### Insertion and Management of Urinary Catheters in Adults Policy - HH(1)/IC/737/16

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#### Document Summary

The indwelling urinary catheter is the second most commonly used device within the hospital setting. It is estimated that one in four patients ends up with a catheter during their hospital stay. It is indicated for varied clinical reasons. However, it is associated with complications, most common of which are urinary tract infections which potentially lead to further serious, life-threatening complications. This policy provides current evidence-based guidance, practical information, and recommendations to contribute to safer practice in the insertion of urinary catheters and on-going care of adult patients with indwelling urinary catheters.

#### Ownership

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Review of BNHH and RHCH policies to produce harmonised, evidence-based HHFT policy with focus on prevention of CAUTI and incorporating recommendations from epic3 and High Impact Intervention: urinary catheter care bundle.

This policy advocates removal of catheters as soon as possible unless the catheter needs to be retained for the following indications:

A. Visible haematuria
B. Urinary obstructions
C. Urology surgery
D. Grade 3-4 sacral or perineal wound in an incontinent patient
E. Input and output monitoring
F. DNAR/End of life care
G. Physical constraints (e.g. unstable fracture)

This policy supports existing pathways which reduce the use of indwelling catheters and reduce the length of time they are left in place which bears the highest risk of infection in hospitalised patients. This policy promotes prudent antimicrobial usage by avoiding the inappropriate use of antimicrobials prior to insertion or during removal of the indwelling catheter unless absolutely necessary based on thorough assessment of the patient. This policy incorporates the best available evidence on how to look after patients with an indwelling catheter to prevent the risk of infection (i.e. epic3 guidelines and EAUN) including staff competency in performing this interventional procedure requiring aseptic technique.

This policy provides an information leaflet for patients, relatives and carers and guidance on what information should be handed over to the community team when patient is discharged from hospital.

Review of BNHH and RHCH policies to incorporate up-to-date guidelines on supra-pubic catheterisation.

Healthcare staff performing initial insertion of supra-pub catheter should refer to recommended British Association of Urology Surgeons (BAUS) guidelines

Sheryl Lucero  July 2015
Roisin Hart  July 2015
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1. Introduction

The indwelling Foley catheter is the second most commonly used device within the hospital setting. Almost 100 million catheters are sold yearly and one in four patients is estimated to have a catheter during their hospital stay. It is indicated for varied clinical reasons. However, despite its common use, it is not without complications (Saint et al, 2000; Pellowe and Pratt, 2004).

Urinary tract infection (UTI) is the second most common healthcare associated infection accounting for 17.2% of all healthcare associated infections. Almost one half (43%) of UTIs are associated with the use of the indwelling catheter. These are commonly referred to as catheter-associated urinary tract infection or CAUTI (HPA, 2012).

Catheter-associated UTI is the second leading cause of secondary healthcare-acquired bacteraemia or urosepsis. Healthcare-acquired CAUTI leads to serious, potentially life-threatening complications for hospitalised patients (e.g. cystitis, pyelonephritis, epididymitis, prostatitis, and orchitis) and costs the NHS almost £124 million to treat each year (Rowley et al, 2010).

The risks of infection from UTI associated with indwelling Foley catheters are associated with the process of insertion and manipulation of the catheter. However, the highest risk factor for the development of CAUTI lies in the duration of catheterisation due to the accumulation of bacterial growth for each day that the catheter is inside the bladder. The longer the duration the catheter is in place, the higher the risk of CAUTI (Pratt and Pellowe, 2010).

In the UK, it is a legal requirement for all NHS organizations registered with the Care Quality Commission to ‘protect patients, workers and others who may be at risk of acquiring a healthcare associated infection’ (DH, 2009, p.3). With these obligations and legal responsibilities, ‘it is no longer acceptable for infections to be regarded as normal’ (Deurden, 2009, p.417). Therefore, it is imperative that all efforts must be taken in order to reduce the risk of patients acquiring a healthcare associated infection.

This policy supports this effort of reducing the risk of healthcare associated infections from indwelling urinary catheters by providing current evidence-based guidelines and standards to translate these guidelines into everyday clinical practice.

2. Purpose

The purpose of this document is to provide current evidence-based guidance, practical information, and recommendations to contribute to safer practice in the insertion of urinary catheters and on-going care of adult patients with indwelling urinary catheters.
3. **Scope**
This policy extends to cover and will be applied fairly and consistently to all Hampshire Hospitals NHS Foundation Trust employees regardless of their protected characteristics as defined by the Equality Act 2010 namely age, disability, gender reassignment, race, religion or belief, sex, sexual orientation, marriage or civil partnership, pregnancy and maternity, length of service, whether full or part-time or employed under a permanent or a fixed-term contract, irrespective of job role or seniority within the organisation.

Where an employee has difficulty in communicating, whether verbally or in writing, arrangements will be put in place as necessary to ensure that the processes to be followed are understood and that the employee is not disadvantaged during the application of this policy and related procedures.

In line with the Equality Act 2010, the Trust will make reasonable adjustments to the processes to be followed where not doing so would disadvantage an employee with a disability during the application of this policy.

This policy complements professional and ethical guidelines and the Nursing and Midwifery Council (NMC) Code of Professional Conduct (NMC 2015).

Infection control is the responsibility of ALL staff associated with patient care. A high standard of infection control is required on ALL wards and units, although the level of risk may vary. It is an important part of total patient care.

It is essential that infection control is seen as an organisational responsibility and priority, that adequate isolation facilities and resources are provided, and that appropriate infection control staff and support services are available.

This policy does not include intermittent catheterisation which, although a urinary catheter device by definition, does not carry the same complications and risks highly associated with indwelling urinary catheters.

Intermittent catheterisation is addressed in the HHFT Catheterisation Procedures which describes the equipment and products used in catheterisation and common procedures related to catheters and is intended to complement and be used within the context of this policy.

4. **Urinary catheterisation**
Catheterisation is an interventional procedure to enable emptying of the bladder. It involves the insertion of a hollow tubular device (catheter) into the urinary bladder, usually via the urethra but sometimes via the supra-pubic area. Indwelling catheters are secured in the bladder by inflating the integral balloon following insertion.

Intermittent catheterisation is an alternative to indwelling catheterisation where a one-way catheter or straight catheter is used. This type of catheter has only one channel for drainage of urine; it has no balloon which secures it inside the bladder.
and hence, is not intended to remain in the bladder for a long period of time. The catheter is removed once the bladder has been emptied. Intermittent catheterisation, similar to indwelling catheterisation, may be performed either via the urethra or supra-pubic site.

Refer to Appendix B for Flow chart on indwelling urinary catheterisation. Refer to the HHFT Catheterisation Workbook for procedure for male and female intermittent catheterisation.

5. **Explanation of Terms**

**Catheter** – a catheter is a thin hollow flexible tube which can be inserted in the bladder either through the urethra (urethral) or supra-pubic channel to drain the urine.

**Lumen** – refers to the inside space of a catheter

**Extra-luminal contamination** – contamination outside the lumen of the catheter

**Intra-luminal contamination** – contamination within the lumen of the catheter

**Urethral indwelling catheterisation or urinary catheterisation** – is defined as passage of a catheter into the urinary bladder via the urethra (urethral catheter) (Fig. 1 and 2).

**Supra-pubic catheterisation** – the insertion of a catheter into the bladder via the anterior abdominal wall (Fig. 3 and 4).
Closed drainage system
A closed catheter drainage system is an aseptic system in which the path from the tip of the catheter inserted into the bladder, to the bag which catches urine, is closed and should not be disconnected. This is in order to protect the urinary tract from bacteria entering via the catheter drainage tubing and from the collection bag.

The term ‘closed drainage’ is, however, not strictly accurate as there are numerous portals of entry for pathogens and the system must be opened to allow emptying and be disconnected when the drainage bag is changed.

Interventional procedure
An interventional procedure is any procedure used for diagnosis or for treatment that involves making a cut or hole to access inside the patient’s body (e.g. inserting a tube into a blood vessel), gaining access to a body cavity (e.g. bladder) or using electromagnetic radiation (e.g. using a laser to treat eye problems).

Autonomic dysreflexia in spinal cord injury
Autonomic dysreflexia is a potentially dangerous clinical syndrome that develops in individuals with spinal cord injury, resulting in acute, uncontrolled hypertension. It can occur if the spinal cord injury is above the 6th thoracic vertebra (T6).

In this context this group of patients are likely to have a supra-pubic or urethral catheter. Professionals and carers must be aware of the over distended bladder or bowel. This can result from a blocked catheter or constipation and can trigger the syndrome.

Peripheral nerves below T6 can transmit and evoke a massive sympathetic surge causing widespread vascular constriction leading to hypertension. If left untreated, this can cause seizures, retinal haemorrhage, pulmonary oedema, myocardial infarction, cerebral haemorrhage and death.

6. Duties
Post Holders

Chief Executive (CE) has ultimate accountability for ensuring robust systems are in place to ensure the Trust continues to work to best practice and complies with all relevant legislations.

