



Policy for the Insertion and Maintenance of Urinary and Supra Pubic Catheters in adults

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1. Scope

The purpose of this policy is to provide healthcare practitioners working within Cumbria Partnership Foundation Trust (CPFT) with evidence based research to promote safe use and management of catheters and reduce the infection risks involved with catheterisation.

The policy applies to any member of staff who have successfully completed the CPFT approved catheterisation and Aseptic Non Touch Technique (ANTT) training. It is anticipated that as part of this process an identified mentor will ensure supervision until both the mentor and member of staff feel they are competent to perform the task without supervision.

2. Introduction

Catheterisation is when a hollow tube is inserted into the bladder for the purpose of evacuating or instilling fluids.

Urethral catheterisation is when the hollow tube is inserted via the urethra into the bladder.

Intermittent catheterisation is when a separate catheter is inserted at each procedure.

Indwelling catheterisation is when the catheter remains in the bladder for an extended period of time. In the UK, short-term catheterisation is used when the catheter remains in situ for less than 30 days. Long-term indicates the catheter has been in situ for over 30 days. No catheter should remain in place for longer than twelve weeks.

Supra-pubic catheterisation is when the catheter is inserted into an artificial tract in the abdominal wall just above the pubic bone and into the dome of the bladder.

The presence of a catheter, the duration of its insertion and the quality of care are all contributory factors in the development of a urinary tract infection. Public Health England identified that 43% of urinary tract infections in England are associated with urethral catheterisation (Hopkins et al. 2012). Over fifteen years ago, the National Audit Office highlighted urinary tract infections as the most common health care associated infection (Bourn 2000). The mortality associated with a urinary catheter is estimated to be approximately 13% and much of this is due to infection.

All those involved in the insertion and management of urinary catheters have, therefore, a responsibility to minimise the infective consequences of the procedure.

The decision to catheterise should be made following a full holistic continence assessment including identifying underlying cause(s) for their bladder dysfunction and exploration of the factors that may contraindicate catheterisation. Consideration should be given to alternative methods of management where appropriate. Catheterisation to manage incontinence should only be used when all other strategies have been tried and failed.

Assessment should take account of the possible sexual, physical, social, psychological and environmental impact of catheterisation.

3. Statement of intent



The purpose of this policy is to ensure that all CPFT healthcare professionals are:

- Aware of best practice in regard to catheterisation.
- Ensuring that patients are catheterised appropriately.
- Aware of the risks associated with catheterisation.
- Utilising appropriate catheterisation and drainage products.

4. Definitions and abbreviations

- **Aseptic Non Touch Technique (ANTT)** an aseptic technique with a unique theory practice framework. Built on the premise of “key part” and “key site” protection. ANTT resources are [available here](#).
- **Benign prostatic hyperplasia (BPH)** is an enlarged **prostate** gland
- **British Association of Urological Nurses (BAUN)**
- **Catheter-associated urinary tract infection (CAUTI).**
- **Charriere size – (ch)** – urinary catheter size (1 ch = 0.3mm therefore 12 ch is 4mm diameter)
- **Cumbria Partnership Foundation Trust (CPFT)**
- **Healthcare Assistant (HCA)**)
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- **Assistant practitioner (AP)**
- **General Medical council (GMC)**
- **Methicillin-Resistant Staphylococcus Aureus (MRSA)**
- **Personal Protective Equipment (PPE)** - gloves, aprons and goggles if required.
- **Royal collage of Nursing (RCN)**
- **Trial without catheter (TWOC)**
- **Transurethral resection of the prostate (TURP)** is a surgery used to treat urinary problems due to an enlarged **prostate**
- **Urinary tract infection (UTI)**



5 Duties and Responsibilities

Duties	Trust board	Chief exec	Director of Infection and Prevention	Managers and matrons	All Prescribers and staff	Infection Prevention and control committee	Infection Prevention and control team	Occupational Health team
Policy Implementation	x	x	x	x	x			
Policy Audits and monitoring			x	x		x		
Adequately resourced	x	x		x				
Oversee the policy			x	x				
Policy review			x					
Staff training on this policy				x				
Incident reporting				x	x			
Compliance with advice and DH guidance			x	x	x	x	x	
Staff responsibilities				x			x	
Work within the policy				x	x		x	x

6 All Healthcare Practitioners

- Staff must safeguard themselves and others from the risk of inoculation injuries. This means adhering to the correct use of PPE when coming into contact with blood or bodily fluids. ▽
- It is the responsibility of all healthcare practitioners to be confident and competent when undertaking this clinical procedure (RCN 2012).
- All Registered Nurses and Medical Practitioners must take into consideration:



- The NMC code of professional conduct: standards for conduct, performance and ethics (NMC 2015).
- Guidelines for records and record keeping (NMC 2014).
- All other relevant policies.
- Informed consent- (see section 10.1)
- The GMC codes of conduct.
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6.1 Registered Nurses

Registered nurses who delegate insertion of a urinary catheter to suitably trained HCA or AP under specific direction are reminded that they are at all times accountable for the delegated task and to ensure:

- The HCA/AP has received adequate training and assessment of competence in the insertion and care of catheters.
- The HCA/AP undergoes regular supervision to ensure their competence to carry out these tasks.
- The HCA/AP will only insert an indwelling catheter to a previously identified patient (those with routine uncomplicated catheterisations) under direct delegation from a registered nurse who is accountable for the task.

