

TRUST WIDE/DIVISIONAL DOCUMENT

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LEAD EXECUTIVE DIRECTOR DGM	Director of Infection Prevention & Control
AUTHOR(S): Note should <u>not</u> include names	The Infection Prevention Team/ Bladder and Bowel Service

TARGET AUDIENCE:	All staff dealing with urinary catheters
DOCUMENT PURPOSE:	This policy set out standards and guidance relating to urinary catheterisation in adults and catheter care for the organisation and practitioners employed within the Trust.
To be read in conjunction with (identify which internal documents)	<p>IC01 Hand hygiene policy IC 02 Spillage policy IC 18 Standard precautions policy IC 24 ANTT policy Royal Marsden Manual of Clinical Nursing Procedures 9th Edition Trial without indwelling urinary catheter (TWOC) Guidance for Community Nurses C014 V3.7 Consent Policy SOP017 SOP for measuring adult fluid status</p>

	Clinical care bundles C013 V5.2 Clinical Records Policy
SUPPORTING REFERENCES	See appendix 7

CONSULTATION		
	Committee/Group	Date
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1. Purpose of this Policy/Procedure

The purpose of this policy is to ensure the Trust meets strategic and clinical best practice standards in delivering direct patient care to patient with or who require urinary catheters / catheterisation

2. Scope

This policy applies to all Trust staff directly or indirectly involved with urinary catheterisation / catheters.

3. Definitions / Glossary

A urethral catheter is a hollow tube inserted into the urinary bladder via the urethra, for the purpose of draining urine or instilling fluids as part of medical treatment.

A supra-pubic catheter is a hollow tube inserted into an artificial tract in the abdominal wall, just above the pubic bone and into the dome of the urinary bladder for the purpose of draining urine or instilling fluids as part of medical treatment.

4. Ownership and Responsibilities

4.1. Role of Divisional Management Teams

Divisional Management Teams (Divisional Director, Divisional General Manager and Divisional/Deputy Directors of Nursing) are responsible for ensuring their clinical workforce is capable to deliver the requirements of this policy and do so. Monitoring mechanisms should be in place (high impact intervention number 6 urinary catheter care) to monitor practice in order to drive high quality patient care and experience.

4.2. Role of Ward and Department Sisters and Charge Nurses

Ward Sisters and Charge Nurses are responsible for ensuring local adherence to this policy. All effort should be made that the workforce are capable to deliver the requirements of this policy.

4.3. Role of Individual Clinical Staff Members

Each individual clinical staff member is responsible to ensure they comply with this Trust Policy. It is the responsibility of all registered health care practitioners undertaking urinary catheterisation to be confident and competent in doing so. The registered health care practitioner must take into consideration:

- Their professional body's code of conduct
- Relevant Trust Policies
- Individuals are responsible for identifying their learning and development needs. These needs are then raised at their annual appraisal.

4.4 Education & Training

There are 2 in-house courses on the learning hub.

- Male catheterisation for community staff
- Male catheterisation for hospital staff.

These are face to face taught sessions with supervised practice and competency to be gained in clinical practice. Records of attendance are held centrally on the Learning hub.

All Students (nursing and medical) should undertake this skill in clinical practice and this should be under direct supervision from a competent practitioner.

4.5 Role of the Bladder and Bowel Service

The Bladder and Bowel Service provides a specialist service, which offers professional advice, guidance and information to community patients on the promotion and management of continence; and facilitates best practice in continence care for faecal and urinary incontinence, including enuresis, and related bladder and bowel problems for children and adults.

For further information contact:

Bladder and Bowel Service
Accrington Victoria Community Hospital,
Haywood Road, Accrington, BB5 6AS
Telephone 01254 359129
bladderandbowelservice@elht.nhs.uk

5. Standards and Practice

Good Practice Statement

Only use indwelling urinary catheters after alternative methods of management have been considered e.g. intermittent catheterisation (Loveday et al 2014). The registered health care practitioner (HCP) should consider alternative measures to avoid urinary catheterisation where possible and understand the high level of risk associated with short and long-term catheterisation.

The patient's clinical need for catheterisation should be reviewed daily and the urinary catheter removed as soon as possible. The need for catheterisation, as well as details about insertion, changes and care should be documented on the Catheter Tracking Tool. (Appendix 1)

Indwelling urinary catheterisation is not a substitute for nursing care of the patient with urinary incontinence.

6. Decision to Catheterise

The competent HCP can make a clinical decision to undertake an initial urethral catheterisation providing the appropriate training has been completed. Initial suprapubic catheterisation will be performed by medical staff. Ideally, indwelling catheterisation should be performed following discussion with the patient's general practitioner (GP) or hospital doctor. If this is not possible, the GP or hospital doctor should be informed that the patient has been catheterised in order that medical decisions regarding subsequent treatment/care can be made.

