Urinary Catheter Care Guidelines

Version 4

Summary: These guidelines are to ensure the provision of evidence based practice, which will ensure that all patients who are catheterised have the best quality of care, minimising infection risk and other side effects and maximising quality of life.

Keywords (minimum of 5): (To assist policy search engine) Urinary Catheter Care, catheterised, urinary catheterisation.

Target Audience: This guideline extends to cover those people who are registered with General Practitioners within the geographical Boundaries of Southern Health Foundation Trust (SHFT) and the responsibilities of those staff providing such service. It is recommended that these guidelines are adopted in independent care homes within the boundary of SHFT to ensure consistency of practice.

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1 Introduction

This policy applies to all staff employed by the trust that will be carrying out urinary catheterisations whether in the patients homes, in the community or a secondary care facility including students under the supervision of a trained nurse,

Urinary catheterisation is an intervention performed by health care workers to enable:

1. Emptying of the bladder
2. To facilitate instillation of a solution or medication
3. Dilate a urethral stricture by insertion of a catheter

About 50% of patients catheterised for longer than 7-10 days contract bacteriuria, frequently asymptomatic but 20 to 30% of patients with catheter-associated bacteriuria will develop symptoms of CAUTI. Once a CAUTI has developed there is a 1 to 4% risk of developing bacteraemia with an associated mortality rate of 13 to 30%.

Catheterisation is a common procedure, yet it carries many risks including trauma, urinary tract infection, encrustation, urethral perforation, bladder calculi neoplastic changes, and those with spinal injuries there is the risk of autonomic dysreflexia. It should therefore be the therapy of choice only when all other interventions are deemed to be inappropriate or have been unsuccessful.

Indwelling urinary catheterisation should only be used after alternative methods of management have been considered.

1.1 Purpose

The purpose of these guidelines are to ensure the provision of evidence based practice, to all registered and non-registered staff including carers, which will ensure that all patients who are catheterised have the best quality of care, minimising infection risk and other side effects and maximising quality of life.

1.2 Scope

This guideline extends to cover those people who are registered with General Practitioners within the geographical Boundaries of Southern Health Foundation Trust (SHFT) and the responsibilities of those staff providing such service. It is recommended that these guidelines are adopted in independent care homes within the boundary of SHFT to ensure consistency of practice.

1.3 Duties and Responsibility

The Nurses & Midwifery Council (NMC Code 2015 under the heading of Preserve Safety states:

“You make sure that patient and public safety is protected. You work within the limits of your competence, exercising your professional ‘duty of candour’ and raising concerns immediately whenever you come across situations that put patients or public safety at risk. You take necessary action to deal with any concerns where appropriate.

Recognise and work within the limits of your competence
Under the heading of the ‘Code’ ‘Practise Effectively’ states: Always practise in line with the best available evidence, to achieve this, you must:

Make sure that any information or advice given is evidence-based, including information relating to using any healthcare products or services.

Maintain the knowledge and skills you need for safe and effective practice.

A blocked catheter can lead to severe discomfort and urinary retention. The Nurse has a responsibility to remedy this problem for the patient, to ensure both comfort and safety.

1.4 Definitions

**Antimuscarinic**: A substance that blocks the neurotransmitter acetylcholine in the central and peripheral nervous system.

**Bacteraemia**: The presence of bacteria in the blood. The blood is normally a sterile environment, so the detection of bacteria in the blood is always abnormal.

**Bacteriuria**: The presence of bacteria in the urine not due to contamination from urine sample collection.

**Bladder calculi**: Bladder stones.

**Catheter**: A thin hollow flexible tube that can be inserted into the bladder either through the urethra or suprapubic (into the bladder through the anterior abdominal wall). The catheter is kept in place by a small balloon filled with sterile water.

**Catheter Maintenance Solutions-(CMS) Used to dissolve mineral deposits known as ‘encrustation’** were originally known as ‘bladder washouts’ this term is no longer used as it does not describe the product and its use correctly.

**CAUTI Catheter associated urinary tract infection**-

**Encrustation**: Deposits of mineral salts on the internal and external surface of the catheter leading to occlusion of the lumen.

**Haematuria**: The presence of red blood cells in the urine.

**Urinary Incontinence**: The involuntary excretion of urine.

**Urethral strictures**: A narrowing of the urethra caused by injury or disease

1.5 The risks of urinary catheterisation

Urinary catheterisation is an intervention performed by health care workers to enable
1. emptying of the bladder,
2. to facilitate instillation of a solution or medication, or to
3. Dilate a urethral stricture by insertion of a catheter

Patients having a catheter inserted as part of their clinical care are in significant danger of acquiring a catheter associated urinary tract infection (CAUTI). The risk of CAUTI is associated with the method and duration of catheterisation, the quality of catheter care and host susceptibility (Pratt et al 2007). The commonest site for healthcare associated
infection is in the urinary tract, with between 43%-56% of urinary infections being traceable to indwelling urinary catheters. (Pratt et al 2014)

These infections arise because catheters traumatise the urethra as well as providing a pathway for bacteria and other organisms to enter the bladder. The longer a catheter is in situ the higher the risk of infection.

As already stated there is a risk of Autonomic Dysreflexia with those patients with spinal injuries Autonomic Dysreflexia

Autonomic Dysreflexia is a life threatening condition that can cause death.

The most common causes of Autonomic Dysreflexia are bladder and bowel distension but may also be caused by other conditions which cause visceral stimulation e.g. infection, loaded colon, anal fissure, ejaculation during intercourse and blocked catheters

Signs and Symptoms: Raised BP, bradycardia, pounding headache, flushing, sweating or blotching above level of injury; pale, cold, goosebumps below level of injury

Treatment consists of removing the precipitating cause. If hypertension persists, nifedipine 5-10mg sublingually, glyceryltrinitrate 250 micrograms sublingually or phentolamine 5-10mg IV is given.

Majority of spinal injury patients have been taught and made of aware of this complication while in a spinal unit.

Catheter Blockage

Each patient should have an individual care regimen designed to minimize the problems and risks of blockage and encrustation. All catheter changes should document whether there was any encrustation and description.

Nice (2012) advocates that to minimise the risk of catheter blockage, encrustations, and catheter related associated infections the following is advised:

1. Develop a patient specific care regime
2. Consider approaches such as reviewing the frequency of planned catheter changes and increase fluid intake
3. Document catheter blockage

Catheterisation is a clinical task that carries a high risk to patients, all patients must be holistically assessed, have a continence and risk assessment completed prior to this procedure, all practitioners must have competed the aseptic technique training, have completed the catheter training programme with LEAD and completed the Catheter Competencies before carrying out any catheterisation.

1.6 Relevant Linking Policies and other documentation

This policy needs to be read in conjunction with:

- The Infection and Prevention Control Policy (including: Appendix 6 (Hand Hygiene & Appendix 7 (Aseptic Technique and Clean Technique Procedure)
- Records Management Code of Practice for Health and Social Care 2016
- Nurse Independent prescribing DOH 2006
- Consent for Examination of Treatment Policy
- Epic 3: National Evidence Based Guidelines for Preventing Hospital Acquired infections 2014
2. Training Requirements

Health Care Support Workers/ Assistant (band 3 HCSW/A)

Band three’s may carry out urethral re-catheterisations on male and female patients; where all criteria have been met. Any band 3 wishing to undertake catheterisation must have completed and the LEAD training, Band 3 competencies must be completed and the patient regularly assessed for the continued need of a catheter.

Although SP catheter management is not a routine task for band 3 HCSW, where they have completed competencies and the training course held by LEAD, they may take responsibility for managing individual SP catheters (after a risk assessment by the RN) but only where there are no complications and under the supervision of their qualified nurse, who will have also completed the LEAD catheter training and competencies, the patient would need to be seen by an RN on the 3rd visit to review care.

Patients requiring rapid response or any urgent response will require an RN to change any SP catheter

Band 4 / Associate Practitioners (AP)

Band 4’s may carry out re-catheterisations on all groups but again where appropriate,

The patient must have been assessed by a registered nurse (RN), the first catheterisation must be carried out by an RN and the correct process of delegation to have been completed for a band 4 to complete this procedure where appropriate. Band 4 competencies should be completed and the patient regularly are-assess for the continued need of a catheter.

Both band 3, 4’s and AP’s must have their line manager’s consent after all appropriate training. The procedures should be documented in their job descriptions

The Royal College of Nursing states that “re-catheterisation does raise issues, in relation to patient selection for this specific procedure being performed by an HCSW/A & AP’s and the delegating nurse need to carry out a comprehensive risk assessment prior to delegation. HCSW/A & AP’s have an individual responsibility to ensure they are confident and competent in the knowledge and skills of practice in line with local guidelines, procedures and policies. HCSW/As & AP’s should work as the patient’s advocate in all aspects throughout urinary catheter care. All staff should have access to appropriate equipment that complies with CE, safety and maintenance requirements within local/national guidelines.” (RCN 2012).

A relative or carer may in some instances, carry out re-catheterisation (urethral/intermittent/supra-pubic). In these circumstances, the RN has the responsibility of ensuring that the carer has the necessary knowledge and competence to carry out the procedure and manage the catheter/drainage system to the same standard of that of a competent professional the training must include infection control, consent, mental capacity and best interests. They are also accountable for the delegation of care.
Patients and carers must be educated about and trained in techniques of hand decontamination and catheter management before discharge from hospital. Community and primary healthcare personnel must be trained in catheter insertion and catheter maintenance.

Loveday, Wilson, Pratt, Golsorkhi, Bak, Browne, Prieto, Wilcox (2014) suggest patients, relatives and carers are given information regarding the reason for the catheter, the plan for review and renewal. If discharged with a catheter, the patient should be given written information on the management of the catheter see appendix H.

Follow up training and ongoing support of patients and carers should be available for the duration of the catheterisation.

In line with local guidelines, procedures and policies, HCSW/As & AP’s should work as the patient’s advocate in all aspects throughout urinary catheter care. All staff should have access to appropriate equipment that complies with CE, safety and maintenance requirements within local/national guidelines.” (RCN 2012).

3. Developing competence in catheter care

All first catheterisations should be carried by a qualified nurse (band 5 and above).

“Registered nurses HCSW/A & AP’s must acquire knowledge, understanding and skills relating to the supervised delivery of urinary catheter care to ensure competency in line with national occupational standards to meet patient service needs.

Competencies for catheter insertion, maintenance and re-insertion can be downloaded from the intranet (see appendix G). HCSW/As & AP’s must inform their immediate line manager if they feel they are not competent to undertake urinary catheter care, so that additional training needs can be identified and facilitated at local level.” RCN 2012.

The Skills for Health Code (DOH 2013) for band 3 & 4’s states that “Be accountable by making sure you can answer for your actions or omissions” the guidance also states that As a Healthcare Support Worker or Adult Social Care Worker in England, you must: be honest with yourself and others about what you can do, recognise your abilities and the limitations of your competence and only carry out or delegate those tasks agreed in your job description and for which you are competent.

4. Urinary Tract Infections (UTI) - Catheter associated infections (CA-UTI)

The Hampshire and Isle of Wight guidelines for antibiotic prescribing (2012) advocates that symptomatic catheter-associated UTI (CA-UTI) cannot be differentiated from asymptomatic bacteriuria on the basis of urine analysis with dipstick tests. Dipstick testing should not be used to diagnose UTI in catheterised patients.

Urine samples should only be sent for laboratory culture if the patient has clinical signs & symptoms, not because the appearance or smell of the urine suggests that bacteriuria is present. Symptoms that may indicate a UTI in patients with catheters are in the Symptom checker appendix I.

If an indwelling catheter has been in place for >2 weeks at the onset of CA-UTI and is still indicated, the catheter should be replaced to hasten resolution of symptoms and to reduce the risk of subsequent CA-UTI. The urine for culture should be obtained from the freshly placed catheter prior to the initiation of antimicrobial therapy.
Urine samples must be obtained aseptically from the sampling port, culture specimens should not be obtained from the drainage bag. (RCN Catheter care 2012)

Maintaining a sterile, closed urinary drainage system is central to the prevention of CAUTIs. Nurses need to be aware that any breaches in the closed system, such as emptying of the urinary drainage bag or taking a urine sample, increase the risk of catheter-related infection (Pratt et al, 2007).

See appendix L for procedure

4.1 UTI Symptom Checker

This is a quick reference guide based on the H&IOW Prescribing Guidelines to help staff decide if a UTI is present. See Appendix I for a copy of the UTI sign checker.

Do not use bladder maintenance solutions to prevent catheter associated infection

Do not offer prophylaxis antibiotics routinely when changing long term indwelling urinary catheters. Where there is a history of UTI after catheter change or trauma during catheterisation appropriate prophylaxis antibiotics should be considered. (Hampshire and Isle of Wight Guidelines for Antibiotic Prescribing in the Community 2012)

Hampshire and Isle of Wight Guidelines for Antibiotic Prescribing in the Community 2012

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<th>Action Advised</th>
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<td>E.g. Loin pain, flank tenderness, Suprapubic discomfort, fever rigid or systemic inflammatory response, change in voiding patterns, nausea, vomiting, malaise or confusion</td>
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<td>1) Yes</td>
<td>Negative</td>
<td>Send specimen and treat with antibiotics</td>
</tr>
<tr>
<td>2) Yes</td>
<td>Positive</td>
<td>Send specimen and treat with antibiotics</td>
</tr>
<tr>
<td>3) No</td>
<td>Positive</td>
<td>Non pregnant- No specimen or treatment Remember most catheterised patients will have a positive dipstick Pregnant- Send specimen and treat with antibiotics</td>
</tr>
<tr>
<td>4) No</td>
<td>Negative</td>
<td>No specimen or treatment</td>
</tr>
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5. Assessment

All patients should have a holistic and continence assessment if the catheterisation is not for acute/chronic retention or an emergency catheterisation. (Check with the continence service as to who carries out continence assessments in your area). Appendix N Staff should consider the use of bladder scanning to assess and manage the risk of urinary retention. Inpatients review daily and non in patient’s review their need for a catheter at each catheter change, using the catheter monitoring form at appendix D. With a plan documenting the:

• Reason for a catheter
• Clinical reasons for continuing catheterisation

Date for removal or review by an appropriate health care professional overseeing their care

Intermittent catheterisation should be used in preference to an indwelling catheter if it is clinically appropriate and a practical option for the patient. See Paragraph 5 for further information or contact the continence team - Appendix N

Consent must be obtained from the individual prior to the procedure of catheterisation, taking into account the mental capacity of the patient, the nurse must have working knowledge of how to obtain valid consent and how to confirm that sufficient information has been provided on which to base this judgment. RCN (2008).

