

Standard Operating Procedure (SOP) for  
trouble shooting of indwelling catheters (adult patients)

<b>Document Details</b>		
<b>Title</b>	Standard Operating Procedure (SOP) for trouble shooting of indwelling catheters (adult patients)	
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Related Trust policy	Urinary Catheter Care Policy for Adult Patients	
<b>Approval process</b>		
Who has been consulted in the development of this SOP?	Continence Advisory Service	
Approved by (Committee/Director)	Clinical Policies Group	
Approval Date	13/11/2023	
Review date	13/11/2026	
<b>Amendments History</b>		
No	Date	Amendment
1	Oct 2023	New Standard Operating Procedure

## Standard Operating Procedure for trouble shooting of indwelling catheters (adult patients)

### Non deflating catheter balloons

- Try attaching a different syringe to the inflation valve
- Leave syringe attached to the inflation valve, with the plunger removed, for 20 mins
- 'Milk' the catheter along its length to dislodge debris occluding the inflation channel
- Insert a 25-gauge orange needle attached to a syringe, into the inflation chamber just behind the inflation valve, and draw back to bypass a faulty valve (be aware that this is using catheter out of license)
- Contact GP, arrange transfer to urology (urology may puncture the balloon suprapubically using a needle, under ultrasound visualisation)
- Inform the catheter manufacturer if a faulty catheter / balloon / valve is suspected

**DO NOT** burst the balloon by over inflating it – this will break it into fragments within the bladder

**DO NOT** cut the catheter or inflation arm or catheter – as the catheter may retract into the bladder, and further attempts at deflation with a syringe will be jeopardised

**DO NOT** leave the catheter insitu for longer than it is licensed for

### Failure of urine to drain upon insertion of catheter into female urethra

- When inserting the catheter, the balloon must not be inflated until urine drains via the catheter

**DO NOT** instill a catheter maintenance solution to establish whether a newly inserted catheter has been positioned correctly in the female urethra

- If catheter drainage issues persist or appear unusual, the HCP needs to offer a visual examination of the patient's genital area including the urethral meatus to check for correct positioning of the catheter and to look for any abnormalities

### Allergy

- Latex – if patient has an allergy to the latex in hydrogel or PTFE catheters, silicone catheters must be used

Standard catheterisation gel contains two active ingredients, Lidocaine and Chlorhexidine (such as Optilube Active, 6ml or 11ml)

- Lidocaine - If the patient has an allergy to Lidocaine, use an alternative gel with no Lidocaine in (such as Optilube, 6ml or 11ml)
- Chlorhexidine - If the patient has an allergy to Chlorhexidine, use an alternative gel with no Chlorhexidine in (such as Optilube Active CHG free, 6ml or 11ml)

## Urinary bypassing due to blockage

There are two reasons for bypassing:

- catheter is blocked
- bladder spasm
- Establish reason for bypassing by instilling a Saline catheter maintenance solution:

If saline can not be instilled, catheter is not patent, and bypassing is due to **blockage**

- Check for obstruction (kinked tubing, occlusion by leg bag straps)
- Address constipation
- Change catheter

If catheter is persistently blocking, consider:

- Promote dilute urine (provide patient with 'Are you drinking enough fluids' leaflet, and check for understanding)
- Following catheter removal, cut it catheter lengthways to establish if blockage / debris is predominantly confined to tip of catheter or throughout the lumen
- Consider an open-ended catheter (useful if blockage is predominantly confined to tip of catheter)
- Consider a silicone catheter (which has a larger lumen than a hydrogel or PTFE catheter, so useful if blockage / debris is throughout the lumen)
- Consider a PTFE catheter if catheter changes are occurring every 1 to 28 days
- Implement proactive catheter changes, before catheter is due to block
- Saline can be used to gently flush catheters that block with pus, blood clots or debris. Refer to Standard Operating Procedure for administration of B Braun Uro-Tainer NaCl Saline 0.9% catheter maintenance solutions, for adult patients
- If urinary pH is elevated above 6.8, consider administering two sequential solutions of 3.23% citric acid (Suby G) catheter maintenance solution twice a week. Refer to Standard Operating Procedure for administration of B Braun Uro-Tainer Twin Suby G 3.23% Citric Acid catheter maintenance solutions, for adult patients

Catheter maintenance solutions must only be administered if there is an Authority to Administer Community Drug Sheet completed by the prescriber.

Refer to Trust Medicines Policy Part 1: General principles (2022)

Authority to Administer for community Services. Authorisation – Community Drug Sheet

<https://staffzone.shropcom.nhs.uk/smii/doclib/10468.pdf?ac=7>

The exception to this rule is if a Urotainer NaCl 0.9% catheter maintenance solution is being administered as a Homeley Remedy.

