PAEDIATRIC NURSING PRACTICE MANUAL
SECTION 3

GENERAL CARE OF THE SICK CHILD

3.5 BLADDER TREATMENTS

3.5.3 URINARY CATHETERISATION: INSERTION AND MANAGEMENT

Aims

To ensure the insertion and care of the urinary catheter is carried out in a manner that minimizes trauma and infection risk.

Background:

Insertion of a urethral catheter is an invasive procedure that should only be carried out by a qualified competent health care professional using aseptic non touch technique. Catheterisation of the urinary tract should only be done when there is a specific and adequate clinical indication, as it carries a high risk of infection.[1, 2]

Indications

In patients undergoing intermittent catheterisation, consider using a portable ultrasound device to assess urine volume and reduce unnecessary catheter insertions.[2] The expected bladder capacity of a child aged 0-12 years = (30mL + (age in years x 30).

Indwelling Catheter	Intermittent Catheter
• To relieve bladder distension • To maintain drainage of urine • To accurately monitor urinary output in critically sick child • Intra and post-operative (eg. urological, spinal)	• To relieve bladder distension • To remove residual urine • To maintain bladder control/remain continent • To collect a urine specimen for diagnostic testing • When a patient who is regularly intermittently catheterised at home, is unable to perform the procedure in hospital • In the initial phase of recovery for patients with spinal injury (check with CNS Rehab)

Key points:

1. Insertion of either an intermittent or indwelling catheter is an aseptic non touch technique (surgical).[3]
2. With the exception of nurses in Diagnostic Imaging, nurses should **NOT** attempt to catheterise a male infant who:
   - is known to have urinary tract abnormalities.
   - is less than 12 months and who has undergone surgery. The exception to this is patients in intensive care units (PICU and NICU).
   - has had surgery on the renal tract.
   - Seek medical advice if there is any doubt as to the appropriateness of undertaking this procedure.

Catheter selection

Intermittent catheters use NELATON® **Indwelling** catheters use FOLEY®

Selection of catheter type and size should be determined by the nurse or medical officer based on the age, size and medical condition of child.

The reason for insertion should also be taken into consideration.

Use the smallest bore size possible to allow adequate drainage and to minimise trauma.[1-3]

Guide to Catheter Size Selection[7,8] **Male & Female**			
Newborn/Premature	5-6 Fr	School Age	8-12 Fr
Infant/Toddler	6-8 Fr	Adolescent	8-14 Fr (majority 12Fr)
Preschool	6-10Fr (mostly 8 Fr)		

Equipment

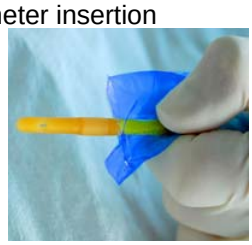
Dressing trolley
Dressing Pack/Catheter pack
Catheter of appropriate size, type and balloon dimensions
Catheter preparation solution
Sterile single use anaesthetic lubricant in syringe
Sterile gloves
Protective sheet and drapes
Angle-poise light
Urine specimen container
Paper bag

Additional equipment required for indwelling catheter

Sterile water ampoule (5mL or 10mL depending on the size of the balloon)
Syringe and drawing up needle
Urine drainage bag with non-return valve
Adhesive tape
Drainage bag holder

