated Infection fact sheet](#)
- [National Safety and Quality Health Service Standards \(second edition\) - Standard 3](#)
- [The Australian Guidelines for the Prevention and Control of Infection in Healthcare \(2019\)](#)
- [NSW Health Clinical Procedure Safety \(PD2017\\_032\)](#)
- [Australian College of Perioperative Nurses – Standards for Perioperative Nursing in Australia](#)
- [NSW Health Clinical and Related Waste Management for Health Services \(PD2020\\_049\)](#)
- [NSW Health Infection Prevention and Control Policy \(PD2017\\_013\)](#)
- [Clinical Excellence Commission Infection Prevention and Control Practice Handbook](#)
- [Therapeutic Guidelines: Antibiotic \(Urinary Tract Infection\)](#)

For patients being discharged with a catheter, additional information is available from:

- [EnableNSW Continence Assistance](#)
- [Continence Aids Payment Scheme](#)

## 10 GLOSSARY OF TERMS

<b>ACORN</b>	Australian College of Operating Room Nurses
<b>CAUTI</b>	Catheter-associated urinary tract infection

<b>CSU</b>	Catheter specimen of urine
<b>Fr</b>	French gauge
<b>IDC</b>	Indwelling catheter. Also known as indwelling urinary catheter or IUC
<b>MSU</b>	Mid-stream urine
<b>NSQHS</b>	National Safety and Quality Health Service Standards
<b>PPE</b>	Personal protective equipment
<b>SPC</b>	Suprapubic catheter
<b>UTI</b>	Urinary tract infection

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