Loveday et al (2014) advocate that no patient should be discharged or transferred with a short-term indwelling urethral catheter without a plan documenting the:

• Reason for a catheter
• Clinical reasons for continuing catheterisation
• Date of removal or review by a appropriate professional overseeing their care

5.1 Reasons for Catheterisation

Investigation:
Urodynamics /Residual Urine

Instillation:
Drugs/Bladder irrigation

Drainage:
Retention (acute or chronic) (see box 1)
Measurement of urine output
Pre & post-operative surgery

Inpatients only
To assist staff in deciding if a catheter is still needed, they can consider the HOUDINI indicators outlined below

H – Haematuria
O – Obstruction – urinary
U – Urology surgery
D – Decubitus ulcers – open sacral sore or perineal sore in an incontinent patient
I – input / output monitoring
N – Not for resus / comfort care
I – Immobility due to physical constraints

Please note if none of these indicators are present consider removing the catheter using the TWOC protocol and pathway, appendix K for community and appendix L for inpatients.

This is only a guide and there may be other reasons not listed above why a urinary catheter is still needed.
BOX 1

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<tr>
<th>ACUTE RETENTION</th>
<th>CHRONIC RETENTION</th>
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<tr>
<td>Retention of urine can be acute or chronic</td>
<td>Chronic retention is usually relatively painless</td>
</tr>
<tr>
<td>Chronic retention can be associated with either low or high intravesical pressure</td>
<td>High intravesical pressure can cause hydronephrosis and renal impairment</td>
</tr>
<tr>
<td><strong>Acute retention</strong></td>
<td>Can present as late-onset enuresis</td>
</tr>
<tr>
<td>• Presents with inability to pass urine for several hours</td>
<td>May also present with hypertension</td>
</tr>
<tr>
<td>• Usually associated with lower abdominal pain</td>
<td>Low pressure chronic retention presents with symptoms of bladder outflow obstruction</td>
</tr>
<tr>
<td>• Bladder is visible and palpable</td>
<td>Need to perform neurological examination to exclude disc prolapse</td>
</tr>
<tr>
<td>• Bladder is tender on palpation</td>
<td>Patients with chronic retention and renal impairment need urgent urological assessment</td>
</tr>
<tr>
<td><strong>When to use with caution</strong></td>
<td></td>
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<tr>
<td>• Recent urethral surgery</td>
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<tr>
<td>• Unexplained haematuria</td>
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<tr>
<td>• History of false passages / strictures</td>
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<tr>
<td>• Pelvic or perineal trauma-fractured pelvis</td>
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<td>• Urinary infection</td>
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5.2 **Intermittent Self Catheterisation (ISC)**

ISC can be considered as treatment for voiding problems due to disturbance or injuries to the nervous system, non-neurogenic bladder dysfunction or intravesical obstruction with incomplete bladder emptying. Contraindications for ISC are the same as urethral catheterisation. The following points will further clarify the support for ISC:

- Symptoms severity profile
- Renal function
- Psychological and physical ability to perform ISC
- Residual urine status
- When giving consent a patient must be aware that the procedure may be life long and the need to perform several times a day (dependant on symptoms)
- The requirement for continual review and follow up
- The exclusions to patient doing ISC include cognitive impairment, lack of consent, reduced compliance and motivation. (RCN 2012)

For further advice on patients performing ISC contact your continence specialist nurse who will carry out a full assessment and the patient’s ability to manage the procedure. It should also be noted with the patient’s consent a carer/spouse can be taught to perform ISC. **For contact numbers please see Appendix N**

6. **Catheter Selection**

In accordance with Nice guidelines (2012) and Loveday et al 2014, the nurse must select the type and charrier gauge of an indwelling urinary catheter based on an assessment of the patient's individual characteristics, including:

- Age
- Any allergy or sensitivity to catheter material
- Gender
- History of symptomatic urinary tract infection
- Patient preference and comfort
- Previous catheter history
- Reason for catheterisation.
- Duration of catheter i.e. short/medium or long term

The following must be specified in the prescription:

- Material
- Length
- Balloon
- Charrier size

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<th>Catheter material</th>
<th>Advantage</th>
<th>Disadvantage</th>
<th>Duration of catheter</th>
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<tr>
<td>Plastic/PVC</td>
<td>Large Internal diameter allows good drainage</td>
<td>Rigid and inflexible</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td>postoperatively.</td>
<td>May cause urethral discomfort.</td>
<td></td>
</tr>
<tr>
<td>PTFE - Teflon coated latex</td>
<td>Smoother outer surface - reduces tissue</td>
<td>Unsuitable for people with latex allergies.</td>
<td>8 days</td>
</tr>
<tr>
<td></td>
<td>damage and more resistant to encrustations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>than pure latex.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silicone Elastomer coated</td>
<td>Smooth internal and external surfaces.</td>
<td>Unsuitable for people with latex allergies.</td>
<td></td>
</tr>
<tr>
<td>latex</td>
<td>May reduce potential for encrustation over</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pure latex.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrogel coated latex</td>
<td>More compatible with body tissue, less trauma.</td>
<td>Unsuitable for people with latex allergies.</td>
<td>3m</td>
</tr>
<tr>
<td></td>
<td>Low surface friction, improved patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>comfort.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Material**

All indwelling catheters are FOLEY catheters – this simply means the catheter has a balloon.

All intermittent catheters are NELATON catheters. (The terms FOLEY and NELATON are generic terms.

Select a catheter that minimises urethral trauma, patient discomfort and irritation.

Ensure the catheter is appropriate for the anticipated duration of catheterisation

**Ensure that you always check manufacturers recommended duration**

See Continence Formulary for more information (for copies of the formulary contact your continence service (appendix N)

**Catheter Length**

The three lengths available are:
- Short length 23 - 26 cm.
- Standard/male length 40 - 44 cm
- Paediatric (30 cm) for use in children only.

**Short**
For ambulatory female patients, unless they are bariatric, bed or wheelchair bound changing an obese or bed/chair bound female from a short length to standard length catheter may resolve problems with by passing or poor drainage.

The shorter length means a leg bag can be worn, which does not show beneath the skirt and also avoids kinking of the catheter or tubing. A short catheter should NEVER be used in a male patient as this can cause severe trauma to the prostatic urethra. National Patent Safety Agency 2009 (a) (NPSA)

**Standard**
Used for male patients and also for female patients if obese confined to bed/chair or on initial catheterisation.

**Balloon Size**
Balloons are available in 3 sizes:
- 5 ml Paediatric balloon.
- 10 ml balloon for routine drainage.
- 30 ml balloons should NOT be used - these are for post-operative use only these are for post-operative use only in community hospital (Lymington)

The weight of water in larger balloons may lead to dragging/pulling of the catheter. The larger balloon may also cause bladder spasm and discomfort because it will rest against the delicate trigone of the bladder causing spasm, bypassing, pain, haematuia and possible erosion of the bladder wall.

NEVER insert more or less water into the balloon than specified by the manufacturer. Over inflation will NOT prevent a catheter being expelled, under inflation results in balloon distortion with the risk that the catheter may become dislodged from the bladder, therefore It is not best practise to deflate and re-inflate the balloon for trouble shooting. Balloons should be filled ONLY with sterile water. Tap water in the balloon may introduce bacteria to the bladder. Saline may cause crystal formation in the inflation channels.

**Charierr Size**
Choose the smallest size possible which provides adequate drainage:

Female 12/14 Ch  Male 12/14/16 Ch

Larger catheters can cause urethral irritation and by passing around the catheter. Larger sizes should only be used if clots or debris are present, post operatively or for supra pubic catheterisation. Larger charrier sizes (18 – 22 gauge) may be used for supra pubic catheterisation as this helps to avoid blockage.

7. **Suprapubic Catheters**

Suprapubic catheters drain the bladder by passing through the anterior abdominal wall into the dome of the bladder. Bladder stones are more common in patients with supra pubic catheters there are several theories why this happens, one theory is they are created when urine is concentrated and minerals crystallize and clump together and they are also can be associated with recurrent infections an annual check should be undertaken this is usually arranged by the hospital after insertion or by the GP.
Catheters used must be licensed for suprapubic use. Individual choice must be considered regarding the length of the catheter, as longer catheters may be easier for some individuals to manage, whilst others will prefer the option of a shorter more discreet catheter.

Conversion to suprapubic catheterisation from urethral catheterisation is not always successful for female patients, as there is a considerable risk of coincidental urethral leakage, and patients should be warned of this risk. Hydrogel coated or 100% silicone catheters are recommended.

The use of dressings around the supra pubic site is not recommended, unless there is exudate or leakage.

**Reasons for a Suprapubic Catheter**
- Urinary retention,
- Inability to pass a urethral catheter due to an obstruction
- Trauma to the pelvis or urinary tract,
- The patient's inability to tolerate a urethral catheter,
- Following pelvic or urinary tract surgery,
- To minimise the risk of urethral trauma,
- A need for long term catheterisation.

**Contraindications include:**
- Unexplained haematuia
- Previous lower abdominal surgery
- History of bladder tumour
- Blood clotting disorders
- Ascites
- Suspicion of ovarian cyst
- Very obese patients

**Benefits**
- Less urethral trauma,
- More positive body image, able to use more discreet and purpose made urine drainage bags,
- Greater comfort especially for wheelchair bound patients,
- Able to access entry site easily for cleansing,
- Greater freedom of expression of sexuality,
- Easier trial without catheter” (TWOC) as a catheter valve can be used, enabling the patient to void urethrally.

The supra pubic catheter is usually inserted in theatre and the first change is usually 6wks post insertion, if the nurse is competent she may do the first change on non-complex patients, or the patient will be required to return to the urology department that initially inserted the supra-pubic catheter. Both Getliffe (2002) & Robinson (2003) advocate the usage of some form of lubrication when changing suprapubic catheters, by using a little anaesthetic gel down the side of the old catheter will lubricate and facilitates its removal.

For further information on the use of lubrication see under heading ‘Lubrication’.

Use quality improvement systems to support the appropriate use and management of short-term urethral catheters and ensure their timely removal.
Catheter Insertion - Health Care Workers should note: The insertion of an indwelling catheter should be inserted as an aseptic technique as per the following instructions:

See appendices A, B, C & D
There is removal and insertion pack that can be ordered via the continence formulary.

8. Drainage Options

The choice of drainage system must be dictated by the intended duration, patient mobility and dexterity, patient choice and clinical decision. Leg bags or free standing drainage bags will normally remain connected to the catheter for 5 – 7 days in line with manufactures instructions or sooner if clinically indicated. More frequent disconnections will break the closed system and increase the risk of infection. A study carried out by Madeo et al (2009) showed that by using a sealed system there was a 41% reduction in CAUTI.

Choice of drainage system

The following should be taken into consideration when selecting products:

Ambulant patients will probably prefer leg bags. These are available in 350, 500 and 750 ml volumes, with short, medium or long tubing.

Always ensure the volume and tubing length are specified on prescription, remembering that leg bags are usually worn by women on the thigh, and by men on the calf.

There are many different types of tap to facilitate drainage and this is one of the most important factors to take into account when selecting a bag, as patients whose manual dexterity is compromised may not be able to operate certain types.

Choose a length that will prevent kinking or dragging of the catheter and tubing. Attachment of leg bags may be either with straps or a leg bag sleeve.

The bags should have a drainage tap (lever type) to facilitate emptying.

Patients with an indwelling catheter will need to use a leg bag by day and a night bag at night. The night bags should be attached to the leg bag using a clean procedure and the bags, should be non-drainable (one use only), with exceptions of bed bound patients then a re-useable night bag can be used in replacement of the leg bag, they must be used in accordance with the manufactures instructions. The leg bag is not disconnected from the catheter unless it is due for a change which is every 5-7 days in accordance with the manufactures instruction.

Night bags should be placed on stand and NEVER on the floor or lying in a receptacle ie bucket, the stand should positioned to prevent any kinking of the catheter and tubing.

It is important that the night bag is attached using the 'closed system' technique, i.e. night bag is attached to the leg bag and valve on leg bag opened to allow free drainage. A belly bag is also available for patients with Supra-pubic catheters (see Continence Formulary).
9. **Catheter Valves**

There is evidence to show that catheter valves are preferred by patients and should always be considered where appropriate (Yates 2008). There is no significant difference in urinary infection; however, there is evidence to show that patients using catheter valves may suffer less from encrustation and blocking problems, prevention of bladder neck trauma probably due to the flushing action of emptying; also there is maintenance of normal detrusor muscle function (Woodward 2013).

There are a number of valves available, and should be selected for ease of use, leak free and compatibility with the patients’ system.