The Director of Infection Prevention and Control (DIPC) is the Trust Director responsible to the board for the delivery of infection prevention and control (IPC) standards.

The Clinical Matrons will ensure that all healthcare workers comply with this policy and that all healthcare workers attend mandatory infection prevention and control training.

All relevant Trust employees have a responsibility to comply with the policy and challenge and report those who fail to follow Trust policy.
Committees/Groups

The Infection Prevention and Control Team (IPCT), together with the Specialist Urology Team will act as resources for information and support. Both teams will provide education in relation to this policy which includes mandatory training.

The Infection Prevention and Control Team (IPCT) will monitor the implementation of this policy via audit within clinical areas and be responsible for regularly reviewing and updating it.

The Health and Safety Team will act as a resource for information and support and consult with managers, the IPCT, and healthcare workers regarding the use of personal protective equipment.

7. Equipment and products
The choice of equipment and products is based on the patients’ condition, clinical needs, and personal preference and should be discussed with the patient and their carer.

Detailed discussion and illustrations of equipment and products used in catheterisation are found in the HHFT Catheterisation Procedures

Refer to Appendix C for common problems and management of indwelling catheter equipment.

8. Principles of management of nursing intervention

Patient preparation:

Consent, information, and support
Catheterisation is an interventional procedure that can cause embarrassment, physical and psychological discomfort and impact on the patient’s self-image. It is the responsibility of the health care professional to inform the patient of the reasons and necessity for the procedure and obtain the patient’s permission. This policy recommends that this is recorded in the Trust Urinary Catheter Assessment and Monitoring (UCAM) form for all inpatients.

Explaining the procedure and providing the reason for catheterisation to the patient will help reduce patient anxiety and embarrassment and help the patient to report any problems that may occur while the catheter is in-situ. Relaxing the patient by offering reassurance and support will help for smoother insertion of the catheter and assist in avoiding unnecessary discomfort and the potential of urethral trauma during the insertion.

Assessment and aseptic technique
Even if catheterisation is a medical request, the health care professional should take a brief medical patient history, especially about urological conditions before the procedure.
Catheterisation involves instrumentation of a sterile tract. It is imperative that the health care professional has a good understanding of the principles of the aseptic procedure to help to reduce the risk of UTI.

9. **Difficulties that may occur during insertion**
   Difficulty in catheterising the patient can be caused by a variety of reasons. Medical advice and support should be sought if problems during or after the insertion occur.

   Refer to Appendix D for catheter complications, causes, and prevention and treatment.

10. **Catheter care/maintenance**
    Evidence of on-going care for patients with urethral and supra-pubic catheter (SPC) must be documented twice daily on the Trust UCAM form found in Appendix I.

   **Meatal cleansing**
   Routine daily personal hygiene is needed to maintain meatal hygiene. Soap and water is sufficient to achieve effective meatal cleansing. However attention must be given to educating non-circumcised patients to clean underneath the foreskin daily to remove smegma, as this may increase the patient’s risk of developing a UTI in addition to causing trauma and ulceration to the meatus and glans penis. When assisting non-circumcised patients with meatal cleansing, you must ensure that the foreskin is reduced back into position to prevent paraphimosis.

   **Care of the supra-pubic catheter site**
   - Always ensure good hand hygiene is performed prior to any intervention and use protective equipment e.g. gloves and apron;
   - Supra-pubic catheter site should be cleaned daily with soap and water. Excess cleansing is not required and may increase the risk of infection. Observe the cystostomy site for signs of infection and over granulation;
   - Antimicrobial agents should not routinely or as prophylactic treatment be applied to the cystostomy site to prevent infection;
   - Dressings are best avoided. If a dressing is used to contain a discharge this should be undertaken with strict aseptic technique to protect against infection;
   - Wherever possible, patients should be encouraged to change their own dressings.

   **Care of urethral catheters**
   Whichever bag is chosen, extensive measures should also be taken to maintain unobstructed flow. To prevent obstruction, the catheter and collecting tube should be kept free from kinking and the collecting bag has to be kept below the level of the bladder at all times (to allow urine to drain by gravity) and must never be rested on the floor.
Drainage of catheter bags
Do not allow the urinary drainage bag to fill beyond three-quarters full. Maintain standard precautions when emptying drainage bags. Clean the outlet valve with 70% isopropyl alcohol/2% chlorhexidine wipes used for decontaminating medical devices. Allow the urine to drain into the disposable/pulp measuring jug. Use a separate disposable/pulp measuring jug for each patient and avoid contact between the drainage tap and the container when emptying the drainage bag. Close the outlet valve and clean it again with a new 70% isopropyl alcohol/2% chlorhexidine wipe.

Observation and management of catheter drainage
The observations relate to the indication for catheterisation. If the catheter was inserted post-operatively for monitoring of urine output, it is vital to ensure that the bladder continues to empty and that excessive diuresis does not occur.

In home settings, observations relate to common complications to long-term catheters such as blockage and infections.

Urinary drainage bag must be labelled with the date when it is due to be changed. Drainage bags must be changed when clinically indicated and in line with the manufacturer’s recommendations (usually 7 days).

Refer to Appendix C for common problems related to equipment and how to manage them.

Stabilising of the urethral catheter
If the catheter is not secured properly, it may migrate from its intended point of stabilisation. Movement-induced trauma can lead to urinary tract infection and tissue necrosis. Inflammation and trauma may also occur when the device is unsecured. Stabilising urethral catheters can reduce adverse events such as dislodgment, tissue trauma, inflammation and urinary tract infection.

The use of a securement device reduces both the physical and psychological trauma to the patient by decreasing the need for reinsertion. If the catheter bag becomes too heavy with urine and it is not supported properly, the bag can pull on the catheter. This, along with catheter movement at the site of insertion can cause discomfort and irritation to the patient. To avoid necrosis at the urethral penile-scrotal junction caused by prolonged catheter pressure, the catheter tubing can be fixed with a securing device/tape to the patients’ thigh leaving a loop of catheter anchored. (Fig. 38)
Clamping of catheters
There are situations when a clamp or valve is an acceptable alternative to a catheter bag to manage urine drainage and an individual patient assessment is required.

The intermittent clamping of the indwelling urethral catheter prior to withdrawal has been suggested on the basis that this simulates normal filling and emptying of the bladder. While clamping catheters might minimise postoperative neurogenic urinary dysfunction, it could also result in bladder infection or distension.

Historic practice of clamping the catheter immediately after insertion in chronic retention is not supported and there is no evidence that this benefits the patient.

Changes of urine due to food and medication
The presence of an appliance for collecting urine increases patient’s awareness of both odour and colour changes affecting the urine caused by some medications and food products.

The patient and caregiver should be told that these changes are not harmful and do not necessarily occur in all patients. Normal urine is clear, straw-coloured with almost no odour.

Refer to Appendix G for colour and odour changes in urine due to food or medication.

11. Supra-pubic catheter change

Change of the catheter

- Long-term catheters can be changed on an individual basis to try to avoid/anticipate problems. However, the catheter must be changed within the timeframe as per manufacturer’s instructions which may be up to a maximum of 12 weeks.
- The catheter can be changed at the time of any identified catheter-related problems e.g. catheter blockage, catheter damage.
- A catheter change depends of the material of the catheter. All-silicone or hydrogel catheter is recommended.
- Check the catheter for encrustation after removal. If there is encrustation then it is better to plan to change the catheter earlier or when there is no encrustation the catheter can be changed later.

If the catheter change is uneventful continue using 100% silicone catheter. Antibiotics are not routinely given prior to supra-pubic catheter change but may be prescribed for patients deemed ‘at risk’ of infection at the physician’s discretion.

Following initial insertion of a supra-pubic catheter, the tract will take approximately between 10 days to 4 weeks to become established, after which time the catheter can be changed safely.
It is not necessary for the first change to be undertaken in secondary care setting.

Refer to the HHFT Catheterisation Procedures for initial insertion of a supra-pubic balloon catheter and procedure for changing a supra-pubic catheter.

12. Removal of urethral and supra-pubic catheters or trial without catheter (TWOC)

The clinical teams must monitor the need for the catheter daily and plan a date for TWOC when the catheter is inserted. Discomfort is frequently encountered during removal of both urethral and supra-pubic catheters and is often a consequence of ridge formation on the catheter balloon. This can be minimised by allowing passive deflation of the balloon rather than applying active suction to the deflating channel.

It is also important to assess risk of falls following removal of catheter in patients who may have had falls or history of falls prior to admission and consider patient access to toilet, call bell, mobility aids and equipment (e.g. urine bottle) and patients who receive night sedative or hypnotics.

Refer to Trust Patient Falls Prevention policy for more information.

When the catheter has been removed and advice on life style (e.g. drinking, etc.) has been given, make sure the patient understands he can contact you or your colleagues at any time if or when problems occur.

This policy advocates removal of indwelling urethral catheters as soon as possible unless the catheter needs to be retained for the following clinical indications:

A. Visible haematuria
B. Urinary obstructions
C. Urology surgery
D. Grade 3-4 sacral or perineal wound in an incontinent patient
E. Input and output monitoring
F. DNAR/End of life care
G. Physical constraints (e.g. unstable fracture)

Colorectal Enhanced Recovery Pathway
Patients who are catheterised during colorectal surgery can expect to have the catheter removed on Day one after the operation if they are mobilising well.