Wherever possible, intermittent (self) catheterisation should be the preferred alternative. However, if it is determined that this is unacceptable or unsafe, then indwelling catheterisation might be considered as the next best option.

6.1. The indications for catheterisation include:

Protection/Drainage – e.g. prostatic hyperplasia; chronic retention; hypotonic bladder; pre & post-operative surgery; & epidural; end of life comfort; sacral/perineal wounds (stage 3 or 4)

Acute care – acute urinary retention; urine output monitoring in critical illness

Investigations – e.g. urodynamics; measurement of residual volumes (less invasively achieved by a portable bladder scanner)

Long-term care - intractable incontinence that cannot be managed by alternative methods of care; chronic urinary retention

However, the use of indwelling catheterisation should not be considered routine in any of these situations

6.2. Consent

Valid consent to undertake an initial insertion or renewal of a catheter must be obtained verbally from the patient where possible and with approval from the person with continuing medical responsibility for the patient. This consent should be recorded in the patient's clinical health record. If the patient does not have capacity to consent to urinary catheterisation – the Mental Capacity Act Policy must be followed.

6.3. Documentation

The assessment and decision to use indwelling urinary catheterisation should be clearly documented, along with the rationale, on the catheter tracking tool/GAD for in-patients, and the EMIS electronic care record for community patients.

On-going, documented review is a fundamental element to ensure that the catheter is considered for removal at every opportunity. If the catheter is not removed after 7 days or a decision for a long term catheter made then the catheter tracking tool should be continued and the need for catheter reviewed daily (the risks of leaving it in do increase by the day).

6.4. Selection of Catheter

Selection is based on a number of factors; Appendix 2 contains a matrix to guide choice based on catheter type and duration. The length of time a catheter can remain in place is guided by the manufacturer's product liability, this should always be heeded. Additionally the appendix (2) gives guidance on the rationale for urethral and supra-pubic catheterisation.

6.5. Catheter Material

Hydrogel-coated, latex catheters appear to be more suitable than all-silicone catheters, because expert opinion suggest that they are more comfortable to the delicate urethral tissue. All-silicone catheters can be difficult to remove due to the cuff formation and the balloon having a poor 'memory'. Choice of catheter material may depend on clinical experience, patient assessment and anticipated length of time the catheter is expected to be in place (Loveday et al 2014).

At the present time, there is no strong clinical evidence on using antibiotic impregnated catheters and therefore are not recommended.

The catheter packaging should be checked that the CE mark is present and that the catheter is licensed for either urethral or supra-pubic use.

6.6 Size of Catheter

For the urethral route, always choose the smallest Charriere (Ch) to provide adequate drainage. The external diameter of a catheter is measured in Charriere – one Ch equals 0.3mm, therefore 12 Charriere will equal 4mm.

As a guide for the urethral route:

- Female 10 – 14 Ch
- Male 12 – 14 Ch

Small Charriere sizes allow the mucus produced by paraurethral glands in the urethra to drain away. By choosing a larger size these glands may become blocked and result in inflammation. Avoid inserting 16ch directly after a 12ch, which could cause trauma following the sudden dilatation of the urethra. Therefore larger sizes should be introduced gradually and may only be required where there is haematuria with large blood clots. Larger Charriere catheters do not resolve bypassing issues as the urethral epithelium is less able to conform around the catheter than if a smaller Charriere is selected.

For suprapubic use, 16ch is commonly used and is recommended to allow for maintenance of a good tract between the abdominal wall and bladder.

6.7. Length of Catheter

For urethral route, women should always be offered a female length catheter, unless they are obese or chair bound, in which case the standard length may be more suitable. Male patients should only ever have standard (male) length catheters inserted. It is dangerous and potentially harmful to insert a female length into a male urethra (NPSA 2009). Warning posters are available via the NPSA website. These should be displayed against any female length stock in storage areas. If assurances cannot be guaranteed then a move towards standard length catheters only being available will be considered:

- Female – 26cms*
- Male (standard) – 43cms*

*Lengths are approximate, as manufacturers vary

For suprapubic route, a standard length is the most usual, but patient preference may decide the most suitable length. Female length is acceptable providing that there is sufficient length to connect a valve or bag. Consideration needs to be given to obesity, mobility and clothing.

6.8. Balloon size

- 10ml balloons must always be used for both urethral and suprapubic routes.
- 30ml balloons are reserved for use in specific situations, mainly for post-prostatic surgery. They can cause bladder spasm and trigone irritation (Pomfret 1996).

Balloons must be filled with sterile water, never:

- air (will float above the urine, preventing drainage),
- tap water (contains soluble salts that can cause osmosis),
- saline (crystals of salt may prevent deflation of balloon).

Balloons should never be under or over filled, as misshaping of the balloon will interfere with drainage. Always follow the manufacturer's instructions (some provide glycerol with catheters for the balloon).

