



Clinical best practice recommendations

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The Canadian Urological Association and Nurses Specialized in Wound, Ostomy & Continence have both published new 2020 clinical recommendations in which they state that they are unable to support the reuse of catheters licenced for single use in any setting.

Canadian Urological Association Perspective

A urologist named Lapides came up with the concept of intermittent catheterization in the 1940s.¹ Previously, there was significant morbidity and mortality associated with the neurogenic bladders and the inability to drain them or the long-term use of indwelling catheters.

Intermittent catheterization has changed the way people manage their bladders and their quality of life in a dramatic way. The management does centre around improving both the quality of life and social rehabilitation. They have become cornerstones and priorities for the urologic management of these patients. There are certainly advantages of intermittent catheterization over indwelling urinary catheters. There's a reduced risk of common indwelling catheter-related complications such as catheters becoming dislodged. There's less of a barrier to intimacy and sexual activity when you do not have an indwelling catheter. There is the potential for reduced lower urinary tract symptoms between catheterizations.

Neurogenic lower urinary tract dysfunction (NLUTD) is associated with increased risk of recurrent UTI, stones and compromised kidney function. Management of neurogenic bladder dysfunction has an incredible economic burden on the healthcare system and quality of life. Assisted bladder drainage remains the cornerstone for urological management of the neurologically impaired patient. Various approaches have been

described to manage neurogenic lower urinary tract dysfunction in neurological populations, including clean intermittent catheterization, indwelling urethral catheters, suprapubic catheterization along with pharmacotherapy. Improving patient quality of life and social rehabilitation has become a priority for the urological management of the neurologically impaired patient.

The **Canadian Urological Association Best Practice Report: Catheter Use** reviews the evidence around the use of long-term urinary catheters in patients with chronic conditions and make practice recommendations for physicians in Canada who manage intermittent catheter populations.² It is based on data obtained from numerous published meta-analyzes and original studies identified through a literature search. The narrative review concentrates on systematic reviews, related guidelines and comparative studies. Articles were reviewed using a methodology consistent with the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) tool. It pays specific attention to the best evidence of the available techniques, design, material, and practices of intermittent self-catheterization and its position in the treatment pathway. Discrepancies are highlighted and discussed in the context of patient reported outcomes and health economics.

Intermittent catheterization is the gold standard for the management of NLUTD. Optimal catheter

material, cleaning method and catheterization technique remain controversial topics in urology. The preferred intermittent catheterization strategy varies by settings and practices. There is no evidence that there is one best catheter for all patients with NLUTD. The reuse of catheters is still considered in different clinical practices despite concerns regarding efficacy and compliance with cleansing techniques. Intermittent catheterization using single-use sterile catheters remains the optimal strategy until the emergence of new evidence supporting multiple use catheters. Long-term cost-effectiveness of single-use hydrophilic catheter or urinary catheters was established from the perspective of several international healthcare systems. Debate continues to linger regarding the best catheter material and technique in which upper urinary tract deterioration can be prevented while minimizing treatment-related morbidity.

The CUA has had instruction manuals dating back many years, yet there have never really been clear guidelines. Some of those manuals include how to re-sterilize and clean your catheter. There was a push to update and modernize the approach to intermittent catheterization guidelines. The CUA Best Practice Group report divides the recommendations into the following five sections; types of catheters, catheter-related complications, patient perspective, economic perspective and conclusions.

Those requiring catheters for a neurological reason are associated with an increased risk of recurrent infection, stones and compromised function. And although these complications are no longer the leading cause of death, they do represent a significant economic burden on the healthcare system as well as the quality of life. Assisted bladder drainage has become the cornerstone of urologic management, and intermittent catheterization is the gold standard.

It is a common misconception that putting a catheter in and out will increase the rate of UTI. In fact, having an indwelling catheter significantly increases the risk of having colonization and infection. Intermittent catheters provide fewer barriers to intimacy and sexual activity.

The body of evidence points to intermittent catheterization using pre-lubricated, hydrophilic,

are associated with fewer urinary tract infections compared to other modalities, and therefore it should be used whenever possible. It is the preferred means of draining the bladder. The evidence is limited with regards to hydrophilic vs. non-coated when it comes to trauma and stricture formation. The paper by Kessler (2009) showed high rates of satisfaction with the initiation of clean intermittent catheterization.⁴ Most users, properly taught, find intermittent catheterization easy to do and incorporate into their daily activities. There is minimal to no pain and their overall quality of life is shown to improve. A large systematic review by Walter & Krassioukov (2019) reported high-level evidence for studies comparing the different types of catheters.⁵

International perspective on the reuse of single-use devices

The issue of reusing single-use products is problematic for urologists. The wording from the U.S. Food & Drug Administration (FDA) states that single-use devices cannot be reprocessed safely and they shouldn't be reused. The U.K. NICE recommends that to make an off-label recommendation for the use of these catheters again is problematic. Single use should be the recommendation for intermittent catheters. Several urologic societies worldwide have stated that reuse of these single-use catheters is considered off-label.

According to the FDA, single-use devices that cannot be reprocessed safely should not be reused under any circumstances. NICE states that to make an off-license recommendation using these catheters, there needs to be a better quality of evidence. In keeping with these recommendations, the CUA guidelines favour single-use hydrophilic coated catheters.

