

Urethral Catheterisation for Male and Female Children



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1. Introduction and who this guideline applies to

This guideline sets out the University Hospitals of Leicester NHS Trust guidance and procedures for urethral catheterisation for male and female children who are patients of the Trust. Urethral catheterisation is insertion, using aseptic technique, of a sterile, purpose-made, hollow tube into the bladder via the urethra, for the purpose of evacuating or instilling fluids.

Urinary catheterisation is one of the commonest interventions in an acute hospital setting for adults especially in the intensive care setting, but far less common in children, other than the intensive care setting. Urinary catheterisation is not without clinical risks. Catheter related urinary tract infections (CAUTI) are one the most common causes of Health-care associated infection (HAI). This can lead to prolonged hospital stay, significant morbidity, mortality and financial burden. This can be minimised by the introduction of a comprehensive urinary catheter care bundle which includes limiting urinary catheterisation to clear indications, urinary catheter insertion using completely aseptic methods by a trained skilled person, reviewing the need to continue use of the catheter on a daily basis and appropriate care of the urine collection bag, catheter and genital area.

Indwelling urinary catheters should only be used when no alternative is available and should be left in for as short a time as possible (NICE 2003)

This guideline includes:

- Insertion of indwelling and intermittent catheters,
- care and removal of the catheter,
- trouble-shooting,
- attaching and removing night bags,
- changing bags,
- trial without catheter and

- Urine sample collection where minimal contamination of the sample is required.
- Indication for catheterisation,
- Guidance on size, length and type of catheter to select.

Care and management including catheterisation of a Mitrofanoff stoma is described in a separate guideline.

1.1 This guideline applies to all members of health care staff assessed as competent to carry out the procedure who are employed by the University Hospitals of Leicester NHS Trust.

1.2 This guideline does not include insertion or change of a supra-pubic catheter.

1.3 This guideline does not include supra-pubic aspiration as this is a task to be undertaken by a paediatric radiologist under ultrasound guidance.

1.4 If the child who needs a catheter is of the opposite sex to the nurse/doctor he or she should be given the choice whenever possible of an alternative health care professional of his or her same gender (Parish 2006, GMC 2006, NMC 2004)

1.5 If the child is Gillick competent but denies consent remember that competence permits consent without parental consent, but does not permit refusal where it is considered clinically necessary. In this circumstance the child should be offered support and opportunity to explore ways in which he or she can cope with the procedure, and where necessary, if all else fails and the child / young person is able to consent to catheterisation with this support, general anaesthesia should be considered.

1.6 All children undergoing urethral catheterisation should be chaperoned. This would generally but not necessarily be a parent or carer. (RCN 2002)

Related documents:

UHL Aseptic Non-Touch Technique. B20/2013

UHL Infection Prevention Policy. B4/2005

UHL Policy for Consent to Examination or Treatment A16/2002

2. URETHRAL CATHETERISATION

2.1 Indications

- To relieve urinary retention.
- To measure urine output accurately.
- To facilitate bladder irrigation.
- To introduce intravesical medication.
- For investigations e.g. the performance of bladder function tests (sterile urine sample is not guaranteed by urethral catheterisation. If such is required then SPC under ultrasound guidance should be considered)
- To measure residual bladder volume where ultrasound scan is not possible or practical.
- During prolonged or pelvic surgery.

- For bladder management with epidural.
- To bypass an obstruction.
- In rare and carefully justified circumstances, to manage incontinence when no other means is possible and tissue viability or hygiene is difficult. For example in the presence of infected wounds or sores, or following orthopaedic hip surgery where splints that cannot be removed are necessary.

2.2 CAUTION OR CONTRAINDICATIONS FOR URETHRAL CATHETERISATION

- Previous urethral or pelvic trauma.
- A known history of urethral stricture.
- In boys, a history of posterior urethral valves.
- Previous difficulty with catheterisation.
- A history of bladder or urethral reconstruction.
- Undiagnosed / unknown cause haematuria.
- A history of lower urinary tract cancer.
- Undiagnosed urethral discharge.
- Congenital anomalies, for example hypospadias or epispadias.
- Suspected UTI
- Consent is with-held (RCN 1997)

Advice in these circumstances should be sought either from the child's consultant team or the Children's Urology Specialist Nurses, contactable via the hospital switchboard.

2.3 Urinary Catheters & ECMO

Accurate fluid balance is essential in critically ill patients requiring ECMO. Ideally, a urinary catheter should be inserted prior to anticoagulation but if this is not possible, insertion whilst on ECMO should be performed by an experienced individual to minimise trauma.

Urinary catheters should not routinely be removed whilst anti-coagulated and receiving ECMO therapy due to the risks of bleeding associated with either removal or potential reinsertion if required.

2.4 DIFFICULTIES WITH CATHETERISATION

If on the first attempt catheterisation fails there should be a full reassessment before a second attempt is made.

If after 2 attempts catheterisation fails the consultant team or the Children's Urology Nurse Specialist should be contacted and asked for support/advice.

2.5 Maintenance of the urinary catheter system

Review the need for a catheter daily and remove at the earliest opportunity unless the catheter is in situ as part of a specific plan that clearly outlines duration.