7. Infection Control

'Catheter associated urinary tract infection (CAUTI) is one of the most common nosocomial infection in hospitals' (Loveday et al 2014). Bacteriuria develops with every patient who has an indwelling catheter within 30 days, which is usually asymptomatic (Tenke et al 2012). However, symptoms can and do occur, which include:

- Loin or suprapubic tenderness
- New onset delirium
- Fever greater than 37.9°C or 1.5°C above baseline on two occasions over 12 hours
- Positive urine culture

The risks of this can be minimised by:

- Limiting the use of indwelling catheters
- Maintaining a closed system of drainage and using a link drainage system
- Good hand washing techniques observing the 5 moments of hand hygiene.

8. Catheter Insertion

Urinary catheters must be inserted using sterile equipment (Trust approved pack) and an aseptic non-touch technique (ANTT) (Loveday et al 2014). Minimising trauma, discomfort and CAUTI requires the Health Care Professional (HCP) to be competent in the procedure and care of catheterisation. Single-use lubricant is recommended to minimise urethral trauma and infection (Loveday et al 2014), which should be used by the HCP or carer who are deemed competent, for both male and female patients. Instillagel has both a lubricant, antiseptic and local anaesthetic and should be used; however must not be used on patients that are allergic to the components. Formulary choice anaesthetic lubricating jelly needs to be prescribed or administered under a local PGD.

9. Changing the Catheter

The principles of asepsis should apply to the procedure of urinary catheterisation, both urethral and suprapubic (See Appendix 3).

For re-catheterisation procedures, the existing catheter should be removed, examined for encrustations and discarded at the start of the procedure. Extreme care should be taken with supra-pubic catheters changes for those patients who are receiving anticoagulant therapy or who have blood clotting disorders. See Procedure for the routine changing of supra-pubic catheters in adults.

If a patient is symptomatic with a urine infection the catheter will need to be changed after 24- 48 hours of effective antimicrobial treatment whilst still continuing the course to completion.

10. Patient Education

Patients (and carers) need to be involved in their care, which includes being aware of the complications of catheterisation and correct information on general catheter care. It is important that patients (and carers) know how to identify a potential problem and whom to contact for help.

Patients who have catheters inserted as a long term measure must be issued with the Catheter Passport (ordered from stationery code ETS450) and staff should go through this booklet with patients/carers.

11. Urine Sampling

Dipstick testing is neither sensitive nor specific for infection and should not be routinely performed and never in catheterised patients or those with prosthetic material in situ.

Routine collection of urine specimens for culture is not useful and is unnecessary unless the patient is symptomatic (Nicolle 2001). When a specimen collection is justified, ANTT must be used, with disinfection of the needle-free sample port with 2% Chlorhexidine in 70% isopropyl alcohol and allowed to dry thoroughly. It is important to include systemic symptoms on the clinical microbiology form. Ideally a urine sample should be collected before the commencement of antibiotics

12. Care of the Suprapubic Site

If dressings are clinically required, they must be sterile and applied using an aseptic non-touch technique. In most cases, a dressing will not be required and patients should be encouraged to clean the site daily.

13. Trauma

Catheter tubing and the drainage bag should be secured to the leg so that it avoids kinks in the tubing, traction on the bladder neck, trauma to the urethra, occlusion of the catheter lumen, or causing excessive constriction to the limb. There are different choices of fixation method, such as straps or sleeves, which needs to be based on individual need. It is important to allow enough slack to accommodate erection, thus minimising risk of urethral meatus injury. Tape should not be used as catheter material could be damaged due to solvents.

14. Drainage Bags and Bag position

The Trust promotes the use of Leg Bags to maximise patient dignity and aid recovery through early unrestricted mobilisation (where possible).

Patient requiring hourly or two hourly urine monitoring (indication acute care) will have available hourly urine monitoring drainage bags.

All drainage systems must be hung on a stand that prevents contact with the floor and positioned so that gravity will allow drainage (not to be draped over cot sides) .

For night time drainage, a single use product should be used, connected to the leg bag to maintain the closed system preventing risk of introducing infection.

Drainage bags should be secured with a fixation device to the patient's thigh. To avoid skin irritation and damage, alternating the leg on which the drainage bag is secured will minimise this risk.

Drainage bags need to be positioned below the level of the bladder to avoid hydrostatic suction, which can cause damage to the bladder mucosa. Higher rates of bacteriuria have been linked to incorrect positioning.

15. Bag emptying

Whenever possible, patients should be encouraged to empty their own drainage bag. If this is not possible, the Health Care Professional (HCP) or carer should wear an apron and non-sterile gloves. Eye goggles may need to be considered when there is a risk of splashing. For patients in hospital, a single-use pulp product should be used to empty urine into and then macerated.

Additionally, it is important to avoid contamination of the tap or the environment by spillage. When drainage bags are three-quarters full, they should be emptied to avoid traction on the bladder. However, the closed system should not be broken more than is necessary.

