

# Preventing catheter-associated urinary tract infection (CAUTI) in hospitals by avoiding unnecessary use of catheters

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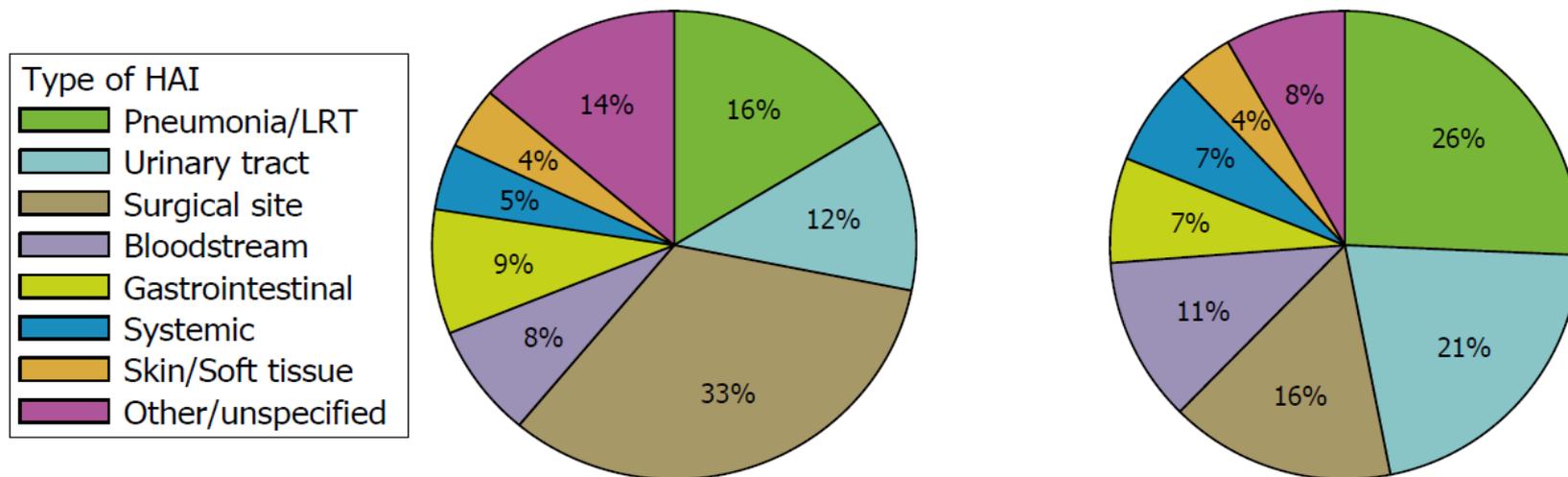
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# Urinary tract infection (UTI)

2<sup>nd</sup> most common infection acquired in hospital

**Figure 23.** Distribution of HAI types by presence of HAI on admission (left) and HAI onset during hospitalisation (right), ECDC PPS 2011–2012



- 60% HA-UTI associated with indwelling urinary catheters
- Catheterised patients constitute a huge reservoir of antimicrobial-resistant organisms in hospitals

# Catheters are over-used in acute care

NHS Safety Thermometer data (April 2014-March 2015) shows that on a single day:

– 288/1182 (**24%**) in-patients with a catheter



• Most common clinical indications:

- Urine output monitoring (44%)
- Acute urinary retention (16%)
- Post-op care (12%)

– 17/288 (**6%**) catheterised patients on antibiotics for UTI (1.59% total in-patient population)

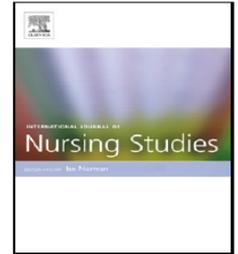


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## Review

### Interventions to minimise the initial use of indwelling urinary catheters in acute care: A systematic review

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- Most published research (n=971 studies) addressed duration of catheter use, not reducing initial use
- 8 intervention studies designed to reduce initial insertion:
  - Most were poorly designed (n=6 uncontrolled before-after studies)
  - Wide variation in the indications for catheter use considered to be acceptable in hospitals



# “It’s easier to stick a tube in”

(Murphy, Prieto & Fader, BMJ Qual Saf 2015; 24:444-450)

- Qualitative study to investigate why clinicians decide to place indwelling urinary catheters in acute medical care
- Retrospective “think aloud” interviews (n=30) and semi-structured interviews (n=20)
- Key findings:
  - Wide variation in opinions about when a catheter is warranted
  - Clinicians perceive risk of infection from short-term catheter is low
  - Decisions influenced by clinical environment, resources, patient age and gender, staff workload
  - Assessing when benefits of catheter use outweigh risks is problematic due to conflicting goals

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# Urine output monitoring

- Catheters are used for accurate measurement of urinary output in critically ill patients
  - Who counts as critically ill?
  - Why is urine output being monitored?
  - How is this information used by clinicians?
  - How frequently/precisely are measurements required?
  - What are the alternatives?



# Urine output monitoring: Influences on practice

Murphy, Prieto  
& Fader (2015)

Beliefs &  
experience

Relation-  
ships with  
colleagues

- Clinicians widen definition of critically ill
- Catheters offer reassurance to clinicians
- Avoiding criticism for missing reduced output
- Lack of trust in next clinical area

“I think it’s easier to stick a tube in and leave it in because you never know what’s going to happen.”

Registrar, Acute Medical Unit

“It’s easier to justify putting one in than not putting one in.”

Registrar, Acute Medical Unit

# Acute urinary retention (AUR)

- Inability to voluntarily pass urine despite a full bladder
- Bladder ultrasound reduces catheterisation and UTI (Palese, 2010)
  - What is the underlying cause?
  - What volume of urine?
  - At what point is a catheter needed?
  - Indwelling or intermittent catheterisation?
  - When is referral to a urologist required?
  - When can an indwelling catheter be removed?



# AUR: Influences on practice in Medicine

Murphy, Prieto  
& Fader (2015)

“You do a bladder scan and they’ve got a residual of 200 and everyone’s very twitched to get a catheter in.”

Consultant physician, MOP

Beliefs &  
experience

- Cause assumed to be constipation or infection
- Uncertainty about urine volume
- Fear of causing harm

“It’s a disaster if its missed.”

Consultant physician, ED

# Conclusions

- The decision to use an indwelling urinary catheter is complex and multifactorial
- More evidence is needed on when the benefits of catheters outweigh the risks to establish what the true indications are
- To identify the best interventions to reduce unnecessary catheter use we need to:
  - understand how decisions are made in practice
  - change the expectations and habits of nurses, physicians and patients about the need for urinary catheters
  - provide viable alternatives
  - develop solutions specific to each indication and environment

# Acknowledgements

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