- Record this review on the urinary catheter care pathway chart – see appendices

Maintain free urinary flow at all times if free drainage is required e.g. ensure there are no kinks

- Position the catheter to prevent backflow of urine
- **Do not** routinely change indwelling catheters or drainage bags
- Change based on infection, obstruction, contamination or manufacturer's instructions or to the individual child's requirements.
- **Do not** break into the urinary drainage system unless absolutely necessary
- **Do not** use routine systemic antibiotics to prevent CAUTI
- **Do not** irrigate/flush the catheter just because of apparent/potential blockage unless this is part of the child's prescribed care plan.
- Use a bladder scanner if obstruction is suspected
- Consider flushing taking into consideration the individual needs of the child with a clear end point and rationale as to the need for the urethral catheter

If not draining consider -

1. Rationale / need for catheter i.e. remove only if no longer required
2. Hydration status
3. Bladder scan if trained to do so or palpate the bladder
4. Flush if catheter still required and there is clearly urine in the bladder.

Infection Prevention

- Wear a plastic apron, wash hands, use gloves
- Wash/gel hands after removing gloves
- **Do not** clean the peri-urethral area with antiseptics or soap but do use warm water at least once a day.
- Empty the catheter drainage system at least 4 hourly or before ½ full, whichever occurs first.
- If the catheter has a catheter valve on it, it should be released as often as the child would usually void his / her bladder.
- Avoid contact between the drainage tap and the collecting container
- Drainage bags and tubing should be **below the bladder and NOT touching the floor** at any time. Tubing should not be carried over safety sides.

2.6 CATHETER SIZE GUIDELINE

Always use the smallest size that will facilitate bladder drainage whilst minimising bladder and urethral trauma.

AGE	WEIGHT	CATHETER
Neonate	< 1200g	3.5fr umbilical catheter
Neonate	1200-1500g	5fr umbilical catheter
Neonate	1500-2500g	5fr umbilical catheter or 6fr urethral catheter
0-6 months	3.5 – 7kgs	6fr urethral catheter
1 year	10kgs	6 – 8fr urethral catheter
2 years	12kgs	8fr urethral catheter
3 years	14kgs	8 – 10fr urethral catheter
5 years	18kgs	10fr urethral catheter
6 years	21kgs	10fr urethral catheter
8 years	27kgs	10fr urethral catheter
12 years	Varies	10 – 12 urethral catheter

SAFETY POINT:

Post-pubertal boys must NEVER be catheterised with a female length catheter.

2.7 CATHETER LENGTH

Standard length (40cm)

Usually for boys, although can be used in females in certain circumstances, for example those using wheelchairs, or into Mitrofanoff stomas.

Female length (23cm)

Can only be used in girls and pre-pubertal boys with extreme caution – the length should be tested against the abdomen and genitalia of the child, and if there is any doubt should be rejected. This length is unlikely to reach the bladder fully, and could cause significant urethral trauma if the balloon were to be inflated in the urethra.

SAFETY NOTE:

Balloons should only be inflated with the recommended volume directed by the manufacturer.

Too little can cause uneven inflation, which can damage the bladder neck.

Too much can cause balloon rupture, which will result in:

1. Distress to the child
2. Loss of catheter
3. Potential for catheter remnants to be left in the bladder requiring removal under general anaesthetic.

2.8 CATHETER MATERIALS AND LENGTH OF USE

MATERIAL	LENGTH OF USE
Plastic Nelaton. For intermittent catheterisation only.	Used to drain the bladder as a single event and should be disposed of immediately.
Latex only Must not be used in people with latex allergy.	Short term use only, up to 3 days. May cause urethral irritation.
Latex with silicone coating Must not be used in people with latex allergy.	Short term use, 7 – 14 days. Rusch product 7 days only.
Latex with (Teflon) PTFE coating Must not be used in people with latex allergy.	Short to medium term, up to 28 days.
Hydrogel or Hydromel coating Must not be used in people with latex allergy.	Long term, up to 12 weeks.
Pure silicone / 100% silicone The only catheter that can be used for people with latex allergy.	Long term, up to 12 weeks.
Silicone Elastomer coating	Long term, up to 12 weeks.

Teflon coated latex catheters are used for short term (≤ 28 days) and hydrogel coated latex or 100% silicone catheters for long-term use (≤ 12 weeks). Silicone catheters have larger lumens and therefore are useful for patients who have frequent blockages and for those who have a latex allergy.

3. Procedures

Prior to undertaking any of the following clinical procedures:

- Discuss the proposed procedure with the child and parents/carers and gain informed consent from the child if Gillick competent and parents/carers. See section 1.5
- Use a safe and warm clinical treatment area away from the child's bed to carry out this procedure.
- Have the child's parent/carer and if available a member of the specialist play team present to support the child throughout the procedure
- Have/assist the child to remove lower garments including underwear and lie supine. Cover with a sheet or light blanket
- Reassure the child that no-one will come in once the procedure has commenced (lock doors if possible or place sign on door) only then, remove the sheet/blanket from the child to commence the procedure.