Enhanced Recovery Pathway for Total knee replacement/Total hip replacement
Patients who undergo total knee replacement and total hip replacement may occasionally require indwelling urethral catheterisation. If this happens, the catheter must be removed as soon as possible unless the catheter needs to be retained for clinical indications as stated above.

Refer to the HHFT Catheterisation Procedures for procedure for removal of urethral and supra-pubic catheter.
Potential problems during and following catheter removal

There are several problems that might arise during and following removal of a urethral catheter and it is vital that the health care professional is aware of the actions required to overcome them.

Refer to Appendix E for potential problems during and following catheter removal

13. Prophylactic antibiotic prior to insertion of urethral catheters or when changing/removing catheters

Antibiotics are not routinely recommended prior to insertion of an indwelling catheter unless the patient has a history of symptomatic urinary tract infection after catheter change or experienced trauma during catheterisation.

Infection may also occur at the site of an SPC insertion which may present as cellulitis, requiring oral or intravenous antimicrobial pharmacotherapy depending upon severity or a subcutaneous abscess requiring formal incision and drainage. Such infections are more common in patients who are immune-compromised.

For guidance on choice of antibiotic for catheter-related bacteraemia, refer to the HHFT Antimicrobial Guide.

14. Catheter complications

Catheter associated urinary tract infection (CAUTI)

Catheter associated urinary tract infection (CAUTI) is a urinary tract infection associated with the use of indwelling urinary catheters.

For the purpose of surveillance, a CAUTI identified within 48 hours of admission is considered a community-acquired infection while any CAUTI identified after 48 hours of admission is considered as hospital-acquired infection.

The incidence of bacteriuria has been estimated to be about 3% to 10% higher each day after catheter insertion. Prolonged urinary catheterisation is common amongst people in long-term care settings and this carries a high risk of developing a catheter-related urinary tract infection and associated problems.

Bacteriuria is therefore an almost universal feature of urinalysis and does not require therapy in asymptomatic individuals.

Refer to Appendix F for flowchart for diagnosis and management of CAUTI.

Refer to Appendix D for list of catheter complications, causes and prevention and treatment.

15. Bladder washout, irrigation and instillation

Bladder washout is defined as the washing out of the bladder with sterile fluid and “bladder irrigation” as the continuous washing out of the bladder with sterile fluid.
Bladder instillations may be indicated for prevention or treatment of catheter blockages.

Instillation treatments are not limited to saline or citric acid solutions; there are some others such as chemotherapy drugs (i.e. mitomycin-C or epirubicin), immunotherapy (BCG) or anti-inflammatory drugs (i.e. hyaluronic acid).

**Washout policies/catheter maintenance in long-term urethral catheterisation**

People requiring long-term bladder draining with an indwelling catheter can experience catheter blockage. It is important to diagnose the exact reason for the blockage in order to decide the correct course of treatment.

Regimens involving different solutions are being used to wash out catheters with the aim of preventing blockage but are not recommended routinely as a preventative measure to blockage. The optimum treatment for blocked catheters is ensuring adequate amount of oral fluids are taken on a regular basis.

Bladder irrigation may be recommended post-urological surgery or in cases when haematuria needs to be managed and will be recommended on an individual basis.

16. **Urinalysis/ catheter specimen of urine (CSU) and Dipstick**

Urinalysis should not be routinely performed on long-term catheterised patients, as virtually all patients will have bacteria present in their urine.

A CSU sample should only be collected when there are valid clinical indications and when other sources of infection have been ruled out.

**Indications for obtaining a CSU sample**

1. Patient is systemically unwell
2. Patient has a high temperature
3. Following lack of response to treatment
4. Admitted/transferred to hospital to ascertain the presence of hospital or community-acquired infection

**Technique for collection of CSU sample**

Urine samples from a catheter must be obtained under aseptic technique from the needle free sampling port by syringe aspiration. The sampling port has been specially designed to re-seal after aspiration of the urine sample. **Never collect CSU sample from the drainage bags.**

Refer to the HHFT Catheterisation Procedures for procedure for obtaining a urine sample from an indwelling catheter.

**Dipstick**

The use of dipstick to detect UTI is not recommended. Bacterial colonisation with catheterisation is inevitable with almost 100% colonisation risk at 7-10 days and does
not require therapy in asymptomatic individuals. If dipstick is used to detect glucose in the urine, attention should be paid that uric acid and vitamin C can cause a false-negative result.

17. **Infection prevention**

**Fluid intake**

Drinking sufficient fluid dilutes the urine and helps reduce the risk of catheter encrustation and blockage. A good fluid intake also ensures a constant downward drainage and flushing effect.

There is no standard amount of advised fluid intake and the type of fluid consumed appears to be insignificant as long as the volume is sufficient to prevent concentration of urine. The amount of fluid needed varies and depends on patient’s size (25-35 ml/kg/day), amount of fluid loss, patient’s food intake and patient’s circulatory and renal status. Regular fluid intake maintains the urinary flow and reduces the risk of infection and catheter blockage. The patient should be given sufficient amounts of fluid to maintain an output of 50-100 ml/h.

**Hand hygiene**

Hand-mediated transmission is a major factor in increasing the risk of infections to patients, which emphasises the vital importance of hand hygiene and use of personal protective equipment such as aprons and gloves. Hands must be decontaminated and a new pair of clean non-sterile gloves worn before manipulating each patient’s catheter. Hands must be decontaminated immediately following removal of gloves.

18. **Patient Quality of Life (QoL)**

**Impact of a catheter on the patient**

An indwelling urinary catheter often will be placed at the outpatient’s clinic or emergency room, often under a stressful condition for the patient; the patient may have been referred because of urinary retention; or an indwelling catheter is the last alternative after all other treatments (e.g. example clean intermittent catheterisation, medication, use of pads or male external catheters) have failed.

The catheter can be a relief at that moment and may be a common intervention performed by health care professionals. However, for the patients, wearing one may not be that easy. A patient can be faced with different kinds of problems such as urinary catheter equipment, how to deal with sexual activities, UTI or even sepsis, emptying bags problems, catheter changes, clothing adjustments, positioning of tubing, (hand) hygiene, meatal cleansing, falling out of the catheter, odour, kinking of catheter.

**Sexuality and body-image**

Patients with indwelling catheters can experience not only physical problems but also emotional problems.
Several constraints may impair teaching/counselling about sexuality, including lack of privacy because of several caregivers in the home, insufficient information about patient’s neurological status, cultural taboos, or views that chronically ill people do not have sexual needs and desires. Making adjustments in sexual activities can be a challenge for patients, require support, open communication, and sensitivity of nurses but by not bringing up this sensitive subject, nurses put their patients in the uncomfortable position of having to introduce the topic themselves. It should be a part of the routine teaching.

Advice which can be given:

- Women can tape the catheter on to the abdomen;
- Men can tape the catheter along the erect penis and secure it under a male external sheath;
- The drainage bag, once emptied, can be positioned out of the way in the bed;
- Alternatively, the drainage bag can be disconnected from the catheter and a valve attached during intercourse;
- A water-based lubrication can be used to facilitate insertion (oil-based or Vaseline® lubrication can damage the catheter and rot the male external catheter);
- A supra-pubic catheter, whenever possible, rather than a urethral catheter would be preferential;

Social support
Wearing a catheter is often not a choice and the experience leads to a time of embodied change, altering one’s view of self within the world. There are support networks for patients to contact such as the Bladder and Bowel Foundation and also possibilities to meet other patients via internet support groups.

19. Patient and caregiver instruction on discharge from hospital
Advice and information
The clinician responsible for completing the discharge summary for the patient on the electronic patient record (EPR) must record any follow-up requirements on the patient’s Clinical Discharge Notes. This may include follow-up date for removal of catheter or date for trial without catheter or TWOC.

Many patients develop special skills in observing their bodies in relation to the catheter, such as the use of their hands to check periodically for the leg bag filling, or they feel the weight on his/her leg increasing. Most participants empty the bag on a schedule very similar to most people’s daily pattern.

Other skills are awareness of changes of urine flow through the catheter, checking the tube for kinks, and especially for Spinal Cord Injury-patients, symptoms which trigger autonomic dysreflexia.
Patients and care-givers should be provided with written and verbal information to support the following (in HHFT, this information is included in the home catheter packs given to patient on discharge):

- Simple anatomy of the urinary tract;
- What is a catheter, position of the catheter in the bladder in relation to function;
- Hygiene and hand washing;
- Care of the drainage system and obtaining further supplies;
- How to set up a link system and care for a free-standing bag;
- Frequency of catheter and bag changes;
- Information on who will change their catheter;
- Avoiding constipation, fluid intake advice;
- How to recognise the onset of problems such as blockage and infection;
- How to deal with specific problems, where and when to seek further advice, date of re-catheterisation and who will do this;
- Contact numbers to access advice and support.