**Use in accordance with manufactures guidance and continence formulary, change using a clean technique.**

10. **Lubrication**

NICE (2003) state that ‘an appropriate lubricant from a single-use container should be used during catheter insertion to lubricate the urethra adequately to minimize urethral trauma and infection’. There is research to support the use of an anaesthetic lubricating gel containing lidocaine to minimize pain and discomfort in both men and women.

Mangnall (2013) and the European Association of Urology Nurses (EAUN) (2012) argue that best practice evidence suggests the risk of urethral trauma can be reduced in both male and female by using a sterile single use lubricant during catheter insertion.

EAUN (2012) agree that the risk of infection associated with urethral trauma may be reduced by using a lubricant containing local anaesthetic

**Lubrication gels available**

Instillagel® (CliniMed) contains lidocaine hydrochloride2%, chlorhexidine gluconate solution 0.25% in a sterile lubricant basis in a disposable syringe. It is available in two sizes - 6ml (female) e and 11ml (male).

Cathejell with Lidocaine® (Teleflex Medical) is a lubricant gel with 2% lidocaine and 0.05 % Chlorhexidine in an accordion tube for a completely controlled instillation available in 8.5gm (female) and 12.5gm (male)

In the event of a patient having a known contra-indication or allergy to antiseptic lubricating gel, a plain lubricating gel may be used, e.g. Cathejell Mono®.

Cathejell with Lidocaine® (Teleflex Medical) in 8.5gm and 12.5gms is available on the continence formulary; if Cathejell Mono is required an FP10 can be completed by the prescriber

**All Gels require five minutes to work**

**Risks of using Anaesthetic Lubrication Gels**

It is important to be aware of the risks of using lubrication gels containing lidocaine, although topical usage is considered to pose a minimal risk to the patient. Both Instillagel® and Cathejell with Lidocaine® are contraindicated in patients with known sensitivities to any of the active ingredients, and in those patients who have damaged or bleeding urethral membranes. This is due to the increased risk of systemic absorption of
lidocaine hydrochloride which may exacerbate ventricular arrhythmias and cause hypotension (Katzung 1995).

Lidocaine should also be used cautiously in patients taking antiarrhythmic medication or patients with impaired cardiac conditions, hepatic insufficiency and epilepsy (BNF 2007).

The MHRA (2005) reported 34 reactions to Instillagel®, with eight of these being anaphylactic in nature, and none of them fatal.

Addison (2000) advised caution in regard to the use of lidocaine particularly on patients with an increased risk of the systemic effects of lidocaine, advising that if the patient’s pulse or breathing rate are slow, consider using a gel not containing lidocaine.

The Continence Formulary advocates the usage of Cathjel which can be used for either urethral.

11. Removal See appendices E

12. Catheter Maintenance and Removal Difficulties

Washing the urethral meatus with unperfumed soap and water during the daily bathing or showering routine is best practice. Vigorous meatal cleansing may increase the risk of infection.

Catheters and drainage bag must always be situated in such a way that will prevent the backflow of urine into the bladder. Do not allow the drainage bag to fill beyond three quarters full.

The urinary drainage bag should be emptied frequently enough to maintain urine flow and prevent reflux, using a clean procedure and should be changed when clinically indicated (NICE 2012) point 1.2.5.8 page 22

When emptying the drainage bag use a separate, clean container for each patient and avoid contact between the urinary drainage tap and the container.

Do not add antiseptic or antimicrobial solutions to urinary drainage bag.

All indwelling catheters must have the balloon deflated prior to removal, and the catheter must be removed slowly to minimize trauma. The water is removed from the balloon using a syringe fitted into the catheter valve. Care needs to be taken to avoid violent suction, which will collapse the inflation channel making deflation of the balloon difficult. Catheter balloons alter following deflation with a noticeable change in the surface area, appearance and diameter. These changes are caused by the in filled water being removed when deflating the catheter balloon prior to removal. This causes the catheter balloon area to collapse and deform, causing either

- Crease formation where the catheter balloon area has collapsed
- Ridge formation, where the catheter balloon when being deflated causes the balloon walls to come together causing either 2-4 ridges. (Robinson 2003).

If deflation is not achieved, try a different syringe. Leave the syringe attached for 20 minutes. “Milk” the catheter along the length between the thumb and finger to unblock or remove obstructions caused by debris or encrustation. Insert a few mls of air, and then draw back on the syringe – this creates a vacuum, which may precede deflation. Alternatively there is evidence that by inserting 0.5-1ml of sterile water, may help clear a
blockage (Gonzalgo et al 2003, Wilson 2012) or attach a 25 gauge (orange) needle into the inflation chamber just above the cuff and draw back; this will bypass a faulty valve (ACA, 2008, Wilson 2012).

**Cuffing**

In addition 100% silicone catheters have a tendency to 'cuff' when deflated. A 'cuffing effect is when the balloon area is forced towards the tip of the catheter. After water has been removed from the balloon the walls will not resume their initial flat surface (unless it has only been inflated for a short time) but collapse into uneven ridges, this appears to be more prominent in 100% silicone catheters. There is evidence that if the balloon of a silicone catheter is allowed to deflate passively or slowly once the syringe is reduced cuffing can be reduced. Tissue damage can also be reduced once the balloon has initially deflated by then inserting 0.5-1ml water back into the balloon thus giving it a smoother oval contour. (Semjonow et al 1995; Gonzalgo et al 2003).

**Do not attempt** to burst the balloon by over inflation as this could break it into fragments within the bladder.

**Never cut the** inflation arm or catheter. The balloon may not deflate and, if there is any traction on the catheter, it could retract into the bladder.

If the balloon still does not deflate, then seek medical assistance.

**The catheter or bag must never touch the floor** (Catheter information booklet (appendix H))

Hands should be decontaminated before manipulating a catheter or bag using a clean pair of non-sterile gloves should be worn and hand hygiene carried out on their removal, staff and **patients must wash their hands before and after manipulating the catheter or bag.**

Catheters should only be changed when clinically necessary, not exceeding the manufacturers’ recommendations (usually 12 weeks).

**Do not break the connection between the catheter and the urinary drainage system unless clinically indicated.**

Some patients may benefit from the use of catheter maintenance solutions to prolong the life of their catheter, avoiding the trauma of re-catheterisation. However, catheter maintenance solutions should only be used on clinical need and not as ‘routine’, **SEE SECTION 14**

Patients may be advised to drink cranberry juice, which has an effect on Escheria coli. The latest research shows that 250 mls gives 10 hours protection. Caution should be taken with patients who have gastric symptoms or arthritis and if their symptoms become worse they should discontinue. Patients taking warfarin should not have cranberry juice as it may alter the levels of warfarin in the body (Patient UK). Diabetic patients should seek advice before taking due to its high sugar level.

Patients should be encouraged to have a good fluid intake of at least 2 litres per day to discourage infection and constipation.

The nurse is professionally accountable for using the products according to the manufacturers’ instructions.
13. **Securing Devices**

Best practice indicates a strap/adhesive fixation should be used to anchor the catheter to prevent urethral and bladder neck trauma, unstabilised catheters can also lead to catheter movement, inflammation, and pain.

Pink (2013), advocates that unstablised catheters, can lead to irritation of the detrusor, resulting in bladder spasm in patients with over active bladders, this can lead to ‘dislodgement and in some cases actual expulsion.

A ‘G’ strap or the convene aqua sleeve can be found in the continence formulary (See the continence formulary)

14. **Encrustation & Catheter Maintenance Solutions (CMS)**

*Every patient should have a care plan with reasons & outcomes of each CMS given*

As micro-organisms, most commonly proteus mirabilis, colonize a catheter surface they multiply rapidly forming a living layer, known as a biofilm, which becomes increasingly thicker as multiplication continues.

Biofilms are highly resistant to treatment with antimicrobial agents, partly because the organisms become embedded in a matrix or glycocalyx produced by its own secretions. There is strong evidence that aggressive antibiotic therapy or the introduction of antiseptic solutions such as chlorhexidine is ineffective. (Pratt et al, 2007; Maki & Tambyah, 2001; Getliffe, 2000)

As the encrusting material is precipitated from the urine, the biofilm continues to grow over the mineral deposits cementing them firmly to the catheter surface and making them extremely difficult to remove. Fluid intake (including cranberry juice) has little effect on encrustation.

Catheter Maintenance Solutions are solutions that can dissolve encrustations on catheters

There is evidence that mineral deposits can be dissolved with acidic solutions, the most effective being 6% acid solution of 50 mls used sequentially is recommended in a frequency in line with manufacturers’ instructions, which keeps the catheter patent.

However, both Getliffe (2002) and Rew (2005) cite Elliott et al (1989) claim that there is evidence that 6% acidic solutions can cause chemical irritation to the bladder mucosa. The mucosa plays an important part in host defense against urinary tract infections and several studies have shown that there can be increased shedding of the urothelial cells from the bladder following instillations of both acidic and neutral Ph solutions. It is therefore recommended that the 3% solution is used. (Getliffe 2002, Rew 2005). There is evidence that using the twin trainer by B, Braun is more effective, this is on the continence formulary, there must be rational for using any other CMS.

Gentle agitation of the solution may also promote greater dissolution but this is not recommended as mechanical force has shown to increase urothelial shedding of the bladder wall.

**Indications for using CMS**

1. If there has been no drainage of urine for a few hours
2. Drainage is very slow and sluggish.
3. Patient has lower abdominal pain
4. Signs of retention

This procedure is classified as an Aseptic Technique because you are using only sterile solutions.
You do not need to wear sterile gloves as these will become contaminated the moment you touch the catheter tubing.
The main thing to consider when undertaking this procedure is that you do not touch the KEY PARTS with anything that is not sterile.
Key part is the sites where harmful micro-organisms can be introduced into the body.
In a catheter maintenance solution (CMS) the key parts will be 1 the disconnected end of the catheter tubing and 2 the tip of the CMS bag to be attached to the catheter tubing. Both of these sites should be sterile so as long as nothing NON STERILE touches these key parts they will remain sterile.

See Appendix O for the procedure

For catheter blockage due to encrustations the following solutions are reported to be the most effective:

**Which Solution**
Uro-Tainer suby G. has a have a solution of citric acid 3.23% Used to dissolve/reduce crystallisation.

Uro-Tainer Solution R. Has a solution of citric acid 6%. Used to dissolve severe and persistent crystallisation (Both on the continence formulary).

**Research has shown that citric acid 6% is the most effective against severe encrustations but can cause chemical irritation to the bladder mucosa.**

After initial treatment with a catheter maintenance solution for blocked catheter with encrustations how often it is repeated is up for debate. If the patient is known blockers he/she may benefit from a catheter maintenance regime.

**According to the manufactures instructions, the maximum usage is twice a day for persistent blockers but due to known side-effects starting at once a day for two weeks then reduce down 1-2 weekly may be beneficial, all patients using CMS should be reviewed on a regular basis to ensure the CMS is working .**

15. Trouble shooting

Other causes of catheter blockage:

1. Mucosal occlusion – this occurs when the bladder mucosa blocks the eyes of the catheter. It is very important to identify this cause as the treatment is very different from encrustation. The best way to determine the cause of the blockage is to examine the catheter visually on removal both internally and externally. If there is no visible evidence of encrustation, and the catheter, when rolled between fingers does not feel gritty, then it is safe to assume that mucosal occlusion has taken place. It may be beneficial where appropriate to use a catheter valve for patients suffering from repeated mucosal occlusion. The presence of the urine may prevent the mucosa from entering the eyes of the catheter.

2. Hydrostatic suction results from the vacuum effect of urine in the drainage tubing. There is suction of the mucous into the eyes of the catheter and prevents drainage. This is most often found in drainage bags that are positioned more than 30 cm below the bladder and a slight temporary rising will often help.
3. Occlusion will also occur when the bladder mucosa closes around the catheter due to bladder spasm. This may be due to detrusor spasm or the catheter itself may irritate the bladder lining and trigger a spasm. Anticholinergic medication may help but patients should be made aware of the side effects in order to help with compliance. It should be discontinued if no positive effect is found. It is also possible that the spasm may occur as a reaction to the catheter material and it may be worthwhile to try a different material for future catheterisation.

- Care should be taken to ensure that the catheter is clear at all times.
- The catheter may have become displaced and this will inhibit the ability to drain.
- The presence of faeces in the rectum may press against the catheter occluding
- Constipation is a common cause of blocked catheters. Evans (2001)
- The tubing of the catheter may be kinked or flattened, particularly if the patient is obese.

16. PH Testing

There is much debate in the research about whether urinary pH should be taken routinely. There are many natural variables which affect urinary pH, including time of day, diet, atmospheric CO2 and inconsistency of testing. There is not a simple relationship between urinary pH as measured by nurses and catheter encrustation. Therefore it is not recommended practice but if in doubt consult your continence service.

17. Other Catheter Associated Problems

Bladder Stones
The bacteria causes an increase in the pH of urine producing optimum alkaline conditions for the struvite (magnesium ammonium phosphate) and calcium phosphate crystals to develop around the eyelets, lumen and balloon it is these 'Crystals' that fall into the bladder causing bladder stones, giving symptoms of catheter blockage and bypassing see under Suprapubic catheters.

Bypassing
Leakage of urine around the catheter may be caused by blocked catheter or bladder spasm. The sensitive trigone area of the bladder may be stimulated by the balloon, which in turn increases the spasm. A smaller catheter can overcome this problem. Ensure no more than 10 ml of water is used in the balloon. N.B – A larger catheter or over inflated balloon will exacerbate the problem.

