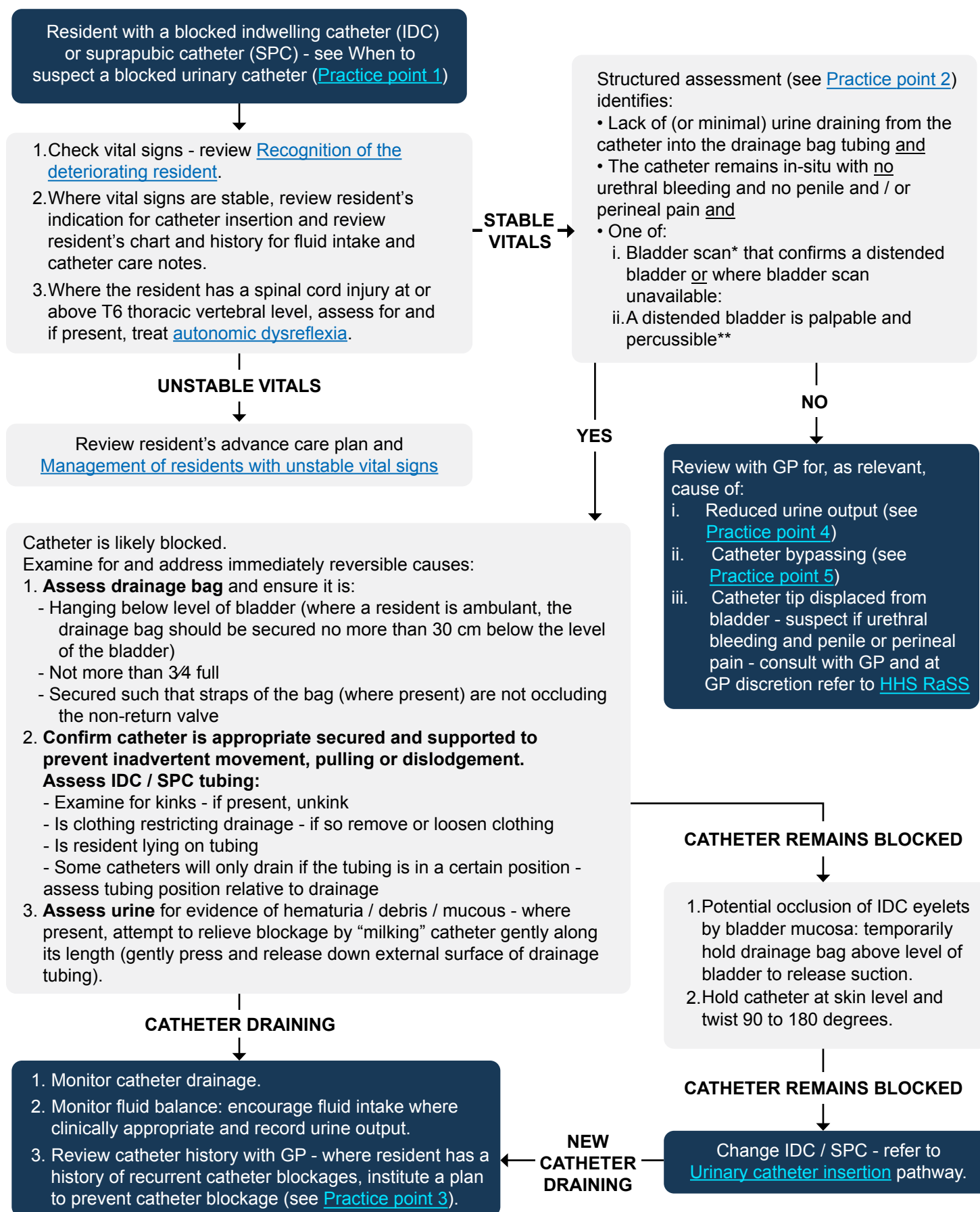


Urinary catheter (IDC or SPC): trouble-shooting a blocked catheter



* Ensure that the assessing clinician has the required competency to perform and interpret a bladder scan - see [QH Adult Urinary Obstruction, Retention and Bladder Scanning: a self-directed resource package](#).

