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| **Guidance for**  |

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| **Preventing Infections Associated with the Insertion, Maintenance, and removal of Suprapubic Catheters**  |

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**N.B. If in any instance this guidance is found to be at variance with The Royal Marsden Hospital Manual of Clinical Nursing Procedures currently in use, please ensure that this guidance is adhered too.**

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**Associated Documentation**

* Royal Marsden
* Suprapubic catheterisation CAUTI bundle
* NHS Highland Policy for preventing infections associated with indwelling urethral catheters
* National Infection Prevention and Control manual
* Standard Infection Control Precautions
* NHS Highland Waste procedure
* NHS Highland Decontamination Policy

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**1. Purpose and Objective**

The purpose of this guidance is to:

**a)** Minimise the risks associated with the insertion of a Suprapubic catheter.

**b)** Standardise the care of Suprapubic catheters, using evidence based guidelines.

**1.1 Aim:** To prevent harm to a patient through the insertion, maintenance and removal of a Suprapubic.

**1.2 Objective:** Staff are fully aware of and adhere to the content of this guidance, and apply the control measures required to minimise infection and the risk of harm to the patient with a suprapubic catheter.

**2. Background**

Urinary catheters are frequently used in healthcare and can be the cause of serious complications, such as blood stream infections and can be a cause of urinary tract infections. Urinary tract infections (UTI) are the most common cause of infection in acute adult patients (Health Protection Scotland 2016). Up to 20% of persons with an indwelling urethral catheter develop an asymptomatic bacteriuria, and 2-6% symptomatic UTI.

Complications arise directly from the use of an indwelling urinary catheter because the catheter bypasses the body’s defence mechanism of passing urine (micturition) which allows microorganisms to be flushed away from the lower urinary tract naturally.

* Microorganisms gain direct entry to the bladder via the external catheter surface.
* Microorganisms can gain entry into the body via the connection points on the urinary catheter system (e.g. drainage bag attachment)
* Biofilms can form on the lumen surface leading to infection and potential blockage of the catheter.

The risk of complications from a urinary catheter increases the longer the catheter remains in situ, therefore regular assessment of the need for a urinary catheter is required.

The microorganisms causing catheter associated urinary tract infection (CAUTI) can originate from the patient’s own flora (endogenous) or cross transmission (exogenous).

A CAUTI caused by microorganisms out with of the persons own flora is suggestive of exogenous infection, the most likely cause being poor adherence to standard infection control procedures.

* Urinary tract infections (UTI) is the most prevalent healthcare associated infection (HCAI) accounting for 22.6% of all acute and 39% of all non-acute of all cases. (HPS 2016)
* Between 20- 30% of catheterised patients develop bacteriuria and of these 2-6% will develop symptoms of UTI.
* Of the patients with a UTI, 1.4 % will develop a bacteraemia, and of these 13-30% dies. (Pratt et al 2014).
* Catheters impede the natural defences of the lower urinary tract and provide an artificial route for organisms to enter the bladder.

Indications for the use of suprapubic catheters over indwelling urethral catheters include the following:

* Post-operative drainage of urine after lower urinary tract and bowel surgery.
* Management of neuropathic bladders
* Longterm conditions, for example multiple sclerosis or spinal cord injuries.
* People with longterm catheters; to minimise the risk of urethral infections or urethral damage
* Urethral trauma, eg inability to catheterise urethrally with acute retention.
* Pelvic trauma.

In some cases suprapubic catheter placement is a temporary measure however more often it is established for long term use. Once a suprapubic catheter tract has been established the catheter should only be removed if an alternative method of bladder emptying is in place.