Cramping pain
It is fairly common for some patients to experience abdominal cramps when a catheter is first inserted. These will usually subside after 24 hours. If insufficient water was introduced into the balloon, then it is possible that the catheter can become dislodged causing pain. Persistent unstable detrusor muscle contractions can also cause pain and may respond to antimuscerinic drugs but these drugs should be used with caution in the over 65’s due to antimuscerinic overload discuss with GP. It is also possible that the tip of the catheter could be poking into the bladder wall. A catheter valve may solve this problem.
Urethral discomfort
This may be caused by distension of the urethra by too large a catheter, or occlusion of the paraurethral glands. This may lead to infection, urethritis and an offensive discharge around the catheter. Ensure appropriate catheter selection i.e. size, length, and material. A smaller hydrogel coated catheter should relieve any discomfort.

Haematuia
Small amounts of blood are quite commonly found in the urine of catheterised patients as a result of trauma or infection. Severe bleeding, however, warrants an urgent medical opinion.

Purple bag syndrome
Older patients who are immobile may develop purple urinary bag syndrome. This condition is harmless and is brought about by the bacterial decomposition of tryptophan, an essential amino acid it can turn the colour of the bag purple.

Pulled out Catheter
Replace catheter for haemostasis, by keeping the catheter inserted allows any trauma to urethra time to heal without scarring. Consult the urology team if the bleeding doesn’t stop, there are clots or difficulty in replacing the catheter. Check the catheter that has been pulled out is intact, if any part of the catheter is missing or if the catheter has been damaged in any way with parts missing, ensure that there that no remnants of the catheter have remained in the bladder (‘been sucked in’), if the catheter has been disposed off before arriving, the nurse should ask to see the catheter where possible, if this is not possible and if there are any concerns, a bladder ultrasound and referral to urology should be instigated immediately.

Catheter Expulsion
If a patient’s catheters are being expelled frequently, the option of a suprapubic catheter (inserted into the bladder through a small incision in the abdomen) should be considered otherwise the urethra can become wider, allowing urine to bypass the lumen of the catheter (Evans, 2001).

Expulsion of catheters are more common in female patients thought to be due to erosion of the bladder neck, as stated a suprapubic catheter should be considered, placing a larger catheter is not an option this will cause more damage and further problems,

18. Documentation
The following information should be documented in accordance with the NMC The Code 2015

- Reason for catheterisation
- Consent
- Type of catheter, manufacturer, batch number and expiry date
- Catheter material, length and size
- Make and type of lubricating gel used, batch number and expiry date
- Drainage system and method of drainage
- Date and time of insertion and by whom
- Date of planned change/reassessment and expected duration
- Advice to patient/carer on prevention of problems- Hand out the ‘Looking after your catheter’ leaflet see appendix H(can be downloaded from the staff intranet).
- Interventions specific to identified problems including rationale
- Review/ care given
It is advised that the **Urinary Catheter Monitoring form** is used for all patients see Appendix (D) the form can be found on the intranet for downloading.

19. **Waste Disposal**

   All health care waste must be segregated immediately by the person generating the waste into appropriate colour coded waste or storage bags in accordance with current national and local policies. All healthcare waste must be labeled, stored, transported and disposed of in accordance with current national and local policies.

   Patient and carers must be educated about the correct handling, storage and disposal of health care waste. NICE (2012).

20. **Audit**

   In compliance with EPIC 3, Guidelines will be audited annually to meet contractual requirements within the physical health teams. Audit results and recommendations will be feed back to the teams.

21. **References**


   Addison R Intermittent Self Catheterisation *Nursing Times* May 17 2001; Vol 97 No20 pp67 - 69


   Department of Health Guidelines *for preventing infections associated with the insertion and maintenance of short term catheters in acute care DOH London 2001*


   Evans A, Feneley R, A study of current nursing management of long term supra pubic catheters *British Journal of Community Nursing* 2000; Vol5 No 5 pp 240-245

   Getliffe K, Hughes SC, Le Claire M The dissolution of urinary catheter encrustation *BJU International* 2000 Vol 85 pp 60-64


   Getliffe K 2002 Suprapubic catheterisation: Essential Skills 23 *Primary health care* Vol 12 no 6


Haberstich N, Protecting cathereterised patients from Infection Nursing and Residential Care October 2003 Vol 4 No 10 pp 482-484

Hampshire and Isle of Wight Guidelines for Antibiotic Prescribing in the Community (2012).


NICE Infection Control: Prevention of Healthcare Associated Infection in Primary and Secondary Care 2003

NICE Infection Prevention of Healthcare Associated Infection in Primary and Community Care 2012

Nursing & Midwifery Council (NMC) The Code: Standards of performance and ethics for Nurses and Midwives 2015

National Patients Safety Agency. Female urinary catheters causing trauma to male adults. 2009/RRR02a

National Patients Safety Agency. Minimising risks of suprapubic catheterisation (adults only) 2009/RRR05b

Patient UK. www.patient.co.uk/medicine retrieved 12/04/12


Pellowe C, Catheter associated urinary tract infections: primary care guidelines Nursing Times 13 January 2004 Vol 100 N0 2 pp 53-54
Rawlinson M Clark J Alternative measures to managing a non draining urinary catheter
British Journal of Community Nursing 2004 Vol 9 No 4 pp 141-14

Rew M Caring for catheterized patients: urinary catheter maintenance British Journal of Nursing 2005 14 2 pp 87-92

Rew M, Woodward S Troubleshooting common problems associated with long term catheters British Journal of Nursing 2001 Vol; 10, No 12, pp764-77

Robinson J Catheter removal & re-catheterisation British Journal of community nursing Vol; 17 Issue 5 pp 30-33

Rigby D Ph testing in catheter maintenance: the clinical debate British Journal of Community Nursing 2004 Vol 9 No 5 pp 189-193

Robinson J Deflation of a Foley catheter balloon Nursing Standard March 19 2003 17, 27 pp 33-38

Royal College of Nursing (RCN) Catheter Care: RCN guidance for nurses 2012


Surgical-Tutor www.surgical-tutor.org.uk retrieved 06/03/2012


Yates A Urinary Catheters Part 6-Catheter Valves Nursing Times 104: 44, pp 24-25
### Appendix A - FEMALE CATHETERISATION PROCEDURE

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain and discuss the procedure with the patient and obtain consent, ensuring this is documented. Ascertain if any problems have been experienced with previous catheterisations. Check for ALLERGIES, latex &amp; Lidocaine (anesthetic gel)</td>
<td>To ensure that the patient understands the procedure and gives a valid consent. Beware of patient having a vasovagal attack. This is caused by the vagal nerve being stimulated so that the heart slows down, leading to syncope faint. Patients with spinal cord injury may have problems with Autonomic Dysreflexia, a life threatening condition. In patients with paraplegia, pain experienced below the level of a spinal cord injury may cause stimulation of the Sympathetic nervous system which can lead to collapse.</td>
</tr>
<tr>
<td>2. Assist the patient to get into the supine position with bent knees, hips flexed and feet resting about 60cm apart. Do not expose the patient at this stage of the procedure.</td>
<td>To enable safe access to the genital area. To maintain the patient's dignity and comfort.</td>
</tr>
<tr>
<td>3. Ensure that a good light source is available.</td>
<td>To enable genital area to be seen clearly.</td>
</tr>
<tr>
<td>4. Decontaminate hands using soap and water or alcohol hand rub in accordance with Trust policy</td>
<td>To reduce risk of cross-infection</td>
</tr>
<tr>
<td>5. Put on a disposable apron.</td>
<td>To reduce risk of cross-infection from micro-organisms on clothes.</td>
</tr>
<tr>
<td>6. Prepare equipment near the patient’s bed. Ensure choice of catheter is correct, and in date. Ensure that the work surface used to place equipment needed during the procedure is decontaminated with a clinell wipe (green)</td>
<td>To minimise airborne contamination and avoid over reaching. To ensure correct catheter is used. To decontaminate work surface reducing the risk of infection</td>
</tr>
<tr>
<td>7. Using an aseptic technique open items required.</td>
<td>To ensure items remain sterile.</td>
</tr>
<tr>
<td>8. Decontaminate hands using soap and water or use alcohol hand rub.</td>
<td>Hands may become contaminated by handling of outer packs etc.</td>
</tr>
<tr>
<td>9. Put on non-sterile gloves. (if using the Cath-it pack use gloves in pack)</td>
<td>To reduce risk of cross-infection.</td>
</tr>
<tr>
<td>10. Remove the cover that is maintaining the patient’s privacy. Position a disposable pad under the patient’s buttocks.</td>
<td>Patient is only exposed prior to procedure to maintain dignity as long as possible. To ensure urine does not leak onto bedclothes.</td>
</tr>
<tr>
<td>11. If a catheter is in situ, attach syringe to catheter port and allow balloon contents to slowly drain out, then remove and dispose of catheter.</td>
<td>Evidence suggests that the balloon deflates flatter when water is drained this way without ‘pulling’ on the syringe</td>
</tr>
<tr>
<td>12. Using swabs, separate the labia minora so that the urethral meatus is seen. One</td>
<td>This maneuver provides better access to the urethral orifice and helps to prevent</td>
</tr>
</tbody>
</table>
13. Clean the urethral orifice with 0.9% sodium chloride using single downward strokes from front to back. To reduce the risk of cross-infection. Inadequate preparation of the urethral orifice is a major cause of infection following catheterisation.

14. Insert nozzle of the anaesthetic lubricating jelly into the urethra. Squeeze the gel into the urethra, remove the nozzle & discard. Allow 5 minutes for anaesthetic effect. Adequate lubrication helps to prevent urethral trauma and infection, as well as minimising patient discomfort.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Remove gloves, decontaminate hands using soap and water or alcohol rub</td>
<td>To reduce risk of cross-infection</td>
</tr>
<tr>
<td>16. Put on sterile gloves</td>
<td>To reduce risk of cross-infection</td>
</tr>
<tr>
<td>17. Place the catheter, in the receiver, between the patient’s legs or alternatively attach to the urine drainage bag</td>
<td>To provide drainage for urine once catheter is inserted.</td>
</tr>
<tr>
<td>18. Aseptically Introduce the tip of the catheter into the urethral orifice gently removing the plastic sheath as it is inserted in an upward and backward direction.</td>
<td>The direction of insertion and the length of catheter inserted should bear relation to the anatomical structure of the area.</td>
</tr>
<tr>
<td>19. Advance the catheter 6-8cm.</td>
<td>This prevents the balloon from becoming trapped in the urethra. Inadvertent inflation of the balloon within the urethra is painful and causes urethral trauma.</td>
</tr>
<tr>
<td>Inflating the balloon according to the manufacturer's directions, having ensured that the catheter is draining adequately. Ask the patient to report any discomfort and observe closely for signs of distress. Withdraw the catheter slightly (resistance can be felt when the balloon locates with the bladder neck opening) and connect it to the drainage system/catheter valve. If a standard length catheter has been used, support the catheter by using a specially designed support strap or adhesive fixation device on the thigh. Ensure that the catheter does not become taut when patient is mobilizing. Ensure that the catheter lumen is not occluded.</td>
<td>To maintain patient comfort and to reduce the risk of urethral and bladder neck trauma.</td>
</tr>
<tr>
<td>To aid drainage.</td>
<td></td>
</tr>
<tr>
<td>20. Patient is covered and made comfortable.</td>
<td>To maintain patient’s dignity and comfort.</td>
</tr>
<tr>
<td>Ensure that the genital area is left dry and clean.</td>
<td>If the area is left wet or moist, secondary infection and skin irritation may occur.</td>
</tr>
<tr>
<td>21. Ensure urine is draining into the bag.</td>
<td>To monitor renal function and fluid balance.</td>
</tr>
<tr>
<td>Measure the amount of urine drained. <strong>Only take a urine specimen for laboratory examination if required.</strong></td>
<td>It is not necessary to measure the amount of urine if the patient is having the urinary catheter routinely changed but still need to ensure urine is draining.</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>22.</strong> Waste is disposed of according to local policy. Remove Personal Protective Equipment, wash hands or use alcohol gel.</td>
<td>To prevent environmental contamination.</td>
</tr>
<tr>
<td><strong>23.</strong> Record information in relevant documents; this should include, consent given, reasons for catheterisation, date and time of catheterisation, catheter type, length and size, batch number, amount of water instilled into the balloon, manufacturer &amp; batch number of anaesthetic gel used, and any problem negotiated during the procedure.</td>
<td>To provide point of reference or comparison in the event of later queries.</td>
</tr>
</tbody>
</table>

Adapted with kind permission of Steve Miles of Dorset Healthcare for Southern Health Foundation Trust
## Appendix B - MALE CATHETERISATION PROCEDURE

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain and discuss the procedure with the patient and obtain consent, ensuring this is documented. Ascertain if any problems have been experienced with previous catheterisations. CHECK FOR ALLERGIES i.e. Latex &amp; Lidocaine (anaesthetic gel)</td>
<td>To ensure that the patient understands the procedure and gives a valid consent. Beware of patient having a vasovagal attack. This is caused by the vagal nerve being stimulated so that the heart slows down, leading to syncope faint. Patients with spinal cord injury may have problems with Autonomic Dysreflexia, a life threatening condition. In patients with paraplegia, pain experienced below the level of a spinal cord injury may cause stimulation of the Sympathetic nervous system which can lead to collapse.</td>
</tr>
<tr>
<td>2. Assist the patient to get into the supine position with the legs extended. Do not expose the patient at this stage of the procedure.</td>
<td>To enable good access to genital area. To maintain the patient’s dignity and comfort.</td>
</tr>
<tr>
<td>3. Ensure a good light source.</td>
<td>To enable genital area to be seen clearly.</td>
</tr>
<tr>
<td>4. Decontaminate hands using soap and water or alcohol hand rub in accordance with Trust policy</td>
<td>To reduce risk of introducing infection at time of procedure.</td>
</tr>
<tr>
<td>5. Put on a disposable apron.</td>
<td>To reduce risk of contamination of uniform from body fluids.</td>
</tr>
<tr>
<td>6. Prepare equipment near the patient’s bed. Check choice of catheter is correct, and in date. Ensure that the work surface used to place equipment needed during the procedure is decontaminated with a clinell wipe (Green)</td>
<td>To minimise airborne contamination and avoid over reaching. To ensure correct catheter is used. To decontaminate work surface reducing the risk of infection</td>
</tr>
<tr>
<td>7. Using an aseptic technique/ open items required.</td>
<td>To ensure items remain sterile.</td>
</tr>
<tr>
<td>8. Decontaminate hands or use alcohol hand rub.</td>
<td>Hands may become contaminated by handling of outer packs.</td>
</tr>
<tr>
<td>9. Put on non-sterile gloves.(if using the Cath-it pack use gloves in pack)</td>
<td>To reduce the risk of cross-infection.</td>
</tr>
<tr>
<td>10. Remove the cover that is maintaining the patient’s privacy. Position a disposable pad under the patient’s buttocks</td>
<td>Patient is only exposed prior to procedure to maintain dignity as long as possible. To ensure urine does not leak onto bedclothes</td>
</tr>
<tr>
<td>11. If a catheter is in situ, attach syringe to catheter port and allow balloon contents to slowly drain out, then remove and dispose of catheter.</td>
<td>Evidence suggests that the balloon deflates flatter when water is drained this way without ‘pulling’ on the syringe</td>
</tr>
<tr>
<td>12. Appropriately place sterile towels across the patient. Creating a hole in the centre of</td>
<td>To create a sterile field.</td>
</tr>
</tbody>
</table>
13. Wrap a sterile topical swab around the shaft of the penis. Retract the foreskin, if necessary, and with 0.9% sodium chloride, cleanse the urethral meatus and glans in a circular motion moving out from the centre. 