** Where a resident has catheter bypass, a catheter may be blocked without bladder distension

Urinary catheter: trouble-shooting a blocked catheter practice points

1) When to suspect a blocked urinary catheter

A blocked urinary catheter should be suspected if there is any of the following:

1. Lack of urine output from catheter.
2. Urine bypassing the catheter.
3. Suprapubic discomfort or pain or distension:
 - In a cognitively impaired resident with a catheter suprapubic discomfort or pain may manifest as an acute behavioural disturbance or delirium
4. In a resident with spinal cord injury above T6 level, suspect and assess for blocked urinary catheter if there is clinical evidence of [autonomic dysreflexia](#).

Confirm the diagnosis using structured assessment outlined in [Practice point 2](#).

2) Structured clinical assessment: confirming a diagnosis of blocked urinary catheter

The purpose of a structured assessment in the resident with a suspected blocked urinary catheter is to confirm or exclude the diagnosis of a blocked urinary catheter. The structured assessment is performed after confirming the resident has stable vital signs and involves the following:

1. Examine the drainage bag tubing to assess for flow of urine from the catheter to the drainage bag:
 - where there is no (or minimal) urine draining from the catheter into the drainage bag, suspect a blocked catheter
2. Assess whether the catheter tip remains in the bladder or whether it has been dislodged into the urethra by looking for evidence of urethral bleeding and asking the resident about whether they are experiencing penile and / or perineal pain.
3. Assess for a distended bladder - this may be performed via a bladder scan or where this is unavailable or the clinician is not trained in use, a clinical assessment.
Clinical assessment for a distended bladder is performed by:
 - Gently palpating (feeling) from the umbilicus down to the pelvic bone - a distended bladder is felt as a smooth, firm mass arising from the midline above the pubic bone
 - Percussion using an indirect percussion technique - this is well described [here](#)

Percussion produces a dull sound over bladder, distinguished from the resonant sound produced when percussion is over bowel.

It should be noted that clinical assessment for a distended bladder is not as accurate as performing a bladder scan. Additionally, where a resident has a blocked catheter and urine is bypassing the catheter, the bladder may not be distended despite a blocked catheter. Therefore, where high index of suspicion exists or where a resident has a bypassing catheter with no or minimal urine draining from the catheter, it may still be reasonable to change the catheter in consultation with the resident's GP.

Urinary catheter: trouble-shooting a blocked catheter practice points

3) Recurrent IDC / SPC blockage

Where the resident has recurrent IDC / SPC blockages:

1. Encourage fluid intake if clinically appropriate and consider reduction to intake of calcium in diet.

2. Avoid constipation.

3. Maintain unobstructed urine flow:

- Prevent collecting tube kinking
- Ensure collecting bag is below level of bladder at all times
- Empty prior to bag being 3/4 full
- Maintain a closed drainage system

4. Check catheter for encrustation:

On removal of IDC / SPC - check the catheter surface for signs of encrustation. Where there is no evidence of encrustation externally, cut the length of the catheter to assess the lumen for evidence of encrustation - take care to avoid sharps injury.

If present:

- Cease ural or urinary alkalinisers
- GP to consider:
 - i. Optimising fluid intake where clinically appropriate
 - ii. Investigation for bladder stones with ultrasound

5. Institute planned approach to catheter change:

Ensure that a clear catheter plan of care is kept including dates of insertion, type of catheter used and date of onset of any symptoms of blockage. For residents with recurrent IDC / SPC blockage a planned approach to catheter changes can minimise catheter blockage. The regimen should be guided by the length of time a catheter remains patent prior to blocking, with the goal being to avoid unscheduled catheter changes by proactively planning a catheter change.

Establish a pattern of catheter life, averaging the time to change over three catheter changes to guide an individualised approach to planned catheter change.

6. Consider change to catheter type or size:

- a. Increased catheter lumen size
- b. Change to 100% silicone catheter (silicone catheters have a larger lumen for the same Fr gauge)

7. Where there is clinical evidence of catheter-associated urinary tract infection (CAUTI), change the catheter and then send a urine sample obtained from the new catheter for microscopy, culture and sensitivities (m/c/s). Antimicrobial therapy is more effective after the catheter has been changed (due to the biofilm that develops on a catheter that acts as a barrier to effective antimicrobial treatment).

