



Latest economic analysis

Taken from The Path to Modernize Ontario Public Coverage for Intermittent Catheters and Related Supplies. February 2021. Spinal Cord Injury Ontario

Latest economic analysis

The estimation of the impact of the use of hydrophilic catheters on lost time to receive treatment for urinary tract infections (UTIs) suggests that providing an individual with a SCI requiring intermittent catheterization the choice of hydrophilic catheters would result in potential long-term cost savings to the Government of Ontario.

This report builds upon and evolves the need for examining the access and affordability of intermittent catheters from the disputed 2019 Health Technology Assessment by HQO on Intermittent Catheters for Chronic Urinary Retention.¹

Approximately 80% of individuals with SCI will develop neurogenic bladder conditions. Of those with neurogenic bladder conditions, 60% require catheterization to urinate. Currently, intermittent catheterization is considered the gold standard. There are two main types of intermittent catheterization: uncoated and coated catheters. Uncoated catheters have an increased risk of bacterial infection due to the need to self-lubricate. On the other hand, hydrophilic coated catheters have a decreased risk of bacterial infection because they don't need to be self-lubricated. However, hydrophilic catheters are more expensive per unit compared to the uncoated catheters.

The objective of a review conducted by Xi et al., was to identify and critically evaluate economic evaluations, examining the cost-effectiveness of hydrophilic versus uncoated catheters for individuals with SCI.² To date, there have been two other studies that have had a similar objective: the HQO report that was published in 2019 and a study by Saadat et al. (2018).^{1,3} Neither of these two studies critically evaluated the economic evaluations that they included.

A scientific literature search in November 2019 identified publications in peer reviewed journals that conducted an economic analysis (i.e., cost / cost-effectiveness studies) on intermittent catheters in the spinal cord injured population. This review included any study that conducted a full economic

evaluation of any urinary catheter for individuals with spinal cord injury.

To date, there have been eight health economic analysis studies comparing the different types of intermittent catheters. All eight studies conducted a cost-utility analysis, assessing cost-effectiveness in various countries across the world, including two studies out of Canada. Six of the eight studies concluded that intermittent catheters with hydrophilic coating were cost-effective or cost-reducing in their respective settings.

Three potential reasons for the discrepancies were postulated.

- 1. Comparator used.** One study concluded that hydrophilic coated catheters was not cost-effective compared with off-label reuse of single-use uncoated catheters. Off-label means that the device is being used outside of the licenced manufacturer's instructions for use. After follow-up interviews with stakeholders, the National Institute for Health and Clinical Excellence (NICE) was concerned that physicians would be liable for infections if they were advising patients to ignore the single-use symbol, and the evidence towards cleaning was lacking in terms of how to adequately reuse a catheter. The final recommendation stated that individuals should be able to choose hydrophilic or gel reservoir catheters. All other studies included approved uses of uncoated catheters as the comparator.
- 2. Consideration of long-term impacts of catheter use.** Five studies incorporated the long-term impacts of catheterization to the economic evaluation. These analyzes considered the secondary complications

of catheterization on renal function. Hydrophilic catheters have been shown to have fewer long-term consequences, including a reduced risk of UTIs and other renal complications, in comparison to the uncoated catheters, leading to increased calculated benefits. These studies provided the most comprehensive evaluation of the economic impact of catheter use.

Two studies on the other hand focused on only the short-term consequences. Additionally, these two studies considered the presence of at least one UTI as the primary clinical outcome, but excluded the number of UTIs that individuals would experience. These model input decisions limit the observed health benefits of hydrophilic catheters resulting in the author's description that hydrophilic catheters were not cost-effective.

3. **Cost difference between hydrophilic and uncoated catheters.** In the most recent study to conclude that hydrophilic catheter was not cost-effective, the researcher included a unit cost difference of hydrophilic and uncoated catheters that was the highest in all studies identified in the review. In fact, in this study it was 3.8 times higher than the study with the next highest cost difference (also conducted in the same year and jurisdiction). Not surprisingly, the much higher unit cost of hydrophilic catheters selected by the study authors contributed to the conclusion that intervention was not cost-effective. However, the cost of hydrophilic catheters used in this study appear to be inconsistent with previous studies.