To reduce the risk of introducing infection to the urinary tract during catheterisation.

14. Holding the penis upright, apply a small amount of lubricating gel to the tip of the meatus then insert the nozzle of the anaesthetic gel into the urethra. Squeeze the gel in slowly; Remove the nozzle and discard. Wait 5 minutes

Adequate lubrication helps to prevent urethral trauma and infection. Use of a local anaesthetic minimizes the discomfort experienced by the patient. Allows the lubrication to take effect

15. Remove gloves, decontaminate hands using soap and water or use alcohol rub

To reduce the risk of cross infection

16. Put on sterile gloves

To ensure catheterisation is carried out as an aseptic procedure

17. Take hold of the penis behind the glans, raising it until it is almost totally extended. Maintain grasp of penis until the procedure is finished.

This manoeuvre straightens the penile urethra and facilitates catheterisation. Maintaining a grasp of the penis prevents contamination and retraction of the penis.

18. Place the catheter, in the receiver, between the patient's legs or alternatively attach to the urine drainage bag. Insert the catheter aseptically, by gently removing the plastic sheath, insert for 15-25cm until urine flows.

To provide a temporary container for urine as it drains.

The male urethra is approximately 18cm long.

19. If resistance is felt at the external sphincter, increase the traction on the penis slightly and apply steady, gentle pressure on the catheter. Ask the patient to strain gently as if passing urine or to cough.

Some resistance may be due to spasm of the external sphincter. Straining / coughing gently helps to relax the external sphincter. Asking the patient to breathe deeply can help overcome urethral spasm.

20. When urine begins to flow, advance the catheter almost to its bifurcation. Gently inflate the balloon, according to the manufacturer's direction. Ask the patient to report any discomfort and observe closely for signs of distress. Withdraw the catheter slightly (resistance can be felt when the balloon locates with the bladder neck opening) and connect it to the drainage system/catheter valve.

Advancing the catheter ensures that it is correctly positioned in the bladder.

Inadvertent inflation of the balloon in the urethra causes pain and urethral trauma.

21. Support the catheter, either by using a G-Strap or adhesive fixation device to the

To maintain patient comfort and to reduce the risk of urethral and bladder neck
<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. Ensure that the glans penis is clean and then reposition the foreskin completely.</td>
<td>Retraction and constriction of the foreskin behind the glans penis (paraphimosis) may occur if this is not done and is extremely uncomfortable and distressing for the patient and could require surgery to correct!</td>
</tr>
<tr>
<td>23. Patient is covered and made comfortable, ensure that the genital area is left dry and clean.</td>
<td>To maintain patient’s dignity and comfort. If the area is left wet or moist, secondary infection and skin irritation may occur.</td>
</tr>
<tr>
<td>24. Ensure urine is draining into the bag, measure the amount of urine drained and take a urine specimen for laboratory examination only if required.</td>
<td>To monitor renal function and fluid balance. It is not necessary to measure the amount of urine if the patient is having the urinary catheter routinely changed, but still need to ensure urine is draining.</td>
</tr>
<tr>
<td>25. Waste is disposed of according to local policy. Remove Personal protective Equipment, wash hands or use alcohol gel.</td>
<td>To prevent environmental contamination.</td>
</tr>
<tr>
<td>26. Record information in relevant documents; this should include, consent given, reasons for catheterisation, date and time of catheterisation, catheter type, length and size, batch number, amount of water instilled into the balloon, manufacturer &amp; batch number of anaesthetic gel used, and any problem negotiated during the procedure.</td>
<td>To provide a point of reference or comparison in the event of later queries.</td>
</tr>
</tbody>
</table>
### CRITERIA RATIONALE

<table>
<thead>
<tr>
<th>1. Explain and discuss the procedure with the patient and obtain consent, ensuring this is documented. Ascertain if any problems have been experienced with previous catheterisations. CHECK FOR ALLERGIES i.e. Latex &amp; Lidocaine (anesthetic gel).</th>
<th>To ensure that the patient understands the procedure and gives a valid consent. Patients with spinal cord injury may have problems with Autonomic Dysreflexia, a life threatening condition. In patients with spinal cord injury, below T6 if a noxious stimuli occurs below this level, stimulation of the Sympathetic nervous system takes place which can lead to collapse.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Position patient comfortably in the supine position. Expose abdomen keeping genitals covered.</td>
<td>To expose abdomen. To maintain the patient's dignity and comfort.</td>
</tr>
<tr>
<td>3 Ensure that a good light source is available.</td>
<td>To enable insertion site can be seen clearly</td>
</tr>
<tr>
<td>4. Decontaminate hands using soap and water or alcohol hand rub in accordance with Trust Policy.</td>
<td>To reduce risk of introducing infection at time of procedure.</td>
</tr>
<tr>
<td>5. Put on a disposable apron.</td>
<td>To reduce risk of cross-infection from micro-organisms on clothes.</td>
</tr>
<tr>
<td>6. Prepare equipment near the patient’s bed. Ensure catheter is licensed for supra-pubic use and is in date. Ensure that the work surface used to place equipment needed during the procedure is decontaminated with a clinell wipe (Green).</td>
<td>To minimise airborne contamination and avoid over reaching. To ensure correct catheter is used. To decontaminate work surface reducing the risk of infection</td>
</tr>
<tr>
<td>7. Using an aseptic technique open items required.</td>
<td>To ensure items remain sterile.</td>
</tr>
<tr>
<td>8. Decontaminate hands with soap and water or with alcohol hand rub.</td>
<td>Hands may become contaminated by handling of outer packs.</td>
</tr>
<tr>
<td>9. Put on <strong>non-sterile</strong> gloves. <em>(If using the cath-it pack use gloves in pack)</em></td>
<td>To reduce the risk of cross-infection.</td>
</tr>
<tr>
<td>10. Remove the cover that is maintaining the patient’s privacy and position a disposable pad under the patient.</td>
<td>Patient is only exposed prior to procedure to maintain dignity as long as possible. To ensure urine does not leak onto bedclothes</td>
</tr>
<tr>
<td>11. Clean site and old catheter with sterile saline solution.</td>
<td>To minimise risk of cross infection. Removes any debris attached to catheter before removal.</td>
</tr>
<tr>
<td>12. Use of anaesthetic lubricant gel. The gel can be applied around the side of the</td>
<td>Helps to reduce infection. Facilitate ease of insertion and removal and reduces</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>13.</strong> To remove indwelling catheter, attach 10ml syringe to inflation port and allow water to drain out on its own, leave attached. Note: With ‘all silicone’ catheters some diffusion of balloon contents occurs, thus, there may be less than 10ml of water on removal.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>With non-dominant hand on skin either side of tract, grasp catheter between finger and thumb at its lowest point and withdraw catheter, noting angle of entry and length of catheter inside. Dispose of catheter. If the catheter becomes ‘stuck’ and cannot be removed, re-inflate balloon with 0.5-1ml sterile water and leave for 5 minutes or longer. Then remove water and try again.</td>
</tr>
<tr>
<td><strong>14.</strong> Dispose of gloves, decontaminate hands with soap and water or use alcohol hand rub. Put on <strong>sterile</strong> gloves</td>
<td>To minimise risk of cross infection.</td>
</tr>
<tr>
<td><strong>15.</strong> Place the receiver containing the catheter beside the abdomen or alternatively attach to a sterile urine drainage bag</td>
<td>To ensure procedure is carried out aseptically.</td>
</tr>
<tr>
<td><strong>16.</strong> The new supra-pubic catheter needs to be inserted soon after withdrawing the old.</td>
<td>The tract can quickly close. Later changes are not as problematic as the tract will have become established.</td>
</tr>
<tr>
<td><strong>17.</strong> Aseptically and by gently removing the plastic sheath, insert new catheter into tract, at the same angle and 2-3cm more than the previous measured depth.</td>
<td>Helps to reduce infection. Facilitate ease of insertion and reduces trauma. To aid correct insertion and ensures balloon can be inflated within the bladder.</td>
</tr>
<tr>
<td><strong>18.</strong> Inflate balloon according to manufacturer's directions. Once fully inflated gently pull back on the catheter to feel it anchor on the side of the bladder.</td>
<td>To ensure correct retention in the bladder. Ensures balloon is not inflated within the supra pubic tract.</td>
</tr>
<tr>
<td><strong>19.</strong> Attach to drainage system and support system as required.</td>
<td>To maintain patient comfort, aid drainage and ensure no tension on the catheter tubing, which can cause trauma.</td>
</tr>
<tr>
<td><strong>20.</strong> Abdomen is left dry and clean. Patient is covered and made comfortable.</td>
<td>To maintain patient’s dignity and comfort. If the area is left wet, secondary infection/irritation may occur.</td>
</tr>
<tr>
<td><strong>21.</strong> Ensure urine is draining into bag</td>
<td>To ensure that the catheter is in the correct position and working effectively.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>22.</strong> Waste is disposed of according to trust policy. Remove Personal Protective Equipment. Wash hands or use alcohol gel.</td>
<td>To prevent environmental contamination</td>
</tr>
<tr>
<td><strong>23.</strong> Record information in relevant documents. This should include, consent given, reasons for catheterisation, date and time of catheterisation, catheter type, length and size, amount of water instilled into the balloon, batch number, manufacturer, anaesthetic gel batch number and any problems negotiated during the procedure. Also amount of urine drained.</td>
<td>To provide a point of reference or comparison in the event of later queries.</td>
</tr>
</tbody>
</table>
Appendix D
Removal of a urinary catheter

Procedure

Gain verbal consent from the patient and make sure they understand the procedure. Explain any potential symptoms they may experience following removal such as urgency, frequency and or discomfort. Check the patient’s records to see how much water was inflated into the balloon and scheduled removal date for planned removals.

Gather relevant equipment required for catheter removal including the appropriate syringe (normally 10ml syringe for routine catheters), gloves, cleaning solution (this is usually normal saline). If re-inserting a catheter use the Cath-it catheter insertion and removal pack, (see continence formulary) if no replacement catheter is required use items as above.

Screen area to maintain privacy. Protect bed linen using protective covering. Ask the patient to lie in a supine position, preserving dignity (RCN 2008).

Wash hands and put on gloves
Place a container between patient’s legs to receive the used catheter and to catch any urine spillage.
If necessary, clean around the meatus and catheter using appropriate solution (usually normal saline), always swabbing away from the urethral opening. Release any leg support system for easier removal of catheter. Change gloves and attach syringe to catheter valve to deflate balloon
Do not pull on syringe but allow the solution to come back naturally – follow the manufacturer’s instructions.

Ask patient to relax and to breathe in and out. As the patient exhales, gently remove catheter. Male patients should be warned of potential discomfort as the deflated balloon passes through the prostatic urethra inspect the removed catheter for any signs of encrustation, especially if a new catheters to be inserted.

Clean the meatus and make the patient comfortable. Remove gloves and dispose of equipment appropriately. Wash hands.
Document the date and time of catheter removal.

Encourage the patient to drink plenty of fluids. Inform patient and/or observe for any signs of voiding difficulties, give out the Catheter at Home booklet (appendix

SUPRAPUBIC REMOVAL

Procedure

Follow the first five steps for urethral catheter removal. Place a container between patient’s legs to receive used catheter and to catch any urinary spillage.
If necessary, clean around the catheter site using the appropriate solution
Release any abdominal and/or leg support system for easier catheter removal. Change gloves.
Attach the syringe to catheter valve to deflate the balloon Do not pull on syringe but allow the solution to come back naturally – follow the manufacturer’s instructions. Ask the patient to relax and to breathe in and out. As the patient exhales, gently remove the catheter. If the catheter is being removed so it can be changed, observe the catheter for any signs of encrustation, the lie of the catheter, the angle of insertion and how much of the catheter was inserted. This information will prove a useful guide for the insertion of the new catheter.

