

Title: Development of an Evidence-based Pediatric Neurogenic Bowel Dysfunction Management Standard of Care

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Objective: To standardize pediatric neurogenic bowel dysfunction management in a pediatric inpatient rehabilitation program.

Methods: An interdisciplinary taskforce including stakeholders from the clinical team, evidence review, and a family leader were used to develop the Standard of Care (SOC). A targeted search of knowledge tools from clinical practice guidelines, best practice statements, hospital policies, and pre-existing reviews were considered. Seven tools were identified and assessed for trustworthiness, comprehensiveness, utility, and pediatric relevance.

Results: The taskforce successfully developed an evidence-based SOC, providing clinicians with guidelines on assessing, curating, and evaluating a bowel routine program, aiming to achieve social continence. It also addresses how to problem-solve when a bowel care program is not effective. Preliminary evaluation results demonstrate satisfaction and perceived utility from the perspective of nurses. This SOC relates to the Best Practice Guideline (BPG), Support Self-Management in Chronic Conditions: Collaboration with Clients and Developing and Sustaining Interprofessional Health Care: Optimizing patient, organizational and system outcomes.

Outcomes: Involving key stakeholders in the development of this standard led to the formation of a pediatric neurogenic bowel care evaluation and decision-making algorithm to problem-solve when a bowel routine is not effective. Following the rollout of the SOC, this information was disseminated to external partners and is available to families. Family-facing educational materials were adapted to empower families to help support with self-management and highlight public visibility and outcomes.

References

- Caring for persons with spinal cord injury. Ontario Neurotrauma Foundation. Retrieved June 2021 from <http://primarycare.onf.org/NeurogenicBowel.html>
- CHEO. (2016). Constipation: Caring for children over 6 months of age. Retrieved from: <https://help.junoemr.com/support/solutions/articles/3000084405-cheo-constipation-caring-for-children-over-6-months-of-age>
- Coggrave, M., Mills, P., Willms, R., Eng, JJ., (2014). Bowel Dysfunction and Management Following Spinal Cord Injury. In Eng JJ, Teasell RW, Miller WC, Wolfe DL, Townson AF, Hsieh JTC, Connolly SJ, Noonan VK, Loh E, McIntyre A, editors. Spinal Cord Injury Rehabilitation Evidence. Version 5.0. Vancouver: p 1- 48. Available at: https://scireproject.com/wp-content/uploads/bowel_management-1.pdf
- Caring for persons with spinal cord injury. Ontario Neurotrauma Foundation. Retrieved June 2021 from <http://primarycare.onf.org/NeurogenicBowel.html>
- Department of Family Medicine and Ontario Neurotrauma Foundation. (2012). Caring for Persons with Spinal Cord Injury – Neurogenic bowel. Available at: <http://primarycare.onf.org/NeurogenicBowel.html>
- Malone JC, Thavamani A. Physiology, Gastrocolic Reflex (Gastrocolic Response) [Updated 2019 Oct 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK549888/>
- Mannell, S., Wiebe, J., Larin, H. (2017). Dynamic Core Intervention for a Child with Cerebral Palsy. *Remedy Open Access*, 2(1076).
- Multidisciplinary Association of Spinal Cord Injured Professionals. (2012). Guidelines for management of neurogenic bowel dysfunction in individuals with central neurological conditions. Available at: <https://www.mascip.co.uk/wp-content/uploads/2015/02/CV653N-Neurogenic-Guidelines-Sept-2012.pdf>
- Pelvic Health Solutions. (2018). Pediatric incontinence & pelvic floor dysfunction. Instructor: Dawn Sandalcidi. Course description at: <https://pelvichealthsolutions.ca/event/pediatric-incontinence-pelvic-floor-dysfunction-june-2020/>
- Pelvic Health Solutions. (2017). Level 1: The physical therapy approach to female and male urinary incontinence. Instructor: Nelly Faghani & Carolyn Vandyken. Course description at: <https://pelvichealthsolutions.ca/event/level-i-the-physical-therapy-approach-to-female-and-male-urinary-incontinence-november-2019/>

Pelvic Health Solutions. (n.d.). ILU massage.

Rutledge, Doughty, Moore & Wooldridge. (2004). Urology Nursing, 23:6, 416-28, Royal National Orthopedic Hospital Trust. (n.d.). Neurogenic bowel. Available at: <https://www.rnoh.nhs.uk/our-services/spinal-cord-injury-centre/medical-management-advice/neurogenic-bowel>

The Johns Hopkins Women's Center for Pelvic Health. (n.d.). Bladder irritants. Retrieved from: https://www.hopkinsmedicine.org/johns_hopkins_bayview/docs/medical_services/gynecology_obstetrics/bladder_irritants.pdf

University of Pennsylvania Medicine Centre (2019) Bowel Bladder and Sexual Function. Retrieved from <https://www.upmc.com/services/rehab/rehab-institute/conditions/spinal-cord-injury/education-spinal-injury/bowel-bladder-and-sexual-function>

Vasquez, N., Knight, S.L., Susser, J., Gall, A., Ellaway, P.H., Craggs, M.D. (2015). Pelvic floor muscle training in spinal cord injury and its impact on neurogenic detrusor over-activity and incontinence. *Spinal Cord*, 53(12). 887-889.

Zivkovic, V., Lazovic, M., Vlajkovic, M., Slavkovic, A., Dimitrijevic, L., Stankovic, I, Vacic, N. (2012). Diaphragmatic breathing exercises and pelvic floor retraining in children with dysfunctional voiding. *European Journal of Physical and Rehabilitation Medicine*, 48(3), 413-421.