16. Valves

These can be used as an alternative to a conventional drainage bag. As well as being discreet, they allow the bladder to resume/continue its storage function. The use of a valve during the day and continuous drainage at night has been found to be an ideal solution for many catheterised patients. There are many different valves available and it is the responsibility of the prescriber to be aware of the strengths and limitations to enable appropriate product selection. There is no evidence to support clamping of catheter as a way of assessing bladder tone prior to the removal of a catheter. The patient's cognitive and functional ability to manage a valve is assessed and that they have acceptable renal function to avoid acute kidney injury should the bladder overfill.

17. Bathing

The patient may either take a bath or shower. The build-up of secretions at the urethral meatus should be minimised by daily routine personal hygiene. Perineal care should also be included to facilitate reduction in extra luminal contamination.

18. Drainage bag changes

The date of bag change should always be written onto the drainage bag.

Health Care Professionals (HCPs) should follow the manufacturer's recommendations for leg drainage bags; for example, each 7 days or earlier if the bag is damaged, which could then become contaminated with bacteria that ascend the system.

For night-time drainage, a single use product must be used and discarded each morning.

19. Discharge

If patients are planned to go home with a new long term catheter they need to go home with a completed catheter passport and a hospital to home urinary catheter bag (with supplies for the first week)

20. Fluids

Unless restricted for medical reasons, an adequate (2 – 2.5 litres) fluid intake should be encouraged per 24 hours, as this maintains a flow of urine through the bladder and helps prevent constipation. There is no evidence of long-term benefit or appropriate dosage of cranberry juice with use of catheters. Furthermore, caution should be exercised for those patients taking warfarin. However, citrate-based drinks are recommended as these have been found to positively affect the pH of the urine. Input and output must be measured on the fluid balance charts on all inpatients.

21. Storage of catheters

Excess quantities of stored catheters can increase the risk of damage to the product or passing the expiry date. For example, latex catheters harden when they are old and if inserted after the expiry date, the risk of perforating the bladder is increased. It is important that equipment is available within the patient's home, which will ensure that the correct catheter is used for individual needs. In the community, it is recommended that practitioners document that new stock has been ordered to replace what has been used. In the hospital environment, safe storage and stock rotation of the catheters is expected.

22. Catheter-life

There are two distinct groups of patients to describe a catheter-life, that is, those who wear a catheter that blocks and those that don't (non-blocking). The main cause of a blocked catheter is encrustation. Non-blocking catheters are those which maintain the patency of the catheter for the duration of the catheter-life expectancy, such as 12 weeks for a long-term catheter.

Encrustations usually form on the tip of the catheter, the balloon area that is bathed in urine and the lumen of the catheter. They are not usually found on the side of the balloon that is against the bladder mucosa or the surface that is in contact with the urethra.

The duration of time that the catheter can be left in place before it becomes blocked, leaks or is pulled out by the patient is referred to as the catheter-life. Monitoring this will help effective planning to reduce the risk of blockage as opposed to crisis intervention.

Persistent blockage and other complications such as recurrent symptomatic CAUTI or haematuria may require investigation and referral for x-ray or cystoscopy should be considered to rule out the presence of bladder stones. There is no evidence that sending catheter tips to Clinical Microbiology is beneficial, therefore should not be undertaken.

23. Catheter problem solving

For a number of problems that can arise with catheters see appendix 5.

24. Catheter Maintenance Solutions

There is minimal evidence to identify if the use of solutions provides any benefit (Hagen et al 2010). However, for catheters that block due to encrustation resulting in a frequency of catheter change that is unacceptable to the patient, then a prescribed regime of an acidic catheter maintenance solution may be clinically justified for short-term use. It is not recommended to use solutions for unblocking a catheter that is no longer draining.

The principle aim of using a solution is to wash the catheter, not the bladder. The term 'bladder washout' has been superseded by the more appropriate term of 'catheter maintenance solution'. The effectiveness of acidic catheter maintenance solutions in dissolving encrustations has been demonstrated in laboratory-based studies. However, the instillation of solutions for either encrustation or debris via an indwelling urinary catheter is not recommended as a routine measure as their efficacy has not been proven in large clinical trials. The Braun Twin system is recommended as the first 50mls breaks down the encrustation and the second 50mls mechanically flushes out the dissolving debris. Frequency of use will need to be determined on an individual patient basis.

The use of solutions can cause damage to the mucosa, causing irritation and spasm if they enter the bladder. For further guidance, please see the 'Treatment Algorithm for Long-term Catheters' in Appendix 6.

Community staff can consult the Bladder and Bowel Service (01254 359129) if further advice is needed.

25. Use of Antibiotics

Antibiotic prophylaxis should not be considered for UTI prophylaxis for patients with urinary catheters or other prosthetic material in situ.