Intermittent catheterization enhances bladder emptying for the patient. It relieves associated symptoms which could otherwise impair quality of life. It is widely accepted that intermittent catheters lessen restrictions on daily activities. They promote patient independence, improve sleep, social functioning and overall quality of life. The success of intermittent catheterization requires acceptance and if the patient is satisfied with the treatment they will be compliant in the long-term. Patients reported a negative impact on quality of life

owing to social, psychological disturbances as well as from infections. Single-use hydrophilic catheters can improve the acceptance of intermittent catheterization for patients.

Wherever possible, hydrophilic coated or pre-lubricated catheters should be proposed to patients as a first treatment option. Evidence shows they have a lower risk of infection, less urethral trauma and a higher convenience and ease of use compared to conventional uncoated catheters.

Intermittent catheterization is the gold standard. There's no optimal material, cleaning method, or technique. Recommending the most straightforward, safest, ease of use, is hydrophilic single-use catheter. There is no evidence that one catheter is better over another. And so, we don't recommend or endorse a single type of product. As a category, whenever possible, hydrophilic coated or pre-lubricated catheters should be proposed to the patient as the first treatment option for these reasons.

Patient adherence to cleaning method cannot be predicted and further amplifies the risk of complications and their burden on the healthcare system. The CUA recommends a patient-centred approach to consider single-use hydrophilic coated catheters as the first and preferred option while considering the patients' and caregivers' ability to accommodate the usage of technique. In updating their best practices, the CUA is in lockstep with the nursing professionals discussed next.⁶

CUA take-aways

1. Intermittent catheterization is the gold standard for patients with incomplete bladder emptying able to catheter themselves.
2. Endorses the use of single-use hydrophilic coated or pre-lubricated catheters, with a clean technique to decrease the likelihood of developing a UTI.
3. The use of single-use hydrophilic coated catheters is recommended to reduce the risk of hematuria and trauma.
4. Hydrophilic or pre-lubricated catheters are convenient and easy to use.
5. From an economic analysis, the CUA recommends offering patients, if possible, hydrophilic coated catheters as cost-effective

compared to single-use uncoated catheters due to the decreased incidence of infections improved quality of life.

6. There is no evidence that the type of catheter impacts urethral stricture formation. And from a patient perspective, the CUA recommended offering hydrophilic or pre-lubricated catheters to patients because of improved bladder related quality of life.

Nursing professional perspective

The *Clean Intermittent Urethral Catheterization in Adults | Canadian Best Practice Recommendations for Nurses* published in May 2020 is the result of a collaboration between Nurses Specialized in Wound, Ostomy & Continence Canada (NSWOCC), Canadian Nurse Continence Advisors (CNCA), Urology Nurses of Canada (UNC) and Infection Prevention and Control Canada (IPAC Canada).⁶

These best practice recommendations help guide qualified nurses in Canada to provide education and improve patient outcomes for adult intermittent urethral catheterization.

The document assists regulated professional nurses in diverse practice settings to provide evidence-based care to adults requiring intermittent urethral catheterization.

Project team members came from four different organizations, all of whom we collaborated with through the Canadian Network of Nursing Specialties run under the Canadian Nurses Association. The recommendations from the four cooperating associations established a Canadian nursing perspective building on the *Catheterization Urethral Intermittent in Adults Dilatation Urethral Intermittent in Adults - Evidence-Based Guidelines for Best Practice in Urological Health Care*, published by the European Association of Urology Nurses (EAUN).

The researchers conducted a literature search between 2010-2018 using the research question. "What is the evidence that supports nursing practice to use and to teach the use of clean, intermittent urethral catheterization?" The initial search turned up 1,449 studies in which the abstracts were reviewed for review of 93 studies by two reviewers was conducted, and 54 studies were included.⁶

The chapters covered in the nursing best practice recommendations include:

1. Methodology.
2. Indications, contraindications and complications.
3. Infection prevention and control.
4. Impact of intermittent catheterization: patient quality of life.
5. Catheter materials and types of materials.
6. Management of intermittent catheterization.
7. Patient education.

There is some variation among Canadian healthcare professionals about the recommended frequency of intermittent catheterizations, acceptable post-void residuals, and adequate urine per catheterization. The nursing expert's recommendation is to achieve a catheterized volume of no greater than 500 ml per catheterization. Usually, this works out to four to six catheterizations in 24-hours. Recommendations include the use of a record to track output.

The best practice recommendations are a great starting point to review any nursing policies and procedures related to intermittent catheterization in adults. Local policy should be observed before starting any catheterization as intermittent catheterization is governed by provincial legislation

Nursing perspective on the reuse of single-use devices

One of the most important recommendations is that a single-use pre-lubricated catheter should be recommended for patients, especially for those with repeated symptomatic urinary tract infections. The authors could not find any intermittent catheters in Canada marketed for reuse in patients performing intermittent catheterization.

Health Canada has licenced single-use catheters to be used only once. They are not designed to be reused. It is against the manufacturer's instructions to reuse. From a professional practice liability standpoint, the authors of the Canadian best practice recommendations for nurses cannot support the reuse of catheters.

The collaborating associations recognize that they cannot support the reuse of catheters licenced for single use from professional and practice liability perspectives. Health Canada licences a single-use catheter because it is to be used only once and then disposed of after use. Single-use catheters are

not designed to be reused, and it is strictly against the original equipment manufacturers' instructions. The reuse of single-use catheters is a contentious and evolving subject.

The collaborating nursing associations recognize that from professional and practice liability perspectives, they are unable to support the reuse of catheters licenced for single use in any setting.

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