3.1 URETHRAL CATHETERISATION USING AN INDWELLING FOLEY CATHETER

Preparing the equipment and the child

1	Gather all appropriate equipment: Sterile dressing pack 0.9% NaCl to cleanse skin Foley catheter of correct size (see appendix) Sterile gloves to fit clinician comfortably Sterile lubricating local anaesthetic gel + syringe if not in an applicator Sterile drainage system or valve Correct size syringe as indicated by the required balloon size on the package Correct volume ampule of sterile water Hypo-allergenic tape
2	Wash hands thoroughly
3	Open packs with no touch technique, using the dressing pack inner wrap as a sterile field.
4	Fill the syringe with the sterile water and place away from the sterile field, taking care to keep key parts sterile

3.2. CATHETERISATION OF A GIRL

1	Place her legs in the frog position and ask her parent/carer to gently support with a hand on her knees (or have a (female) colleague do so)
2	Wash hands again
3	Put on sterile gloves
4	With the non-dominant hand hold the labia minoris apart to expose the urethral meatus
5	With the dominant hand gently wash down from just below the clitoris to the rectum with a gauze swab soaked in saline. Repeat 2-3 times using a new swab each time to ensure the genitalia are free from any contaminants.
6	Apply the sterile local anaesthetic lubricating gel to the external urethral meatus, and advance into the urethra up to 1cm.
7	Wait 2-3 minutes for the local anaesthesia to take effect
8	Maintaining your hold on the labia minoris, place the tip of the catheter into the urethra and insert upwards at approximately 30 degree angle until urine flows.
9	Insert the catheter to the hilt before filling the balloon to ensure no damage to the urethra.
10	Fill the balloon with the correct volume of water indicated by the manufacturer and gently bring the catheter back until the balloon is resting in the bladder neck.

11	Attach the drainage system or catheter valve
12	Fasten the catheter to the child's thigh ensuring there is no kink, and no opportunity for the catheter to pull on the bladder neck when the child is moving around and mobilising
13	Dispose of all the used equipment safely
14	Wash hands thoroughly
15	Return the child to her bed and ensure she is comfortable
16	Where a drainage system is being used ensure tubing is correctly positioned to encourage free flow of urine, with no kinks.

3.3 CATHETERISATION OF A BOY

1	Wash hands
2	Put on sterile gloves
3	Gently take hold of the penis and retract the foreskin as far as possible without hurting. The younger the child the less this will be, and in very young boys or boys with tight foreskins this might not be possible at all
4	Using a sterile gauze swab clean the glans and urethral meatus to remove any contaminants.
5	Apply the sterile local anaesthetic lubricating gel to the external urethral meatus, and advance into the urethra up to 1-2cm where possible.
6	Hold the distal urethra closed and wait 2-3 minutes for the local anaesthesia to take effect
7	Hold the penis with slight upward tension and perpendicular to the child's body. Insert the catheter.
8	When the first sphincter is reached (at the level of the pelvic floor muscles) lower the penis 90 degrees (facing child's toes), apply constant gentle pressure.
9	If resistance is felt the following strategies should be considered: <i>Increase traction on penis and apply gentle pressure on the catheter</i> <i>Ask the child to take a deep breath</i> <i>Ask the child to cough and bear down e.g. try to pass urine</i> <i>Gently rotate the catheter.</i>
10	If unable to pass the catheter seek assistance from treating medical team, Urology registrar or children's urology nurse specialist. DO NOT use force as you may damage the urethra
11	Continue gently inserting the catheter until urine is flowing
12	Move the catheter into the bladder all the way to the hilt to ensure the balloon is clear of the urethra
13	Fill the balloon with the correct volume of water indicated by the manufacturer and gently bring the catheter back until the balloon is resting in the bladder neck.
14	Attach the drainage system or catheter valve
15	Fasten the catheter to the child's thigh ensuring there is no kink, and no opportunity for the catheter to pull on the bladder neck when the child is moving around and mobilising

16	Dispose of all the used equipment safely
17	Wash hands thoroughly
18	Return the child to his bed and ensure he is comfortable
19	Where a drainage system is being used ensure tubing is correctly positioned to encourage free flow of urine, with no kinks.

3.4 RECORDING THE PROCEDURE

1	Record the procedure in the child's medical and nursing notes and ensure there is a care plan in place for day to day care of the child and management of the catheter
2	Record the following details: <i>Consent gained</i> <i>Reason for catheterisation</i> <i>Date and time of catheterisation</i> <i>Type and size of catheter</i> <i>Volume of water in the balloon</i> <i>Manufacturer and batch number – use the peel off label where possible</i> <i>Any problems during the procedure</i> <i>Colour and consistency of urine drained</i> <i>Volume of urine drained – ensure this is also recorded on the child's fluid balance chart where appropriate</i> <i>Whether or not a specimen was obtained</i> <i>Date the catheter should be removed/changed</i>
3	Where available a green urethral catheterisation label should be stuck into the child's medical records and completed appropriately

3.5 CLEAN INTERMITTENT CATHETERISATION BY NURSE / CARER OR THE CHILD (CISC)

1	By nurse while the child is in hospital , this should be a sterile procedure as for an indwelling Foley catheter, except that the catheter should be removed once the bladder is empty. A specific intermittent use catheter should be used following the same size guideline as for a Foley. No retaining balloon is required. In every other way the procedure for preparing the equipment and child, and for inserting the catheter, is the same as for inserting an indwelling Foley catheter.
2	By the child's parent / regular carer the procedure is clean, and not sterile. The parent / carer will have been taught by the child's nurse specialist, and should be comfortable with the technique and equipment required. They will require equipment to be provided whilst the child is in hospital in the same way as medication is provided.
3	By the child the procedure is clean, and not sterile. The child will have been taught by his or her nurse specialist, and will have a varying degree of supervision required. This should be ascertained and stated as part of developing the child's care plan, and provided for by the nursing staff in the absence of the child's parents whenever necessary.