7 Training

It is the responsibility of CPFT to ensure that all staff undertaking clinical procedures are suitably trained to do so. The structure for gaining competence in catheterisation is as follows (RCN 2012):-

- Gain a theoretical knowledge and understanding in aspects of catheterisation including observation of catheterisation (on a model/manikin)
- Be trained in ANTT
- Practise catheterisation on a model/manikin under supervision
- Undertake 5 supervised catheterisation on actual patients with your mentor
- Have 3 of the 5 deemed as proficient by your mentor
- Feel competent and confident to be able to catheterise without direct supervision
- Become a competent mentor for others
- An update should be undertaken at least every 5 years

8 Decision and Indications for catheterisation

8.1 Indications for catheterisation

- Monitoring renal function hourly during critical illness.
- Acute urinary retention.
- Chronic urinary retention, only if symptomatic and/or with renal compromise
- To assist in the healing of open sacral or perineal wounds in incontinent patients.



- Where it is viewed on balance as “better” for the patient to use a catheter, such as end-of-life care, disability, unfit for surgery, staff must remember that the risks associated with catheter usage are of a serious nature that increasingly may become difficult to justify. Particular care is necessary in women, the elderly and those with impaired immunity.
- Neurological disease.
- Patients with intractable urinary incontinence when all other management approaches have failed.
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8.2 Contra-indications for catheterisation

- Catheterisation of patients who are agitated and/or cognitively impaired is best avoided where possible. RCN 2012
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- Lack of carer availability in order to manage / undertake the catheter care for the patient.
- Tissue viability and preserving skin integrity. Catheterisation can increase the risk of pressure ulcer development, as there is a tendency to reduce patient interactions such as toileting or pad changing.
- Patients with known or suspected urethral injury or false passages.
- Patients with diagnosed urethral stricture may be managed by the use of a larger ch intermittent catheter (under urology guidance).
- Gender reassignment patients or patients who have had extensive genital surgery would not be catheterised by a nurse without a GP or urologist present.
- **Never** catheterise or consider continued catheter usage **for nursing convenience.**

8.2 Risks

- **Asymptomatic bacteriuria**- the presence of bacteria in the urine from a sample taken without any typical symptoms of UTI. Bacteriuria is commonplace in catheterised patients, 3-6% of people acquire bacteriuria with every day of catheterisation and all patients with a long term catheter will have bacteriuria.(SIGN 2012)
- **Infection** – this may be local, or a systemic infection may develop (bacteraemia).UTI symptoms include: Loin/suprapubic tenderness, delirium, a high temperature, pain when passing urine, lower abdominal or flank pain, increased frequency or urgency when passing urine. Obviously when a patient is catheterised then some of these signs and symptoms are not possible to assess. Diagnosis of a CAUTI should be made primarily by assessing the patient for these signs and symptoms and should not be reliant on microbiological testing. Testing urine from catheterised patients is only indicated in symptomatic patients for selecting the appropriate antibiotic treatment, (SIGN 2012).
- **Trauma** – It is possible to cause trauma by incorrect selection of catheter or unskilled insertion. Urethral strictures may result from trauma.
- **Urethritis** – Bladder spasm, pain and discomfort may develop as a result of infection or irritation by the catheter.
- **Autonomic Dysreflexia** - This condition is unique to spinal injured patients. Autonomic Dysreflexia is a vascular reflex which occurs in response to a stimulus from the bladder, bowel or other internal



organ below the level of the lesion in a patient with spinal injury above T6. True autonomic Dysreflexia is potentially life threatening and considered a medical emergency.

- **Possible causes** in relation to bladder and bowel are: distended bladder commonly caused by blocked catheters, distended bowel usually caused by constipation, pressure ulcer, UTI, bladder spasm, bladder calculi, and severe anxiety.
- **The symptoms are** – pounding headache caused by acute hypertension, bradycardia, sweating above the level of injury, goose bumps, blotching of the skin, or nasal congestion.
- **Treatment** – raise the patients head, feel for distended bladder – the bladder can be very gently tapped but **Do not press the bladder or use catheter patency solutions** as these techniques will only increase the pressure, change the catheter immediately, check blood pressure and if still increased for the patient seek medical advice.

8.2.1 Minimising risks -

- limiting use of indwelling catheters
- maintaining closed system
- good handwashing using 7 stage method before and after procedure
- follow ANTT clinical guidelines for catheter insertion
- **Allergy Assessment:**
 - Latex
 - Soap
 - medication, e.g. Lidocaine/anaesthetic gel
 - Chlorhexidine
 - Allergy to the component materials of the catheter

8.3 Selection of a catheter device

Catheters are available in a wide range of sizes, materials and types each with a specific purpose. It is essential to select a sterilised catheter which is appropriate at the outset.