**3. Roles and Responsibilities**

**All staff** must adhere to the principles outlined in this guideline and its associated guidance.

* Staff have a duty of care to ensure that the care they provide does not cause harm to the patient
* All staff are responsible for ensuring their practice and the practice of others complies with standard infection control precautions
* Staff must ensure that documentation in relation to Suprapubic catheter care is completed in a timely and appropriate manner.
* Staff must ensure they undergo education and training to maintain their competency caring for urinary catheter drainage systems.
* Where applicable, staff must ensure that patients are provided with information to enable them to care for and maintain their catheter.

**Managers** are responsible for ensuring that staff are aware of this policy and its associated guideline, and are supported to adopt its principles.

* Managers must ensure that staff are competent to provide care relating to Suprapubic catheters.

**4.** **Suprapubic catheterisation** is the insertion of a catheter through the anterior abdominal wall into the dome of the bladder. Indications for this procedure are when urethral catheterisation is contraindicated in the long-term and it is not possible to relieve urinary retention by any other means.

NBThere are a number of risks and disadvantages associated with Suprapubic catheterisation.

* 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

**Contra-indications** for suprapubic catheterisation.

Although suitable for a wide variety of patients, they are inappropriate with:

* Obesity or immobility- the traditional stoma site may become concealed by an apron of excess anterior abdominal wall fatty tissue making sitting and changing catheters problematic.
* Haematuria of unknown origin
* Bladder tumours
* Small contracted or fibriotic bladders, which may have resulted from long term catheterisation on free drainage.
* Midline scars unless being inserted with suitable radiography.

**5. Preparation for Procedure**

**5.1 Patient-preparation**

Informed consent must always be obtained in accordance with national and local guidelines. Any issues regarding capacity to consent must be documented in the patient`s medical/ nursing notes. Please refer to NMC Code of Conduct and Adults with Incapacity, Scotland Act 2000.

**5.2. Consent**

Catheterisation is an invasive procedure with associated serious risks, therefore obtaining documented valid consent is vital prior to the procedure being undertaken electively. In gaining consent the patient expects that it is in their best interest and safety to undergo the procedure. In the process of gaining consent to catheterise a patient it is best practice to provide supportive written information in a format that they understand. Explaining the procedure and providing the reason for catheterisation to the patient assists in reducing anxiety and embarrassment, and helps the patient to report any problems that may occur whilst the catheter is in place.

When consenting to catheterisation the patient must understand the rational, the alternatives and the consequences of not being catheterised. Patient consent is also required for a chaperone or other supervising healthcare worker.

Practitioners should be mindful of the contra-indications when making the decision to catheterise. Catheterisation must not be routinely supported by practitioners where it is deemed unnecessary. The patient’s clinical need for a catheter should be reviewed daily and the catheter removed as soon as possible if appropriate. If the catheter is required in the long-term the review is undertaken according to risk assessment and documented in the corresponding care plan.

**6. Procedure**

Only staff deemed competent to insert a Suprapubic catheter should do so.

Pre-procedural considerations should be addressed as per any patient preparing to undergo a radiological intervention.

**Catheters must be inserted using sterile equipment and aseptic technique**. The procedure may be performed in a main operating theatre, endoscopy unit, radiology department or on a ward as clinical situation dictates. The procedure may be done under general, Spinal or local anaesthesia as deemed clinically appropriate.

Key points in the process are listed below; full guidance on the insertion technique can be found within the Royal Marsden.

* Discuss the procedure with the patient and gain consent
* Real time ultrasound guidance should be used in all cases unless in an emergency situation.
* Position the patient on their back
* Ensure a good light source is available and ensure patient privacy and warmth.
* Wash your hands, put on disposable plastic apron and clean trolley for the procedure with a neutral detergent and then wipe down with a 70% alcohol impregnated wipe.
* Prepare equipment
* Open outer cover of catheterisation pack
* Wash hands with liquid soap and put on sterile gloves.
* Open up pack using aseptic technique
* Drape sterile sheeting between Doctor and patient with supra-pubic site exposed.
* Clean around catheter site using cleaning solution
* A percutaneous Seldinger technique should be used rather than trocar and cannula, whenever possible.

