

REDUCING CATHETER ASSOCIATED URINARY TRACT INFECTIONS

QUICK GUIDE ON CRITERIA-INITIATED URINARY CATHETER REMOVAL

Urinary catheterisation of patient can be initiated for a number of reasons. These include alleviation of bladder or clot retention, critical care monitoring, intraoperative and post-operative management and for wound or end-of-life management.

A complex matrix of microorganisms and their byproducts, known as a 'biofilm', will begin to develop as soon as a urinary catheter is inserted. The biofilm will continue to proliferate while the catheter remains *in situ*. The risk of microorganisms ascending the catheter and establishing an infection in the bladder increases with the duration of catheterisation^{1,2}.

Sometimes, urinary catheters are left *in situ* unnecessarily after the indication for catheterisation has resolved. This puts the patient at a heightened risk of acquiring a urinary tract infection. In most circumstances, there are four steps required for the removal of a urinary catheter³:

- 1) A physician recognises that a catheter is in place;
- 2) A physician recognises that a catheter is no longer needed;
- 3) A physician writes the order to remove the catheter;
- 4) A nurse removes the catheter.

But what if the catheter is no longer needed and there is no removal order?

This information sheet provides advice on initiating a criteria-led catheter removal protocol when no removal order has been documented.

Criteria-initiated urinary catheter removal protocol

The criteria-initiated urinary catheter removal protocol aims to empower nurses to remove urinary catheters that are no longer necessary and have no removal order documented. It is not suitable to use the protocol if there is a standing medical order for catheterisation or if a medical order for removal has been documented. The protocol is made up of two stages:

STAGE 1: Decision making for removal

STAGE 2: Trial of void procedure

This protocol has been designed to assist clinicians to improve the care of adult patients with catheters in acute settings and is not designed for use when caring for patients who require long-term catheterisation or for paediatric patients with catheters.

Stage 1 - Decision making for removal

Consider these questions:

- Is there a documented reason for the catheter to remain *in situ*?
- Is the initial clinical indication for catheterisation still present?
- Is the patient constipated?

If you answered **YES** to any of these questions, then the catheter needs to remain *in situ* and be reviewed again within 24 hours. If you answered **NO** to all of these questions, then this patient is an ideal candidate for criteria-initiated catheter removal. Remove catheter and proceed to Stage 2.

Stage 2 - Trial of void procedure

The trial of void procedure can be complex and requires assessment of the individual patient. Once the catheter is removed, the clinician should:

- Encourage fluid intake, in line with any fluid restrictions, and maintain fluid balance chart;
- Ensure that the patient can easily access bathroom facilities and keep an eye out for fall risk and patient confusion;
- Observe if the patient voided in the six hours post removal; and
- Observe if the patient experienced any pain during voiding.

If voiding occurs and is pain free scan the bladder to confirm residual volume and leave the catheter out. Continue to monitor the patient for signs of urinary retention.

If voiding was not observed after catheter removal then review fluid balance and scan the bladder. It may be necessary to prompt the patient to void and inform patient that recatheterisation may be necessary. If still voiding does not occur, determine the bladder volume using a bladder scan. Seek advice from the team leader, medical officer or specialist nurse on the most appropriate clinical pathway for the patient.

Tips for catheter removal

- Prior to catheter removal, review patient history for any difficulty documented during catheter insertion. You may need to seek medical advice or assistance to remove the catheter if catheter insertion was difficult.
- The optimal time to remove a catheter is 6AM. Removal at this time will enable access to appropriate clinical resources if recatheterisation is required later in the day.
- Be mindful that patients with a spinal cord injury, stroke or delirium may have a limited pain response and therefore may be unable to express if voiding is painful.
- Always seek advice from the team leader, medical officer or specialist nurse before recatheterising a patient or catheterising with an intermittent catheter.

References

1. Saint, S. and C. Chenoweth, *Biofilms and catheter-associated urinary tract infections*. Infect Dis Clin of N Am, 2003. **17**(2): p. 411-432.
2. Trautner, B.W. and R.O. Darouiche, *Role of biofilm in catheter-associated urinary tract infection*. A J of Infect Control, 2004. **32**(3): p. 177-183.
3. Meddings, J., et al., *Reducing unnecessary urinary catheter use and other strategies to prevent catheter-associated urinary tract infections: an integrative review*. BMJ Qual Safety, 2013. **0**: p. 1-13.

About this Project

This project is being undertaken by the CEC's HAI program. The HAI program aims to assist local health districts and speciality health networks to improve systems to manage and monitor the prevention and control of HAIs. For further information on the HAI program, please visit <http://www.cec.health.nsw.gov.au/programs/hai>.

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