- **Indwelling catheters** should be the smallest ch size suitable for the purpose required and the appropriate length. Small ch sizes allow the mucus produced by the paraurethral glands in the urethra to drain away. By choosing a larger size these glands may become blocked and result in inflammation. Therefore as a guide 12-14ch should be utilised for indwelling urethral catheterisation.
- **Supra pubic catheters:** a 16ch is recommended to allow for maintenance of a good tract between the abdominal wall and the bladder. The packaging of sterile items must be checked to ensure in date and intact and discarded if not.
- **Intermittent catheters** are single use and should be the smallest ch for purpose. Female 10ch and male 12ch. Intermittent bladder drainage allows the bladder to maintain tone, stimulate blood supply and maintain normal bladder health.
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- Intermittent catheterisation should be used in preference to an indwelling catheter if it is clinically appropriate and a practical option for the patient. NICE 2017
 - Offer a choice of either single-use hydrophilic or gel reservoir catheters for intermittent self-catheterisation. NICE 2017



- Indwelling urinary catheters should be used only after alternative methods of management have been considered. NICE 2017
- The patient's clinical need for catheterisation should be reviewed at each change and TWOC undertaken if clinically indicated.
- Rationale of the chosen method should be documented in the patient notes and handed over on transfer of care. NICE 2017
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8.3.1 Catheter selection should be determined by:

- How long the catheter will remain in-situ
- Any allergy or sensitivity to the catheter materials
- History of symptomatic urine infection
- Patient preference, comfort and abilities to self-manage the device
- Length required – Female indwelling catheter 20-26cms. These should always be offered for women unless obese or chair bound when a standard (male) 40 -43cm catheter may be more suitable. For Supra-pubic a standard length is most suitable but female length can be used if sufficient length to connect bag or valve comfortably.
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- Catheter tip design (see appendix 2) Examples of these include:
 - **Whistle-tipped** (open ended) catheters are open at the end and provide a larger drainage area and therefore facilitate drainage of debris and clots.
 - **Robert's catheters** facilitate drainage of residual urine at the bladder base as they have eyes below as well as above the balloon, to allow maximum drainage and bi-coude tip which can reduce bladder irritation.
 - **Tiemann/coude-tipped** catheters are angled upward at the tip to assist in negotiating the upward bend in the male urethra. This feature facilitates passage through the bladder neck in the presence of obstruction from an enlarged prostate gland e.g. Benign Prostatic hyperplasia (BPH). These are also the catheter of choice following recent trans urethral resection of prostate (TURP).
- Long-term indwelling catheters (both urethral and suprapubic) carry a significant risk of bacteriuria and symptomatic urinary tract infection.
- If a patient has a urinary residual over 50-100mls it is important that the cause is not overlooked and the patient has further investigations to reach a formal diagnosis
- Re-assessment of the initial choice of catheter and the need for continued catheterisation should be carried out on a regular basis.
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Please Note: **FEMALE LENGTH CATHETERS FOR FEMALES ONLY.**

8.3.2 Available Catheters



Catheter type	Indication	Advantages	Disadvantages
Nelaton intermittent catheter	Single use only (insert drain bladder remove)	Body image Less chance of infection	Requires person to be able to perform procedure or have family/carer or nurse to perform
PTFE coated latex	Medium term 7-28 days	Reduced tissue damage and more resistant to encrustation	Unsuitable if latex allergy
Hydrogel coated latex	Long term Up to 12 weeks	More compatible with body tissue, less trauma, low surface friction	Unsuitable if latex allergy
Hydrogel coated silicone	Long term Up to 12 weeks	Suitable for patients with latex allergy	Rigid Cuff formation on balloon deflation may make removal difficult
Silicone elastomer coated latex	Long term up to 12 weeks	Smooth internal and external surfaces, may reduce potential for encrustation	Unsuitable if latex allergy
Silicone catheters	Long term up to 12 weeks	Suitable for patients with latex allergy. More rigid than latex. Minimal mucosal irritation. Larger internal bore in relation to Ch size.	D shaped lumen which may induce formation of encrustation. Silicone permits gas diffusion therefore balloons may deflate and allow the catheter to fall out prematurely. Not usually recommended for supra-pubic unless patient has latex allergy.
Silver alloy coated hydrogel	Up to 28 days	Risk of UTI can be reduced in the first 7 days (Loveday et al 2014)	No evidence for long term use.

8. Supra Pubic Catheters

Supra pubic catheterisation does offer some advantages over urethral catheterisation (Rigby 2009). The risk of patients developing CAUTI is reduced, as the bacterial count on the abdominal skin is less than around the perineal and perianal areas, although bacteriuria and encrustation still occur in susceptible patients (Simpson 2001). Urethral integrity is retained and it allows for the resumption of normal voiding after surgery. Pain and catheter-associated discomfort are reduced. Patient satisfaction is increased as, for some, their level of independence is increased and sexual intercourse can occur with fewer impediments (Fillingham and Douglas 2004). Supra pubic catheterisation may also be indicated as a long term solution to bladder drainage in patients with neurological conditions and spinal cord injury. The initial insertion of Supra Pubic catheters is performed within the Acute Care setting. The first change of a supra-pubic catheter must be carried out by a urology Clinical Nurse Specialist in a controlled hospital environment. If dressings are clinically required, they must be sterilised and applied using an ANTT technique. In **most cases, a dressing will not be required** and patients must be encouraged to clean the site daily with soap and water.



9.1 Risks/disadvantages

- Conversion to supra pubic catheterisation from urethral catheterisation is not always successful for female patients due to risk of urethral leakage.
- Bowel perforation and haemorrhage at the time of insertion.
- Infection, swelling, encrustation and granulation at insertion site.
- Pain, discomfort or irritation for some patients.
- Bladder stone formation and possible long-term risk of squamous cell carcinoma.
- Urethral leakage (Addison and Mould 2000).