8. Where recurrent blockage occurs despite addressing above, refer to specialist urology or continence advisor or [HHS RaSS](#) for consideration of further investigation or management.

Urinary catheter: trouble-shooting a blocked catheter practice points

4) Reduced urinary output (oliguria) in resident with patent catheter

Assess vital signs and if vital signs are unstable (refer to [Recognition of the deteriorating resident](#)), refer to [Management of residents with unstable vital signs](#). Where vital signs are stable, ensure blocked catheter is excluded (see [Practice point 2](#)) and when catheter confirmed to be patent, assess the resident with the GP for causes of reduced urine output:

Cause		Comments
Pre-renal	Hypovolaemia	Dehydration – see Dehydration and subcutaneous fluids
		Bleeding – check for melaena or PR bleeding
		Third space losses – suspect in residents with abdominal pain
	Low cardiac output	Heart failure
	Sepsis	Suspect in residents with symptoms of an infection or fever
Renal	Nephrotoxic medications	Recent change to medications e.g. commencement of antibiotics, NSAIDs or ACE inhibitors
	Worsening of chronic renal failure	Suspects in residents with history of impaired renal function
Post-renal	In resident with catheter, confirm patency of catheter and that catheter position is optimal – see Practice point 1	
	Ureteric obstruction	Suspect if bilateral flank pain
	Faecal impaction	Severe faecal impaction may impede urine output

If clinical assessment of the resident is normal and resident appears well, trial increased oral fluid intake and if low urine output persists, perform blood tests to assess renal function. GP to consider withholding nephrotoxic agents in interim to results being available and improvement to urinary output. If concerns persist, consult [HHS RaSS](#) at GP discretion.

5) Bypassing catheter in resident with patent catheter

A bypassing catheter may be blocked so initial assessment should be undertaken to exclude a blocked catheter.

Where a catheter is determined to be patent but bypassing persists, assess with GP:

- Is the catheter bypassing:
 - Acute or chronic?
 - Episodic or continuous?
- If acute, has there been any change to:
 - Catheter used?
 - Amount of fluid used to inflate the catheter balloon and is this consistent with manufacturer instruction?
 - Are there clinical features of a urinary tract infection (see [Urinary tract infection](#) pathway)?
 - Is the catheter causing traction (pulling) on the bladder neck due to ineffective securing device or securing device placement?
- If episodic, is there associated pain consistent with bladder spasms?

Where bladder spasm is suspected, consider the following in consultation with the GP:

1. Ensure catheter is secured with a dedicated securing device and the drainage bag well supported with leg straps or for immobile residents, on a bedside stand.
2. Ensure balloon is inflated to the volume recommended by manufacturer.
3. Encourage fluid intake where this is clinically appropriate.
4. Treat constipation.
5. Where bladder spasms persist and IDC / SPC continues to be indicated, consider an antispasmodic agent (e.g. oxybutynin) - however, this needs to be an informed decision as adverse effects include dry mouth, constipation, drowsiness, blurred vision, delirium and increased falls risk; where antispasmodic agent is contraindicated, seek specialist input.