**Supply and reimbursement of catheter equipment**

Patients should be provided with catheter take home packs on discharge, to ensure that the patient can start at home immediately. Equipment may vary, but consists mostly of leg bags, night bags, straps/stockinet holder, bed holder and/or a catheter valve. In case of a supra-pubic catheter sometimes dressing supplies may be required if secretions soil clothing. Thereafter primary care will oversee the availability of further supplies in the community.

At HHFT, inpatient units/wards have access to supplies of home catheter packs with equipment which can be adapted to the needs of the patients and written information and contact numbers to access advice and support.

Refer to Appendix H for information leaflet for patients, relatives and carers.

### 20. Stakeholders Engaged During Consultation

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Date of Consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection Prevention and Control</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Health and Safety (Health and Safety Advisor)</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Safeguarding (Trust Safeguarding Lead)</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Information Governance (Information Governance Manager)</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Risk and Compliance Manager (Risk and Compliance)</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Divisional Directors and Divisional Directors (Operational)</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Head of Health4Work</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Infection Prevention and Control Committee</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Consultant Microbiologists</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Clinical Service Managers/Leads</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Operational Service Managers</td>
<td>29/09/2015</td>
</tr>
<tr>
<td>Urology Team (Lead Urology Clinical Nurse Specialist)</td>
<td>29/09/2015</td>
</tr>
</tbody>
</table>
21. **Training**

Individuals in the Trust whose roles extend to indwelling catheterisation and supra-pubic catheterisation should refer to the Trust Learning and Development policy and the Training Needs Analysis to comply with related training required in this policy.

Records of completion of yearly Self-assessment Competency Statement for Urethral Catheterisation and Urinary Catheter Care (form found in the HHFT Catheterisation Procedures) will be monitored by departmental managers during periodic staff appraisals.

22. **Monitoring Compliance with the Document**

<table>
<thead>
<tr>
<th>Minimum requirements</th>
<th>Requirement Reviewed by</th>
<th>Method of Monitoring</th>
<th>Frequency of Review</th>
<th>Monitoring Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor compliance with the policy</td>
<td>Infection Prevention &amp; Control Team</td>
<td>Audit of compliance with High Impact Intervention 6 Urinary catheter care bundle</td>
<td>Monthly</td>
<td>Infection Prevention &amp; Control Committee</td>
</tr>
<tr>
<td>RCA investigations of all incidents related to this policy resulting to Serious Incident Requiring Investigation (SIRI)</td>
<td>Infection Prevention &amp; Control Team</td>
<td>Datix incident reporting system</td>
<td>As and when required</td>
<td>Clinical Governance</td>
</tr>
</tbody>
</table>

23. **References**


Health Protection Agency (HPA) (2012) Diagnosis of UTI. Quick reference guide for primary care. Available at


Legislation

Guidance from other organisations


24. **Associated Documentation**

Aseptic technique policy  
Care of adult patients with a learning disability policy  
Cleaning, disinfection and sterilization policy  
Consent to examination or treatment policy  
Glove policy  
Hand hygiene policy  
HHFT Antimicrobial Guide  
HHFT Catheterisation Procedures  
HHFT The (Colorectal) Enhanced Recovery Programme Information for patients, relatives and carers  
Learning Development Policy  
Patient Falls Prevention Policy  
Standard Precautions Policy (Incorporating Personal Protective Equipment)  
Trust Reporting, Managing and Learning from Incident Policy  
Waste Management Policy  
Guidelines for Managing Potential Urinary Retention Following Total Joint Arthroplasty under Spinal Anaesthetic (2010)

25. **Contributors**

<table>
<thead>
<tr>
<th>Contributor Job Title</th>
<th>Contributor Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection Control Nurse</td>
<td>Sheryl Lucero</td>
</tr>
<tr>
<td>Urology Specialist Nurse</td>
<td>Sr. Roisin Hart</td>
</tr>
</tbody>
</table>
Appendix A – Equality Analysis Form

<table>
<thead>
<tr>
<th>Document Name: Insertion and Management of Urinary Catheters in Adults Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 1 – Policy Author to complete and forward on to an EA Lead for sign off</strong></td>
</tr>
<tr>
<td>1. Could the application of this document have a detrimental equality impact on individuals with any of the following protected characteristics? (See Note 1)</td>
</tr>
<tr>
<td>a. Age</td>
</tr>
<tr>
<td>b. Disability</td>
</tr>
<tr>
<td>c. Gender reassignment</td>
</tr>
<tr>
<td>d. Race</td>
</tr>
<tr>
<td>e. Religion or belief</td>
</tr>
<tr>
<td>f. Sex</td>
</tr>
<tr>
<td>g. Sexual orientation</td>
</tr>
<tr>
<td>h. Marriage &amp; civil partnership</td>
</tr>
<tr>
<td>i. Pregnancy and maternity</td>
</tr>
<tr>
<td>2. If ‘Yes’ to question 1, do you consider the detrimental impact to be valid, justifiable and lawful? If so, please explain your reasoning.</td>
</tr>
<tr>
<td>3. Specify with which, if any, individuals and groups you have consulted in reaching your decision.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Part 2 – Equality Analysis Lead to complete and forward back to the Policy Author</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide a brief summary of the potential impact of the policy and whether sufficient consideration has been given to the Equality Duty.</td>
</tr>
<tr>
<td>1. Is this document recommended for publication? Yes</td>
</tr>
<tr>
<td>If ‘yes’ go to question 3 if ‘No’ complete number 2 below.</td>
</tr>
<tr>
<td>2. This document is not recommended for publication because:</td>
</tr>
<tr>
<td>a. Amendments are suggested as follows:</td>
</tr>
<tr>
<td>b. A more detailed equality analysis should be undertaken as follows:</td>
</tr>
</tbody>
</table>
c. Other (please specify)

3. Specify with which, if any, individuals and groups you have consulted in reaching your decision.

Name: Steve Mullen      Job Title: Risk & Compliance Advisor     Date: 13 November 2015

Part 3 – Policy Author to complete on receipt of part 2 and before forwarding for final policy approval

1. I have reviewed the Part 2 assessment and have made the necessary amendments to the policy.
   If you have answered ‘no’, please explain why not

Name: Sheryl Lucero   Job Title: Infection Prevention & Control Nurse
Date: 13 November 2015

Note 1
Under the terms of the Equality Act 2010 public sector Equality Duty, the Trust has a legal responsibility to think about the following three aims of the Equality Duty as part of our decision making and policy development.

- Eliminate unlawful discrimination, harassment and victimisation;
- Advance equality of opportunity between people who share a protected characteristic and people who do not share it; and
- Foster good relations between people who share a protected characteristic and people who do not share it.
Appendix B – Flowchart on Indwelling urinary catheterisation

**Indwelling urinary catheterisation**

**Contraindications for urethral catheterisation**
- Suspicions of urethral trauma

**Indications for urethral catheterisation**
- Acute and chronic urinary retention
- Need for accurate measurements of urinary output in critically ill patients
- Pre-operative care for selected surgical procedures
- Patients undergoing urological surgery or other surgery on contiguous structures of the genitourinary tract
- Anticipated prolonged duration of surgery
- Need for intra-operative monitoring of urinary output
- Maintain a continuous outflow stoma for patients with voiding difficulties, as a result of neurological disorders that cause paralysis or loss of sensation affecting urination
- To assist in healing of open surgical or perineal wounds in incontinent patients
- To allow bladder irrigation/irrigation
- Patient requires prolonged immobilisation (e.g., potentially unstable thoracic or lumbar spine, multiple traumatic injuries such as pelvic fractures)
- To facilitate continence and maintain skin integrity (when conservative treatment methods have been unsuccessful)
- To improve comfort for end of life care if needed
- Management of intractable incontinence

**Long-term catheterisation**

**Short-term catheterisation**

**Advantages of supra-pubic catheterisation**
1. Less risk of urethral trauma, necrosis or catheter-induced uroliths
2. Reduced risk of catheter contamination with microorganisms commonly found in the bowel
3. Greater comfort, particularly for patients who are frail or bed-bound
4. Easier access to the entry site for cleaning and catheter change
5. More appropriate in respect to a person’s sexual activity
6. Can be clamped and the ability to void urethraly can be assessed prior to removal of the supra-pub catheter

**Limitations of supra-pubic catheters:**
1. Risk of bleeding and vesical injury
2. Leakage of urine via the urethra
3. Specialised training may be required for healthcare professionals and carers for the changing of a supra-pubic catheter
4. Patients with indwelling urine may require antibiotic therapy prior to initial insertion or routine catheter change
5. Patients on anticoagulant therapy will require their coagulation levels checking prior to insertion of a supra-pubic catheter

**Remove ASx unless for the following clinical indications:**
- A. Visible haematuria
- B. Urinary obstruction
- C. Urology surgery
- D. Grade 3-4 scar or perineal wound in an incontinent patient
- E. Input and output monitoring
- F. DNR/End of life care
- G. Physical constraints (e.g., unstable fracture)

