Emergency Department Placement and Management of Indwelling Urinary Catheters in Older Adults: Knowledge, Attitudes, and Practice

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Introduction: Indwelling urinary catheters (IUCs) are placed frequently in older adults in the emergency department (ED). Though often a critical intervention, IUCs carry significant risks. Our objective was to examine current knowledge, attitudes, and practice of emergency nurses and other providers regarding IUC placement and management in older adults.

Methods: We surveyed ED providers at a large, urban, academic medical center. We developed questionnaires using items from previously validated instruments and questions created for this study. We also assessed providers' management of 25 unique clinical scenarios, each representing an established appropriate or inappropriate indication for IUC placement.

Results: 129 ED providers participated: 43 nurses and 86 other providers. Ninety-one percent of nurses and 87% of other providers reported comfort with appropriate indications for IUC placement. Despite this, on the clinical vignettes, nurses correctly identified the appropriate approach for IUC placement in only 40% of cases and other providers in only 37%. Practice varied widely between individual providers, with the nurse participants reporting appropriate practice in 16%-64% of clinical scenarios and other providers in 8%-68%. Few nurses or other providers reported reassessing their patients for IUC removal at transfer to the hospital (28% of nurses and 7% of other providers), admission (24% and 14%), or shift change (14% and 8%).

Discussion: Although emergency nurses and other providers report comfort with appropriate indications for IUC placement, reported practice patterns showed inconsistencies with established guidelines. Wide practice variation exists between individual providers. Moreover, nurses and other providers infrequently consider IUC removal after placement.

Key words: Urinary catheters; Catheter-related UTI; Quality improvement; Patient safety; Emergency nursing; Geriatrics

Catheter-associated urinary tract infections (CAUTIs) are the most common hospital-acquired infection and have significant associated mortality and morbidity rates, as well as costs.[1,2] Older adult patients are disproportionately affected because they most commonly receive indwelling urinary catheters (IUCs) and are more susceptible to urinary tract infections and associated complications.[3] Older adults are also more susceptible to noninfectious complications of IUCs, including delirium, urethral trauma, pain, and falls because of tethering.

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Though potentially appropriate for patients with acute urinary obstruction or critical illness, urinary catheters are frequently placed unnecessarily, at times for staff convenience.[1,4,5] Prior studies have indicated that nearly half of catheters placed in hospitalized patients are unnecessary[1,6] and as many as half lack documented physician orders.[1]

Although efforts have focused on the inpatient setting to reduce CAUTIs by preventing inappropriate IUC placement and removing IUCs as soon as no longer necessary,[7] only recently has the emergency department been targeted as a potential site for intervention.[1,4,8,9] Nearly half of all hospitalizations originate in the emergency department, and 8% to 23% of ED patients who are admitted receive urinary catheters,[1,6] with the highest rates in older adults.[1] Thus an improved understanding of ED practices surrounding the use of IUCs may allow for the development of interventions to reduce inappropriate placement. The goal of our study was to describe the knowledge, attitudes, and practice of ED providers regarding placement and management of IUCs in older adults and the team dynamics in decision making surrounding this intervention.

Methods

We surveyed ED providers at a large, urban, academic medical center with approximately 70,000 adult ED visits annually, of which 26% are by patients aged 65 years or older. Participants included emergency nurses, attending physicians, midlevel providers (nurse practitioners [NPs] and physician assistants [PAs]), and resident physicians. Participants were recruited as a convenience sample during scheduled in-service sessions for nurses and regularly scheduled staff meetings for attending physicians, midlevel providers, and resident physicians.

We designed a comprehensive written survey to assess ED provider knowledge, attitudes, and practice regarding placement of IUCs, incorporating items from previously published instruments,[10–13] as well as questions created specifically for this study. This survey was then modified to reflect the clinical role of each participant type, yielding a total of 4 forms—for nurses, attending physicians, midlevel providers (NPs and PAs), and resident physicians.

The surveys included demographic information, knowledge and attitudes about IUCs, team dynamics of decision making in IUC placement and management, and current practice in various clinical scenarios. For questions of knowledge and attitudes, participants were asked to rate their agreement with statements on a 5-point Likert scale with options of "strongly agree," "agree," "neither agree nor disagree," "disagree," and "strongly disagree." For practice surrounding team dynamics of decision making, participants were asked to rate how frequently they took certain actions, using a 5-point Likert scale with options of "very frequently," "often," "sometimes," "infrequently," and "never."

To assess whether ED provider practices surrounding IUC placement aligned with current standards of care and expert recommendations, we first conducted an extensive literature review to identify clinical scenarios in which IUC placement was considered appropriate or inappropriate. On the basis of this literature review, we categorized 25 scenarios as one of the following: IUC placement indicated, IUC placement should be considered with alternate modes of urine collection, try alternate urine collection before IUC, or IUC placement contraindicated (Figure). We created brief written vignettes for each scenario to assess current practice of ED providers and included these 25 vignettes as part of the written survey. For example, for the scenario regarding morbid obesity, the vignette presented to participants was a "79-year-old morbidly obese patient with deep vein thrombosis." For each scenario, participants were asked whether they would place an IUC and were given options of "always," "would consider alternatives," "only if alternatives have failed," "never," and "unknown/unsure."

The survey content was initially evaluated and revised by a multidisciplinary expert panel that included the authors. Before administration to study subjects, each survey was pilot tested with individuals who would have been eligible to participate in the study and revised based on comments and suggestions from this pilot phase. The self-administered surveys were completed during July and August 2013. All surveys were completed anonymously. This study was approved by the Weill Cornell Medical College Institutional Review Board.

The survey responses were stored in a customized REDCap (Research Electronic Data Capture, Vanderbilt University, Nashville, Tennessee) database. Data were analyzed using Stata software (version 12.0; StataCorp, College Station, TX). Data are presented as frequencies with proportions, means with standard deviations, and medians with interquartile ranges. The mean proportion correct for the 4 scenario categories was calculated as the number of correct responses divided by the total number of scenarios in each category.

To facilitate comparison of knowledge, attitudes, and practice between emergency nurses and other providers, we reported the results for the individual provider types and in aggregate for attending physicians, NPs/PAs, and resident physicians. NPs and PAs have similar roles in our emergency department, so we reported their results as a single category (ie, midlevel providers).