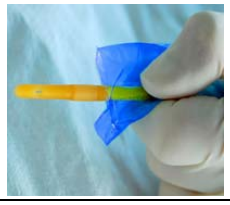
FEMALE URETHRAL CATHETERISATION

PROCEDURE	ADDITIONAL INFORMATION
Prepare patient: Explain procedure to child and parent/carer and gain consent. Place protective sheet under the child.	Check for allergies to lubricant or latex.
Place child in a supine position with knees bent and hips flexed. Wash genitalia with soap and water. Cover the patient with a sheet.	Maintain the child's dignity throughout the procedure.
Perform hand hygiene.	
Prepare equipment: Clean trolley with sporacidal detergent and/or alcohol and allow to dry. Gather equipment. Position waste bag on side of trolley Put on apron.	Use a Tuffie 5 wipe if visibly soiled.
Open dressing pack onto cleaned surface. Using a non touch technique, add sterile equipment onto general aseptic field. Pour antiseptic solution into tray. Perform hand hygiene and apply sterile gloves.	If assistant required, assistant to open outer packaging of dressing and equipment.
Apply fenestrated drape to the child and adjust to expose the vulva.	
Separate labia with non dominant hand to expose urethral meatus. Maintain hand position	
Using the other hand ± forceps, swab the inside surface of each labium minora once and urethral meatus twice with the antiseptic solution. Dry with sterile gauze	Move swab from above the urethral meatus down towards the rectum. Use each swab only once.
Slowly instil 2mL anaesthetic lubricant into the urethra and around the urethral meatus. Allow 2-3 mins for anaesthetic to be effective.	
Remove gloves and perform hand hygiene.	
Apply new sterile gloves.	

PROCEDURE	ADDITIONAL INFORMATION
Place sterile tray onto drape between the child's thighs.	
Lubricate the catheter to approx 2-6cms from tip.	Leave 2mL of lubricant in the syringe.
Gently insert catheter into the urethra using forceps or by only touching the catheter sheath, until urine flows. Remove hand separating labia.	eg. Foley catheter insertion 
Allow the bladder to empty.	Collect urine specimen if required.
Proceed as follows for Indwelling Catheter:	
Ensure urine is flowing prior to inflating the balloon. Instil the recommended volume of sterile water into the balloon inlet.	If the child feels pain, the catheter may not be in the bladder. Deflate the balloon and gently advance the catheter further into the bladder.
Connect catheter to drainage system using non touch technique.	It may be necessary to regulate the flow of urine to prevent shock.
Secure the catheter to the child's thigh with tape.	Check for tape allergies. Check there is no tension on the catheter and tubing.
Position the urinary drainage bag **below** the level of the bladder.	The bag should not be in contact with the floor.[1]
Dispose of equipment in clinical waste. Remove gloves. Perform hand hygiene. Decontaminate trolley.	
Ensure the child is comfortable at end of procedure.	

MALE URETHRAL CATHETERISATION

PROCEDURE	ADDITIONAL INFORMATION
Prepare patient: Explain procedure to child and parent/carer and gain consent. Place protective sheet under the child. Place child in a supine position. Wash genitalia with soap and water. Cover the patient with a sheet.	Check for allergies to lubricant and latex.
Perform hand hygiene.	
Prepare equipment: Clean trolley with sporacidal detergent and/or alcohol and allow to dry. Gather equipment. Position waste bag on side of trolley. Put on apron.	Use a Tuffie 5 wipe if visibly soiled.
Open dressing pack onto cleaned surface. Add sterile equipment onto general aseptic field using non touch technique. Pour antiseptic solution into tray. Perform hand hygiene. Apply sterile gloves.	
Apply fenestrated drape across the shaft of the child's penis and between the legs.	
With non-dominant hand, gently retract the foreskin until the urethral meatus is just visible. **Do not** force the foreskin back, especially in infants.	If the meatus cannot be visualised seek medical advice. The foreskin is adherent to the glans in an infant.
Using the preferred hand, clean the urethra and the shaft of the penis with swabs and antiseptic solution. Work in a circular motion from the meatus to the base of the penis.	Use each swab only once and discard into waste bag.
Instil up to 5mL anaesthetic lubricating gel into the urethra. Allow 2-3 minutes for the gel to take effect.	Older boys may need up to 10mL lubricant.
Remove gloves, perform hand hygiene. Apply new sterile gloves.	