Dealing with difficulties-See Catheter Maintenance and Changing
Appendix E - Indwelling Urinary Catheter Insertion & Ongoing Care Form

Stop! Think. Avoid if possible

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>DOB</th>
<th>Hosp No.</th>
<th>NHS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

Ward/ Unit / Location …………………………… Date of admission (inpatient) or ………………………………………
Date of first contact/catheter change (community)………………

Patient admitted with a catheter? Yes / No
If yes complete as much information on this page as you can from the patient / notes

Patient informed of need to catheterise? Yes / No
If NO, specify why consent was not obtained:…………………………………………………………
Procedure fully explained and understood by patient? Yes / No
Information sheet given to patient? Yes / No
Antimicrobial prophylaxis used? Yes / No
Allergies: Please state…………………………………………………………………………………………

<table>
<thead>
<tr>
<th>Catheter Type</th>
<th>Catheter Information</th>
<th>Drainage System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethral catheter</td>
<td>100% Silicone</td>
<td>Free Drainage</td>
</tr>
<tr>
<td>Supra-pubic catheter</td>
<td>PTFE coated latex</td>
<td>Leg/night bag</td>
</tr>
<tr>
<td>Short/medium term (up to 28 days)</td>
<td>Simplastic 2 way / 3 way</td>
<td>Flip-flow valve</td>
</tr>
<tr>
<td>Long term (up to 12 weeks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned date of removal/catheter change</td>
<td>Balloon size ........... mls of water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Charriere size .......</td>
<td></td>
</tr>
</tbody>
</table>

Catheter Insertion: A urinary catheter should be a last resort when all other options have been considered.
Reason for insertion: ……………………………………………… Expected Duration ………………………………………
Aseptic technique used ☐
Appropriate catheter used ☐
Sterile saline used for meatal cleansing ☐ If not specify cleansing agent used:……………………………………
Sterile lubricant used ☐
Residual urine (mls)………………………… Colour of urine: ……………………………………………………………
Easy insertion? Yes / No If no why? ………………………………………………………………………………………

Name (print) …………………………….. Job title: ………………………………………..
Signed………………………………… Date: ………………………………………..

Place catheter sticker from outer packaging in patients notes

Investigations / Interventions
- Is patient pyrexial? Yes / No
- Urinalysis done? Yes / No / Not required
- CSU sent? Yes / No / Not required
  Results of CSU:…………………………………………………………………………………………
  Treatment prescribed:………………………………………………………………………………
- Bladder scan done? Yes / No / Not required
  Date scan done:…………….. Residual urine (mls) ……

CSU taken insert date
Sensitive to: ……………………………
Resistant to: ……………………………

Removal
Date catheter removed / replaced: ………………………
Name (print).…………………………. Job title: ……………………………
Signed:……………………………………………. 

Urinary Catheter Care Guidelines
Version 4
September 2017
Indwelling Urinary Catheter: Ongoing Care  
*To complete daily (inpatient) or at each catheter change (community)*

Patient Name  
DOB  
Hosp No.  
NHS No.

<table>
<thead>
<tr>
<th>Date</th>
<th>Cath still required?</th>
<th>Specify the reason if catheter still required</th>
<th>Hand Hygiene?</th>
<th>Meatal hygiene performed ensure foreskin placed back over glans penis (men)</th>
<th>Catheter tube secured safely to the leg?</th>
<th>Drainage bag positioned above the floor &amp; below the bladder?</th>
<th>Drainage bag changed? (change bag every 7 days)</th>
<th>Closed drainage system observed?</th>
<th>Specify any problems identified interventions &amp; outcomes.</th>
<th>* see extract from HIOW Antibiotic Prescribing guidelines 2012 below</th>
<th>PRINT name Sign and job title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
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</table>

Please refer to the SHFT Urinary Catheter Guidelines for further information  
*Ref: Hampshire and IOW Guidelines for Antibiotic Prescribing in the Community 2012. NB: Between 2%-7% of catheterised patients will acquire bacteriuria each day. Antibiotics will not eradicate asymptomatic bacteriuria and does not reduce mortality or prevent symptomatic episodes. Urine samples should only be sent for laboratory culture if the patient has clinical sepsis (eg fever, flank or suprapubic discomfort, confusion, vomiting). A urine specimen for culture should be obtained PRIOR to initiating antimicrobial therapy for presumed CAUTI. If catheter is long term and needs to be replaced (if still indicated), urine for culture should be obtained from freshly placed catheter PRIOR to initiation of antimicrobials. Antibiotic prophylaxis should not be offered routinely. Consider antibiotic prophylaxis for patients with a history of symptomatic UTI after catheter change or who experience trauma during catheterisation.*
### Training Needs Analysis for Male, Female & Suprapubic Catheterisations

All Staff must have completed the Aseptic Technique Assessment before this Training

<table>
<thead>
<tr>
<th>Training Programme</th>
<th>Frequency</th>
<th>Course Length</th>
<th>Delivery Method</th>
<th>Facilitators</th>
<th>Recording Attendance</th>
<th>Strategic &amp; Operational Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male and Female catheterisation</td>
<td>Once</td>
<td>6hrs</td>
<td>Face to Face</td>
<td>Clinical Educators</td>
<td>M.L.E</td>
<td>Julie Dawes Head of Nursing</td>
</tr>
<tr>
<td>Suprapubic catheterisation</td>
<td>Once</td>
<td>3.5hrs</td>
<td>Face to face</td>
<td></td>
<td></td>
<td>Julie Dawes Head of Nursing</td>
</tr>
</tbody>
</table>

**Directorate**

- **Service**
  - Adult Mental Health
  - Specialised Services
  - Learning Disabilities
  - TQtwentyone
  - Older Persons Mental Health
  - ISD’s Adults
  - ISD’s Children’s Services
  - Corporate

**Target Audience**

- All qualified staff required to undertake catheterisation (Male, female & suprapublic)
- Band 3 & 4 required to undertake female, male & suprapublic catheterisation (As stated in their job description and with permission of their line manager.)
Appendix G - Continuous Bladder Irrigation (CBI)

Continuous bladder irrigation is an infusion of a sterile solution into the bladder usually by using a three way irrigation closed system with a triple-lumen catheter. One lumen is used to drain urine; another is used to inflate the catheter balloon and the final lumen carries the irrigation solution. CBI is primarily used following genitourinary surgery to keep the bladder free of clots or sediment. The CBI is usually set up in theatre so the patient returns to ward with the irrigation already in place, the rate of infusion is dependent on the patient’s colour of urine. If it’s heavily blood stained then the rate of fluid requires to be fast, if there is little bleeding then the rate of infusion can be slowed down or stopped.

This procedure should only be carried out by staff that are trained in continuous bladder irrigation and understand the concepts of the procedure. Band 3 & 4 are allowed to carry this out but only after being trained by a qualified member of staff the accountability will still remain with the qualified member of the staff. There are a number of risks associated with CBI (which includes introducing infection) according to NICE 2003 the procedure should not be undertaken without due consideration to the risks involved.

A strict fluid chart is essential for these patients, an accurate measure of output must be recorded and input, if there is a discrepancy in input/output this must be reported to ensure the patient is not going into retention or fluid is being absorbed into the blood stream. For further information on the procedure and principles of care see the Royal Marsden Guidelines (Pages 230- 233)
Appendix H - Urinary catheterisation clinical competencies

<table>
<thead>
<tr>
<th>Name:</th>
<th>Role:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base:</td>
<td>Date initial training completed:</td>
</tr>
<tr>
<td></td>
<td>Date Aseptic Technique E assessment completed</td>
</tr>
</tbody>
</table>

Competency Statement:

The participant demonstrates clinical knowledge and skill in urinary catheterisation without assistance and/or direct supervision (level 3 - see level descriptors). Assessment in practice must be by a Registered Nurse who can demonstrate competence at level 4 or above.

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Assessment Method</th>
<th>Level achieved</th>
<th>Date</th>
<th>Assessor/self assessed</th>
</tr>
</thead>
</table>

The Participant will be able to:

1. Demonstrate knowledge and skill in urinary catheterisation

   a) State when it is appropriate to utilise an indwelling urinary catheter
   
      Questioning

   b) State when this should be reviewed
   
      Questioning

   c) Discuss what must be considered when selecting the right catheter for the patient
   
      Questioning/observation

   d) Demonstrate an understanding of the terms:
      i) Intermittent
      ii) Short term
      iii) Medium term
      iv) Long term
      v) Foley catheter
      vi) Nelaton catheter
      in reference to catheter use
   
      Questioning

   e) Discuss types and demonstrate an understanding of the materials used to make catheters and the circumstances that they are most appropriately used.
      i) PVC or Plastic (Indwelling)
      ii) Latex (non-coated)
      iii) PTFE (Teflon) coated Latex
      iv) Silicone elastomer-coated Latex
      v) 100% silicone
      vi) Hydrogel-coated Latex
   
      Questioning

   f) Demonstrate an understanding of the range of catheter length and appropriate, safe choice for patients:
      i) Short
      ii) Standard
   
      Questioning
<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Assessment Method</th>
<th>Level achieved</th>
<th>Date</th>
<th>Assessor/self assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>iii) Paediatric</td>
<td></td>
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</tbody>
</table>
| g) Discuss knowledge and demonstrate an understanding of the range of balloon size and safe and appropriate use: Demonstrate understanding of the range of balloon sizes and safe and appropriate use  
i) 5 ml  
ii) 10 ml  
iii) 30 ml  
iv) Balloon inflation | Questioning/observation |                |      |                        |
| h) Demonstrate understanding of the process used to select Charriere size. | Questioning/observation |                |      |                        |
| i) Discuss the mechanism and appropriate use of **Suprapubic** catheters | Questioning/observation |                |      |                        |
| j) Discuss the options of drainage systems, considerations and appropriate choices for the patient | Questioning/observation |                |      |                        |
| k) Discuss the use of catheter valves and the criteria for use in the individual patient | Questioning/observation |                |      |                        |
| l) Describe the process of deflating catheter balloon and safe actions to take if the balloon fails to deflate | Questioning/observation |                |      |                        |
| m) Discuss/demonstrate the principles of safe, effective:  
i) catheter maintenance  
ii) routines for changing a catheter  
Discuss the causes and solutions to catheter blockage:  
i) Mucosal occlusion  
ii) Hydrostatic suction  
iii) Occlusion due to spasm  
iv) Mechanical causes  
v) Encrustation | Questioning/observation |                |      |                        |
| n) Discuss the causes for and solutions to:  
i) Bypassing  
ii) Cramping pain  
iii) Urethral discomfort  
iv) Haematuria  
v) Purple Bag syndrome  
v) Pain on removal | Questioning |                |      |                        |
<p>| o) States what information must be documented following insertion of a | Questioning/observation |                |      |                        |</p>
<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Assessment Method</th>
<th>Level achieved</th>
<th>Date</th>
<th>Assessor/self assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary catheter</td>
<td></td>
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</table>

2. Demonstrate practical skill in clinical catheterisation procedures

<p>| | | | | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>a)</td>
<td>Female catheterisation</td>
<td>Direct observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Male catheterisation</td>
<td>Direct observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Suprapubic catheterisation</td>
<td>Direct observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d)</td>
<td>Bladder irrigation</td>
<td>Direct observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e)</td>
<td>Urine collection and analysis</td>
<td>Direct observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f)</td>
<td>Catheter removal</td>
<td>Direct observation</td>
<td></td>
<td></td>
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</tbody>
</table>

Source Urinary Catheter Care Guidelines 2016 Southern Health Foundation Trust

Date all elements of Competency Tool completed to level 3 __________

Name ______________ Signature ______________ Status __________ Date __________

I confirm that I have assessed the above named individual and can verify that he/she demonstrates competency in urinary catheterisation

Assessor ______________ Signature ______________ Status __________ Date __________

Review Dates: | Competent Yes / No: | Registered Nurse Signature: | Verifier signature: | Comments: |
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### Levels of competency Rating Scale

<table>
<thead>
<tr>
<th>Level of achievement</th>
<th>Level</th>
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<tbody>
<tr>
<td><strong>Novice</strong></td>
<td>Cannot perform this activity satisfactorily to the level required in order to participate in the clinical environment</td>
</tr>
<tr>
<td></td>
<td>Can perform this activity but not without constant supervision and assistance</td>
</tr>
<tr>
<td></td>
<td>Can perform this activity with a basic understanding of theory and practice principles, but requires some supervision and assistance</td>
</tr>
<tr>
<td><strong>Competent Practitioner</strong></td>
<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision</td>
</tr>
<tr>
<td></td>
<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision, at an appropriate pace and adhering to evidence based practice</td>
</tr>
<tr>
<td></td>
<td>At this level competence will have been maintained for at least 6 months and/or is used frequently (2-3 times /week) The practitioner will demonstrate confidence and proficiency and show fluency and dexterity in practice <strong>This is the minimum level required to be able to assess practitioners as competent</strong></td>
</tr>
<tr>
<td></td>
<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision, at an appropriate pace and adhering to evidence based practice. At this level the practitioner will be able to adapt knowledge and skill to special/ novel situations where there maybe increased levels of complexity and/or risk</td>
</tr>
<tr>
<td><strong>Expert</strong></td>
<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision, at an appropriate pace and adhering to evidence based practice. Demonstrate initiative and adaptability to special problem situations, and can lead others in performing this activity</td>
</tr>
<tr>
<td></td>
<td>At this level the practitioner is able to co-ordinate, lead and assesses others who are assessing competence. Ideally they will have a teaching and /or mentor qualification</td>
</tr>
</tbody>
</table>

Useful Organisations

Bladder and Bowel Foundation: 0870 770 3246
www.bladderandbowelfoundation.org

MS Society Helpline: 0808 800 8000
mssociety.org.uk

Parkinson’s Disease Society Helpline: 0808 800 0303
www.parkinsons.org.uk

Age Concern:
www.ageuk.org.uk

The radar key for disabled toilets:
www.radar.org.uk
Appendix I Urinary Catheter Care Guidelines 2016

Looking after your catheter

This booklet has been written to help patients who have a catheter at home

It is important that you know who to contact, should you require any help/advice regarding your catheter. This is usually either your community team or practice nurse, both are contactable through your GP surgery.