**Indwelling time 14 days**

**Contraindications for supra-pubic catheterisation**
- Known or suspected carcinoma of the bladder
- Absence of an easily palpable or distended urinary bladder which can be localised using ultrasound
- Previous lower abdominal surgery (without prior consultation with urology team)
- Coagulopathy (until the abnormality is corrected)
- Acute pyelonephritis
- Prosthetic device in lower abdomen (e.g., hernia mesh)

**Indications for supra-pubic catheterisation**
- In addition to the indications of the urethral catheterisation, the following indications apply
- Acute and chronic urinary retention that is not able to be adequately drained with a urethral catheter
- Preferred by patient due to patient needs (e.g., wheelchair user, sexual issues)
- Acute pyelonephritis
- Obstruction, stenosis, abnormal urethral anatomy
- Pelvic trauma
- Complications of long-term urethral catheterisation
- When long-term catheterisation is used to manage incontinence
- Complex urethral or abdominal surgery
- Incontinent patients who are constantly soiling urethral catheter

**Long-term catheterisation can be necessary in:**
- Bladder outlet obstruction
- Chronic retention, where intermittent catheterisation is not possible
- Debilitated, paralysed or comatose patients in presence of skin breakdown and infected pressure ulcers - only as a last resort when alternative non-invasive approaches are unsatisfactory or unsuccessful
- Cases where a patient insists on this form of management after discussion of the risks
- Intractable incontinence where all other measures have been tried and proven to be ineffective
- Intractable urinary incontinence where catheterisation enhances the patient’s quality of life - only as a last resort when alternative non-invasive approaches are unsatisfactory or unsuccessful

**Short-term catheterisation is mostly used:**
- During surgical procedures and post-operative care
- For exact monitoring of urine output in acute illness
- For relief of acute or chronic urinary retention
- Instillation of medication directly in the bladder

**Remove ASx unless for the following clinical indications:**
- A. Visible haematuria
- B. Urinary obstruction
- C. Urology surgery
- D. Grade 3-4 scar or perineal wound in an incontinent patient
- E. Input and output monitoring
- F. DNR/End of life care
- G. Physical constraints (e.g., unstable fracture)

**Appendix B – Flowchart on Indwelling urinary catheterisation**

**Indwelling urinary catheterisation**

**Supra-pubic catheterisation**

**Contraindications for supra-pubic catheterisation**
- Known or suspected carcinoma of the bladder
- Absence of an easily palpable or distended urinary bladder which can be localised using ultrasound
- Previous lower abdominal surgery (without prior consultation with urology team)
- Coagulopathy (until the abnormality is corrected)
- Acute pyelonephritis
- Prosthetic device in lower abdomen (e.g., hernia mesh)

**Indications for supra-pubic catheterisation**
- In addition to the indications of the urethral catheterisation, the following indications apply
- Acute and chronic urinary retention that is not able to be adequately drained with a urethral catheter
- Preferred by patient due to patient needs (e.g., wheelchair user, sexual issues)
- Acute pyelonephritis
- Obstruction, stenosis, abnormal urethral anatomy
- Pelvic trauma
- Complications of long-term urethral catheterisation
- When long-term catheterisation is used to manage incontinence
- Complex urethral or abdominal surgery
- Incontinent patients who are constantly soiling urethral catheter
## Appendix C - Common problems related to equipment and how to manage them

<table>
<thead>
<tr>
<th>Observation</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty in emptying the drainage bag</td>
<td>Check whether there are other systems with different taps.</td>
</tr>
<tr>
<td>Inability to tolerate indwelling catheter due to urethral and/or bladder mucosal irritation impacting on patient’s self-image.</td>
<td>Use catheter support strap to prevent unnecessary pulling. Discuss use of anti-cholinergic with medical team. Consider use of 100% silicone catheter. Explain the need for and function of the catheter. Offer reassurance and support. Discuss alternative management options with the multi-disciplinary healthcare team.</td>
</tr>
<tr>
<td>Inadequate drainage of urine. Constipation may cause pressure on the drainage lumen that prevents the catheter from draining adequately, which can cause ureteric reflux and back pressure on the kidneys</td>
<td>Check the tube is not kinked. Ensure free flow of urine. Check the tubing is not blocked. If a three-way catheter is in place; commence irrigation. If a standard indwelling catheter is in use, see bladder washout. Maintaining regular bowel function with a high-fibre and high-fluid intake helps prevent constipation.</td>
</tr>
<tr>
<td>Over-full drainage bag</td>
<td>Empty the drainage bag Round the clock emptying of the drainage bag. Ensure drainage bag is supported/stabilised correctly. Advise the patient/carer regarding stabilisation devices.</td>
</tr>
<tr>
<td>Leakage of urine around the catheter (bypassing) which may be due to bladder irritation, irritation from the catheter balloon, incorrect side of catheter, or constipation</td>
<td>Ensure the catheter/drainage system is well supported. Discuss use of anti-cholinergic therapy with medical team. Ensure a 10 ml balloon catheter has been used for standard drainage. Replace with the correct size; usually 2Ch smaller.</td>
</tr>
<tr>
<td>Incorrect positioning of the drainage bag above the level of the bladder</td>
<td>Teach patient to regularly check the position of the drainage bag.</td>
</tr>
<tr>
<td>No flow urine</td>
<td>Check if catheter may be blocked- Lower the drainage system to aid gravity to see if urine then flows. Make sure that the catheter and drainage tubing are not kinked or trapped. Check whether the drainage bag is full. Check whether the catheter is still in the bladder- Check if the balloon is visible; if the patient experiences any pain. If so, remove the catheter after deflating the balloon. Check whether there was a sufficient fluid intake.</td>
</tr>
<tr>
<td>Migration (when the catheter tube ‘migrates’ from its intended position)</td>
<td>The use of a securement device reduces both the physical and psychological trauma to the patient.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Issue</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point of stabilisation and dislodgement leading to urethral trauma, inflammation and UTI</td>
<td><strong>Patient</strong> by decreasing the need for reinsertion.</td>
</tr>
<tr>
<td>Catheter falls out- may be due to incorrect filling of the balloon; incorrect fixation of a balloon free catheter; catheter balloon may have deflated; accidental trauma.</td>
<td><strong>Check whether the amount of water in the balloon was sufficient.</strong>&lt;br&gt;<strong>Check fixation of the catheter.</strong>&lt;br&gt;<strong>Catheter needs to be replaced as soon as possible as the supra-pubic tract may close. Contact urology specialist team or healthcare professional who is competent to re-insert a new catheter.</strong></td>
</tr>
<tr>
<td>Incorrect positioning of tubing</td>
<td><strong>Should be correctly positioned and secured to allow free drainage and patient mobility.</strong></td>
</tr>
<tr>
<td>Clothing problem</td>
<td><strong>There are different clothes on the market such as underwear for people with catheter.</strong>&lt;br&gt;<strong>Keywords such as ‘bathing suits with bags for a drainage bag’ can be used when searching for products on different websites.</strong></td>
</tr>
<tr>
<td>Occlusion of catheter lumen by tight clothing</td>
<td><strong>Teach patients about occlusion by tight clothing. See above.</strong></td>
</tr>
<tr>
<td>Catheter straps occluding the non-return valve of the drainage bag</td>
<td><strong>Try different straps or catheter support products (e.g. leg pockets to support drainage bag).</strong></td>
</tr>
<tr>
<td>Kinking of catheter tube</td>
<td><strong>Try to un-kink the tubes.</strong>&lt;br&gt;<strong>Check the positioning of the drainage bag.</strong></td>
</tr>
<tr>
<td>Change in odour or colour of urine</td>
<td><strong>Inform patient of possible reasons for odour/colour change. Change in odour may be caused by urinary tract infection but this is not a reliable indicator of bacteriuria or infection.</strong></td>
</tr>
</tbody>
</table>
### Appendix D - Catheter complications, causes, and prevention and treatment