Urinary catheter: trouble-shooting a blocked catheter references

1. Society IC. ICS Standards 2020-2021: the 2020-2021 compilation of the International Continence Society Standardisations, Consensus Statements, Educational modules, Terminology and Fundamentals documents with the International Consultation on Incontinence algorithms. Best Practices: Basic Care in Indwelling Urinary Catheter Management [https://www.ics.org/Publications/ICS%20Standards%202020-2021\[Jan21\].pdf2021](https://www.ics.org/Publications/ICS%20Standards%202020-2021[Jan21].pdf2021).
2. Gould CV, Umscheid CA, Agarwal RK, Kuntz G, Pegues DA, Healthcare Infection Control Practices Advisory Committee H. Guideline for prevention of catheter-associated urinary tract infections 2009 Centers for Disease Control and Prevention (CDC). *Infect Control Hosp Epidemiol*. 2010;31(4):319-26.
3. Loveday HP, Wilson JA, Pratt RJ, Golsorkhi M, Tingle A, Bak A, et al. epic3: national evidence- based guidelines for preventing healthcare-associated infections in NHS hospitals in England. *J Hosp Infect*. 2014;86 Suppl 1:S1-70.
4. Australia and New Zealand Urological Nurses Society Catheterisation clinical guidelines. <https://www.anzuns.org/wp-content/uploads/2011/12/ANZUNS-Catheterisation-final-Document- October-20131.pdf>.
5. Continence Nurses Society Australia PlaES-c. Update on single versus reuse of urinary catheter drainage bags and catheters for intermittent catheterisation. https://www.consa.org.au/images/files/CoNSA_update_on_single_versus_reuse_of_urinary_devices.pdf Continence Nurses Society of Australia; 2017.
6. Jahn P, Beutner K, Langer G. Types of indwelling urinary catheters for long-term bladder drainage in adults. *Cochrane Database Syst Rev*. 2012;10:CD004997.
7. Reid S, Brocksom J, Hamid R, Ali A, Thiruchelvam N, Sahai A, et al. British Association of Urological Surgeons (BAUS) and Nurses (BAUN) consensus document: management of the complications of long-term indwelling catheters. *BJU Int*. 2021;128(6):667-77.
8. Geng V, Cobussen-Boekhorst H, Farrell J, Gea-Sanchez M, Pearce I, Schwennesen T, Vahr S, Vandewinkel C. Evidence-based guidelines for best practice in urological healthcare: catheterisation - indwelling catheters in adults, urethral and suprapubic. European Association of Urology Nurses (EAUN). 2012. https://nurses.uroweb.org/wp-content/uploads/EAUN_Paris_Guideline_2012_LR_online_file.pdf accessed July 2022.
9. Princess Alexandra Hospital Procedure: Catheterisation and care of the urinary drainage bag. In: *Urology*, editor. PAH Intranet: Metro South Health; 2020.
10. Willette PA, Coffield S. Current trends in the management of difficult urinary catheterizations. *West J Emerg Med*. 2012;13(6):472-8.
11. Getliffe KA. The characteristics and management of patients with recurrent blockage of long- term urinary catheters. *J Adv Nurs*. 1994;20(1):140-9.
12. Sweeney A. Long-term suprapubic catheter-related care requirements when living at home: the development of a best practice guide. https://eprints.utas.edu.au/37926/1/Sweeney_whole_thesis.pdf: University of Tasmania; 2020.
13. Summerton DJ, Kitrey ND, Lumen N, Serafetinidis E, Djakovic N, European Association of U. EAU guidelines on iatrogenic trauma. *Eur Urol*. 2012;62(4):628-39.
14. Mathur S, Fraczyk L. Limitations of urinary pH monitoring in long-term catheter users. *Br J Nurs*. 2006;15(8):427-33.
15. Khan A, Housami F, Melotti R, Timoney A, Stickler D. Strategy to control catheter encrustation with citrated drinks: a randomized crossover study. *J Urol*. 2010;183(4):1390-4.
16. Miles G, Schroeder J. An evidence-based approach to urinary catheter changes. *Br J Community Nurs*. 2009;14(5):182-7.
17. Chang C WC, Tsai P. Control catheter encrustation with lemon juice: a prospective randomized study. *Academia Journal of Biotechnology*. 2016;4(5):164-70.

Urinary catheter: trouble-shooting a blocked catheter version control

Pathway	Urinary catheter (IDC or SPC): trouble-shooting a blocked catheter				
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Author	Improving the quality and choice of care setting for residents of aged care facilities with acute healthcare needs steering committee in collaboration with Queensland Surgical Advisory Committee				
Custodian	Queensland Dementia, Ageing and Frailty Clinical Network (QDAF)				
Supersedes	Indwelling urinary catheter: preparation for insertion and insertion				
Applicable to	Residential aged care facility registered nurses and General Practitioners in Queensland RACFs, serviced by a RACF acute care support service (RaSS)				
Document source	Internal (QHEPS) and external				
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Relevant standards	Aged Care Quality Standards: Standard 2: ongoing assessments and planning with consumers Standard 3: personal care and clinical care, particularly 3(3) Standard 8: organisational governance				