Choosing Wisely for Critical Care – *CAUTI Prevention*

March 17, 2022 - Bonnie Schleder, EdD, APRN, CCRN, TNS
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Good Shepherd Hospital

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#1 Don’t retain catheters and drains in place without a clear indication

CAUTI results in:

- 4 day longer LOS
- Excess mortality 36/1,000
- Cost of $13,793/case

CDC Indications

What is “accurate measurements of urinary output in critically ill?”

A. Examples of *Appropriate* Indications for Indwelling Urethral Catheter Use [1-4]

- Patient has acute urinary retention or bladder outlet obstruction.
- Need for accurate measurements of urinary output in critically ill patients.
- Perioperative use for selected surgical procedures:
  - Patients undergoing urologic surgery or other surgery on contiguous structures of the genitourinary tract.
  - Anticipated prolonged duration of surgery (catheters inserted for this reason should be removed in PACU).
  - Patients anticipated to receive large-volume infusions or diuretics during surgery.
  - Need for intraoperative monitoring of urinary output.
- To assist in healing of open sacral or perineal wounds in incontinent patients.
- Patient requires prolonged immobilization (e.g., potentially unstable thoracic or lumbar spine, multiple traumatic injuries such as pelvic fractures).
- To improve comfort for end of life care if needed.

National Healthcare Safety Network (NHSN) CAUTI Criteria

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When is it a CAUTI?

A patient must have:

1) An indwelling urinary catheter for more than 2 days by the date of event (with ‘day one’ being the day of catheter insertion)

and

2) One sign or symptom including fever, suprapubic tenderness, costovertebral angle tenderness, urinary frequency or urgency or dysuria

and

3) Urine culture with more than 10^5 CFU/mL of one bacterial species (non-bacterial pathogens have been excluded)

How is CAUTI data reported

- Standardized Infection Ratio (SIR) – compares the number of observed infections to the number of predicted

- Standardized Utilization Ratio (SUR) – compares the number of observed device days to the number of predicted

According to the CDC what was the impact of COVID-19 on CAUTI SIR?

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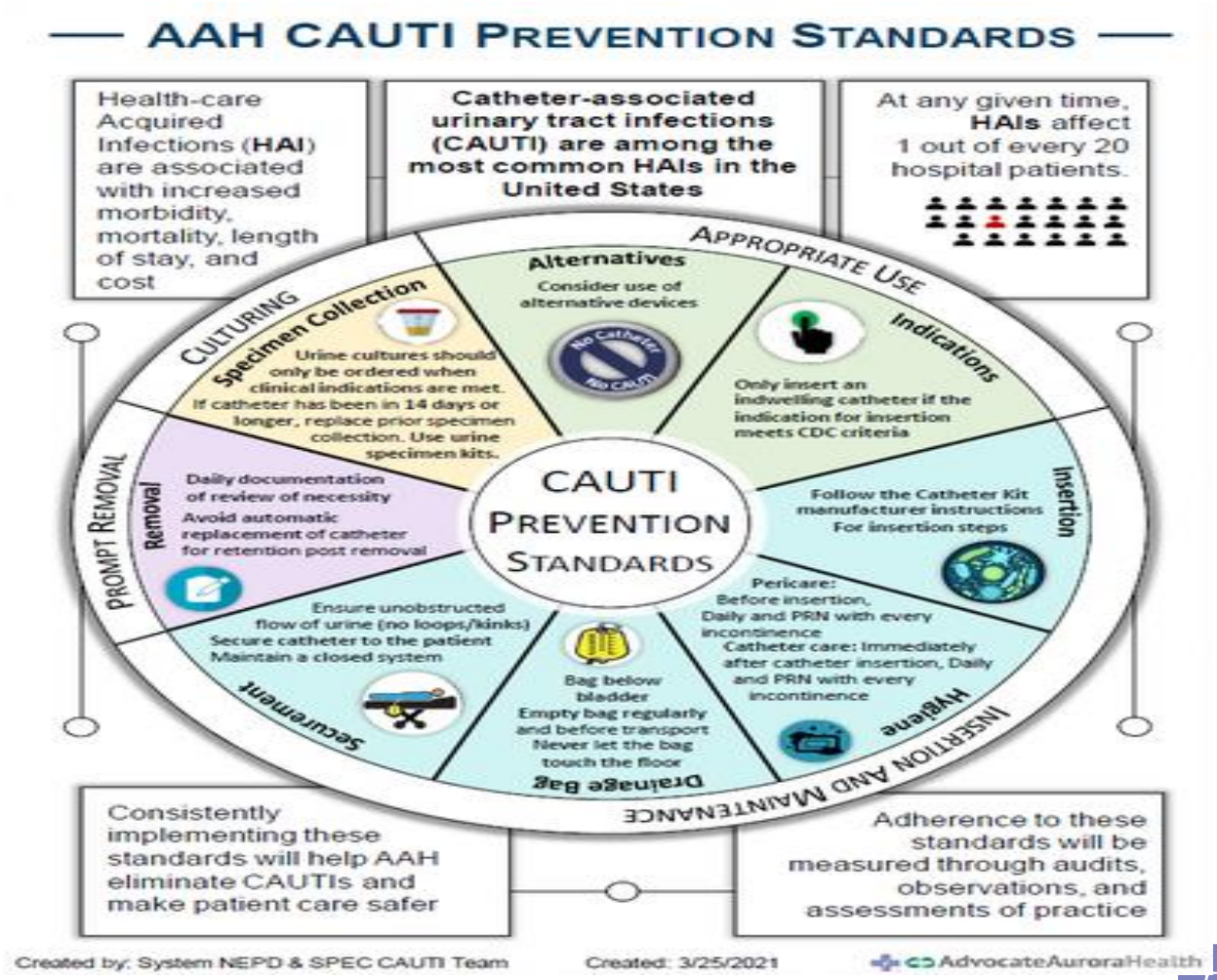
It’s not just about today, it’s about tomorrow