A re-examination of the health economics is warranted

In summary, the discrepancies observed in individual cost-effectiveness studies are a result of the type of comparator, time frame of the analysis and unit cost of hydrophilic catheters chosen by the researchers. Studies that have included a comprehensive assessment of the full impact of hydrophilic catheters compared with single-use uncoated catheters using a reasonable unit cost of catheter have concluded that although the total health care costs for individuals receiving hydrophilic catheters may be higher than individuals using uncoated catheters, the additional health benefits are great enough to consider the intervention cost-effective. In other words, the transition to a funding model to provide individuals with more choice in catheter type may cost more for individuals opting to use hydrophilic catheters compared to uncoated catheters. This additional cost though is considered acceptable given the expected gains in health.

The scope of the identified studies is limited to the direct public healthcare payer costs associated with catheter use. These studies do not speak to the potential indirect cost impacts such as the lost time due to the treatment of UTI, out of pocket costs to receive medical care, and reduced social isolation / increase in self-reliance with greater convenience in catheter administration. In a cost-effectiveness study of hydrophilic catheters led by Dr. Welk and colleagues, the cost impact of lost time for treatment of urinary tract infection was considered in a secondary analysis.⁴ The researchers observed that when lost time was valued in their model, there was a lower average lifetime cost for individuals receiving hydrophilic catheters compared to uncoated catheters. There was an expected cost savings from a societal perspective. Experiencing less UTIs may also result in lower out of pocket costs for parking, transit and attendant assistant costs related to attending medical appointments to treat this complication. For individuals with limited upper limb function, the convenience of applying a hydrophilic catheter may also result in greater self-reliance and lower dependence on paid caregivers reducing the costs associated with this care. Greater convenience in catheter application may also give the individual confidence in pursuing interactions with others, thus reducing social isolation and the negative associated health consequences. The magnitude of these impacts need to be further explored in future studies. However, these examples along with the estimation of the impact of the use of hydrophilic catheters on lost time to receive treatment for UTIs suggests that providing an individual with a SCI requiring intermittent catheterization the choice of hydrophilic catheters would result in potential long-term cost savings to the Government of Ontario.

References

1. Health Quality Ontario. Intermittent catheters for chronic urinary retention: A health technology assessment. ON Health Technol Assess Ser. 2019;19(1):1–153. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6395058/>.
2. Xi, M., Elterman, E. S., Welk, B., Pakosh, M., & Chan, B. C. F. (2020) Cost-effectiveness of hydrophilic-coated urinary catheters for individuals with spinal cord injury: A systematic review. BJUI Compass 2020 <https://bjui-journals.onlinelibrary.wiley.com/doi/full/10.1002/bco2.63>
3. Saadat SH, Shepherd S, Van Asseldonk B, Elterman DS. Clean intermittent catheterization: Single use vs. reuse. Can Urol Assoc J. 2019;13(2):64–69. DOI:10.5489/cuaj.5357
4. Welk B, Isaranuwatthai W, Krassioukov A, Torp LH, Elterman D. Cost-effectiveness of hydrophilic-coated intermittent catheters compared with uncoated catheters in Canada: A public payer perspective. J Med Econ. 2018;21(7):639-648.



SPINAL CORD INJURY ONTARIO LÉSIONS MÉDULLAIRES ONTARIO

Visit [YourMoveOntario.ca](https://yourmoveontario.ca)



HOUSING



FINANCIAL
ASSISTANCE



HEALTH



SEXUALITY



EQUIPMENT



TRANSPORTATION
& TRAVEL

Spinal Cord Injury Ontario
<https://sciontario.org>

Peter Athanasopoulos
petera@sciontario.org
416 422-5644 ext. 260