PROCEDURE	ADDITIONAL INFORMATION
Place sterile tray on the drapes between the child's thighs. Lubricate 20cm along catheter.	
Using gauze, hold the penis perpendicular to the body. Insert the catheter into the urethra. Use forceps for Nelaton catheter. If using a Foley catheter, touch only the outer plastic sheath.	
If resistance is felt, pause momentarily to let the external sphincter relax before continuing insertion.[4]	When the catheter tip approaches the external sphincter, resistance may be felt.
Lower the penis and advance the catheter with constant gentle pressure until urine flows.	Obtain a urine specimen if required.
Allow the bladder to empty and remove the intermittent catheter.	
Proceed as follows for an Indwelling Catheter	
Ensure urine is flowing prior to inflating the balloon. Instil the recommended volume of sterile water into the balloon inlet.	If the child feels pain, the catheter may not be in the bladder. Deflate the balloon and gently advance the catheter further into the bladder.
Using a non touch technique, connect catheter to drainage system.	It may be necessary to regulate the flow of urine to prevent shock.
Secure the catheter to the child's thigh with tape. Ensure there is no tension on the catheter and tubing.	Check for tape allergies before application.
Position the urinary drainage bag **below** the level of the bladder.[1]	The bag should not be in contact with the floor.
Dispose of equipment in clinical waste, remove gloves and perform hand hygiene Decontaminate the trolley.	Ensure patient is comfortable at end of procedure.

DOCUMENTATION

Enter into patient progress notes:

- Indication for catheterisation
- Type of catheter
- Size and length of catheter
- Volume of water inserted into the balloon of a Foley catheter
- Volume of urine obtained
- Any problems encountered
- Date and time of catheterisation

ONGOING MANAGEMENT OF AN INDWELLING CATHETER

1. Following aseptic insertion of an indwelling urinary catheter, maintain a closed drainage system.
2. Review the need for the catheter daily and remove as soon as clinically indicated.[2, 5]
3. Encourage adequate fluids to maintain dilute urine and reduce the risk of infection.
4. Monitor the catheter patency and urine output hourly. Normal urine output is 1-2mL/kg/hr. Report if any variation
5. Cloudy, offensive smelling or unexplained blood stained urine is not normal and needs further investigation.
6. Ensure drainage system is below the level of the bladder at all times and free of kinks to prevent reflux of urine into the bladder.
7. Empty the urinary drainage bag frequently enough to maintain urine flow and prevent reflux. Use a separate and clean container for each patient and avoid contact between the urinary drainage tap and container.[6]
8. Do not place the drainage bag onto the floor as this increases the risk of infection.[1, 2, 6]
9. Use aseptic non touch technique to obtain urine sample from the catheter tubing port. Cleanse the access port with 2%chlorhexidine/70% alcohol prior to sampling.
10. Routine daily personal hygiene is all that is needed to maintain meatal hygiene.

COMPLICATIONS:

- Infection
- Trauma: from insertion; balloon inflated in incorrect position
- Blockage: blood, debris see PNPM 3.5.5 Bladder Irrigation
- Inability to catheterise

REMOVAL OF A URINARY CATHETER

Key point

It is not necessary to clamp the catheter prior to removal.[2]

PROCEDURE	ADDITIONAL INFORMATION
Explain procedure to child and family.	
Perform hand hygiene and don sterile gloves.	
Insert sterile syringe into catheter port and allow the water to fill the syringe until balloon fully deflated. Refer to documented volume instilled into balloon to ensure correct amount is withdrawn.	Do not draw back on the syringe as this may cause a vacuum in the balloon and can prevent the balloon from deflating. If this occurs, surgical intervention will be required to remove the catheter.
Gently withdraw catheter	If resistance felt, and catheter cannot be removed easily, do not force, leave catheter in situ and consult medical team.
Upon removal, check the catheter is intact.	Report to medical team if not intact.
Dispose of catheter and drainage system in clinical waste. Remove gloves and perform hand hygiene.	
Document catheter removal in patient notes.	
Monitor urine output post catheter removal.	

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