3.6 CARE AND MANAGEMENT OF AN INDWELLING URETHRAL CATHETER

Choice of drainage system

1	For monitoring urine output a sterile hourly volume monitoring bag should be attached to the catheter. The bag should not be in a position to touch the floor.
2	Volumes should be recorded and discarded into the main bag every hour.
3	The main bag should be emptied every 3-4 hours, or more if it is filling rapidly. It should not be permitted to become too heavy.
4	This bag does not need regular changing unless being exchanged for either a leg bag or catheter valve if the urine output no longer needs to be so closely monitored, using an aseptic technique (see section 'changing a catheter bag.').
5	For keeping the bladder empty following urological surgery a leg bag should be attached to the catheter, allowing the child to mobilise as much as possible. The bag should not be in a position to touch the floor.
6	The bag should be emptied regularly, and should not be permitted to become too heavy, as this will put excessive pressure on the bladder neck and can cause damage.
7	Where the catheter is to remain in for over 6 weeks the bag and/or valve should be changed weekly using an aseptic technique (see section 'changing a catheter bag.').
8	Where the catheter is needed because the child is unable to void his or her bladder spontaneously, a catheter valve should be attached to the catheter.
9	The catheter valve should be released as often as the child would ordinarily void his or her bladder.

3.7 EMPTYING THE CATHETER BAG

1	Decontaminate hands
2	Collect a urine collection jug
3	Put on a plastic apron and non-sterile gloves
4	Open the tap on the bottom of the bag and drain the urine into the collection jug. Ensure the tap does not come into contact with the jug.
5	Close the tap on the bottom of the bag securely and ensure it is clean and dry.
6	Dispose of the urine appropriately. This is NOT appropriate urine for laboratory testing.
7	Remove gloves and wash hands
8	Document volume, colour and whether or not there were any particles in the urine.
9	Document and inform medical staff of any causes for concern.

3.8 ATTACHING A NIGHT BAG

1	Collect the appropriate night bag and a urine collection jug.
2	Ensure there is an appropriate place to hang the bag on the child's bed, or bring a stand.
3	Decontaminate your hands
4	Put on a plastic apron and non-sterile gloves
5	Empty the leg bag into the urine collection jug and close the tap. Ensure the tap does not come into contact with the jug.

6	Remove the cap from the end of the night bag tubing, being careful not to touch the exposed tip.
7	Attach the bag connection firmly into the outlet tube on the end of the leg bag.
8	Ensure the outlet tap on the end of the NIGHT BAG is closed and open the outlet tap on the end of the LEG BAG .
9	Ensure the catheter bag tubing is not running upwards at any point. It should pass through and not over the bed's safety sides.
10	Support the night bag either on the hooks on the child's bed, or on a night bag stand. The bag should not touch the floor under any circumstances.
11	Release any straps attaching the leg bag to the child's legs but ensure the bag remains supported on the bed, and is not able to fall.
12	Ensure the tubing is not able to kink, occlude or become trapped.
13	Ensure the bag is checked regularly throughout the night and emptied appropriately.
14	Remove gloves and wash hands.
15	Document the placement of the bag in the child's nursing notes.

3.9 REMOVING A NIGHT BAG

1	Wash your hands.
2	Put on a plastic apron and non-sterile gloves.
3	Close the tap on the end of the child's leg bag.
4	Disconnect the night drainage bag from the leg bag by gently twisting and pulling. Allow any urine in the tubing to drain into the night drainage bag.
5	Empty the bag into a toilet and discard the bag. They are single use only such that a new bag must be used each night.
6	Support the leg bag appropriately for the child with soft straps, ensuring the tubing is not kinked, occluded or trapped.
7	Remove gloves and wash hands.
8	Document the volume of urine drained into the night bag and that the night bag has been removed in the child's nursing notes and fluid balance chart where appropriate.

3.10 CHANGING A CATHETER BAG OR VALVE

1	Collect a new appropriate bag or valve and a urine collection jug.
2	Wash your hands.
3	Put on a plastic apron and non-sterile gloves.
4	Empty the catheter bag.
5	Release any straps attaching the leg bag to the child.
6	Hold the catheter in one hand and the bag or valve in the other and disconnect carefully using a twisting and pulling manoeuvre without putting any tension on the catheter.
7	Nip the end of the catheter together to prevent leakage.
8	Remove the protective end from the tubing on the new catheter bag or valve, being careful not to touch the exposed tip.

9	Push the bag connection or valve into the end of the catheter securely.
10	For a leg bag, support the bag appropriately for the child with soft straps, ensuring the tubing is not kinked, occluded or trapped. The bag should not be in a position to touch the floor.
11	For a valve, ensure the valve is comfortably positioned inside the child's clothing.
12	Remove gloves and wash hands.
13	Document the volume of urine drained into the discarded bag and that the bag has been changed in the child's nursing notes and fluid balance chart where appropriate.

