



Indwelling Urinary Catheter Usage in the Emergency Department

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Background

- Indwelling urinary catheters (IUCs) are useful medical tools but can result in urinary tract infections (UTIs).
- Minimizing catheter use is a key element in infection prevention.
- In the acute setting of the Emergency Department (ED), the risks of IUCs are sometimes overlooked.

Methods

- **Setting:** 494-bed tertiary care center—61,000 ED visits/year
- **Objective:** Assess use of IUCs in the ED and identify opportunities to minimize inappropriate catheterizations
- Catheter point prevalence was determined by bedside evaluation on 65 different days Jul-Dec 2009 & Jun-Sep 2010.
- Chart review was conducted for 165 catheterized patients:
 - 79 patients identified by bedside evaluation; 86 patients randomly-selected from catheter billing data

Results

- Of the 2,541 patients assessed at bedside, 3.1% had an IUC placed in the ED.

Definition of appropriate IUC use:

1. Critical illness (hemodynamic instability, respiratory distress, intensive care unit admission, urgent surgery, or major trauma)
2. Acute urinary retention or obstruction
3. Acute congestive heart failure in patients in whom it was not possible to measure urinary output by non-invasive means (e.g., urinal, bedpan)
4. Immobilization (defined as unable to use bedpan/urinal secondary to pain or dyspnea)
5. Sacral decubiti and incontinence

Results (continued)

- The analysis included 165 patients with IUC:
 - 60% were female
 - 62% were ≥65 years old
 - 70% had a physician's order for catheter insertion
- 62 (37%) cases were considered inappropriate use of an IUC:
 - 66% of patients with inappropriate catheters were female.
 - 66% of patients with inappropriate catheters were ≥65 years old.
- The predominant clinical association with inappropriate IUC usage was confusion (e.g., dementia, delirium)—found in 52%.
- In 16% of inappropriately placed IUCs, patients were undergoing diuresis but non-invasive means to measure urine output likely could have been used.

Table: Patients with inappropriate IUC vs all patients admitted from ED

	Study pts with inappropriate IUC (n=62)	All pts admitted from ED, FY 2010-11 (n=11,606)
Female	66%	47%
Age >=65 years	66%	40%
Confusion	52%	N/A

Results (continued)

- In 15% of inappropriately placed IUCs, a straight catheter could have been used to obtain urine samples or to assess post-void residuals.
- Most of the appropriate IUCs were indicated for critical illness.

Examples of inappropriate catheter use:

Confusion/incontinence is not an indication for indwelling catheterization:

66 yo M with acute hepatic encephalopathy; 43 yo F with post-ictal confusion. Foley placed for each patient.

Straight catheter could have been used instead of indwelling catheter: 28 yo M with cognitive dysfunction evaluated for fever. Urine sample needed. Foley placed (and left in for days).

Noninvasive means could have been used to measure urine output instead of indwelling catheter: 74 yo F with 1 episode of melena. No history of CHF/CAD. Hemodynamically stable. Given 2 U pRBC and furosemide 20mg IV x 1 between units. Foley placed "to measure I&Os."

Conclusions

- Catheters were placed in a small subset of the ED population; however, by extrapolation, >600 inappropriate catheters are placed per year in this ED.
- Many of the patients with inappropriate IUCs were confused—IUCs were likely being used in several of these cases to manage incontinence.
- Educational messages should target (especially for confused patients) avoidance of IUCs and promotion of incontinence care.
- Straight catheterizations can be used to obtain urine samples instead of IUCs. Bladder scanners can be used to assess post-void residuals.
- Whenever possible, non-invasive means for measuring urine output should be used instead of IUCs.



References

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