<table>
<thead>
<tr>
<th>Catheter Complications</th>
<th>Causes</th>
<th>Prevention and Treatment</th>
</tr>
</thead>
</table>
| **CAUTI**               | • Extra-luminal contamination may occur when the catheter is inserted using poor aseptic technique or later by micro-organisms ascending from the perineum through capillary action.  
                          • Intra-luminal contamination occurs when there is a break in the closed sterile drainage system and contamination of the urine drainage bag.  
                          • Prolonged urinary catheterisation.                                       | • Patients who have a long term catheter and symptomatic of a UTI may benefit from replacement of the catheter if they require treatment with antibiotics as it may yield greater and faster clinical improvement.  
                          • Only patients with symptomatic positive urinalysis should receive treatment. See Appendix F flowchart for diagnosis and management of CAUTI.  
                          • Anti-microbial therapy is not required in asymptomatic individuals.  
                          • Consider supra-pubic catheters which are less prone to cause symptomatic infection compared to urethral catheterisation and are preferable in appropriate patients.  
                          • Adherence to aseptic technique during insertion of the catheter and good catheter care - see catheter care /maintenance. |
| **Epididymitis**        | Epididymitis is an inflammation of the epididymis usually due to common urinary pathogens.                                    | See above.                                                                                                                                                 |
| **Catheter blockage**   | **Catheter encrustation**  
                          Encrustation is a result of bacteria in the urine, most commonly ‘Proteus’ (P. mirabilis) that produce an enzyme called urease which splits urinary urea into ammonia and carbon dioxide. As a result there is an increase in alkalinity, providing ideal conditions for the development of crystals, e.g. struvite (magnesium ammonium phosphate) and calcium phosphate. The crystals develop around the eyelets, balloon and internal lumen of the catheter.  
                          **Debris**  
                          Debris is caused by urothelial cells from the bladder or tumours shedding cells, blood from infection, disease, urological surgery or trauma or from mucus.  
                          **Biofilm**  
                          Biofilm is a thin layer of micro-organisms adhering to the surface of a structure, which may be organic or inorganic, together with the polymers that they secrete. | • Oral fluid is the recommended treatment to prevent catheter blockage. Routine bladder washouts or instillations are not recommended as a preventative measure but the occasional washout maybe necessary when a blockage occurs and were oral fluids alone are not be sufficient.  
                          • Assessing the appropriate catheter is essential and selected on an individual basis. Larger catheter lumens also reduce blockage. Silicone catheters appear to be affected by blockage less often than other catheters, which may be explained by the larger lumen, but the material may also be a contributing factor. |
| **Catheter bypassing**  | Catheter bypassing may occur as a consequence of various aetiologies including catheter blockage, bladder spasm,  
<pre><code>                      | In itself catheter bypassing is not a diagnosis but rather a symptom, treatment of which should be aimed at the underlying cause. |
</code></pre>
<table>
<thead>
<tr>
<th>Trauma</th>
<th><strong>Urethral mucosal trauma</strong></th>
<th><strong>Visceral injury</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>constipation, pulling on the catheter or too large or small a diameter of the catheter.</td>
<td>Incorrect size or positioning of catheter. Poor insertion technique.</td>
<td>Trauma during urethral catheterisation which results in the formation of a false passage, usually at the level of the prostate or bladder neck. Usually associated with supra-pubic catheterisation. Visceral trauma is more common amongst patients with previous lower abdominal surgery and in those with neurological disease.</td>
</tr>
<tr>
<td><strong>Haematuria</strong></td>
<td>Haematuria may occur following catheterisation and is usually self-limiting. During urethral catheterisation, prostatic trauma may be the underlying cause, although decompression of high pressure chronic retention may also result in haematuria.</td>
<td>If such haematuria fails to settle, irrigation through a 3-way catheter may be required or in more severe cases, formal bladder washout under general anaesthesia may be necessary. Haematuria following supra-pubic catheterisation may be resolved by irrigation through the SPC or via an additional urethral catheter.</td>
</tr>
<tr>
<td><strong>Granuloma formation</strong></td>
<td>This complication is limited to supra-pubic catheterisation.</td>
<td>May require application of silver nitrate in the vast majority of cases. Rarely, if this is ineffective, surgical excision of the granuloma may be required with or without re-siting the SPC.</td>
</tr>
<tr>
<td><strong>Urinary extravasation</strong></td>
<td>Although almost exclusively related to supra-pubic catheterisation, it is possible to cause bladder rupture with resultant urinary extravasation when catheterising with the aid of a catheter introducer.</td>
<td>This procedure should only be carried out by an experienced urology medical practitioner. A free draining catheter and antibiotic therapy will usually resolve the situation but occasionally a radiological inserted drain may be required, or even, in the case of bladder rupture as a consequence of an introducer, laparotomy and primary bladder repair may be necessary.</td>
</tr>
<tr>
<td><strong>Inability to remove catheter</strong></td>
<td>This may be as a consequence of balloon calcific encrustation or a faulty deflation mechanism.</td>
<td>Do not cut the catheter below the bifurcation as although this may result in deflation and allow catheter removal, it can fail and if not secured, the catheter may be syphoned into the bladder which may require an ultrasound guided trans-abdominal balloon puncture and cystoscopy. Cutting the catheter will invalidate product liability. If this occurs, perform a cystoscopy to ensure all balloon fragments are removed in order to avoid the potential consequence of calcification around the remaining foreign body with resultant bladder calculus formation. If unable to remove an SPC, utilise a flexible cystoscope and attempt balloon perforation with a metal guide wire of fine gauge needle. Evacuation of all catheter matter is essential.</td>
</tr>
</tbody>
</table>

Catheter the catheter support and apply or re-apply as necessary. Re-catheterise the patient using correct size catheter.
### Appendix E - Potential problems during and following catheter removal

<table>
<thead>
<tr>
<th>Problems during catheter removal</th>
<th>Cause</th>
<th>Suggested action/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Unable to deflate balloon.</td>
<td>Damaged or faulty valve on the inflation/deflation arm of the catheter</td>
<td>Check the valve for evidence of damage. Try adding 2-3 ml of sterile water into inflation channel to dislodge blockage. If unsuccessful, use a syringe and needle to aspirate the fluid from the inflation arm (above the valve).</td>
</tr>
<tr>
<td></td>
<td>Channel obstruction</td>
<td>Attach syringe to the inflation arm and leave in place for 20-40 minutes. The effect of gravity will help with the deflation process. Squeeze the visible tubing to try and displace crystal formation in the inflation channel. If the above are unsuccessful, refer to the medical team as the balloon may need to be punctured supra-pubically using a needle under ultrasound visualisation. Following catheter removal, the balloon should be inspected to ensure it is intact and that there are no fragments left in the bladder.</td>
</tr>
<tr>
<td>2. Wrinkling of balloon following deflation resulting in formation of a “cuff”.</td>
<td>Balloon unable to return to pre-inflation shape resulting in formation of a ridge</td>
<td>Withdraw catheter gently on deflation of balloon. If resistance is experienced, stop the procedure. Using a syringe, re-insert 1-2 ml of saline back into the balloon. This action will prevent formation of a “cuff”. Withdrawal of the catheter should now be easier and patient discomfort and potential urethral trauma will be reduced.</td>
</tr>
<tr>
<td>3. Pain</td>
<td>Balloon cuffing (as above) or sensitivity experienced at the bladder neck or within the urethra from the catheter</td>
<td>Good patient preparation and support throughout the procedure is essential so that the patient is relaxed and fully aware of what to expect. Inserting anaesthetic (lignocaine/lidocaine) gel into the drainage port of the catheter 3-5 minutes prior to the removal can reduce sensitivity at the bladder neck. It should be noted that no more than 2-3 ml will need to be used as this volume will remain within the catheter.</td>
</tr>
</tbody>
</table>

**Note:** If you experience any product failure or difficulties, it is important that the manufacturer is contacted and informed of a problem. Any incident related to product failure or difficulties should be reported on Datix.
<table>
<thead>
<tr>
<th>Problems following catheter removal</th>
<th>Cause</th>
<th>Suggested action/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Frequency and dysuria</td>
<td>Inflammation of the urethral mucosa</td>
<td>Ensure a fluid intake of 2-3 litres per day (30mg/kg/day). Advise the patient that frequency and dysuria is common but will usually be resolved once micturition has occurred at least three times. Inform medical staff if problem persists.</td>
</tr>
<tr>
<td>2. Retention of urine</td>
<td>Inability of the bladder to empty. Patient anxiety</td>
<td>Encourage the patient to increase fluid intake. Offer the patient a warm bath to promote relaxation. If unsuccessful, perform palpation of the bladder or a bladder scan and inform medical staff if the problem persists as the patient may require re-catheterisation.</td>
</tr>
<tr>
<td>3. Bacteriuria/urinary tract infection</td>
<td>Resulting in frequency and dysuria</td>
<td>Encourage a fluid intake of 2-3 litres a day to promote flushing of the bladder. Collect an MSU if symptoms persist and inform medical staff.</td>
</tr>
<tr>
<td>4. Small amounts of blood at the start, throughout or at the end of the patient’s urine stream</td>
<td>Minor damage of tissue in urethra</td>
<td>Encourage the patient to increase fluid intake. Reassure patient that the condition is harmless. Inform patients of signs of UTI.</td>
</tr>
<tr>
<td>5. The urge to urinate and not get to the container or bathroom in time.</td>
<td></td>
<td>Explain to the patient this resolves mostly within the first 24 - 48 hours. If not, urinary culture to exclude UTI.</td>
</tr>
<tr>
<td>6. Dribbling. This problem should subside within several days.</td>
<td></td>
<td>Give patient pads. Teach patient pelvic floor exercises. Explain that this is mostly a short-term complication as a result of the catheter.</td>
</tr>
</tbody>
</table>
Appendix F - Flowchart for diagnosis and management of CAUTI

Does the patient have two or more (new or worsening) signs and symptoms compatible with UTI? 
(e.g. haematuria, supra-pubic tenderness, frequency of urination, dysuria, urgency and polyuria, fever, rigors, confusion, malaise or lethargy, flank pain)

Does the patient have an indwelling catheter?

No

No further action.

Yes

Refer patient to medical team for review.

Consider seeking advice from consultant microbiologist.