3.11 HYGIENE

1	If the child is in bed he or she should be encouraged to use a clean wipe to clean his or her genital area, or permit a nurse, parent or carer to do this for him or her. This should be carried out daily.
2	If the child is mobile he or she could have a bath or shower with support appropriate to age and condition. The catheter and genitalia should be cleansed as normal with a clean wipe and no soap.
3	For the nurse: Explain what you are about to do to the child.
4	Prepare a bowl of hand-warm water, new wipes and a clean towel.
5	Soap should not be used.
6	Ensure the curtains are closed fully around the bed, or the door and window closed and covered to provide privacy.
7	Wash your hands.
8	Put on a plastic apron and non-sterile gloves.
9	Gently wash around the child's genital area, being careful not to pull on the catheter.
10	Observe for signs of chaffing or infection of the skin or urethral meatus.
11	If there is any encrustation around the catheter tubing this should be soaked off by wrapping the catheter with a warm, wet wipe and leaving for a few minutes before gently rubbing away. Do not pick or scrape as this could damage the catheter.
12	Always wipe the catheter tubing down and away from the child, and not up toward the urethra meatus.
13	Pat-dry the child's skin and dress the child appropriately.
14	Ensure the catheter bag is appropriately positioned and supported and that the tubing is not kinked, trapped or occluded. The bag should not be allowed to touch the floor and tubing must not run up-hill.
15	Dispose of the used wipes and the water.
16	Remove gloves and apron and wash your hands.
17	Document care given in the child's nursing notes. Record and report any cause for concern.

3.12 REMOVAL OF A URETHRAL CATHETER INCLUDING TRIAL WITHOUT CATHETER (TWOC)

1	Explain what is to happen, and what to expect with regard to sensations after the catheter has been removed – stinging and soreness until after the initial bladder emptying, frequency and urgency. Ensure the child and his or her parents understand fully.
2	Symptoms should resolve within 24 hours, and if not will require further investigation.
3	The child needs to be encouraged to drink well throughout the day following catheter removal.
4	The child should not be left for any longer than he or she would ordinarily go between voiding episodes without having his or her bladder checked.

5	If the child has not passed urine within 4-5 hours of catheter removal his or her consultant team should be informed, and the child examined to check whether or not the bladder is full.
6	Ultrasound scan should be used to check bladder fullness.
7	If the bladder is not full the child should be asked to continue drinking with ongoing bladder checks.
8	The child's bladder should not be permitted to fill beyond their expected capacity for age (Age + 1 x 30mls) without being fully assessed by either his or her consultant team or the Children's Urology Nurse Specialist.
9	If the child fails to pass urine and the bladder is found to be full the child should be re-catheterised.
10	Before attempting to remove the catheter check in the documentation how much water is in the retaining balloon. Safety note – silicone catheter balloons allow water to permeate through the balloon wall and be lost; therefore the volume will be lower over a period of time.
11	Take a syringe of the appropriate size to deflate the balloon.
12	Wash hands.
13	Put on a plastic apron and non-sterile gloves.
14	Attach the syringe to the balloon valve and allow the balloon to deflate without tension on the plunger – this prevents cuffing of the catheter and ensures less discomfort on withdrawing the catheter.
15	If the balloon does not deflate check that the syringe is securely attached to the inflation valve.
16	Try an alternate syringe.
18	Insert 2-3mls sterile water into the balloon absolutely no more and then try again to deflate the balloon.
19	If the balloon remains inflated contact the child's consultant team or the children's urology nurse specialist.
20	DO NOT UNDER ANY CIRCUMSTANCES CUT THE CATHETER OR ATTEMPT TO BURST THE BALLOON BY OVERINFLATING WITH AN EXCESSIVE VOLUME OF WATER.
21	Check that the balloon is fully deflated by gently pulling on the plunger to ensure it will not allow any further drainage.
22	Ask the child to take a deep breath and blow it out slowly.
23	As the child blows out quickly but carefully pull out the catheter.
24	If resistance is felt do not continue .
25	Check that the balloon really is completely deflated
26	Ask the child to breathe deeply as before and try one more time.
27	If resistance is still felt stop and inform the child's consultant or the Children's Urology Nurse Specialist.
28	Once the catheter is out check that it is intact, and report any damage, as there might be a fragment left in the bladder.
29	Record the catheter removal in the child's notes including the time, to facilitate monitoring the child's bladder and ensure he or she passes urine appropriately in a safe time frame post removal.
30	Discard the catheter, remove gloves and apron and wash your hands.
31	Ensure the child has a good supply of favoured drinks and maintain contact with him or her to encourage and support while he or she fills his or her bladder. Follow the details as above to ensure he or she is able to void appropriately.

3.13 URINE SAMPLE COLLECTION FROM A NEEDLE-FREE SAMPLE PORT

POINT OF SAFETY – URINE FOR LABORATORY TESTING *MUST NOT BE TAKEN FROM THE COLLECTION BAG.*

1	Explain what you are about to do to the child and parent / carer, ensuring specifically that although you need to use a syringe, there is no needle, and nothing will touch the child or hurt.
2	Do not clamp the catheter before sampling. This will damage the catheter and potentially prevent the balloon valve from working. This will make the catheter impossible to remove without general anaesthetic for the child for safe removal.
3	Check that the appropriate request form with correct details is ready.
4	Label a boric acid bottle (red top) with the child's correct details. (See guideline on urine sample collection for correct transportation). The bottle and form should clearly state that this could be a catheter-caused UTI (CA-UTI).
5	Collect necessary equipment – 20ml syringe, cleansing wipe, sharps disposal bin.
6	Wash hands
7	Put on a plastic apron and non-sterile gloves.
8	Identify the needle port on the catheter tubing and swab with the cleansing wipe, and allow the area to dry.
9	Insert the syringe into the port and withdraw a sufficient sample for testing – see guideline on urine sample collection for details.
10	Drain the sample into the labelled bottle immediately and seal the bottle securely.
11	Attach the request form to the bottle and place safely in the sample collection box on the ward.
12	Remove gloves and apron and wash hands.
13	Reassure the child and parent / carer that the sample has been collected.
14	Document the sample collection in the child's clinical notes with time and date clearly identified.

