Preventing Catheter-Associated Urinary Tract Infections

A guide for healthcare workers

Recommendations for Quality Improvement

- Support and resource infection prevention and control programs to prevent CAUTIs.
- Implement quality improvement (QI) programs such as a:
  - Protocol reviewing the necessity for continued catheterization which may include automatic stop orders requiring renewal for catheter continuation, standardized reminders in patient charts or electronic patient record and daily review by nursing and physician staff to ascertain continuing necessity
  - Protocol for management of postoperative urinary retention
  - Surveillance system for analysing and reporting data on catheter use and any associated adverse events
- Provide regular in-service training about CAUTI prevention.

Approaches not considered routine CAUTI prevention

- Do not use silver-coated or other antibacterial catheters.
- Do not screen for asymptomatic bacteriuria in catheterized patients.
- Do not treat asymptomatic bacteriuria except before invasive urologic procedures.
- Do not cleanse the periurethral area with antiseptics while the catheter is in place.
- Do not use chronic antibiotic suppressive therapy.
- Do not change indwelling catheters or drainage bags at arbitrary fixed intervals.
- Do not use catheters in patients for continence management or during caesarean section.
- Do not perform continuous irrigation of the bladder with antimicrobials as a routine infection prevention measure.
- Do not instil antiseptic or antimicrobial solutions into urinary drainage bag.
- Do not clamp indwelling catheters prior to removal.

Unresolved issues

- Antiseptic solution versus sterile saline for meatal cleaning before catheter insertion.
- Use of urinary antiseptics.
- Use of catheters with valves
- Spatial separation of patients with urinary catheters in place.
- Antibiotic prophylaxis at catheter removal to prevent symptomatic infection.

Other Considerations

- Post-operative intermittent catheterisation reduces the risk of bacteriuria compared with indwelling catheter.
- Where appropriate, consider suprapubic, condom drainage or intermittent catheterisation instead of an indwelling urethral catheter.

Recommendations in this guide are consistent with the following systematic reviews:


In addition, this guide reflects information in the:

What is the problem?

- Urinary tract infection (UTI) is one of the most common healthcare associated infections with 70-80% attributable to an indwelling urinary catheter.
- 12-16% of hospital patients will have a urinary catheter during their hospital stay.
- Urinary catheters are frequently inserted unnecessarily and there are variations in insertion and maintenance practices.

What is the risk?

Indwelling urinary catheters can lead to bacterial infections that are associated with:

- Method and duration of catheterisation.
- Quality of catheter care.
- Increased host susceptibility which includes female gender, the elderly, patients with impaired immunity, severe illness, diabetes, renal dysfunction and/or incontinence.

How is risk minimised?

There are three key considerations:

- Insertion
- Maintenance
- Quality Improvement

Insertion

The first and foremost goal of catheter associated urinary tract infection (CAUTI) prevention is limiting catheter use and its duration thus clear indications for catheter use are required.

Insertion principles:

- Minimise urinary catheter use and duration of use.
- Define indications for catheter use:
  - Urinary retention or obstruction.
  - Urinary monitoring in critically ill patients.
  - Perioperative use for selected surgical procedures:
    - Urological surgery or other contiguous structures of genitourinary tract.
    - Anticipated prolonged duration of surgery.
    - Large urinary output.
    - Operative patients with urinary incontinence.
    - Intraoperative output monitoring.
  - Wound healing in incontinent patients.
  - Prolonged immobilisation required (e.g., unstable spine, pelvic fracture).
  - Exceptional circumstances (e.g., comfort at end of life).
- Ensure insertion is undertaken by trained and competent staff.

Recommendations for Catheter Insertion

1. Develop guidelines for catheter use, insertion, and maintenance.
2. Document catheter indication, date, time, gauge and person inserting catheter.
3. Only trained, dedicated personnel insert urinary catheters.
4. Assess latex allergy, length of catheter and type of drainage bag.
5. Ensure patient comfort and dignity during the procedure.
6. Perform hand hygiene as per the ‘5 Moments for Hand Hygiene’.
7. Insert catheter using surgical aseptic non touch technique (ANTT®).
8. Minimise urethral trauma through the use of adequate lubricant and the smallest possible gauge catheter.

Checklist for Insertion

A checklist for the insertion of indwelling catheters is located on the TIPCU website in Word format so that modifications can be made to meet your organisational requirements.

Recommendations for Maintenance

- Secure after insertion to prevent movement and traction.
- Maintain closed catheter system: If disconnection occurs, replace with new collecting system using standard ANTT®.
- Only disconnect the catheter and drainage tube when clinically indicated.
- Minimise catheterisation duration and leave in place only as long as indicated.
- Maintain unobstructed urine flow keeping collection bag lower than bladder and avoid kinking or clamping the catheter.
- Use standard precautions during manipulation of the catheter or collection system.
- Perform routine hygiene of the meatal area.
- Change long-term indwelling catheters at intervals adapted to the individual patient and/or when clinically indicated and/or as per manufacturers recommendations.
- For examination of fresh urine, collect a small sample by aspirating urine from the sampling port with a sterile needle and syringe after cleansing the port with disinfectant. Obtain larger volumes of urine for special analyses aseptically from the drainage bag.
- Do not discharge or transfer a patient with a catheter without a plan documenting the reason for the catheter, date catheter inserted, catheter type and size, volume of water in balloon, indications for continuing and date for removal or review.