Refer to HHFT Anti-microbial Guide if treatment is required.

Did the patient have an indwelling catheter in the previous 48 hours?

No

No

Collect CSU sample.

Review need for catheter and remove if possible.

Re-send MSU after removal of catheter.

Yes

Collect MSU sample.

Significant growth of at least $10^9$ colony forming units (CFU) of one or more bacterial species in a catheter specimen of urine (CSU) or mid-stream catch urine (MSU)

CAUTI

Has the patient been in hospital for > 48 hours?

Yes

Healthcare-acquired CAUTI

No

Community-acquired CAUTI
### Appendix G - Possible colour and odour changes in urine due to food or medication

<table>
<thead>
<tr>
<th>Medication</th>
<th>Colour or odour of urine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptyline</td>
<td>Blue-green</td>
</tr>
<tr>
<td>Anthraquinones</td>
<td>Red-brown (in alkaline urine)</td>
</tr>
<tr>
<td>Antibiotics (not all)</td>
<td>Offensive smell</td>
</tr>
<tr>
<td>Chloroquine</td>
<td>Rusty brown, yellow</td>
</tr>
<tr>
<td>Danthron</td>
<td>Orange</td>
</tr>
<tr>
<td>Ferrous salts</td>
<td>Black</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>Red</td>
</tr>
<tr>
<td>Indomethacin</td>
<td>Green</td>
</tr>
<tr>
<td>Levodopa</td>
<td>Darkens</td>
</tr>
<tr>
<td>Methylene</td>
<td>Darkens (red-black on standing)</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>Red to brown</td>
</tr>
<tr>
<td>Nitrofurantoin</td>
<td>Pink (alkaline)</td>
</tr>
<tr>
<td>Phenothiazines</td>
<td>Pink to red-brown</td>
</tr>
<tr>
<td>Rifampicin</td>
<td>Red to brown</td>
</tr>
<tr>
<td>Senna</td>
<td>Yellow-brown (acid urine); yellow-pink (alkaline urine) darkens on standing</td>
</tr>
<tr>
<td>Sulphonamides</td>
<td>Greenish blue</td>
</tr>
<tr>
<td>Triamterene</td>
<td>Blue</td>
</tr>
<tr>
<td>Uropyrine</td>
<td>Orange</td>
</tr>
<tr>
<td>Vitamin B Complex</td>
<td>Dark yellow</td>
</tr>
<tr>
<td>Warfarin</td>
<td>Orange</td>
</tr>
</tbody>
</table>

**Caused by food and drink**

<table>
<thead>
<tr>
<th>Food</th>
<th>Colour or odour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Green colour and offensive smell (not in all patients)</td>
</tr>
<tr>
<td>Beetroot</td>
<td>Pink to dark red</td>
</tr>
<tr>
<td>Red fruit drinks</td>
<td>Pink to dark red</td>
</tr>
<tr>
<td>Oily fish</td>
<td>Fishy</td>
</tr>
<tr>
<td>Total parenteral nutrition</td>
<td>Offensive</td>
</tr>
</tbody>
</table>

Certain food smells appear to pass through into the urine e.g. onions, garlic, some spices.

---

**Purple urine bag syndrome (PUBS)**

Purple urine bag syndrome is a rare condition and is characterised by a purple discolouration of the urine bag, appliances and various catheter tubing. The urine itself may be dark in colour and not necessarily purple. The condition appears to have a significantly higher incidence in women and chronically debilitated patients with long-term indwelling urinary catheters. The major risk factors for PUBS are female gender, severe constipation, chronic indwelling urinary catheterisation and increased tryptophan dietary content.

The purple colour is caused by the metabolism of tryptophan by bacteria to indole (an organic compound produced by bacteria) and later converted to indican in the liver. Indican passes through the kidney giving urine a purple/ blue/grey colour. Although studies have shown certain factors may be present, these factors are not found consistently. PUBS are generally found to be harmless but there have been case reports describing PUBS progressing to Fournier’s gangrene. The discolouration of the urine and the urine bag can be distressing for patient, family and healthcare workers therefore they should be educated to manage this syndrome. The incidence is reduced by avoiding constipation and proper care of the urinary catheter.

Appendix H- Patient information leaflet for patients, relatives and carers

Infection Prevention and Control Team

Having a urinary catheter

Information for patients, relatives and carers

This information leaflet has been provided to help answer some of the questions you may have about having a urinary catheter and its care.
Why do I need a urinary catheter?
Waste products from the body are filtered from the blood in the kidneys to produce urine. Urine is stored in the bladder. When there is about 400mls (less than one pint) of urine in the bladder, the bladder must be emptied to avoid discomfort.

Some people may not be able to pass urine voluntarily and require a urinary catheter to be inserted. The reason for this may include:

- Inability to empty the bladder due to an enlarged prostate or urethral stricture (narrowing of your water pipe)
- Spinal injuries involving damage to the nerves which supply the bladder
- Failure of bladder muscle to expel urine
- Difficulty controlling urine
- Following surgical procedures
- A condition present at birth.

If urine is left in the bladder for too long, the bladder may become overstretched and not work properly, leading to infection, formation of kidney stones, and potential kidney damage.

Are there different types of urinary catheters?
Yes. An indwelling urinary catheter is a thin, soft, hollow tube which may be passed through the urethra (opening where urine normally passes through during normal urination) and into the bladder. This allows the bladder to be emptied artificially. It is held in place inside the bladder by a small balloon which is filled with sterile water.

Please note that the risk of infection from urinary catheters is related to the length of time the tube stays inside the bladder. The longer the tube stays inside the bladder, the higher the risk of potential infection.

For this reason, we may insert an intermittent catheter to empty the bladder artificially. This type of catheter is also a thin, hollow tube, but does not have a balloon to hold it in place inside the bladder. Once the bladder has been emptied using an intermittent catheter, the tube can be removed and disposed of.

Intermittent catheters carry less risk of urinary tract infection (UTI) compared to indwelling catheters because they are not left in the bladder for a long period of time. Where possible, we will use an intermittent catheter instead of an indwelling catheter. Your doctor or nurse will discuss this with you.

Where it may not be technically possible, or when there are reasons why passing a catheter through the urethra may not be recommended, the catheter may be passed through a small incision made on the abdomen (tummy, or area above the pubic bone) and into the bladder. This is called a supra-pubic catheter.

The healthcare professional in charge of your care will discuss these options with you based on your situation.
How will the catheter be inserted?

An indwelling urinary catheter or intermittent catheter which is passed through the urethra may be inserted by a nurse or doctor, or a clinical healthcare assistant who is skilled and competent to do this procedure.

Similarly, inserting a supra-pubic catheter may be done by a skilled and competent healthcare professional, usually a specialist urology doctor or a specialist nurse practitioner. It will be done under local anaesthesia, where you will be awake but will experience some discomfort.

We may use an ultrasound machine to help us guide the catheter tube correctly into your bladder.

Your healthcare professional will discuss the options with you and make sure you understand the risks and benefits of having the procedure done. He/she will recommend the length of time that you should use the catheter.

The type of catheter and drainage collection bag will depend upon your specific circumstances. Your healthcare professional will be happy to answer any questions which you may have for you to make an informed decision and consent to having the procedure done.

When you have consented to have the catheter inserted, your healthcare professional will ensure that you are positioned comfortably for the procedure.

When inserting an indwelling catheter into the urethra, he/she will apply either an anaesthetic gel or a water-based lubricant into the urethra to help minimize any trauma or discomfort when inserting the catheter. Some intermittent catheters are already lubricated and may not require the use of anaesthetic gel or water-based lubricant. Your healthcare professional will make this assessment and discuss with you the option to use anaesthetic gel or water-based lubricant if required.

If we have used an intermittent catheter, we will remove it as soon as the bladder has been emptied. However, if you have either an indwelling or supra-pubic catheter where the catheter is inserted inside the bladder, the catheter tube will be attached into a drainage collection bag. We will secure the tube to your thigh using a supportive adhesive strap to prevent any pulling of the tube when you move about.

Are there any risks associated with the insertion of an indwelling catheter?

It is always helpful to let the healthcare professional know if you have had a catheter before and if there were any particular difficulties or problems which you may have encountered.

Insertion of a supra-pubic catheter where the catheter is passed through a small incision (cut) made on the abdomen (tummy, or area above the pubic bone) and into the bladder is a safe procedure done under local anaesthesia. You will be awake but may experience some discomfort during the insertion.
Inserting an **indwelling catheter** or an **intermittent catheter** is usually a safe procedure. However, there may be a risk that any of the following may occur during insertion of the catheter:

- Sometimes there may be difficulties in inserting the catheter tube. If this happens, the healthcare professional doing the procedure may apply more anaesthetic gel to further open and lubricate the urethra to ease the passing of the tube.
- In men, there may be some difficulty in passing the catheter tube when the muscle surrounding the urethra tightens up. Straining gently as if you are passing urine, or coughing when asked may help relax this muscle and ease the passing of the tube into the urethra. The healthcare professional will give you instructions to do this if necessary.
- Occasionally, in men, the tightening of the muscle surrounding the urethra, a false passage, or an enlarged prostate may cause a difficulty in inserting the catheter. The specialist practitioner inserting the catheter may use a curved tipped catheter to be able to pass the catheter into the bladder.