3.14 TROUBLE SHOOTING

This section includes:

1. Potential psychological problems
2. Bladder pain
3. By-passing
4. Blockage
5. Infection
6. Stricture formation
7. Formation of false passage
8. Pain or haematuria from traumatic insertion

Potential psychological problems

Catheterisation is an invasive procedure and requires a full explanation in language that the child is able to appreciate and understand. Informed consent **must** be gained by the parents/carers, and where the child is competent, from the child.

Catheterisation should never take place by restraining the child against his or her will. This would be an abuse of power, and is against the law. It would also cause emotional and psychological damage, and undermine the child's trust in his or her health care team.

Whilst older children might ask for a same-sex clinician to carry out catheterisation for them, and this should be accommodated whenever possible, it is of absolute importance that the clinician is

appropriately competent and confident in the technique as well as able to gain and hold the child's confidence.

Staff **must** be chaperoned by either a member of staff of the same sex as the child, or the child's parent / carer (Britton and Wright 1990 and RCN 2002).

Bladder pain

Pain is generally due to bladder spasm and the child will often complain of still feeling the need to pass urine, even though the catheter is draining well.

There might also be some irritation and inflammation caused by the initial catheterisation.

Bladder pain can be minimised by choosing a smaller French gauge catheter rather than larger and the child will be helped with anticholinergic medication for the length of time the catheter is in situ. This should be stopped 4 hours prior to catheter removal, as it can prevent good bladder emptying.

By-passing

By-passing occurs when urine leaks between the catheter and urethral wall. The cause could be

- Bladder spasm, which forces urine out around the catheter as the catheter lumen is too narrow to drain under increased bladder pressure.
- A blocked catheter.
- The use of a catheter that is too large, causing urethral spasm.
- The balloon being inflated too far, causing
 - Bladder spasm
 - The eyes in the catheter lying too high, such that there is residual urine below them, which can't drain down the catheter.

By-passing can be avoided with correct choice of catheter size at the outset, use of anticholinergic medication, correct inflation of the balloon, and ensuring that the catheter does not become blocked.

Blockage

This can be caused by

- Debris or encrustation
- Mucus where the child has undergone bladder reconstruction using bowel
- The catheter eyes being occluded by bladder mucosa – also associated with pain.
- Kinked catheter tubing.
- Patient sitting on the catheter tubing...

Initial checks should be to ensure these latter 2 are not the cause.

In some circumstances a bladder washout may be required. This should be part of the child's care plan, with the specific washout regime clearly prescribed. When washing out the solution should be gently instilled into the bladder via the catheter using a 50mls catheter tip syringe, using an aseptic technique. The solution should then be permitted to drain by gravity. **It should not be pulled back using the syringe** unless by a clinician who has experience of such, for example the child's consultant team or the Children's Urology Nurse Specialist.

The risk of encrustation can be reduced and the catheter life extended by lowering the pH of urine by dietary means, for example Ascorbic Acid (vitamin C), Cranberry juice, pulses and cereals, and ensuring a good fluid intake and urine output (Getliffe 1993).

Infection

Invasion of the catheter by micro-organisms may result in colonisation with no clinical symptoms or invasion of the bladder tissues. However, there is also a risk of developing catheter-associated UTI that is symptomatic, and appropriate treatment should be sought based on culture and sensitivities along with a clear reason for continuing with an indwelling catheter. (The scope of the NICE guidance 2007 is for children with first or recurrent UTI, and does not include catheter-associated UTI)

Catheter-associated UTI is classified as having occurred 48 hours after catheter insertion, up to 48 hours after removal.

Prevention relies on

- Good standards of hand hygiene and the wearing of gloves whenever handling the catheter or drainage system.
- Following an aseptic technique when catheterising.
- Maintenance of a closed drainage system (Pomfret 2000a)
- Good positioning of the drainage system to prevent reflux.
- Using the sampling port for urine sample collection, and ensuring the port is correctly cleaned using a 70% alcohol solution first, and allowing sufficient time for it to dry before sampling.
- Ensuring the drainage system does not come into contact with the floor.
 - This includes not coming into contact with wheelchair wheels.
- Good standards of patient personal hygiene; the urethral meatus should be cleansed daily (see specific heading 'Hygiene').

Stricture formation

Strictures can be caused by

- Urethritis resulting from trauma on insertion.
- Inflating the balloon in the urethra.
- Traumatic removal of the catheter.
- Sensitivity to the products being used.
- Tissue necrosis caused by pressure on blood vessels in the urethra, generally caused by using too large a catheter, but made worse in anyone with vascular compromise.
- Para-urethral abscess, caused by blocking the para-urethral ducts, generally caused by using too large a catheter (Blandy 1980, Britton and Wright 1990).

Attention to technique, asepsis and catheter selection will reduce the risk of stricture formation.