Patients should be informed of these risks before consent is obtained.

10. Clinical Procedure

10.1 Consent

Catheterisation is an invasive procedure with associated potential risks; therefore, obtaining documented informed consent is vital to the procedure. In gaining informed consent the patient understands the rationale and risks involved with the procedure. In the process of gaining informed consent to catheterise a patient, it is best practice to provide supportive written information in a format that they understand. Relaxing the patient by offering reassurance and support will help for smoother insertion of the catheter and assist in avoiding unnecessary discomfort and the potential of urethral trauma during the insertion.

Where a patient is unable to communicate in English every effort must be made to find a suitable interpreter.

For indwelling catheters ensure the risks of bypassing, discomfort, blockage, infection, multi-resistant infection, bleeding and potential sexual dysfunction are discussed.

It is a necessity that informed consent and agreement is reached and the relevant information recorded in the patients' medical and/or nursing notes. It implies an understanding of the event and the associated potential complications/problems. **(Consent policy - POL/001/010)** (RCN 2011 Informed consent in Health and Social Care Research)

10.2 Base line observations

The recording of baseline observations at initial indwelling catheterisation is a local recommendation of good practice and will facilitate easier recognition of UTI symptoms.

10.3 Hygiene

Routine daily personal hygiene is all that is required for meatal cleansing for most patients (EPIC 3). Perineal care should also be included to facilitate reduction in extra-luminal contamination (Maki et al 2001). However, some patients may find it difficult to maintain standards of personal hygiene and healthcare staff must ensure that the patient is cleaned adequately prior to attempting catheterisation. Single use wash mitts or swabs with sterile water/saline may be used if required.

10.4 Fluids



The patient should receive individual advice regarding fluid intake volumes, as this maintains a flow of urine through the bladder. Citrate-based drinks such as grapefruit juice are recommended as these have been found to positively affect the pH of the urine (Haleblian et al 2008).

11. Antibiotics

11.1 Prophylactic use of antibiotics:-

A Cochrane review of antibiotic policies for short term catheter bladder drainage in adults concluded that there was only weak evidence that antibiotic prophylaxis (compared with antibiotics when clinically indicated) reduced the rate of symptomatic urinary tract infection in female patients following abdominal surgery and catheterisation for 24 hours. There was also limited evidence that prophylactic antibiotics reduced bacteriuria in non-surgical patients. General opinion is that prophylactic antibiotics should be reduced (RCN 2012).

NICE guidance suggests that antibiotic prophylaxis should only be used when changing catheters in those with a history of UTI at catheter change or those who experience trauma during catheterisation.

11.2 Symptomatic Catheter Associated Urinary Tract Infection (CAUTI)

If a patient develops CAUTI (symptomatic urine infection) and antibiotics are commenced then the urinary catheter **must** be removed (and only replaced if **essential**). This is because the catheter will have become impregnated with bacteria (biofilm) and the antibiotic will be unable to remove them. The catheter should be removed/ replaced when the optimal level of antibiotic in the bloodstream is achieved this is usually 2 hours after commencement of oral antibiotics or 30 minutes after a dose of IV antibiotics. Long-term antibiotic prophylaxis for CAUTI is **not recommended**.

12. Equipment and Preparation

Catheterisation is an aseptic procedure. It is imperative that the healthcare professional has a good understanding of the principles of ANTT as this will help to reduce the risk of urinary tract infection. See ANTT procedural Guides [available here](#).

12.1 Catheter Valves

A catheter valve is like a tap which fits directly into the end of the indwelling catheter. The valve is an alternative to the catheter drainage bag. The valve allows the bladder to continue being used maintaining normal function and is discreet.

Catheter valves must only be given to alert and orientated patients who understand the importance of releasing the valve (at least 3-4 hourly during the day) and have the dexterity to do so. If the person has a carer who can perform the task as stated this should be documented. The valve should be changed every 5-7 days and catheter bags can be attached at night on continual drainage. These are not recommended for those patients who have over active bladder. Catheter valves are fitted using the same technique as leg bags below.

12.2 Drainage bags



Catheter bags should be kept below the level of the bladder at all times and should not be allowed to touch the floor. They may be worn on either leg/belly or night bags can be attached to a stand. **There should be effective fixation of the bags to prevent trauma.** Leg bags need to be emptied when 2/3 full and the inlet tube needs to be the correct length to prevent kinking and/or pressure on the bladder neck. Where possible educate and encourage the patient to empty their own bags. An ANTT guide is available for catheter bag changes a copy of this can be left in the home for patients/relatives/carers to use; all ANTT resources are [available here](#).– If the bag is changed by a healthcare professional then the same ANTT guideline can be followed. 2 litre drainage bags should be added to body worn bags using an ANTT technique and keeping the closed system. Body worn bags should be changed every 5-7 days or per manufactures instructions. To avoid skin irritation and damage, alternating the leg which the drainage bag is secured on daily, will minimise this risk. Night bags should be disposable and supported on a stand.

12.3 Catheter fixation

Catheters **must also be supported with a fixation device** at all times to prevent trauma and pressure damage.