**7. Post procedure considerations**

The patient should be observed post procedure for signs of complication;

* Abdominal pain/ Localised peritonitis

* Sepsis signs of the patient’s condition deteriorating

Immediately following insertion of a suprapubic catheter, aseptic technique should be employed to clean the insertion site. Keyhole dressings around the insertion site may be required if secretions soil clothing, but are not essential. Once the insertion site has healed (7-10 days), the site and catheter can be cleaned during bathing using soap and water; and a clean cloth (Royal Marsden) Cleaning should be directed away from the insertion site. Do not use foam cleanser on the supra-pubic site and supra-pubic catheter. Talcum powders and creams should not be used around the supra-pubic site.

Strategies to support the suprapubic catheter may be required, eg anchoring to the abdominal wall, to prevent friction and potential displacement of the catheter or balloon.

Urine may still leak via the urethra especially if the catheter is blocked or drainage tube kinked.

**7.1 Suprapubic catheter change.**

A new suprapubic tract takes between 10 days and 4 weeks to be established. The first suprapubic catheter change should not be performed before 4 weeks as the tract will not be fully established and change of catheter may not be possible potentially resulting in the suprapubic catheter tract being lost. If the supra-pubic catheter falls out before 4 weeks contact Urology department as a matter of urgency.

Longterm suprapubic catheters should be changed on an individual needs basis once the suprapubic tract is healed and this can vary from 4 to 12 weeks, using a Standard (male length) Foley catheter, minimum size 16ch and made of silicone or hydrogel.

The catheter must be replaced immediately if it falls out because the bladder/stoma alignment will become misaligned within 20 minutes, and the stoma opening can close within 24 hours. Patients with suprapubic catheters should have a spare foley catheter (same gauge & size), sterile dressing pack available to use in case of emergencies.

Verbal instructions will be given to the patient/ carer prior to discharge to ensure awareness of post-op complications specific written instructions regarding post operative care will be included in the procedure specific leaflet.

* IDL (Immediate discharge letter) will be issued at the time of discharge.
* Patients will be discharged with their catheter passport
* Referral to the community nursing service for catheter care and maintenance

7.2 MRSA & antibiotics

* Patients to be admitted overnight will be screened for MRSA
* Urine culture should be carried out at pre-assessment clinic or by GP at least a week prior to surgery.
* Significant urine infection including MRSA in urine should be treated pre-operatively and if necessary continued in post operative period as clinically appropriate. This treatment plan should be discussed and documented with patient/ carer.
* All patients will have prophylactic antibiotics in accordance with NHS Highland prescribing guidance.
* MRSA eradication treatment should be discussed with Infection Prevention and Control Team.

**8. Guidelines for reducing urinary catheter-associated Infections**

Maintaining a sterile continuously closed urinary drainage system is central to the prevention of catheter associated urinary tract infection (CAUTI).

Breaches in the closed system, such as unnecessary emptying of the urinary drainage bag, the unnecessary use of bladder maintenance solutions or taking unnecessary urine samples, will increase the risk of CAUTI and should be avoided.

* Daily review of the need for catheter to be recorded on patient suprapubic bundle. Remove catheter as soon as instructed **if for short-term use**.

**8.1 Bladder Catheter maintenance solutions or lavage**

Clinical evidence for the use of catheter maintenance solutions is limited however if maintenance solutions are considered, PH testing of the urine at the stage it blocks should be carried out to ensure the appropriate solution is chosen to manage and reduce blockage.

**If a blockage is thought to be due to blood or clots, a bladder lavage using a catheter tip syringe and saline should be carried out not using a solution such as a urotainer as it will be ineffective in this situation. This does not need to be carried out under the advice of Urology nurses or Non Medical prescriber.**

**To further manage the situation it should be ensured an appropriate sized catheter is in place and if further investigation is required as to the cause of the bleeding, this should be referred to the appropriate clinician**

**8.2 General Catheter Care**

Ensure the urinary catheter drainage bag is positioned below the level of the bladder to facilitate drainage and prevent backflow.