A catheter is a hollow tube inserted in to the bladder to drain urine; it can either be a urethral catheter, that is via the normal tube to the bladder or a suprapubic catheter, which is inserted through the abdominal wall. The care is the same for both types of catheters and for men and women.

Information for Patients, Community Teams & Practise Nurses

Name __________________________________________________________

Address _______________________________________________________

_____________________________________________________________

DOB __________________________________________________________

Male ☐ Female ☐

Community Care Team/Practise Nurse phone no. __________________________

Surgery phone no. __________________________

To be completed by the nurse

Reason for Catheter _____________________________________________

Date catheter inserted & by whom ________________________________

Type of catheter-urethral/Suprapubic ______________________________

Size & Make ___________________________________________________

Material & balloon size _________________________________________

Notes _________________________________________________________

_____________________________________________________________

The above information is to assist you should you run into problems, it can be helpful to keep the booklet handy so you have the above information if you should need it.
Appendix I Urinary Catheter Care Guidelines 2016

Catheter Valves
These small devices are used instead of a leg bag. They are only suitable for some people. They can allow more freedom of movement and are more discreet for the wearer in that you can not see the tubing. You may find that your catheter valve will tuck into your underwear or you can support it with a G strap. You will need to empty your bladder via the valve every two to three hrs. A night bag will still have to be used and this is attached to the end of the valve, and the valve opened same as you would with a leg bag. The valves require changing every 5-7 days; these are also available on prescription. Discuss the use of these with your community nurse as they are not suitable for everyone.

Catheter Changes
This is dependant on the type of catheter you have; the majority of catheters in the community can stay in for 12wks. This time is very dependant on the patient, as some will require an earlier change. These changes are usually carried out by your community care teams/practise nurse. If you have had a suprapubic catheter inserted, the first change is usually carried out by the hospital; then the community care team/practise will carry out any further changes.

Sex
Sex is still possible with a catheter; there is no restriction for a suprapubic catheter, but for those patients with a urethral catheter here are a few tips!
Male patients can disconnect the bag attach a catheter valve and tape the catheter along the shaft of the penis, then apply a condom.
Female patients can disconnect their bag, attach a valve and tape the catheter to the top of their leg or thigh.

If you had a catheter inserted whilst in hospital, it can be helpful to contact your community nurse or practise nurse at your surgery, to ensure they are aware that you have a catheter, as they will need to arrange its change and care.

Washing
Daily washing is important; the area should be washed with unperfumed soap and patted dry with a towel. The use of talcum powder and creams is not advisable; you may still be able to have a bath/shower, this can be checked with your community nurse.

Drinking
A good fluid intake is important to keep the urine clear. Try to drink at least two litres in 24hrs. The fluid does not have to be water but any type of fluid, if drinking tea and coffee, please be aware that caffeine can irritate the bladder this also applies to alcohol.

Urine bags
There are many different manufacturers of urine bags, and samples may be obtained through your community care/practice nurse to try. It is advisable to wear a leg bag during the day and connect the night bag to the bottom of the leg bag at night. This is called the ‘closed system’ and helps prevent infection entering into your catheter/bladder. Try alternating the leg bag on different legs, this helps keep your skin healthy. Leg bags will require changing every seven days as recommended by the manufactures. You can obtain your bags on prescription from your surgery/GP.

Always wash your hands before and after touching or changing your leg/night bag.

Emptying your bag
Most leg bags contain up to 500mls of urine but there are also 750ml bags, however, either will require emptying before it is totally full. It is advisable to empty the bag when its 2/3rds full (approx 300-400mls) this prevents by-passing (leakage of urine around the catheter) due to the bag being too full, this can cause the leg bag to slide down the leg due to it being too heavy and becoming uncomfortable.
Appendix I Urinary Catheter Care Guidelines 2016

Night Bags
The single use disposable night bag should be used by all patients apart from those patients who are bed bound then the reusable type can be used and changed every seven days. These bags attach to the bottom of your leg bag and the valve on the leg bag is opened to allow urine to drain through the leg bag into the night bag. They hold up to 2 litres of urine so there is no need to worry about having to empty the bag throughout the night. The night bag must be attached to a stand; these are available from companies who supply your bags, for further information contact your community care/practise nurse.

The night bag should not be left in the bed or on the floor. Leaving night bags on the floor or in a receptacle can cause infection, night bags left lying in the bed, can cause back flow and blockage.

Securing your bag

It is important to ensure that your leg bag is secured to your leg/thigh comfortably; two leg straps will normally come with your bag, one for the top of the bag and one for the bottom. The straps should not be too tight as to leave indentations and marks on the skin, but not too loose that cause the bag to slip when urine has collected in the drainage bag.

G Straps-(Support straps)
These are special straps that secure the catheter to your body; they prevent any pulling on the catheter and will help keep the catheter in place. They are available on prescription from your GP or discuss the issue with your community/practise nurse.

Problems
There are several ‘problems’ associated with catheters; this section will discuss the most common ones.

Infection
Infections are common in all types of catheters, antibiotics are not normally prescribed unless you become symptomatic i.e. temperature and feeling unwell. You may need to increase your fluids to prevent infection (See page 3). If an infection is present you may experience by-passing (urine leaking around the catheter) slow sluggish urine, offensive smell, debris in the urine and blood.

If you think you have an infection contact your community care team or GP.

By-Passing.

This may occur when an infection is present but it can also occur due to bladder spasms. These spasms can be due to the body trying to expel the catheter, and treatment for this can at times be difficult. A good fluid intake is needed and if really troublesome, medication may be available to help you.

Blood

It is very common to see blood in the urine just after you have had your catheter put in or changed. If you accidentally pull on the catheter, this can cause a small amount of blood to be seen in the tubing or bag. If you see clots or your urine is heavily blood stained you must contact your community team or GP immediately.

Cramping Pain

It is fairly common for some patients to experience abdominal cramps when a catheter is first inserted. These will usually subside after 24 hours. The pain can also be due to bladder spasms as discussed in section on by-passing. Mild pain killers can also be prescribed used.
Appendix J
Urinary Tract Infection- Symptom Checker* (non-pregnant adults)
Please note that this is only a guide and staff should use their clinical judgement when assessing for UTI*

### Women under 65 years without a catheter

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Score</th>
<th>Symptom</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>a need to pass urine more often than usual (frequency)</td>
<td></td>
<td>need to pass urine urgently</td>
<td></td>
</tr>
<tr>
<td>need to pass urine urgently</td>
<td></td>
<td>pain on urinating (dysuria)</td>
<td></td>
</tr>
<tr>
<td>passing of an excessive quantity of urine (polyuria)</td>
<td></td>
<td>suprapubic tenderness</td>
<td></td>
</tr>
<tr>
<td>blood in urine (haematuria)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enter symptom score =

- **Severe or Symptom Score 3 or more**: Treat with empirical antibiotics (no MSU required)
- **Symptom Score 2 or less with cloudy urine**: Dipstick urine. If positive to nitrates and (leucocytes or blood) treat*
- **Symptom Score 2 or less and urine not cloudy**: Unlikely to be UTI consider other diagnosis
- **Symptom score 0 (asymptomatic) with or without a positive lab result or positive dipstick test**: Unlikely to be UTI consider other diagnosis

*If dipstick test negative the probability of UTI is reduced to 20%

**Men under 65 yrs - MSU is recommended to diagnose lower UTI in men under 65 as it may result from a functional or anatomical abnormality eg prostrate abscess.** For **Recurrent UTI in women** ie 3x or more per year, seek specialist advice

### Men and Women over 65 yrs without a catheter

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Score</th>
<th>Symptom</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>a need to pass urine more often than usual (frequency)</td>
<td></td>
<td>need to pass urine urgently</td>
<td></td>
</tr>
<tr>
<td>need to pass urine urgently</td>
<td></td>
<td>pain on urinating (dysuria)</td>
<td></td>
</tr>
<tr>
<td>passing of an excessive quantity of urine (polyuria)</td>
<td></td>
<td>suprapubic tenderness</td>
<td></td>
</tr>
<tr>
<td>blood in urine (haematuria)</td>
<td></td>
<td>fever&gt;38°</td>
<td></td>
</tr>
<tr>
<td>new incontinence</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Enter symptom score =

- **Symptom score 2 or more (particularly if dysuria, fever or new incontinence present)**: Send sample. Treat
- **Symptom score of 0 (asymptomatic) or 1 with or without a positive lab result or a positive dipstick test**: Unlikely to be UTI consider other diagnosis. Urine sample not recommended

### References and abbreviations
Southampton, Hampshire, Isle of Wight & Portsmouth along with Surrey Heath & Berkshire East Guidelines for Antibiotic Prescribing in the Community 2014

UTI= Urinary Tract Infection, M.S.U= Main stream sample of Urine, C.S.U = Catheter specimen of Urine
### All Men and Women with a Catheter

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Score one point for each symptom present</th>
</tr>
</thead>
<tbody>
<tr>
<td># - chills or rigor (fever &gt; 38°C)</td>
<td></td>
</tr>
<tr>
<td># - new central low back tenderness</td>
<td></td>
</tr>
<tr>
<td># - new onset confusion or worsening of pre-existing confusion or agitation</td>
<td></td>
</tr>
<tr>
<td>change in voiding patterns (output)</td>
<td></td>
</tr>
<tr>
<td>nausea/vomiting/malaise</td>
<td></td>
</tr>
<tr>
<td>Suprapubic discomfort</td>
<td></td>
</tr>
</tbody>
</table>

**Enter symptom score** =

Symptom score 1 or more symptoms without #
- Send sample and await results

Symptom score of 1 or more of the symptoms with #
- Send sample. Treat immediately if systemically unwell or pyelonephritis

Symptom score of 0 (asymptomatic) with or without a positive lab result or a positive dipstick test
- Unlikely to be UTI, consider other diagnosis

- Dip stick testing should not be used to diagnose UTI in catheterised patients.
- Smell or appearance of urine are not symptoms of UTI in catheterised patients
- No routine antibiotic prophylaxis routinely for long term urinary catheter change.
- Only consider prophylactic antibiotics if: history of UTI on catheter change, if the catheter change is traumatic.
- Specimens should be obtained by sampling through the needle free catheter port using aseptic technique. Do not take specimens from the catheter bag
- If catheter associated UTI is suspected and the catheter has been in for more than 2 weeks, change catheter, take a urine sample from the new catheter, then start antibiotics (on the same day). Review antibiotic sensitivities when the specimen result is available and treat accordingly.

### Acute Pyelonephritis (Upper UTI) Evidence of UTI with symptoms of pyelonephritis such as:

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Score one point for each symptom present</th>
</tr>
</thead>
<tbody>
<tr>
<td>fever &gt; 38°C.</td>
<td></td>
</tr>
<tr>
<td>uncontrollable shivering (rigors)</td>
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</tr>
<tr>
<td>loin pain</td>
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</tr>
<tr>
<td>flank tenderness</td>
<td></td>
</tr>
</tbody>
</table>

- Some signs of SEPSIS eg impaired consciousness, pallor, perfuse sweating, significant tachycardia, hypotension, hyperglycaemia not associated with diabetes, shortness of breath, temperature ↑ 38°C. or ↓ 36°C.

**Enter symptom score** =

Symptom score 1 or more with positive nitrite dipstick
- If hospital admission* is not needed, take MSU and commence antibiotic treatment. UTI is highly likely.

Symptom score of 1 or more with a dipstick negative to nitrites (positive to leucocytes)
- UTI is moderately likely consider sampling and treating

Symptom score 0 (with or without a +ve lab or dipstick result
- Unlikely to be UTI consider other diagnosis

Consider hospital admission* if significantly dehydrated or unable to take oral fluids/medications, for frail elderly who have been hospitalised or have a history of reoccurring UTI, signs of sepsis, failure to improve after 24 hours of antibiotics.

---

*Hospital admission = admission to hospital
APPENDIX K: NURSE LED SHORT-TERM INDIWELLING URINARY CATHETER REMOVAL PROTOCOL FOR COMMUNITY CARE TEAMS

Please note that this is a guide only, staff should use their clinical judgement when assessing patients

For use with all patients with short-term urinary catheter up to 35 days

---

**Was the catheter placed:**
- For urinary retention*
- In conjunction with GU surgery or specialist procedure/equipment
- By Urology

**Contact the responsible GP for discussion on removal if not already advised. Consider referral to a continence clinic if applicable**

**Does the patient have one or more of the following conditions?**
- Terminal illness with catheter required for comfort
- Open perineal or sacral wounds WITH ASSOCIATED incontinence

**Leave catheter in place, REASSESS in 7 days or with change in level of care**

**Is the patient able to use one or more of the following?**
- Toilet, Bedpan or Bedside commode
- Urinal or Sheath (male)
- Protective continence pads/aids

**Turn Over**

---

*Has the underlying cause of retention resolved? e.g. enlarged prostate, infection, constipation (bowels open within the last 48 hours), trauma

---

**LEAVE catheter in place**
**REASSESS in 7 days or with change in level of care**

**PROVIDE patient with contact details and instructions if suprapubic pain or distention**

**REMOVE Catheter**

---

**Advise patient to drink normally – no more than 2 glasses of fluid per hour**

---

Urinary Catheter Care Guidelines
Version 4
September 2017
CATHETER REMOVED
(arrangement made for patient contact when voided or if unable to void in 4 hours)

Has patient been able to void within 4 hours following removal?