Refer to Trust Medicines Policy Part 9. Procedure for the administration of homely remedies in community hospitals and community service teams (Uro-tainer NaCl 0.9% catheter maintenance solution) 2022

<https://staffzone.shropcom.nhs.uk/smii/doclib/11450.pdf>

The Trust Catheter Care Pathway, Catheter Maintenance Solution document must be used to assess for, and to document, administration of all CMS

Refer to Trust document on Staffzone:

CONT 005 Catheter Care Pathway

<https://www.shropscommunityhealth.nhs.uk/content/doclib/11156.doc>

## Urinary bypassing due to bladder spasm

There are two reasons for bypassing:

- catheter is blocked
- bladder spasm
- Establish reason for bypassing by instilling a Saline catheter maintenance solution:

If saline can be instilled, catheter is patent, and bypassing is due to **bladder spasm**

- Advise patient to switch to decaf fluids
- Promote dilute urine (provide patient with 'Are you drinking enough fluids' leaflet, and check for understanding)
- Address constipation
- Consider smaller charriere catheter
- Consider switching from silicone to hydrogel or PTFE catheter if no latex allergy (which are softer, more comfortable)
- Discuss antimuscarinic or Mirabegron medication with GP (if patient already on an antimuscarinic or Mirabegron, discuss with GP whether the patient would be a suitable candidate to try an alternative, or higher dose)
- Discuss with patient and GP whether the patient would benefit from referral to urology for consideration of intravesical botox

- Catheter balloons should be inflated with the exact volume of sterile water as specified by the manufacturer
- They should not be under inflated as this can lead to the balloon inflating asymmetrically, which will potentially cause more irritation to the trigone, and increase bladder spasm
- Underinflating catheter balloons will result in the catheter being used out of license and the manufacturer will not be liable for any associated clinical issues
- However, Midlands Centre for Spinal Cord Injury (MCSCI) or urology may occasionally request under inflation of catheter balloons. This must be a documented request (not verbal) and be placed in the patients notes (uploaded to Rio documents). It must also be documented in the patient's notes that the nurse has discussed the risks with the patient, of under inflated balloons, that the catheter is being used out of license, and that informed consent has been gained

## Previous history of external encrustation causing trauma upon catheter removal

- Administer 6% citric acid (Solutio R) catheter maintenance solution immediately prior to removing future catheters, to dissolve the encrustation, and hence minimize the risk of further trauma.  
Refer to Standard Operating Procedure for administration of B Braun Uro-Tainer Solutio R 6% Citric Acid catheter maintenance solutions, for adult patients

Catheter maintenance solutions must only be administered if there is an Authority to Administer Community Drug Sheet completed by the prescriber.

Refer to Trust Medicines Policy Part 1: General principles (2022)

Authority to Administer for community Services. Authorisation – Community Drug Sheet

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The Trust Catheter Care Pathway, Catheter Maintenance Solution document must be used to assess for, and to document, administration of all CMS

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### Purple urine bag syndrome

Rare condition, with purple discoloration of the urine, within the catheter drainage system. The purple colour is derived from metabolites of tryptophan which are found in high levels in the gut of constipated patients. The formation of purple pigments are also derived as a result of recurrent CAUTIs. Enzymes produced from bacteria containing sulphatase and phosphatase enzymes, produce a combination of red and blue pigments

- Address constipation
- Promote effective catheter care which minimises the risk of further CAUTIs
- Reassure the patient that purple urine bag syndrome is not harmful and that no active interventions are required / it can be addressed conservatively (treatment of asymptomatic bacteriuria is not indicated)
- If current CAUTI is suspected, follow CONT054 Standard Operating Procedure for management of suspected or confirmed CAUTI (urethral or supra pubic indwelling urinary catheters, adult patients)

### Spontaneous catheter expulsion from urethra, with balloon intact

Most common in female patients with a neurological condition, such as multiple sclerosis

- Advise patient to switch to decaf fluids
- Promote dilute urine (provide patient with 'Are you drinking enough fluids' leaflet, and check for understanding)
- Address constipation, and advise patient to avoid straining to stool
- Consider smaller charriere catheter
- Consider switching from silicone to hydrogel or PTFE catheter if no latex allergy (which are softer, more comfortable)
- Consider a PTFE catheter if catheter changes are occurring every 1 to 28 days
- If the amount of water in silicone catheter balloons is reducing significantly via osmosis, and leading to catheters falling out – **DO NOT deflate and reinflate the balloon**. Instead, consider switching to a hydrogel or PTFE catheter. These are less likely to lose a significant amount of water via osmosis. If the patient must continue with a silicone catheter due to latex allergy – consider using a silicone catheter that is inflated with a 5% glycerin solution, that helps reduce premature balloon deflation
- Discuss antimuscarinic or Mirabegron medication with patient and GP (if patient is already on an antimuscarinic or Mirabegron, discuss with GP whether patient would be a suitable candidate to try an alternative, or higher dose)
- Discuss with patient and GP whether they are a suitable candidate for referral to urology, for consideration of formation of a cystostomy stoma / suprapubic catheter, or intravesical botox