CAUTI Prevention Standards



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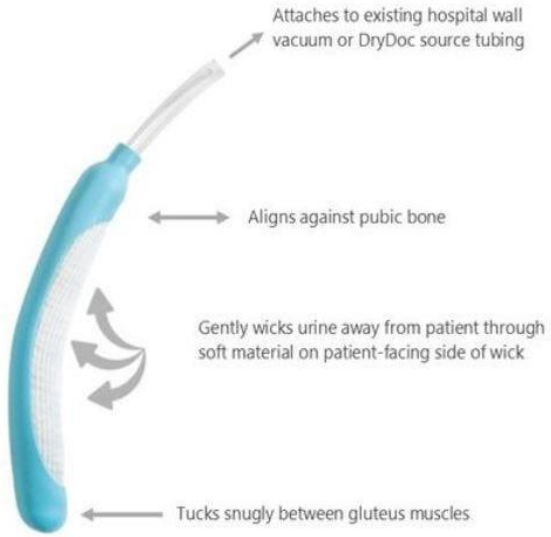
Consider Alternatives



Are external catheters appropriate for accurate urine output measurement?

Insertion & Maintenance Questions before Ordering

- Can sterile technique be maintained upon insertion?
- Will it decrease activity?
- Which catheter is best?
  - No to little additional benefit with antiseptic or antimicrobial catheters
  - Risk of urinary tract infection is comparable between indwelling catheters, suprapubic, and intermittent catherization if catherization duration is ≤ 5 days
  - If duration is > 5 days, consider intermittent catherization with bladder scans
- If a catheter is occluded, should I order irrigation?
  - Maintain a closed system (red tape indicates closed system)

Prompt Removal

What is the infection risk if a urinary catheter remains in for 7 days?

a. 25%

b. 50%

c. 75%

d. 100%

Develop a Culture of Culturing

- If cultures are needed, obtain culture within the 2-day window from time of insertion
- If urinary catheter is in for ≥ 14 days (e.g. coming from home or another facility) urinary catheter should be changed prior to obtaining culture
- Utilize culture criteria

Collecting a Urine Specimen from an Indwelling Urinary Catheter

Indication

IDSA Approved Indication for Urine Culture

1. Fever*† (2 temperatures >100.5°F within 48 hours)
2. Rigors*†
3. Altered Mental Status*†
4. Malaise or Lethargy*†
5. Flank pain
6. Costovertebral angle tenderness
7. Acute hematuria
8. Pelvic Discomfort
9. Sepsis in a catheterized patient with no other cause
10. In patients without a urinary catheter: dysuria, urgent frequent urination, or suprapubic tenderness
11. In patients with spinal cord injury: increased spasticity, autonomic dysreflexia, or sense of unease

*New onset or worsening with no other identified cause

†Not an indication for urine culture when presenting by itself

Inappropriate Indications for Urine Culture

1. Recent results and / or cultures pending / in process
2. Cloudy Urine
3. Sediment in Urine
4. Dark Urine
5. Foul Smelling Urine
6. Pyuria
7. Chronic urinary catheter
8. Any Surveillance Screening

Red Flags

Urine Cultures should only be ordered when clinical indications are met. If a catheter has been in 14 days or longer, the old catheter should be removed to reduce the likelihood that the specimen is contaminated by way of exposure to catheter biofilm. If necessary, a new catheter should be inserted prior to specimen collection.

Supporting CAUTI Prevention with Awareness (Saint, et al., 2020)

- Providers were unaware of catheterization for 88 (28%) of the 319 provider-patient observations
- Catheter use was inappropriate in 36 (31%) of the 117 patients with a catheter
- Providers were unaware of catheter use for 44 (41%) of the 108 provider-patient observations of patients who were inappropriately catheterized

Catheterization was more likely to be appropriate if respondents were aware of the catheter ($P < 0.001$)

Provider Documentation

Two Day Prevalence study Non-surgical pt's

March 2022

Intensivist - Documentation of urinary catheter was present 5 out of 7 times = 74.1%

Primary Care – patient outside the ICU

Documentation of urinary catheter was *present 5 out of 13 times = 38.4%*

Communication Barriers and Solutions

(Manojlovich, et al.,2020)

Interventions to reduce catheter use must be integrated into workflow

- Rounds may be the best time to discuss catheters
  - Not always done; no consistent pattern
  - Nurse and physician workflow patterns are not aligned
- EMR
  - Multiple clicks
  - Unable to determine through documentation if catheter is present
- Communication hierarchy
  - Orders not present or followed
  - Nurse driven protocols

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