For those with symptomatic catheter associated urinary tract infection, the catheter should be changed 48 hours after the patient has reduced symptoms of CAUTI

26. Decision to Remove Catheter

The Trust requires a **daily review** of catheters (on inpatients) to minimise length of time in place with the aim to reduce healthcare acquired infections.

Removal of the catheter should be considered unless the patient's condition fits into one of the following categories, where continued catheterisation is for clinical benefit and/or quality of life:

- Acute illness, hourly or two hourly urinary output monitoring continues
- Urinary obstruction leading to urinary retention (where intermittent catheterisation is not viable)
- Neurogenic bladder and urinary retention (where intermittent catheterisation is not viable)
- Urological surgery
- Open sacral wounds (stage 3 or 4) for incontinent patients

Catheters should be removed wherever clinically possible, following individual assessment, which takes into account the patient's condition and in collaboration with the healthcare team.

Post-operatively, the catheter must be removed as soon as clinically possible

Attempts should be made to avoid removal of an indwelling catheter on the day of discharge or transfer from hospital.

Following removal, this must be documented on the catheter tracking tool and care plan and the patient's condition should be monitored.

A bladder scan (portable) should be performed by a competent clinician if the patient has not passed urine 6 hours following removal of the catheter. If a volume of 200mls or greater is recorded then the patient will require re-catheterisation, or they can be taught how to perform clean intermittent self-catheterisation by a competent clinician. If an indwelling catheter is re-inserted, arrangements for a further trial without catheter within 14 days should be made. The causes of persistent retention of urine (i.e. two failed trials without catheter) should be investigated by referring to urology services and a long term management plan put in place.

27. Adverse Events

Consideration should be given to user sensitisation to latex products, especially in those patients at high risk due to repeated exposure.

Autonomic dysreflexia is a serious life threatening condition that affects people with spinal cord injury at or above the level of the 6th thoracic vertebrae. Bladder problems are one of the most common causes of this condition (Appendix 8).

Lidocaine based lubricating gels should not be used during a catheterisation procedure in the following circumstances:

- If the patient states they have an allergy/hypersensitivity to any of the active ingredients within the product.
- If the patient has noticeable abrasions and lesions on the penis or urethral orifice. Local anaesthetics must not be applied to a traumatised urethra as the drug may be so rapidly absorbed that a systemic, rather than a local, reaction is produced (BNF 2012). These could include confusion, respiratory depression and convulsions; hypertension; and bradycardia (may lead to cardiac arrest).
- Nursing assessment prior to administration should include identification of patients at increased risk of systemic effects and checking for possible drug interactions.

All medical devices and medicinal products containing Chlorhexidine have been identified as being a risk for anaphylactic reaction. HCP should ensure that any known allergies are recorded in the patient notes and report any adverse events to the MHRA (MDA/2012/075)

28. Training and Support

Through self-regulation, healthcare personnel (Registered Healthcare professionals, Assistant Practitioners and Trainee Assistant Practitioners) are accountable for both competency development and continuing Professional Development in urinary catheterisation if this is applicable to their role (NMC 2010/RCN 2013/GMC 2014/HPC).

Staff should inform their manager if they feel they are not competent and identify their training needs relating to this area of practice.

CATHETER TRACKING CARE BUNDLE

Appendix 1

Date of insertion :	
Reason for insertion :	
Catheter size and type :	
Date of expiry/change:	
Inserted by:	
Was ANTT used?	YES/NO
Was the skin cleansed?	YES/NO with what?
Was lubrication used?	YES/NO which?
Was the foreskin replaced after the procedure	YES/NO/ N/A
Residual Urine amount	
Any other comments? ie was it a difficult or easy procedure	

Hospital NumberDOB.....
NHS Number.....M/F
First Name
Last Name.....

Evidence has proved that removal of an indwelling urinary catheter as soon as no longer required reduces the incidences of Catheter Associated Urinary Tract Infections (CAUTI) Consider **HOUDINI** acronym below, document and report daily on chart below

Haematuria – visible
Obstruction – urinary
Urology surgery
Decubitus Ulcer (Pressure ulcer) – open sacral or perineal wound in patients with incontinence
Input/output monitoring
Nursing end of life care
Immobility

- Goals at a glance**
1. Reduce the risk of trauma and identify the risk of infection
 2. Ensure urine is draining freely
 3. Ensure the patient understands the reason for insertion and is involved in catheter care, if appropriate
 4. If patient complains of pain, check for: kinking of drainage tube, none drainage of urine, constipation, or bladder spasm
 5. Maintain patient privacy and dignity at all times
 6. Maintain accurate fluid balance chart
 7. Encourage patient to drink 2.5 litres daily if not on restricted fluids
 8. If none of the HOUDINI acronym are present consider removal of catheter following discussion with medical staff
 9. Record on going care/or complications in the nursing records
 10. N.B. if continence management is still required consider use of alternative products e.g. uridom