12.4 Catheter balloons

- Follow manufacturer's instructions. Adults usually 10ml balloon however occasionally urological patients may require larger balloon (Loveday et al 2014).
- Balloons should always be filled with sterile water however Inflation of silicone catheters with water can sometimes lead to water loss from the balloon over time, with an associated risk of the catheter falling out. Some manufacturers recommend filling the balloon with a 10% aqueous glycerine solution. Apart from the manufacturers' recommendations there are no studies available about water contra glycerine in the balloon. Some catheter manufacturers provide sterile pre-filled syringes with sterile water or glycerine 10% inside the packing.
- Balloons should never be filled with air (as this will float above the urine preventing drainage), or tap water (contains soluble salts that can increase osmosis), or saline (crystals of salt may prevent deflation of the balloon).
- Balloons should never be under or over filled as mis-shaping of the balloon can interfere with drainage as increases risk of bladder mucosa being sucked into eyelets.

12.5 Anaesthetic gel

National guidelines are ambivalent as to whether a lubricant gel or an anaesthetic gel should be used prior to catheterisation (RCN 2012). However BAUN advocate the use of single use anaesthetic lubricant gel. NICE advises an appropriate lubricant. Anaesthetic gels which contain 2% lidocaine hydrochloride and chlorhexidine gluconate solution 0.25% anaesthetises, has antiseptic properties and dilates the urethra thus reducing the risk of trauma and infection. Lubricating gel will only dilate the urethra.

CPFT staff will continue to use an anaesthetic gel when indicated.

- At least 11ml (male) or 6ml (female) of the gel is instilled directly into the urethra until this volume reaches the sphincter/bladder neck region. The practitioner should wait 5 minutes after instilling the gel, before starting the catheterisation but it is important to follow manufacturer's guidance.
- **Anaesthetic gel must be prescribed.**



12.5.1 Contraindications for anaesthetic gels

There are clear contraindications/cautions for use of instillagel on the manufactures website: www.clinimed.co.uk/urology due to the gel contents and for patients who have trauma, abrasions or lesions on the penis or urethral orifice which may increase absorption of lidocaine systemically, leading to symptoms of cardiac shock/anaphylaxis. Other anaesthetic gels are available, follow manufactory guidelines.

Do not use an anaesthetic gel:-

- If allergic (hypersensitive) to lidocaine, chlorhexidine, methyl hydroxybenzoate, propyl hydrobenzionate or any of the other ingredients
- If the moist lining of the application site is damaged or bleeding

Care should be taken when using anaesthetic gel :-

- If patients have heart problems
- If patients have liver problems
- If patients are epileptic
- If patients have respiratory impairment

If a serious adverse reaction occurs:

- Inform GP/dial 999
- Complete documentation and clinical incident as per Trust Policy
- Complete a Yellow card as detailed in the BNF
-

13. Equipment Required

- Sterilised dressing pack containing ; gauze swabs, dressing sheets, use 1 pair of sterile gloves for insertion and non-sterile gloves for preparation phase.
- Selection of appropriate catheters. (It is advisable to take a spare catheter)
- Sterile single use anaesthetic lubricating jelly (instillagel 6ml female and 11ml male)
- Red topped urine specimen container (if required)
- Soap and water/ wash mitt/ sterile water for cleaning skin (as required)
- Alcohol based hand rub
- 10 ml syringe of sterile water (prefilled is possible)
- 10ml syringe to deflate balloon (if existing catheter in-situ).
- A closed urinary drainage system, e.g., a night bag, leg bag or catheter valve
- A catheter drainage bag stand; must be used for every patient when using a night bag.
- Support mechanisms – suitable fixation devices for catheter and drainage bags.
- Waste bag.
- Disposable plastic apron



14. Insertion Procedure

Action	Rationale	urethral	Supra-pubic
1. Prior to the procedure <ul style="list-style-type: none"> • Explain the process to the patient • Gain valid consent. Give reassurance to the patient throughout the procedure.	To ensure the patient understands the procedure.	✓	✓
2. (a) Undertake procedure on the patient's bed or in clinical treatment area using screens/curtains to promote and maintain dignity. If the procedure is carried out in the patient's home ensure privacy and dignity maintained at all times.	To ensure patient's privacy and dignity is maintained.	✓	✓
(b) Assist the patient into the supine position.	To ensure the external genitalia/abdomen is accessible.	✓	✓
(c) Do not expose the patient at this stage of the procedure.	To maintain patient's dignity and comfort.	✓	✓
3. Prepare the surface for equipment.		✓	✓
4. In hospital, clinic or nursing/residential home, take the trolley to the patient's bedside.	The top shelf acts as a clean working surface.	✓	✓
5. Decontaminate hands using either liquid soap and water or sanitizer.	To reduce risk of infection.	✓	✓
6. Put on disposable plastic apron.	To reduce risk of cross infection.	✓	✓
7. Open the outer cover of the catheterisation pack and slide the pack onto the top shelf of the trolley or suitable surface within patient home. Don clean gloves.	To prepare equipment.	✓	✓
8. Using ANTT open the supplementary items onto the sterile field of the catheterisation pack.	To reduce the risk of cross infection.	✓	✓
9. Remove cover that is maintaining the patient's privacy and position a disposable pad/towel under the patient's buttocks and thighs.	To ensure urine does not leak onto the bed.	✓	
10. Maintaining the patient's dignity position absorbent pad or towel below the Supra Pubic site.	To ensure urine does not leak onto the bed.		✓
11. In female, separate labia, locate external urethral opening and clean with soap and water, using front to back movement. In male, lift the penis and retract the foreskin if present using a gauze swab and clean the glans penis with soap and water.	To reduce the risk of introducing infection. Lifting the penis straightens the penile urethra and facilitates catheterisation.	✓	
12. Clean around the Supra Pubic site using a 2% chlorhexidine in 70% alcohol product licensed for skin use, (chloraprep). Allow to dry prior to catheter insertion.	To reduce the risk of introducing infection.		✓
13. Remove gloves, wash hands/gel put on sterile gloves and continue to use ANTT.	To reduce the risk of cross infection.	✓	



