Incontinence in older adults: The role of the geriatric multidisciplinary team

ABSTRACT: Urinary and fecal incontinence are very common in the geriatric population, yet many patients and health care practitioners wrongly consider incontinence a normal part of aging. As a result, older patients are often reluctant to seek help, and health care practitioners do not always provide evidence-based care. With advancing age, incontinence becomes increasingly complex because of comorbidities, polypharmacy, cognitive impairment, and functional impairment that can often make the diagnosis less clear. The multidisciplinary team is an integral part of the assessment, diagnosis, and management of older patients with incontinence. The process begins with a review of physical, psychological, and social health, and includes consideration of functional status, quality of life, and goals of care. The nurse continence advisor, the pelvic floor physiotherapist, and the geriatrician all play important roles in the management of urinary and fecal incontinence in older patients. The nurse continence advisor focuses on conservative and holistic strategies for managing incontinence, the pelvic floor physiotherapist addresses the neuromusculoskeletal aspect of continence management, and the geriatrician performs a physical examination, obtains a detailed account of the patient’s bladder and bowel history, and screens for functional, cognitive, and mobility impairment. Other specialists, such as occupational therapists and general physiotherapists, are involved as needed to assist patients with dexterity and mobility issues that may be contributing to incontinence. With the number of Canadians older than 65 expected to increase, more geriatric continence clinics will be needed.

The multidisciplinary team is essential to the practice of geriatric medicine. A good example of this can be seen in continence clinics staffed by a variety of health professionals skilled in providing evidence-based care for incontinence, an important geriatric syndrome that is underreported and undertreated. Without treatment, urinary and fecal incontinence can lead to significant complications, including falls, pressure ulcers, and depression. Despite the risks posed by incontinence, there are surprisingly few continence clinics with a geriatric medicine focus, and more are needed. With the number of Canadians older than 65 years projected to be 24% to 28% of the total population by the year 2063, a parallel increase in the number of older patients with incontinence can be expected.

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be expected. As this segment of the population grows, assessment and management of incontinence will become increasingly important, especially for frail older adults. These very complex patients often have multifactorial incontinence due to nongenitourinary conditions such as dementia, mobility decline, poor dexterity, and polypharmacy. Such patients may not tolerate extensive urological investigations, and frailty is a known predictor of postoperative complications after urological procedures.³

Older adults require an incontinence assessment that includes a review of physical, psychological, and social health. Functional status, quality of life, and goals of care must also be considered. Quality of life for older patients can be improved with the help of a nurse continence advisor (NCA), a pelvic floor physiotherapist, a geriatrician, and other health professionals skilled in the assessment, diagnosis, and management of urinary and fecal incontinence.

The nurse continence advisor
The nurse continence advisor is a registered nurse who has recognized education, training, and certification in continence management. The NCA focuses on conservative and holistic strategies for managing incontinence and related symptoms, including urinary urgency, frequency, and nocturia, and fecal incontinence and constipation.³ This nursing specialty was developed in Great Britain in the

The holistic approach to bladder and bowel incontinence used by the NCA helps to form a solid therapeutic relationship with the patient and provides reassurance that there are strategies to manage incontinence, no matter what the cause.

Management strategies will vary depending on a patient’s needs and abilities. Urinary and fecal incontinence can be easily treated in many cases using conservative management alone. Simple lifestyle strategies such as weight loss, adequate fluid intake and appropriate timing of fluids, and dietary change to ensure adequate fibre intake can all help achieve continence. Other dietary changes that may be considered include avoiding excess caffeine, alcohol, artificial sweeteners, and concentrated sugars. Behavioral strategies can also help reduce incontinence. These include practising urge suppression and bladder retraining techniques, using appropriate containment products, managing constipation, and strengthening pelvic floor muscles. In patients with significant cognitive impairment who have difficulty using behavioral strategies, prompted or timed voiding is often helpful. Although each patient is an individual with unique symptoms, the same structured assessment and management strategies are used for both male and female patients.