Daily Care Bundle % increasing risk of developing CAUTI	Day 1: 6%	Day 2: 12%	Day 3: 18%	Day 4: 24%	Day 5: 30%	Day 6: 36%	Day 7: 50%
DATE							
Daily cleansing of catheter insertion site with soap and water							
Ensure drainage bag is below bladder level and off the floor by use of a stand or hanger							
Empty drainage bag when 2/3 full or 6 hourly							
Observe urine: report to medical staff if blood in urine, presence of debris, increase in concentration or signs of infection present							
If the patient is mobile consider use of leg bag; apply overnight catheter bag if a leg bag is used, Maintain a closed system							
Using HOUDINI acronym, review if the indwelling urinary catheter is still required							
Planned date for trial without catheter (TWOC)							

The needs for catheterisation must be reviewed daily. If catheter is to remain after 7 days then another catheter tracking tool should be started but the risks of infection increase by around 5% per day of catheterisation. If this is to be a long term catheter then a catheter passport should be started.

Catheter Selection Matrix

Catheter type	Duration	Material and comments
Short term	Up to 1 week	<ul style="list-style-type: none"> Plastic – post-op or intermittent catheterisation Latex – uncoated latex rarely used as high surface friction can cause discomfort and tissue trauma
Medium term	Up to 4 weeks	<ul style="list-style-type: none"> Poly-tetra-flouride-ethylene (PTFE) bonded latex - smoother outer surface Silver-alloy hydrogel coated (to be used on advice by Specialist Nurse)
Long term	Up to 12 weeks	<ul style="list-style-type: none"> Silicone bonded with an elastomer – not pure silicone 100% silicone – thin walled, better drainage capacity Hydrogel bonded – highest compatibility with human tissue, less risk of trauma and less biofilm/encrustation formation
Suprapubic		Urethral
Specific Considerations		
<ul style="list-style-type: none"> Long-term (including incontinence) Sexually active Post-specific surgery Urethral trauma Some wheelchair-bound people Difficulties with urethral catheter Annual bladder ultrasound 	<ul style="list-style-type: none"> Short-term Intermittent Post-specific surgery Difficulties with suprapubic 	
Specific Care		
<ul style="list-style-type: none"> Strict asepsis on insertion Strict asepsis on redressing the fistula site Hand hygiene as per 5 moments 	<ul style="list-style-type: none"> Strict asepsis on insertion Hand hygiene as per 5 moments 	
Specific Advantages		
<ul style="list-style-type: none"> Reduced risk of infection Enables sexual activity 	<ul style="list-style-type: none"> Nurse able to carry out procedure at first insertion (where risk assessed), therefore care will be client-directed from the point of insertion 	
Specific Disadvantages		
<ul style="list-style-type: none"> Altered body image Potential urine leakage from around the site Limited nursing research on subject Requires a registered medical practitioner to perform initial insertion Urethral leakage 	<ul style="list-style-type: none"> Altered body image Impedes sexual intercourse Higher risk of infection 	

ASEPTIC NON TOUCH TECHNIQUE



Indwelling urinary catheterisation

for the ANTT practice principles see www.the-antt.org

Prep patient

- Apply waterproof pad & gown.
- Ask patient to lift gown pre step 9.

Preparation zone

1

Clean hands with alcohol hand rub or soap & water

2

Clean trolley with 70% alcohol wipe-

3

Gather equipment onto bottom shelf

Patient zone

4

Apply apron (clean hands if contaminated between Steps 3 & 4)

5

Open catheter pack & position waste bag

6

Open equipment onto critical aseptic field using non-touch technique (NTT)

7

- Clean hands Apply sterilised gloves

8

Prepare equipment using non-touch technique (NTT)