Cross infection can occur from the use of unclean containers to dispose of urine when emptying drainage bags.

Use a separate single use disposable container for each patient when emptying the bag.

Contact with drainage tap must be avoided.

Healthcare workers, patients and carer’s must decontaminate their hands, apply non sterile clean gloves and disposable apron before manipulating the catheter drainage system.

Check the catheter is continuously connected to the drainage system. Do not break the connection between the catheter and the urinary drainage system unless clinically indicated.

* The drainage bag should be positioned lower than the level of the patient`s bladder with the tubing free of kinks on a stand or attached to a leg bag. The bag should not be in contact with the floor.
* Day to day care of the catheter may be undertaken by patient or carer (paid or informal). Ensure they are aware of their own role in preventing urinary tract infection through the provision of education and information sheets. Routine daily personal hygiene is all that is required.
* The catheter bag should be emptied when the bag is two thirds full as per manufacturer’s guidelines or twice daily ensuring the bag is empty enough to maintain urinary flow to prevent reflux. Empty urinary drainage bags into a clean disposable container. Avoid contact between the urinary drainage tap and the container, and floor.
* If a night drainage bag is required use a non drainable bag attached to the catheter bag and discard daily.

A closed drainage system is one of the most important steps in preventing urinary tract infection. Non-return valves prevent back flow of urine, and the outlet tap enables the bag to be emptied without disconnection and utilisation of non-touch technique.

The catheter bag or valve must be changed every 7 days.

**9. Specimen Collection**

Always wash hands before and after collecting a sample. Non sterile disposable gloves and disposable apron should be worn when undertaking the procedure.

Cleanse the needle free sampling port with an alcohol wipe before and after the procedure

Obtain urine samples from sampling port using aseptic technique and appropriate Iuer lock syringe. Do not take specimens from the catheter bag. Urine samples should be sent to the laboratory in a sterile container with minimum delay. Information must be provided on clinical history to inform microbiological reporting.

* Only clinically relevant specimens should be sent. Do not send routine specimens.
* All urine specimens for bacterial microscopy and culture should be sent to the laboratory in a red top universal container containing boric acid. Boric acid preserves the bacterial count of most urinary pathogens and white cells. When using boric acid containers, urine must reach the fill line.
* The specimen container and request form should clearly state information about current/recent/planned antibiotic therapy.

**Urine clamps should NOT be used to aid bladder filling**. If this is required an assessment should be made to a place a catheter valve (flipflow) within the catheter drainage circuit.

**10. Storage of equipment**

* Catheters should be stored in a dry, well ventilated area away from sunlight; manufacturers recommend storage temperature 15$°$C.
* Store in manufacturer`s protective boxes.
* Check packaging is intact, correctly marked, and undamaged.
* Use stock control methods to ensure compliance with expiry dates.
* Ensure lot and batch numbers are recorded on the patient Suprapubic bundle or care plan by utilising the catheter sticky label.

**11. Training and monitoring**

All staff performing catheter care must be competent to do so. Training is provided through NHS Highland Practice development department; competency should be assessed and maintained at ward level.

**12. References**

EAUN Guidelines 2012 Catheterisation; indwelling catheters in adults, 2012

SIGN 88 Management of bacterial UTI in patients with Catheters.

Health Protection Scotland 2011, Scottish National Point Prevalence Survey of Healthcare Associated Infection and Antimicrobial Prescribing 2011.

National Patient Safety Agency (NPSA) 2009, Precutaneous Insertion of suprapubic catheter

Pratt RJ, Pellowe C, Wilson JA et al, (2014). Epic3: National evidence-based guidelines for preventing healthcare-associated infections in NHS Hospitals in England. *J Hosp Infect* (suppl): S1-70.

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