Creation of a false passage

The mucosal lining of the urethra is delicate and susceptible to damage during catheterisation. There is generally some resistance felt when catheterising, especially boys, but undue force should not be used. Catheterisation should stop and advice be sought from a urologist or the children's urology nurse specialist if the child complains of more than mild discomfort.

Where a false passage is diagnosed the child will be required to be carefully catheterised by an experienced clinician, and this catheter will need to remain in situ for up to 6 weeks for tissue healing.

Pain or haematuria from traumatic insertion

Correct instillation of a local anaesthetic lubricant into the urethra, allowing up to 5 minutes before catheterising, should reduce pain and friction on catheterisation.

Attention to technique and correct catheter selection will also prevent and reduce the risk of trauma.

Ensuring the child is fully aware and consenting to the procedure, and has the support of a parent, carer and/or play specialist should help him or her to relax, which will greatly facilitate a less traumatic procedure.

4. Education and Training

Authorised staff

All members of staff who undertake urethral catheterisation, care and removal of the catheter for children must be supported by their line manager and carry out this activity as an integral part of their key responsibilities within their role.

Members of staff who may carry out this role are those who have undergone appropriate training and been assessed as competent.

The training must be identified through the appraisal process and be included in their personal development plan.

Members of staff must complete the Trust competency based training and assessment program led by the children's urology nurse specialist lead, who can be contacted on ext. 5533.

Members of staff must have completed a period of supervised practice, the time span of which will be agreed by the assessor but to be completed within 6 months.

Authorised members of staff must have evidence of assessment and competency signed by an appropriate assessor.

Authorised members of staff must accept responsibility for updating knowledge and skills and provide evidence of this as agreed with line manager as part of the appraisal process.

Staff new to the Trust who have been trained elsewhere or who are newly registered and have been assessed as competent within their pre-registration training must provide evidence of the training and assessment program that they have successfully completed.

If the member of staff does not have any evidence of successful completion of their training and assessment they will be required to undertake the UHL training. These members of staff will be required to undertake a one-of practical assessment by an appropriate assessor within the Children's CMG.

Where the child is known to have complex urology it may be necessary to restrict urethral

catheterisation to those with specialist training and experience.

N.B Inappropriate use of feeding tubes as urethral catheters can result in knotting and harm to the patient (Foster et al 1992). If clinicians are using inappropriate catheters or products not specifically designed for use as urinary catheters, there are concerns relating to risk assessment and practitioner liability (Medical Devices Agency 2001).

5. Monitoring compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Insertion bundle compliance Care bundle compliance	Infection control audit tool.	Ward sister	Monthly	Departmental quality & safety board
Number of CAUTIs		Ward sister	per 1000 catheter days	Departmental quality & safety board

6. Supporting Documents and Key References

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- Urinary Catheter Insertion & Urinary Catheter Daily Care Bundles. The Infection Prevention Society. (Available at www.ips.net.uk)

7. Key Words

Catheterisation, Urinary, Children's, Catheter, Bladder, Foleys

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs. As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

CONTACT AND REVIEW DETAILS	
Guideline Lead (Name and Title) Jeni Senior Children's Urology Nurse Specialist	Executive Lead Chief Nurse
<p>Added - 2.5 Maintenance of the urinary catheter system Review the need for a catheter daily and remove at the earliest opportunity unless the catheter is in situ as part of a specific plan that clearly outlines duration.</p> <ul style="list-style-type: none"> • Do not irrigate/flush the catheter just because of apparent/potential blockage unless this is part of the child's prescribed care plan. <p>Removed - For PICU patients only If not draining consider ...</p> <p>Added - 2.7 CATHETER LENGTH Usually for boys, although can be used in females in certain circumstances, for example those using wheelchairs, or into Mitrofanoff stomas.</p> <p>Added to - 3.7 EMPTYING THE CATHETER BAG 3.8 ATTACHING A NIGHT BAG</p> <p>Point 5 & 6 - Ensure the tap does not come into contact with the jug.</p> <p>Added - 3.12 DO NOT UNDER ANY CIRCUMSTANCES CUT THE CATHETER OR ATTEMPT TO BURST THE BALLOON BY OVERINFLATING WITH AN EXCESSIVE VOLUME OF WATER.</p>	

CAUTI – Definition

All patients with a positive urine culture who did not have evidence of urinary tract infection when inserted or for the first 48 hours the catheter is in situ. This includes urinary tract infections isolated within 48 hours of catheter removal.

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Criteria 1

Must also have one of the following;

Fever >38 °C

Suprapubic tenderness

Costovertebral angle pain or tenderness

AND EITHER

A positive urine culture of $\geq 1 \times 10^5$ colony-forming units (CFU)/ml with no more than 2 species of microorganism

OR

A positive urine culture of $\geq 1 \times 10^3$ and $\leq 1 \times 10^5$ colony-forming units (CFU)/ml with no more than 2 species of microorganism

WITH

At least 1 of the following;

A positive dipstick for leucocytes and/or nitrites

Pyuria (Urine with ≥ 10 wbc/mm³ unspun urine or ≥ 5 wbc/mm³ high power field of spun urine) Microorganisms seen on Gram's stain of unspun urine

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Criteria 2

Patient < 1 year of age with at least one of the following;