9

Apply aseptic field drapes over genitals & between legs

10

Clean urethral orifice with normal saline & gauze

11

Insert lubricating gel

12

- Dispose gloves Clean hands. Apply sterilised gloves

13

Insert catheter using NTT by touching only the plastic wrapping

14

Inflate balloon

15

Attach collection bag using NTT

16

Dispose of waste & gloves

17

Clean hands with soap & water immediately after glove removal

Decontamination zone

18

Clean trolley with 70% alcohol wipe-

19

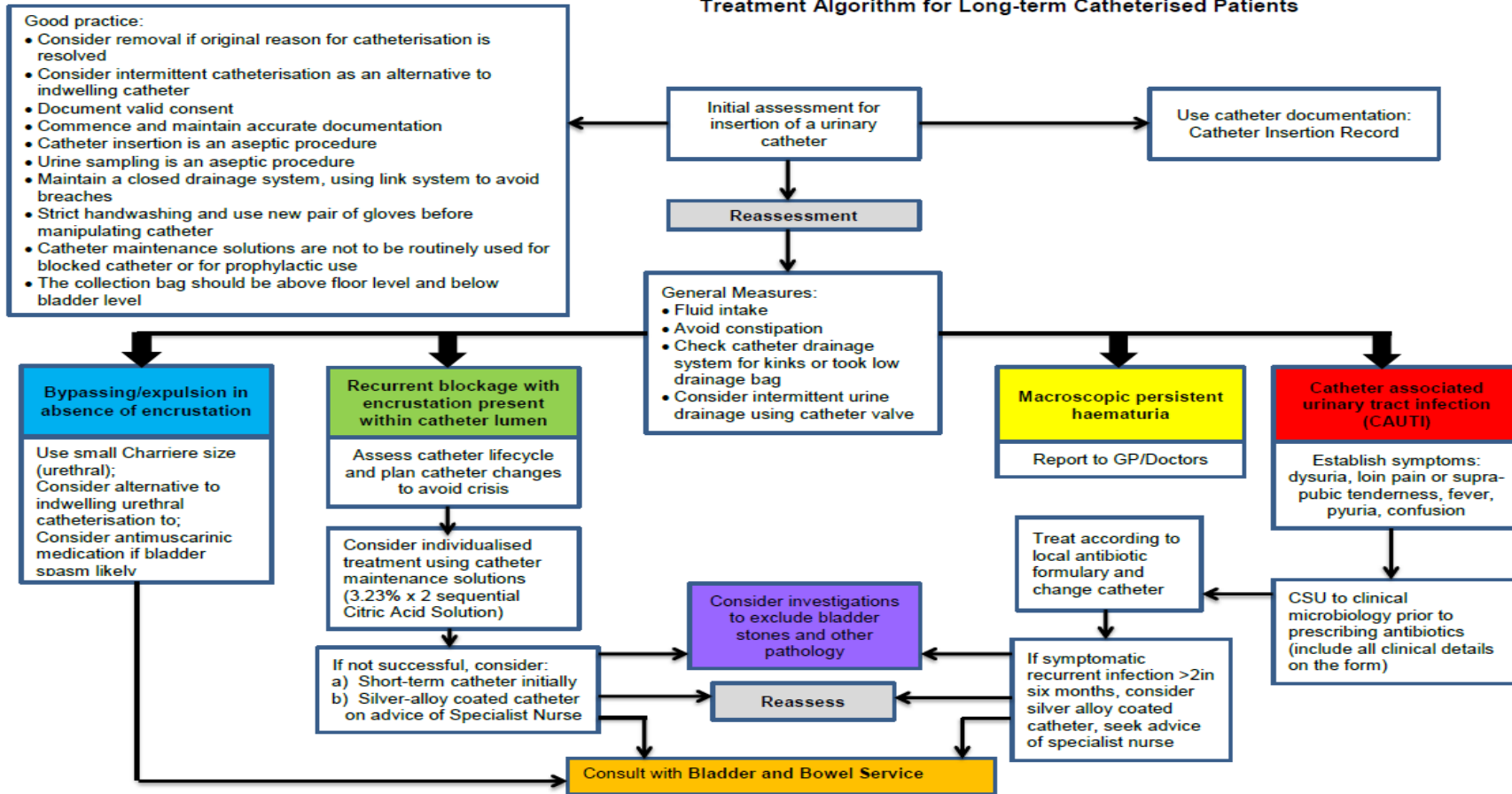
Clean hands with alcohol hand rub or soap & water

Problem solving

Problem	Possible reasons and action to take
Urine does not drain	<ul style="list-style-type: none"> • Check for mechanical obstruction – kinked tubing; occlusion by leg straps; bag higher than level of bladder • Check for constipation • Occlusion of catheter eyes by anaesthetic gel or bladder mucosa – gently instil sterile water/saline to clear eyes; • check that leg bag is not too low down on the leg • Consider changing the catheter and inspect for encrustation – if it is patent – consider bladder spasm as a cause • Consider that the patient maybe dehydrated or in renal failure • If new catheter doesn't drain – check that it's in the urethra; that the catheter is correct length and that eyelets are in the bladder
Encrustation	<ul style="list-style-type: none"> • Main cause is struvite formation (calcium phosphate and magnesium ammonium phosphate salts); struvite forms as a result of precipitation of these salts from the urine when it becomes alkaline because of urease forming bacteria • Encourage fluid intake, which includes citrate-based drinks. • Assess 'catheter life' by observing at least three catheters; implement planned catheter changes to avoid blockage. A prescribed regime of acidic catheter maintenance solutions maybe clinically justified.
Haematuria	<ul style="list-style-type: none"> • May be caused by trauma, infection, renal/bladder pathology; if severe, seek medical help urgently. Treat for shock and monitor for clots and blockages. • If occult, refer to GP to consider investigation, e.g. cystoscopy.
Urine bypassing	<ul style="list-style-type: none"> • Check for tube kinking and/or constipation • If due to bladder spasm or irritation: consider anticholinergic medication; consider a smaller catheter size; check balloon size; consider catheter material (latex allergy) • If due to encrustation: change and inspect catheter
Cramping pain	<ul style="list-style-type: none"> • This should subside after 24 hours of initial insertion; if it persists, it may be bladder spasm and anticholinergic therapy should be considered
Urethral discomfort	<ul style="list-style-type: none"> • May be due to distension of urethra by too large a catheter or by occlusion of the