**How should my catheter be looked after?**

The healthcare staff looking after you will review your need for the catheter daily and talk to you about removing it as soon as you no longer need it. A silicone catheter may stay inside the bladder for as long as 12 weeks, while a PTFE (polytetrafluroethylene)-coated latex catheter may stay inside the bladder for only up to four weeks.

The most common problem when using a catheter is urinary tract infection because of the bacteria entering the bladder from the catheter, or around it. The risk of infection increases the longer the catheter stays in place.

**Good hygiene:**

- Everybody should wash their hands and wear gloves and a plastic apron when dealing with your catheter.
- Routine daily personal hygiene using soap and water is sufficient to maintain cleanliness around the urethra where the catheter is inserted. Men who are not circumcised should pay particular attention to cleaning underneath the foreskin daily to prevent any infection. After washing, place the foreskin back into its usual position.
- Women should always wash from front to back in order to prevent contamination from the back passage into the area where the catheter is inserted.

You must contact your healthcare professional if you notice any discharge from where the catheter enters the body, whether the discharge is discoloured or has a smell.

**Catheter valve**

Depending on your condition, your healthcare professional may discuss the option to have a catheter valve instead of a urine drainage bag. If suitable for your condition, a special valve will be attached to the catheter and may be turned OFF (closed) to allow your bladder to fill up, then turned ON (opened) to empty your bladder when you feel the urge to pass urine. Catheter valves are particularly beneficial as they help maintain bladder capacity (your bladder’s ability to hold normal amounts of urine) and they reduce the need for a leg bag. If you have a catheter valve, it should be changed every five to seven days.
Catheter drainage bags
Depending on your needs and condition, you may either have a leg bag which can hold 350mls, 500mls or 750mls of urine or a two litre drainage bag attached to your catheter. Both types of bags can last up to seven days before needing to be replaced.

If you have a leg bag, we may attach a night bag (which can usually hold up to two litres) to the leg bag in the evening for overnight use or when there is a need to increase the drainage capacity of the leg bag to ensure free flow of urine. Night bags should be non-drainable and therefore disposed of and replaced each night or after use.

A night bag can also be attached to a catheter valve. Once it is connected, it is important to make sure that the valve is in the open position (turned ON) to allow drainage of urine into the night bag.

At home, used drainage bags should be wrapped in newspaper or placed in a plastic bag before being disposed with your normal household waste.

Please note that catheter drainage bags must not be flushed down the toilet.

Position of the collection drainage bag:
The catheter tube must be positioned below the level of your bladder and must not be touching the floor to avoid contamination of the drainage bag.

Fluid intake
Unless advised otherwise by your doctor, we advise that you drink plenty of fluids to prevent your urine from becoming concentrated. You should aim to drink enough fluids to keep your urine a pale yellow colour.

You may have heard or read that cranberry juice can help to prevent urinary tract infection. However, we advise against drinking it if you are prone to developing urine acid stones or calculi, or if you are taking medications which may cause thinning of the blood.

You should remain comfortable and pain-free while you have the catheter. If you experience any discomfort, discharge, or leakage, you must tell the nurse or doctor in charge of your care.

Sexual activity with a catheter
It is possible to have sex while wearing a catheter. It is important to wash the area around the catheter before and after having sex.

If you are a man with a urethral catheter, you should fold the catheter tube along the side of your penis and use a condom to hold it in place while you are having sex.

If you are a woman with a urethral catheter, you can use surgical tape to secure the catheter onto your stomach while you are having sex.

Please note that if you normally use lubricants (such as K-Y®Jelly) during sex, please do not use Vaseline® as this can damage the surface of the catheter.
Frequently asked questions

Can I bathe/ shower?
Yes. You can take a bath or shower every day, leaving your catheter attached to the drainage collection bag in place. When bathing or showering, wash the catheter using downward strokes away from the body and then wash the area where the catheter enters the body.

What if my catheter falls out?
You must let the nurse or doctor looking after you know that your catheter has fallen out. He/she will see if the catheter needs replacing and arrange for the catheter to be replaced if necessary.

How would I know if I have developed a urinary tract infection?
You may experience one or more of the following symptoms:

- Lower abdominal (tummy) pain or back pain
- Unpleasant smelling urine
- Discoloured urine/ blood-stained urine
- Fever-type symptoms.

Antibiotics are not routinely prescribed for urinary tract infections. Your doctor will examine you and take a sample of your urine for testing prior to deciding whether you may require antibiotics or not.

If you have any queries or concerns about your condition, please do not hesitate to speak to the nurses and doctors looking after you.

Infection Prevention and Control Team

- Andover War Memorial Hospital
  Telephone: 01962 825156

- Basingstoke and North Hampshire Hospital
  Telephone: 01256 486774

- Royal Hampshire County Hospital
  Telephone: 01962 825156

www.hampshirehospitals.nhs.uk

Infection Prevention and Control Team
April, 2013; July, 2015
Review July, 2017
FCS/030/2013/VER2
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Appendix I - Urinary Catheter Assessment and Monitoring (UCAM) Form (PDF copy can be printed off from Trust intranet)

Patient Name __________________________
DOB __________________________
MRN __________________________
NHS Number __________________________
Ward/Area __________________________

<table>
<thead>
<tr>
<th>Catheter Information</th>
<th>Procedure fully explained and understood by patient?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catheter type:</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Silicone</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Simplastic</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>2-way</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>3-way</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Balloon size</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>ml sterile water</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Catheter size</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

| Date of insertion: | Yes | No |
| Time: | Yes | No |
| Place of insertion: | Yes | No |
| Ward | Yes | No |
| Community | Yes | No |
| Insertion route: | Yes | No |
| Urethral | Yes | No |
| Supra-pubic | Yes | No |
| Duration | Yes | No |
| Short-term (<14 days) | Yes | No |
| Long-term (up to 12 weeks) | Yes | No |
| Planned date of removal (TWOC)/change: | Yes | No |
| Clinical indication: | Yes | No |
| Acute | Yes | No |
| Chronic retention | Yes | No |
| Urology procedures/investigations (Haematuria/Oclusions) | Yes | No |
| Grade 3-4 sacral/perineal wounds in incontinent patients | Yes | No |
| Acute episode / input & output monitoring | Yes | No |
| End of life care | Yes | No |
| Physical constraints (e.g. unstable fracture/spinal injury) | Yes | No |
| Other (Specify): | Yes | No |

| Date of removal: | Yes | No |
| Time: | Yes | No |
| Removal of catheter | Yes | No |
| The risk of infection increases with the duration of catheterisation. | Yes | No |
| Any issues identified? (e.g., Was the catheter tip and balloon intact? Signs and symptoms of infection?) | Yes | No |

| Date & Time | Yes | No |
| Review patient | Yes | No |
| TWOC, a day | Yes | No |
| Catheter still required? | Yes | No |
| (If Not, review ASAP) | Yes | No |
| Continuing Clinical indication (See A-G* above) | Yes | No |
| Personal hygiene performed? | Yes | No |
| (If catheter not changed, ensure patient washes hands before and after) | Yes | No |
| Catheter tube secured safely to the leg? | Yes | No |
| Drainage bag positioned above the floor & below bladder level? | Yes | No |
| Drainage bag labelled & in date? | Yes | No |
| (Check every 7 days under continuous infusion) | Yes | No |
| Catheter & drainage tube connection maintained? | Yes | No |
| Drainage bag not more than 3/4 full? | Yes | No |
| Specify any problems identified, interventions & outcomes (e.g., bladder wash out, Measure, Repeat) | Yes | No |

Insert by: Print Name __________________________
Signature __________________________
Job title __________________________

Removed by: Print Name __________________________
Signature __________________________
Job title __________________________

Page 39 of 40
<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Review patient TWICE a day</th>
<th>Catheter still required? Yes / No</th>
<th>Continuing Clinical indication (See A-G * below)</th>
<th>Personal hygiene performed? Yes / No</th>
<th>Catheter tube secured safely to the leg? Yes / No</th>
<th>Drainage bag labelled &amp; in date? (Change every 2 days unless catheter indwelling) Yes / No</th>
<th>Catheter &amp; drainage tube connection maintained? Yes / No</th>
<th>Drainage bag no more than 3/4 full? Yes / No</th>
<th>Specify any problems identified, interventions &amp; outcomes (e.g. Melder without bladder drainage)</th>
<th>PRINT name and job title</th>
<th>Signature</th>
</tr>
</thead>
</table>

A. Visible haematuria  
B. Urinary obstructions  
C. Urology surgery & procedures/investigations  
D. Grade 3-4 sacral or perineal wounds in incontinent patients  
E. Input and output monitoring  
F. End of life care  
G. Physical constraints (e.g. unstable fracture/injury)  

* Indicate as LT (long-term) if catheter required for >14 days.

All-silicone catheters have an indwell time of 12 weeks. Check the date when catheter is due to be changed.