			✓
14. Place dressing / protective towel (sterile) in position.	To create a protective field.	✓	✓
15. If catheter change required. <ul style="list-style-type: none"> • Explain procedure to patient and deflate the balloon. Never cut catheter or valve to remove. • Remove catheter slowly. • Discard in appropriate clinical waste. 	To reduce anxiety, allow for relaxation of muscles and reduce trauma.	✓	
16. If removing Supra pubic catheter explain procedure to patient and deflate the balloon. Remove catheter slowly by gripping with thumb and fore finger next to the abdomen so you will know the depth and angle required to replace. If the catheter is sticking, twist on removal. If completely adhered contact urology for advice. Ensure re catheterised within 10 minutes for 1 st change and 30 mins for subsequent changes.	To reduce anxiety, allow for relaxation of muscles and reduce trauma. To free from skin. To maintain surgical passage.		✓
17. Following manufacturer's instructions, slowly instil anaesthetic lubricating gel. For urethral Approx. 11mls male, 6mls female For male catheterisation it is that require the gel pushed throughout the urethra. This is obtained by using the thumb and fore finger to deliver firm downward strokes. Wait 5 minutes to ensure a maximised anaesthetic effect.	Adequate lubrication helps to prevent urethral trauma. Use of anaesthetic minimises the discomfort experienced by the patient and can aid success of the procedure.	✓	✓
18. Tear open at the tip of the catheter, the plastic cover surrounding it. Gently insert the catheter 2-3 cms at a time. Advance the catheter to the bifurcation.	To prevent contamination of the catheter. To minimise patient discomfort and reduce incidence of trauma.	✓	
a) In SupraPubic catheterisation advance the catheter a little further than the one removed. When urine starts to flow, proceed another 2cms. (RCHT 2015). There is a risk that the catheter tip may have passed into the urethra in women it is recommended that a visual check be performed.	Advancing the catheter ensures that it is correctly positioned in the bladder. (British Association of Urological Guidelines 2010)		✓
(b) Slowly inflate the balloon according to the manufacturer's direction, having ensured that the catheter is positioned correctly. If any pain or resistance discontinue.	Inadvertent inflation of the balloon in the urethra causes pain and urethral trauma.	✓	
(c) Withdraw the catheter to feel the bladder wall/neck and attach the drainage bag/valve if not already connected.	Withdrawing the catheter ensures the balloon sits correctly ensuring optimal urine drainage.	✓	✓
(d) Secure the catheter using a support strap/fixation, or G strap. Ensure that the catheter does not become taught when the patient is mobilising or when the penis becomes erect (urethral).	To maintain patient comfort and to reduce the risk of urethral and bladder neck trauma.	✓	✓



(e) Secure leg bag with straps or sleeve.			
19. In males ensure that the glans penis is cleansed after the procedure and reposition the foreskin if present.	Retraction and constriction of the foreskin behind the glans penis resulting in paraphimosis may occur if this is not done.	✓	
20. Help the patient into a comfortable position. Ensure that the patient's skin and bed are both clean and dry.	If the area is wet or moist, secondary infection and skin irritation may occur.	✓	✓
21. Measure the amount of urine emptied if in retention.	To be aware of bladder capacity for patients with previous occurrences of urinary retention. To monitor renal function and fluid balance.	✓	✓
22. Take a urine specimen for laboratory examination (only if the patient has symptomatic evidence of UTI).	To confirm bacterial cause of UTI. To rule out urinary tract infection.	✓	✓
23. Dispose of equipment in a plastic clinical waste bag and seal the bag. Clean area/trolley and decontaminate hands in the appropriate manner. In the community waste can go down the domestic waste stream otherwise clinical waste bin	To prevent environmental contamination.	✓	✓
24. Record information in relevant documents, this should include : Reasons for catheterisation Residual volume Date and time of catheterisation Catheter type length and size Amount of water instilled into the balloon batch number and manufacturer Drainage system used Problems negotiated during the procedure Review date of change of catheter/TWOC if appropriate.	To provide a point of reference or comparison in the event of later queries.	✓	✓
25. Record patient experience and any problems.	To provide a point of reference or comparison in the event of later queries.	✓	✓
26. Drainage bag to be positioned above the floor but below the level of the bladder.	To prevent reflux or contamination.	✓	✓
27. Samples of urine should only be taken if valid reason for example if infection suspected. It must be taken aseptically via the catheter sampling port after cleaning with an isopropyl alcohol 70% impregnated swab and allowed to dry thoroughly	To prevent cross infection, and erroneous results.	✓	✓

15. Catheter maintenance solutions



The decision to use catheter maintenance solutions should be done following a risk assessment. There is minimal evidence to identify if the use of solutions provides any benefit (Hagen et al 2010). Bladder maintenance solutions should not be used to prevent CAUTI (NICE 2012). However, for catheters that block due to encrustation resulting in a frequency of catheter change that is unacceptable to the patient, then a prescribed regime of an acidic catheter maintenance solution will be clinically justified for short-term use. Evidence of encrustation should always be seen prior to deciding to use. If prescribed the smallest amount possible should be used (50ml x2) and discontinued if not effective. Follow the manufacturer's administration instructions.