	paraurethral glands – change to a smaller catheter.
Urethral discharge	<ul style="list-style-type: none"> • During normal micturition a mucus substance is produced by the paraurethral glands (which line the urethra) to protect against ascending infection and is usually flushed away. However, in the catheterised patient, the mucus drains away through peristaltic action and gravity rather than being flushed away and can result in presence of mucus outside the urethra and on the catheter surface.
Blocking due to debris in urine	<ul style="list-style-type: none"> • Sludgy mucus type debris can block the catheter. Expert opinion suggests using a valve in this situation to encourage natural flushing of the catheter lumen.
Non-deflating balloon	<ul style="list-style-type: none"> • Check that syringe is not faulty; leave syringe for a few minutes to allow water to drain spontaneously - not forcibly as a vacuum may result in the inflation channel. If this fails, it has been reported that using a sterile needle and syringe, which is inserted into the arm above the inflation valve is another method to deflate the balloon. If unsuccessful, discuss with doctor regarding a urological opinion. NEVER cut the valve off.
Catheter rejection	<ul style="list-style-type: none"> • If a patient pulls their catheter out with the balloon inflated due to a confused state, consider alternative methods to manage the bladder problem. On occasions, catheters may be expelled due to a combination of weak pelvic floor muscles, urethral dilatation and detrusor overactivity. Other means of continence care should be sought.
Difficulty in removing catheter	<ul style="list-style-type: none"> • Expert opinion suggests that inflating and deflating balloon about four times and then leaving for five minutes before catheter removal can assist in easier extraction of catheter. If the catheter cannot be removed, stop and refer to the urological team in collaboration with the doctor.

Treatment Algorithm for Long-term Catheterised Patients



Autonomic Dysreflexia information

Autonomic dysreflexia (also known as autonomic hyperreflexia) is one of the most serious life threatening conditions that affect people with spinal cord injury at or above the level of the 6th thoracic vertebrae.

The syndrome develops secondary to any noxious stimulus below the level of injury. As the spinal cord is damaged, signals cannot pass normally to the brain, therefore, the body produces exaggerated abnormal nerve signals which cause problems above and below the level of the spinal injury. Below the injury, blood vessels go into spasm causing the blood pressure to rise. Above the level of injury, the body senses the high blood pressure and tries to relax the blood vessels (can only influence the blood vessels above the level of injury) which causes flushing and blotchiness of skin and pounding headache.

Symptoms may be mild or severe and patients may present with one or more of the following:

- Pounding headache
- Flushing and/or blotching above the level of cord damage
- Pallor below the level of injury
- Slowed heart rate
- Profuse sweating (above level of injury)
- Palpitations
- Goosebumps
- Blurred vision or seeing spots before your eyes
- Stuffy nose
- Feeling of doom and gloom, anxiety, apprehension
- Elevated blood pressure.

N.B. Under normal circumstances a tetraplegic person may have a low blood pressure (eg 90/60). A rise of 20mmHg can be quite significant; therefore if the BP rises to 120/80mmHg it could become an emergency situation. Hypertension may be severe enough to lead to seizures, stroke or ultimately death.

Bladder problems are the most common cause of autonomic dysreflexia:

- Overfull bladder
- Kidney or bladder stones

- High pressure voiding
- Urinary tract infection
- Blocked catheter
- Defective drainage system (eg kinked tubing or leg bag too full).

Treatment

Identify the source of the noxious stimulus. Removing the stimulus will cause the symptoms to settle.

Reduce the blood pressure by returning the patient to bed and place in a sitting position. (If bladder problems suspected only sit patient to 45 degrees. Sitting at 90 degrees may cause increased pressure on the full bladder.)

Check Bladder

- If patient is not catheterised and bladder appears full, catheterise immediately and leave on free drainage. Catheter should be lubricated with an anaesthetic gel prior to insertion.
- If catheterised, empty leg bag and untwist any kinked tubing. If catheter appears blocked change the catheter immediately.
- DO NOT ATTEMPT A CATHETER MAINTENANCE SOLUTION; this will only distend the bladder further with potentially fatal consequence.
- If infection is suspected commence antibiotic therapy.
- Check bowel and check for other potential causes (faecal impaction) and treat appropriately.
- It is recommended that sublingual Nifedipine 10mg or GTN spray is given if the blood pressure cannot be reduced within the first 2-3 minutes the above mentioned procedures (Shergill et al, 2005).

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