Evaluate bladder using bladder scanner

Scanned volume more than 300mL AND / OR Suprapubic pain

Evidence of suprapubic pain OR distention

Attempts toileting, check patient drinking

No scanner available

RISK ASSESS with patient whether patient can be safely left for another 2-4 hours (time of day / frailty / home support / availability of evening care cover)

If YES: a). alert Evening Team / Out of Hours (as appropriate) to presence of patient and treatment plan as safety net

b). Review in 2 hours by phone (to allow time for reinsertion if required)

If NO: Proceed to re-insert catheter if this is in the patient’s best interest (i.e. not the interest of the service)

Patient able to void?

PROVIDE patient with emergency contact details & safety net advice

REINSERT CATHETER
If Residual Volume more than 300mL leave catheter in & refer to GP/Urology

If Residual Volume less than 300mL remove catheter as In/Out Catheter, alert Evening Team / Out of Hours (as appropriate) to presence of patient and treatment plan and review in morning

YES

No

Scanned volume more than 300mL AND / OR Suprapubic pain

Evidence of suprapubic pain OR distention

Attempts toileting, check patient drinking

No scanner available

RISK ASSESS with patient whether patient can be safely left for another 2-4 hours (time of day / frailty / home support / availability of evening care cover)

If YES: a). alert Evening Team / Out of Hours (as appropriate) to presence of patient and treatment plan as safety net

b). Review in 2 hours by phone (to allow time for reinsertion if required)

If NO: Proceed to re-insert catheter if this is in the patient’s best interest (i.e. not the interest of the service)

Patient able to void?

PROVIDE patient with emergency contact details & safety net advice

Advise patient that they may experience increased frequency/urgency for up to 2 weeks post removal

YES

NO
APPENDIX L: NURSE LED SHORT-TERM INDWELLING URINARY CATHETER REMOVAL PROTOCOL (INPATIENTS)

Please note that this is a guide only, staff should use their clinical judgement when assessing patients

For use with all patients with short-term urinary catheter up to 35 days

Was the catheter placed:
- For urinary retention*
- In conjunction with GU surgery or instrumentation
- By Urology

YES

Contact the responsible medical team or GP (if in community) for discussion on removal if not already authorised

NO

Does the patient have one or more of the following conditions?
- Terminal illness receiving comfort care or withdrawal of care;
- Open perineal or sacral wounds WITH ASSOCIATED incontinence;
- Need for hourly urine output monitoring AND associated action^?

YES

LEAVE catheter in place REASSESS at least every 24 hours or with change in level of care

NO

Is the patient able to use one or more of the following?
- Toilet, Bedpan or Bedside commode
- Urinal or Sheath (male)
- Protective continence pads/aids

YES

REMOVE Catheter

NO

LEAVE catheter in place REASSESS at least every 24 hours or with change in level of care

Patient able to void within 4 hours following removal?

NO

Evaluate bladder using bladder scanner

Scanned volume more than 300mL AND / OR Suprapubic pain

YES

MONITOR

Post void Residual Volume measurement with bladder scanner

Advise patient to drink normally – no more than 2 glasses of fluid per hour

NO

Attempt toileting

YES

Advise patient that they may experience increased frequency/urgency for up to 2 weeks post removal

NO

*Has the underlying cause of retention resolved? e.g. enlarged prostate, infection, constipation (bowels open within the last 48 hours), trauma

^Strict urine output monitoring can be achieved by 4 hourly measurement of urinals / pads / sheaths

Urinary Catheter Care Guidelines
Version 4
September 2017
Appendix M Decision flow chart for catheter blockage

Monitor patient life plan and work on management plan before by-passing or blocking (Catheter Life plan). Plan to do subsequent catheter changes before the same problem occurs again.

Assessment - Check the following:
1. Ensure catheter and tubing are not twisted or kinked and client is not sitting or lying on it.
2. Clothing is not restricting the catheter tubing.
3. The drainage bag is hanging below the level of the bladder and is not more than 2/3 full.
4. Is the patient constipated? Perform bowel assessment and resolve if required (loaded bowel can cause pressure and impede drainage).
5. Can blood clots, mucous, cellular debris and/or mineral deposits be viewed in the urine? Try to gently remove debris by “milking” the catheter gently along its length.
6. Encourage patient to increase their fluid intake to help flush out any obstruction.
7. Is it possible that bladder mucosa could be blocking the catheter “eyes” at the base of the bladder? Briefly hold the drainage bag above the level of the bladder to see if blockage is released when bag is lowered.

Long Term Management Plan
1. Record findings, actions, and catheter change details on the catheter monitoring form.
2. Look back over at least 3 catheter changes and work out how long the catheter functions before by-passing or blocking (Catheter Life plan). Plan to do subsequent catheter changes before the same problem occurs again.
3. Monitor patient’s fluid status to ensure fluid intake is adequate. Is the catheter the right size? Larger sizes are associated with irritation and leakage.
4. Is there a history of bladder and/or urethral spasms—may require review GP/Urologist.

Is the catheter draining slowly, bypassing or seem blocked?

- NO
  - Continue as usual and record any action taken

- YES
  - YES
  - CMS worked
  - NO

- YES
  - YES
  - Change Catheter and examine it
  - Any grittiness when catheter is gently rolled between fingers
  - Is there encrustations in the “eye” of catheter when it is removed (you may need to cut it open) See long term management plan
  - To see to see

Try a catheter maintenance solution of Suby G—see catheter guidelines on using 6% solution and management

Is the catheter draining now

- YES
- NO
The following items should be collected as preparation for collecting a catheter specimen of urine for analysis:

- Sterile gloves;
- Apron;
- Syringe and needle;
- Alcohol-saturated swab;
- Gate clip or non-traumatic clamps;
- Universal specimen container;
- Appropriate documentation/forms.

The procedure

- Obtain informed consent. Explain to the patient to optimise specimen quality. Ensure the procedure is performed maintaining patient’s dignity.
- Wash hands, put on apron, prepare equipment. Apply alcohol hand rub.
- If no urine is visible in the tubing, apply a non-traumatic clamp/gate clip a few centimeters distal to the sampling port.
- Once sufficient urine has collected in the tube, wipe the sampling port with an alcohol-impregnated swab. Allow to dry.
- Stabilising the tube below the sampling port, insert the needle into the port at an angle of 45 degrees.
- In a needle-free system, insert the syringe into the sampling port according to the manufacturer’s recommendations.
- Obtain the required amount of urine by pulling back on the plunger (refer to microbiology department to ascertain volume required).
- Remove syringe/needle.
- Dispose of sharps as appropriate.
- ‘Inject’ urine into sterile specimen pot.
- Wipe the sampling port with an alcohol-impregnated swab, allow to dry.
- Unclamp the catheter tubing as required.
- Dispose of waste, remove apron, and wash hands thoroughly.
- Complete documentation.
- Dispatch the specimen to the laboratory according to SHFT specimen guidelines.

Adapted from D Higgins 2008 Obtaining a Catheter Specimen of Urine Nursing Times May 2008
Appendix O

Contact for the SHFT Continence Team

For contacting the team please ring the number below who will direct you to the most appropriate person to help with your query

The Hub: 01256 3676565
Appendix P

Procedure for administrating a catheter maintenance solution

Procedure as advised by the Infection Control Team, please also see the manufactures instructions.

1) Use a sterile community pack each time you do a bladder washout – in this pack there will be a pair a sterile gloves, sterile field, apron and waste bag
2) That you place the outer wrapping from the leg bag under the bladder tubing, to protect the work surface from any fluid leaks – inside of the wrapper touching the catheter tubing
3) That you place the sterile field from the pack on top of the leg bag outer wrapper immediately under the area of the bladder tubing you are going to disconnect – thereby creating 2 layers between the catheter and the work surface. The sterile field is not fluid resistant and so using the outer wrapping under this will help protect surfaces from any fluid leaks
4) You wear the apron and the sterile gloves in the pack, but treat the gloves as if they are non-sterile and use them to only touch the non-sterile areas e.g. catheter tubing
5) You then disconnect the catheter from the leg bag
6) Once the catheter tubing is disconnected from the leg bag, insert the bladder maintenance solution into catheter tubing using a non-touch technique – i.e. not touching the key parts
7) On completion of washout, reconnect the catheter tubing to a **new leg bag**, again not touching the key parts i.e. top of leg bag to catheter tubing
Equality Impact Assessment (or ‘Equality Analysis’) is a process of systematically analysing a new or existing policy/practice or service to identify what impact or likely impact it will have on protected groups.

It involves using equality information, and the results of engagement with protected groups and others, to understand the actual effect or the potential effect of your functions, policies or decisions. The form is a written record that demonstrates that you have shown due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations with respect to the characteristics protected by equality law.

For guidance and support in completing this form please contact a member of the Equality and Diversity team

<table>
<thead>
<tr>
<th>Name of policy/service/project/plan:</th>
<th>Urinary Catheter Care Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Number:</td>
<td>SH CP 123</td>
</tr>
<tr>
<td>Department:</td>
<td>Clinical</td>
</tr>
<tr>
<td>Lead officer for assessment:</td>
<td>Marion Houghton BEM BSc(Hons)RN Clinical Nurse Specialist in Continence</td>
</tr>
<tr>
<td>Date Assessment Carried Out:</td>
<td>September 2016</td>
</tr>
</tbody>
</table>

1. Identify the aims of the policy and how it is implemented.

<table>
<thead>
<tr>
<th>Key questions</th>
<th>Answers / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briefly describe purpose of the policy including</td>
<td>These guidelines are to ensure the provision of evidence based practice, which will ensure that all patients who are catheterised have the best quality of care, minimising infection risk and other side effects and maximising quality of life.</td>
</tr>
<tr>
<td>• How the policy is delivered and by whom</td>
<td></td>
</tr>
<tr>
<td>• Intended outcomes</td>
<td></td>
</tr>
</tbody>
</table>

2. Consideration of available data, research and information

Monitoring data and other information involves using equality information, and the results of engagement with protected groups and others, to understand the actual effect or the potential effect of your functions, policies or decisions. It can help you to identify practical steps to tackle any negative effects or discrimination, to advance equality and to foster good relations.

Please consider the availability of the following as potential sources:
- **Demographic** data and other statistics, including census findings
- Recent **research** findings (local and national)
- Results from **consultation or engagement** you have undertaken
- Service user **monitoring data**
- Information from **relevant groups** or agencies, for example trade unions and voluntary/community organisations
- Analysis of records of enquiries about your service, or **complaints** or **compliments** about them
- Recommendations of **external inspections** or audit reports

<table>
<thead>
<tr>
<th>Key questions</th>
<th>Data, research and information that you can refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.1</strong></td>
<td>What is the equalities profile of the team delivering the service/policy?</td>
</tr>
<tr>
<td></td>
<td>The Equality and Diversity team will report on Workforce data on an annual basis.</td>
</tr>
<tr>
<td><strong>2.2</strong></td>
<td>What equalities training have staff received?</td>
</tr>
<tr>
<td></td>
<td>All Trust staff have a requirement to undertake Equality and Diversity training as part of Organisational Induction (Respect and Values) and E-Assessment</td>
</tr>
<tr>
<td><strong>2.3</strong></td>
<td>What is the equalities profile of service users?</td>
</tr>
<tr>
<td></td>
<td>The Trust Equality and Diversity team report on Trust patient equality data profiling on an annual basis</td>
</tr>
<tr>
<td><strong>2.4</strong></td>
<td>What other data do you have in terms of service users or staff? (e.g results of customer satisfaction surveys, consultation findings). Are there any gaps?</td>
</tr>
<tr>
<td></td>
<td>The Trust is preparing to implement the Equality Delivery System which will allow a robust examination of Trust performance on Equality, Diversity and Human Rights. This will be based on 4 key objectives that include:</td>
</tr>
<tr>
<td></td>
<td>1. Better health outcomes for all</td>
</tr>
<tr>
<td></td>
<td>2. Improved</td>
</tr>
</tbody>
</table>
In the table below, please describe how the proposals will have a positive impact on service users or staff. Please also record any potential negative impact on equality of opportunity for the target:

In the case of negative impact, please indicate any measures planned to mitigate against this.
<table>
<thead>
<tr>
<th>Positive impact (including examples of what the policy/service has done to promote equality)</th>
<th>Negative Impact</th>
<th>Action Plan to address negative impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guidelines for Children:</strong> To promote the child’s dignity and comfort</td>
<td>No negative impacts identified at this stage of screening</td>
<td><strong>Actions to overcome problem/barrier</strong></td>
</tr>
<tr>
<td>To recognise and minimise risks of secondary complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure the child has age appropriate explanation of procedure using play therapy and distraction tools where appropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure parents/carers have adequate explanation of procedure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To ensure that current research based practices are implemented</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disability</strong></td>
<td>Ensure the patient has appropriate explanation of procedure: Interpreting and translation service if necessary</td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
<tr>
<td>Category</td>
<td>Reason</td>
<td>Impacts identified at this stage of screening</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Gender Reassignment</td>
<td>To promote dignity and respect to transgender patients: In respect to Procedure for male or female Catheterisation.</td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
<tr>
<td>Marriage and Civil Partnership</td>
<td></td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
<tr>
<td>Pregnancy and Maternity</td>
<td></td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
<tr>
<td>Race</td>
<td>Ensure the patient has appropriate explanation of procedure: Interpreting and translation service if required.</td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
<tr>
<td>Religion or Belief</td>
<td></td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td></td>
<td>No negative impacts identified at this stage of screening</td>
</tr>
</tbody>
</table>