Long term use is not recommended as the solutions can cause damage to the mucosa increasing the shedding of epithelial cells into the bladder. Solutions can cause irritation and spasm if they enter the bladder. Use should be reviewed on a regular basis. These do not prevent infection and can cause infection by breaking the closed system.

Urology referral should be undertaken if repeated catheter blockages with no visible cause.

Normal saline	If the patient is well hydrated this should only be required for patients with reconstructed bladders as these produce a large amount of mucus. Recommended usage 1 per week.
Optiflow G (3.23% citric acid) SubyG	Works by dissolving the crystals that form within the lumen of the catheter. There is conflicting evidence as to its efficacy. If required 2 x 50ml solutions given once per week being re-assessed weekly by the HCP on its continued use.
Optiflow R (6% citric acid) Solution R	Effective at dissolving severe encrustation. Should only be used after solution G has been tried and found to be not effective. If required 2 x 50ml solutions once for a maximum of 2 weeks only.
Chlorhexidine 0.02%	Previously used as antiseptic washout. Current literature suggests use is detrimental and no longer should be used.

16. Trial Without catheter (TWOC)

16.1 Indications for TWOC

- To ascertain if voiding is possible
- To prevent continued catheter usage if not required
- Post operatively to ascertain voiding function

16.2 How to minimise discomfort during a TWOC

- The patient should be encouraged to drink normally (1.5 to 2 litres during the day) prior to TWOC as over consumption may compromise bladder function.
- Patients/carers should be shown how to use catheter valves prior to using.



- Consider using a catheter valve instead of drainage bags 2 weeks prior to removal of the catheter; this will give some bladder filling function so that the resident is more prepared when the catheter is removed. When the catheter valve is fitted ensure that it is emptied regularly this maybe hourly initially until the resident becomes familiar with it, then 2-4 hourly. At night attach the catheter valve to a single use night drainage bag. (Shropshire Infection Prevention Team 2016)
- Patients who are constipated / no bowel movement for 3 days, require treatment for constipation prior to community TWOC.
- The patient should be advised of protocol should TWOC fail. Think about a continence management plan and have toileting regimes, adaptations and products at hand e.g. urinals commodes, sheaths (for men) and learning to perform intermittent self-catheterisation as well as absorbent products and catheterisation. It is important that the resident feels their incontinence will be well managed. A bladder diary will help you estimate the product absorbency required.
- Warn the patient of potential discomfort prior to catheter removal.
- In removing a catheter at the start of a TWOC, check water volume in balloon. Avoid pulling on the syringe as this may create a vacuum and cause the balloon to cuff making removal difficult. Instead allow water to drain out of the balloon under its own pressure.

16.3 Absolute Contraindications for community

- Radical Prostatectomy within the last 3 months
- Patients who have experienced significant problems with insertion of this catheter (required multiple attempts by a specialist or history of haemorrhage and or pain in previous catheterisation).
- Patients, who are not alert, orientated or have poor cognitive function. These patients can be discussed with the GP and special arrangements can be made for TWOC in the community if after discussion this is appropriate and in the patient's best interest.
- Patients who withhold/withdraw consent for TWOC in the Community.
- Patients who are unable to concord with treatment regime.
- Patients who are unable to alert District Nurses if any difficulties on the day of TWOC.
- If urine is not passed or an unacceptable amount of residual urine is showing present on a bladder ultrasound/intermittent catheter. (Bladder scanners should be used in caution postpartum).

16.4 Where to perform a TWOC and why:

- At home, if possible, as it is more relaxed for the patient and reduces the risk of cross infection by not bringing them back into a hospital ward environment.
- At home if history does not indicate any problems with the catheterisation as above.

- TWOC to be performed early morning and patient checked after 4hrs. Best practice to utilise a bladder scanner.

- If 2 failed TWOC's refer to urology.

16.5 Reasons why intermittent bladder drainage is the better option if a TWOC is unsuccessful:



- Intermittent bladder drainage can be achieved by use of a catheter valve or intermittent catheterisation as these allow the bladder to expand to store urine and contract to empty, therefore maintaining normal bladder health.
- If bladders are allowed to remain on long-term continual/free drainage, bladder function can be lost and may not return if a TWOC is considered in the future

17. Obtaining a sterile catheter specimen of urine (CSU)

It is important that catheter specimens of urine are taken using ANTT to ensure that contamination of the urine does not occur. Specimens should only be taken from the sampling port of the urine drainage system. Catheter samples of urine (CSU) should only be sent to confirm the organism causing a symptomatic urine infection. They should not be used as a diagnostic tool for UTI, as bacteriuria is almost inevitable in a catheter in situ for more than 7 days.

18. Catheter trouble shooting

18.1 Bleeding/ Haematuria

Slight bleeding may indicate trauma to the urethra on catheterisation. Advise the patient to drink to flush through.

Haematuria may be caused by trauma due to traction of the catheter, infection, calculi or renal/bladder pathology. Ensure catheter and collection device supported. If severe seek medical advice and observe for clots and blockages.