- Catheter balloons should be inflated with the exact volume of sterile water as specified by the manufacturer
- They should not be over inflated as this will potentially cause the balloon to burst and will leave fragments of catheter balloon in the patient's bladder, which will need to be removed via cystoscopy
- Catheters with more than 10ml of water in them will also significantly increase the risk of trauma to the bladder, bladder neck and the urethra
- Deflating and inflating catheter balloons more than once, or overinflating catheter balloons will result in the catheter being used out of license, and the manufacturer will not be liable for any associated clinical issues
- However, urology may very occasionally request over inflation of 10ml catheter balloons or use of larger catheter balloons, to help prevent spontaneous catheter expulsion from the urethra. This must be a documented request (not verbal) and be placed in the patients notes (uploaded to Rio documents). It must also be documented in the patient's notes that the nurse has discussed the risks with the patient, of over inflated balloons / larger balloons, that the catheter is being used out of license, and that informed consent has been gained
- Indwelling catheters with 30ml balloons must not be inserted in the community. They should only be used on a urology ward, post prostatic surgery. The heavier weight and larger balloon may cause bladder spasm, irritation of the trigone and trauma / necrosis to the bladder neck

### Spontaneous catheter expulsion, with balloon deflated

- Examine the expelled catheter and balloon closely
- If the balloon is ruptured, it is likely that bladder calculi are present in the bladder and they have burst the balloon. Inform GP and request referral to urology to assess further
- If the balloon is intact / not ruptured, it is likely that the catheter / balloon was faulty. Save the catheter and inform the catheter manufacturer

### Haematuria

May be caused by trauma, infection or renal / bladder pathology

It commonly occurs post urological surgery, and post catheterisation for acute urinary retention (particularly if the residual volume was very significant, and the bladder was very distended)

- If the haematuria is severe, arrange urgent transfer of patient to urology, at Royal Shrewsbury Hospital. The patient should be monitored for shock, clots and associated blockage
- If CAUTI is suspected, follow CONT054 Standard Operating Procedure for management of suspected or confirmed CAUTI (urethral or supra pubic indwelling urinary catheters, adult patients)
- If trauma is suspected, ensure catheter is secured appropriately (refer to Standard Operating Procedure for securing indwelling catheters - adult patients) and ensure that patient / family / carers have been provided with CONT013 'Patient Information – indwelling catheters' leaflet, and check for understanding
- If haematuria is related to known renal / bladder pathology, and you are concerned about it, liaise urgently with urology / GP
- If haematuria is of unknown origin and is persistent, inform GP for further assessment / referral to urology, to establish underlying aetiology

### Phimosis

Phimosis is the inability to retract the foreskin over the glans

- Gently pull back foreskin as far as it will comfortably go, to clean glans and to visualise the urethral meatus, prior to urethral catheterisation
- Inform GP if pain and inflammation is present or infection is suspected
  - Balanitis inflammation of the glans
  - Posthitis inflammation of the foreskin
  - Balanoposthitis inflammation of the glans and foreskin
- Discuss with the patient and GP whether they are a suitable candidate to be referred to urology, for consideration of circumcision surgery

**DO NOT** force foreskin back, further than it will comfortably go

## Paraphimosis

Paraphimosis occurs when the foreskin becomes trapped behind the corona of the glans. This leads to strangulation of the glans, painful vascular compromise, distal venous engorgement, oedema, and even necrosis

Paraphimosis is a medical emergency

- Patient must be transferred immediately to A&E at Royal Shrewsbury Hospital, where urology are based

**DO NOT** attempt to reduce the foreskin

## Unable to remove catheter from supra pubic cystostomy stoma, following deflation of balloon

### PREVENTION

- Consider using a hydrogel or PTFE catheter, if no latex allergy (as they are less likely to cuff upon removal, compared to silicone catheters)
- If the patient has a latex allergy, consider using a silicone catheter, with an integral balloon (as they are less likely to cuff than standard silicone catheters)

### TREATMENT

- Leave catheter insitu for 5 minutes after deflating balloon, to allow balloon to regain its original shape
- Rotate catheter as it is slowly removed
- Consider reinflating the catheter balloon with 1ml of sterile water (be aware that this is using the catheter out of license. However, it may be clinically appropriate to consider this approach following multidisciplinary discussion, when a patient can not be transferred to urology – eg end of life care)
- Consider inserting a temporary urethral catheter (this may not be appropriate if patient is known to have a non patent urethra – eg due to stricture, cancer)
- Arrange transfer of patient to urology, at Royal Shrewsbury Hospital
- If the patient is at risk of autonomic dysreflexia, the transfer must be undertaken immediately, as a medical emergency

## Unable to insert new catheter into suprapubic cystostomy stoma

- Consider inserting a temporary urethral catheter (this may not be appropriate if patient is known to have a non patent urethra – eg due to stricture, cancer)
- Arrange urgent transfer of patient to urology, at Royal Shrewsbury Hospital
- If the patient is at risk of autonomic dysreflexia, the transfer must be undertaken immediately, as a medical emergency

## Over-granulation around suprapubic cystostomy stoma site

### PREVENTION

- Rotate the direction of the lay of the catheter against the abdomen (use a catheter fixation device, alternate which leg the bag is attached to)

### TREATMENT

- Use a dressing which is appropriate for addressing over granulation (eg Inadine, Lyofoam)
- Liaise with the tissue viability nursing team, if required