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In Pursuit of Appropriate Urinary Catheter Indications: Details Matter

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Indwelling urinary catheters are among the most over-used devices in modern health care. Often considered routine devices, urinary catheters are placed in 15% to 25% of hospitalized patients (1, 2). They are frequently inserted in emergency departments, often without a physician order or appropriate indication (3). Once hospitalized, many patients remain catheterized unnecessarily, in some cases because physicians are unaware of the catheter (4). Urinary catheters are associated with urinary tract infections and other infectious complications related to inappropriate antimicrobial treatment, resulting in selection and transmission of multidrug-resistant organisms and *Clostridium difficile* infection (5, 6). The noninfectious complications of urinary catheters, such as urethral strictures and erosions, hematuria, and prolonged immobilization, are often unrecognized (7).

Although effective interventions to improve urinary catheter use have been published (8, 9), reducing use in hospitals has proved difficult. The 2009 Guideline for Prevention of Catheter-Associated Urinary Tract Infections from the Centers for Disease Control and Prevention (CDC) (10) provides a list of examples of appropriate and inappropriate indications for indwelling urinary catheters to help guide facilities in promoting appropriate use. However, because of the lack of published evidence to guide the indications, the CDC list was based primarily on expert consensus, and some of the indications have been subject to broad and variable interpretation. One example is the “need for accurate measurements of urine output in critically ill patients” (10), which is often applied to patients who do not need frequent (for example, hourly) measurement of urine output to guide management. In addition, certain conditions, such as chronic urine retention, and nonindwelling catheters were not addressed.

Findings by Meddings and colleagues (11) in this *Annals* supplement address the need for more specific guidance on appropriate urinary catheter use. Following the RAND/UCLA Appropriateness Method, the researchers conducted a systematic review of the literature and convened a multidisciplinary panel of experts to rate the appropriateness of various indications for indwelling, intermittent, and external urinary catheters. Because of a lack of studies examining risks and benefits of urinary catheters in medical patients, the researchers relied on existing guidelines and intervention studies to create the list of

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indications to evaluate. After a multistage process of ratings by the experts, median values of appropriateness were calculated and agreement among panel members was ascertained.

Although there were clear areas of consensus among the panelists, several areas of uncertainty were apparent. The panel members agreed that specific indications for indwelling urinary catheters are needed in the intensive care unit, such as the need for measurement of *hourly* urine output in critically ill patients. However, the use of catheters for *daily* urine volume was also considered appropriate if the urine "cannot be collected/assessed without a catheter." Unfortunately, this indication may be influenced by such factors as workload and practicality. Although the panelists generally agreed with the CDC indications for indwelling catheters, they also believed that intermittent or external catheters were appropriate in specific clinical scenarios. However, uncertainties about the use of external catheters for incontinence were raised, such as use upon patient request or for mild cases of skin breakdown. Surprisingly, even among some experts, there was misunderstanding about the inappropriateness of external catheters for management of urine retention.

The discussions by the panel also emphasized the need for hospitals to provide support for nurses to facilitate the use of alternative urinary management strategies in certain patient populations. Although the panelists rated both indwelling and external catheters as appropriate for management of incontinence in patients who are difficult to turn due to excessive weight, the discussion revealed a critical need for hospitals to have proper equipment and resources (such as mechanical lifts and lift teams) for turning of obese or edematous patients to protect the safety of patients and health care personnel. Hospitals must also ensure that nurses have adequate time, training, and equipment to perform intermittent catheterization with the required frequency to safely manage patients with chronic urine retention.

Meddings and colleagues should be applauded for their efforts to refine the urinary catheter appropriateness criteria. In the absence of data, their methods involved a systematic assessment of "the collective judgment of experts." As with any consensus-driven guidance, however, reliance on expert opinion can be challenging and should include disclosure of potential conflicts of interest. The findings also reveal important areas of uncertainty and disagreement among experts' opinions, particularly with regard to use of external catheters and patients with chronic urine retention. When both indwelling catheters and alternatives are deemed appropriate for a given scenario, studies evaluating patient outcomes using the different approaches could provide critical information and improved criteria to guide decision making on urinary management strategies. Such studies would move the field beyond a reliance on expert opinion and toward a more evidence-based approach that will ultimately improve patient safety.

Refining the catheter appropriateness criteria will also help guide evaluation of programs to improve urinary catheter use. Nationally, efforts are under way to develop a risk-adjusted urinary catheter use metric that could be used as a comparative quality metric. Understanding specific patient characteristics in addition to patient care locations that

influence urinary catheter use could help guide further refinements of risk adjustment in the future.

In the meantime, health care facilities can do several things to improve urinary catheter use. Identifying alternative devices for bladder management, such as external catheters, that are easy for nurses to use and making these devices readily accessible to nursing staff would increase the use of these products. In addition, engaging and empowering nurses to remove unnecessary urinary catheters and providing clear parameters and protocols for assessing and managing bladder function after catheter removal are essential (12). Obese or edematous patients require special attention with regard to incontinence management, patient movement, and prevention of pressure ulcers. In particular, hospitals need to ensure that they have the proper equipment to enable the movement of these patients.

Meddings and colleagues have shown that where urinary catheters are concerned, we need to focus on the details—the specifics of patient conditions, needs for monitoring, nursing care processes, available alternatives, and the equipment needed—to make substantial improvements in device use and patient safety.

Disclaimer:

The findings and conclusions in this article are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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