



Clinical Issues in Clean Intermittent Catheterization

History:

Intermittent catheterization as an alternative to use of an indwelling catheter was first advanced in 1966 by Guttman¹, who argued that periodic routine bladder emptying was more physiologic and would provide better outcomes than the indwelling catheter. However, he conceptualized intermittent catheterization as a sterile procedure. It was Lapides who introduced the concept of clean intermittent catheterization in 1972.² Over the last 36 years clean intermittent catheterization (CIC) has gained overall acceptance in the medical community, and there are a number of studies with variable scientific rigor that support this approach to managing urinary retention and/or neurogenic bladder.

The topic of CIC and related education is included in the instruction and certification process for nurses pursuing certification in continence care through the Wound Ostomy Continence Nursing Certification Board (WOCNCB).³⁻⁵

Current Status:

Clean Intermittent Catheterization involves periodic insertion of a catheter in the bladder to eliminate urine, and is an accepted method of management for individuals with neurogenic bladder or urinary retention. One of the most common complications associated with CIC is urinary tract infection (UTI). Clinicians and clients consistently seek to reduce the incidence of UTI. Factors thought to contribute to UTI in this population include rigor of clean technique, use of sterile versus clean catheters, numbers of individuals performing the procedure, and the impact of fluid intake, frequency of catheterization, and bowel management.

The incidence of urine colonization with bacteria is a known phenomenon among people who manage with CIC. The actual incidence of urinary tract infection with systemic symptoms requiring medical intervention and the associated costs of providing care in the population utilizing CIC is not known.⁶

Recent initiatives by consumer groups and industry have focused on the potential role of non-sterile (reused) catheters on incidence of UTI. As a result the Centers for Medicare and Medicaid Services (CMS) has revised its coverage policy to support single use catheters for individuals practicing CIC. CMS now covers 200 single use catheters per month. (Local Coverage Determination for Urological Supplies, L27219, CMS 4-01-08).

The WOCN Society recognizes that prevention of UTI among those managed with CIC is multifactorial and strongly supports a holistic approach to management of these

individuals. Specifically, the WOCN believes that all people using CIC should be counseled regarding each of the following strategies for reducing UTI:

- Meticulous clean technique, including thorough hand washing or use of an alcohol-based hand sanitizer prior to catheterization. For individuals who choose to reuse their catheters, it is also critical to thoroughly wash and rinse the catheter immediately before and after use;^{7,8,9}
- Consistent attempts to minimize the number of people providing catheterization for a specific individual. Studies indicate a correlation between increased numbers of persons performing the procedure and the incidence of UTI, at least among men;¹⁰
- Routine use of adequate amounts of lubricant to minimize urethral trauma;⁹
- Strict adherence to the established individualized schedule for catheterization, to prevent excess bladder distention and/or reflex bladder contractions;^{11,12,13} The schedule should be individualized based on bladder capacity and fluid intake. In general, catheterization frequency should be designed to limit urine volume to the individual's known bladder capacity (or <300 - 500 cc)
- Consistent adequate fluid intake, typically defined as 30 cc/kg body weight per day;¹⁴
- Meticulous bowel management to prevent constipation and prompt, thorough cleansing after defecation to minimize numbers of bacteria in the perineal and periurethral region;^{11,15}
- Consideration of topical estrogen for postmenopausal women to maintain health of the urethral mucosa and to minimize bacterial overgrowth in the perineum.^{16,17}

The WOCN Society also believes that there is inadequate research in the area of UTI prevention for individuals managed by CIC, and strongly supports additional research in this area.

References:

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Authors:

Kate Lawrence, MSN, RN, CWOCN

Margaret Goldberg, MSN, RN, CWOCN

Dorothy Dougherty, MN, RN, FNP, CWOCN, FAAN

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