18.2 No urine drainage

This may be due to:-

- Kinked tubing/ mechanical obstruction – check position/ tube length/occlusion by leg straps
- Constipation- pressure from the rectum may stop catheter draining properly. Implement management programme
- Drainage bag positioned above waist level – patient/carer education
- Patient dehydrated or in renal failure -
- Catheter not in the urethra
- Catheter not the correct length – obese female patients may require standard length as female length may be too short
- Encrustation and blockage – always check and inspect catheter for encrustation - see below

18.3 Encrustation

Main cause is struvite formation (calcium phosphate and magnesium ammonium phosphate salts). Struvite forms as a result of precipitation of these salts from the urine when it becomes alkaline because of urease forming bacteria. Check pH of urine – pH for encrustation is >6.8. Encourage



fluid intake. Ensure removed catheters are examined for encrustations. Assess catheter life by observing at least 3 changes and plan future catheter changes earlier to avoid blockage.

18.4 Blockage

- Eyelets of catheter may be drawn into the bladder mucosa. Raise drainage bag above the level of the bladder for 10-15 secs. Check correct fluid in balloon.
- If sludgy mucus/debris causes of blockage there is a suggestion using a valve encourages natural flushing

Persistent blockage and other complications such as recurrent symptomatic CAUTI or haematuria may require investigation and referral for x-ray or cystoscopy must be considered to rule out the presence of bladder stones.

18.5 Urine bypassing

- Check for kinking and/or constipation
- Check for encrustation
- Check for infection
- Due to bladder spasm — consider smaller catheter size, check balloon size, consider catheter material and anticholinergic therapy.

18.6 Urethra discomfort

- This may be due to distention of the urethra caused by too large a catheter or occlusion of the para urethral glands leading to infection, urethritis and offensive discharge – change to smaller size and treat infection.

18.7 Urethral discharge

- During normal micturition the Para urethral glands produces a mucus substance to line the urethra and protects against ascending infection, this is normally flushed away. In catheterised patients the mucus drains away through peristaltic action and gravity so the mucus can present on the catheter surface. – Encourage good daily hygiene.

18.8 Catheter rejection

- Catheters may be expelled due to weak pelvic floor muscles, urethral dilation and detrusor instability (bladder spasms). Bladder spasms are common within first 24-48hrs, if persists action for bladder spasms. If pulled out due to confused state – consider other bladder management.

18.9 Non-deflating balloon



- Check the syringe is not faulty, leave for a few minutes to drain spontaneously – not forcibly. If this fails, do not cut valve but seek urology opinion.

18.10 Paraphimosis

- This can occur when the foreskin is not replaced following hygiene procedures or catheterisation. If the foreskin cannot be replaced into the normal position refer for urgent medical advice.

19. General catheter care review/handover:

If available use a catheter passport which should contain the below information, otherwise ensure:-

- A clear rationale for ongoing usage of a catheter; that it is appropriate and that there is no better alternative to the type of catheter being used.
- The general health status of the patient, including long-term chronic conditions, surgical and medical history and medication.
- How the patient accepts the use of a catheter (psychological implications).
- The patient's understanding and compliance with catheter care and practices are safe and follow the manufacturer's guidelines. This will include social and meatal hygiene practices, hand washing, bag/valve emptying and changing routines. The review should also ensure that no washing of urinary drainage equipment or reconnection takes place in any care setting.
- Review of bowel activity and relationship to the catheter function.
- Review of the impact of the catheter on lifestyle and quality of life. This would include employment, home life, sexual activity, shopping, recreation and sports, socialising, travel, staying away from home and holidays.
- Review of the frequency of catheter and drainage system changes and if this is appropriate. Use a catheter diary for monitoring changes and to plan ongoing management.
- Review of the fluid intake, the types of fluids consumed, the patient's health belief in relation to this and its appropriateness.



ALTERNATIVE TYPES OF TIPS FOR INDWELLING FOLEY CATHETERS .

Roberts Catheter (eyes below and above the balloon).



Tiemann/Coude tipped catheter



Whistle tipped (open ended) catheter



Appendix 3

Possible colour and odour changes in urine due to food or medication



Medication	Colour or odour of urine
Amitriptyline	Blue-green
Anthraquinones	Red-brown (in alkaline urine)
Antibiotics (not all)	Offensive smell
Chloroquine	Rusty brown, yellow
Danthron	Orange
Ferrous salts	Black
Ibuprofen	Red
Indomethacin	Green
Levodopa	Darkens urine
Methyldopa	Darkens (red-black if left to stand)
Metronidazole	Red to brown
Nitrofurantoin	Pink (alkaline)
Phenothiazine's	Pink to red-brown
Rifampicin	Red to brown
Senna	Yellow-brown (acid urine); yellow-pink (alkaline urine) darkens on standing
Sulphonamides	Greenish blue
Triamterene	Blue
Uropyrine	Orange
Vitamin B complex	Dark yellow
Warfarin	Orange
Caused by food and drink	
Asparagus	Green colour and offensive smell
Beetroot	Red
Red fruit drinks	Pink to dark red
*Oily fish	Fishy smell
Total parenteral nutrition (TPN)	Offensive
Certain food smells appear to pass through into the urine eg onions, garlic, some spices	

From European Association of Urology (2012)



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