Fever >38 °C or hypothermia <36 °C

Apnoea Lethargy

Bradycardia Vomiting

Dysuria

} With no other recognised cause

AND EITHER

A positive urine culture of $\geq 1 \times 10^5$ colony-forming units (CFU)/ml with no more than 2 species of microorganism

OR

A positive urine culture of $\geq 1 \times 10^3$ and $\leq 1 \times 10^5$ colony-forming units (CFU)/ml with no more than 2 species of microorganism

WITH

At least 1 of the following;

A positive dipstick for leucocytes and/or nitrites

Pyuria (Urine with ≥ 10 wbc/mm³ unspun urine or ≥ 5 wbc/mm³ high power field of spun urine) Microorganisms seen on Gram's stain of unspun urine

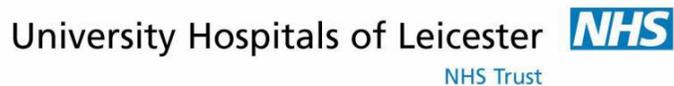
Note: Elements of the criteria must occur within 24 hours of each other to be included



Urinary Catheter INSERTION Bundle



Urinary Catheter Insertion Standard		Yes	No	Comment
1	Have alternatives to urinary catheterisation been considered and documented?			
2	Is the clinical reason for insertion specified and documented?			
3	Is the healthcare worker trained in catheterisation or supervised by a trained person?			
4	Is the smallest gauge catheter used for effective drainage?			
5	Is hand hygiene performed before urinary catheterisation?			
6	Is a single use apron worn for urinary catheterisation?			
7	Are single use sterile gloves worn for the aseptic procedure?			
8	Is the urethral meatus area cleaned with sterile normal saline prior to urinary catheterisation?			
9	Is asepsis maintained throughout the procedure?			
10	Is sterile, single use anaesthetising lubricant used prior			
11	Is the catheter connected aseptically to a sterile closed drainage system?			
12	Is the urinary catheter bag positioned below the level of the bladder for effective drainage?			
13	Is waste discarded into the appropriate waste stream according to local policy?			
14	Is all personal protective equipment removed?			



Urinary Catheter Care Pathway

Details:

Date of Insertion: Operator:

Reason for Insertion:

Catheter Type: Long Term / Short Term (Circle as appropriate)

Catheter Type/Make/Length/Size:

Volume of Sterile Water in Balloon:

Is a green insertion sticker in the notes? Yes / No / Catheterised Outside UHL

Continuing clinical indication

- A urinary Catheter is a clinical need
- If not required then the catheter should be removed at the earliest opportunity
- This needs reviewing and documenting daily unless there is a clear plan of care indicating reason and period of catheterisation needed, e.g. post urology surgery

Catheter Care

- A wash should be completed once in 12 hours in the nappy region ensuring the catheter itself is clean – use warm water only, not antiseptics or soap
- Soiled nappies should be changed immediately taking care that the catheter itself is clean. The child should be in double nappies
- Ensure the catheter is secure to prevent it dislodging with balloon inflated causing trauma
- If mobile the child can bath in warm water.

Closed Bag System

- **Do not** routinely change indwelling catheters or drainage bags
Change based on infection, obstruction or contamination, manufacturers instruction and individual needs of the child
- **Maintain free urinary flow at all times** e.g. ensure there are no kinks or blockage.
Assess reason for failure to drain and treat appropriately according to the child's care plan
Use a bladder scanner if obstruction is suspected
- Drainage bags should be **below the bladder and NOT touching the floor** at all times

Access

- Infection Control
 - Wear a plastic apron, wash hands,
 - Wash/gel hands after removing gloves
- Empty the catheter drainage system when **1/2 full**
- Avoid contact between the drainage tap and the collecting container
 - Samples should be taken from the hard plastic meter port, not the drainage bag



Place Patient Label Here

Date	Time	Days Catheter in situ	Catheter Needed (Y/N)	Catheter Care Performed	Catheter Positioned Correctly	Aseptic Sample Taken	Catheter Bag Changed	Signed
		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		10						
		11						
		12						
		13						
		14						

Appendix 5

If a young person refuses treatment:

(General Medical Council 2018, Ethical Guidance, 0–18 years: guidance for all doctors)

Respect for young people's views is important in making decisions about their care. If they refuse treatment, particularly treatment that could save their life or prevent serious deterioration in their health, this presents a challenge that you need to consider carefully.

Parents cannot override the competent consent of a young person to treatment that you consider is in their best interests. But you can rely on parental consent when a child lacks the capacity to consent. In Scotland parents cannot authorise treatment a competent young person has refused. In England, Wales and Northern Ireland, the law on parents overriding young people's competent refusal is complex. You should seek legal advice if you think treatment is in the best interests of a competent young person who refuses.

You must carefully weigh up the harm to the rights of children and young people of overriding their refusal against the benefits of treatment, so that decisions can be taken in their best interests.¹⁶ In these circumstances, you should consider involving other members of the multi-disciplinary team, an independent advocate, or a named or designated doctor for child protection. Legal advice may be helpful in deciding whether you should apply to the court to resolve disputes about best interests that cannot be resolved informally.

You should also consider involving these same colleagues before seeking legal advice if parents refuse treatment that is clearly in the best interests of a child or young person who lacks capacity, or if both a young person with capacity and their parents refuse such treatment. For further guidance on these issues see GMC guidance on consent and treatment and care towards the end of life.

Other refs

Principals of consent, NMC 2015