Quality of life is impacted by incontinence and is a key focus of the NCA. Incontinence can be devastating to a patient’s sense of well-being and sense of self,⁷ and can interfere with the ability to perform daily activities outside the home. Fear of embarrassment can lead the older adult to avoid social situations and is associated with low self-esteem, isolation, and a reduction in physical activity.⁶,⁸ When older adults are in hospital, incontinence can negatively impact their ability to participate in rehabilitation because of fear that therapy sessions will be interrupted by the need to toilet and clean up after an incontinence episode.⁹

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The pelvic floor physiotherapist
The pelvic floor physiotherapist addresses the neuromusculoskeletal aspect of continence management. Pelvic floor muscle function is influenced by dural and peripheral neural mobility (the ability of nerves to move within tissues), dynamic stabilization of the trunk, proper posture, synchronous breathing, and abdominal muscle recruitment patterns. The mobility of the spinal and cranial dura or lumbar peripheral and autonomic nerves during limb movements can be restricted by fibroptic tissue from trauma or surgeries. This will restrict a nerve’s normal freedom of movement by fastening it to the surrounding tissue structures (tethering). This differs from impingement, where the nerve cannot move at all. Tethering will alter the recruitment pattern of the muscles innervated by that nerve or the excursion of the surrounding muscles. This will in turn affect the movement of the involved bony structures of the lumbar spine or pelvis, thereby altering the attachment of the pelvic floor muscles or the synergies required for function.

The pelvic floor physiotherapist will assess all of the patient’s pelvic floor functions and consider the patient’s history, functional, and cognitive abilities when deciding on a management plan. The assessment begins with a detailed medical and obstetrical history to help establish causes of neural tethering affecting muscle function. Low back and pelvic pain, which are common in older patients, have long been associated with incontinence. The alignment and dynamic stabilization of the back and pelvis are also examined, as these are crucial to the functioning of the pelvic floor.

Along with factors affecting the pelvic floor, the physiotherapist will consider other functional factors that can affect continence in older adults. The patient must be able to get to the bathroom safely; therefore, gait speed, balance reactions, and stamina need to be assessed. The physiotherapist will also need to consider the ability of the patient to undo buttons and zippers, pull down pants, and sit on the toilet, which will depend on hip mobility and upper extremity dexterity and strength.

The physiotherapist’s assessment might also include a review of the patient’s voiding, fluid intake, and bowel history if this has not been assessed already by other team members, and will teach proper bowel movement technique to avoid straining.

During the physical examination, the physiotherapist will assess vaginal and rectal muscle recruitment patterns (the successive activation of muscles to increase the strength of contraction), as well as the contraction and relaxation capacity of each individual component of thelevator ani, striated rectal, and urogenital diaphragm muscles. This process involves looking for restrictions produced by adhesions or reduced neural mobility. The impact of the contraction on organ prolapse lift and on the firmness of the rectovaginal septum is considered, as well as possible fascial damage, avulsion, or ligamentous damage. Next, the strength, speed, and timing of pelvic floor muscle contraction are assessed. This is done at rest, with cough and Valsalva maneuver testing, and during functional activities such as a one-leg stand, squat, walking, lunging, or any physical activity that the patient does regularly.

Imaging with 2D ultrasonography may be useful to assess abdominal recruitment pattern, diastasis, and levator ani excursion and activity during cough and Valsalva maneuver testing. Biofeedback can be used to assess electromyographic activity of the muscles and may help those with pelvic floor overactivity learn how to relax the pelvic floor muscles. Limitations of biofeedback include an inability to differentiate between eccentric and concentric contraction of the levator ani, and the lack of sensitivity of current probes in isolating the levator ani from adjacent muscle groups.

After assessment, the physiotherapist develops a treatment program based on the patient’s level of function and the goals the patient wishes to achieve in terms of improved function. Education is provided about the effect of pelvic floor muscle activity, posture, and breathing pattern on incontinence, and the importance of compliance to the exercise program is reinforced. Pelvic floor physiotherapy, especially for geriatric patients, requires multiple visits as muscle strengthening and modification of muscle coordination takes time. For the average patient, treatment over a minimum of 3 months is often needed to obtain meaningful results.

The geriatrician
The geriatrician performs a physical examination, obtains a detailed account of the patient’s bladder and bowel history, and screens for functional, cognitive, and mobility impairment. The geriatrician can then supplement this history with a more detailed review of the patient’s medical history. This is particularly important in frail older adults who are more likely to have chronic conditions that affect bladder and bowel function. For instance, postmenopausal women with diabetes have a
2.5 times greater risk of having urinary incontinence than those without the disease, and they also have more severe incontinence than those without the disease.\textsuperscript{15,16} In a study of community dwelling older adults with diabetes, fecal incontinence was present in 13.2\% of individuals.\textsuperscript{17} Other comorbidities associated with fecal incontinence include chronic kidney disease and depression.\textsuperscript{18} Neurological disease, including previous stroke and Parkinson disease, are strongly associated with urinary incontinence. Any newly diagnosed changes in bowel function should prompt the health care team to consider colon cancer, and referral for flexible sigmoidoscopy or colonoscopy should be made depending on the patient’s goals of care.

Polypharmacy and inappropriate prescribing are major causes of morbidity in older men and women, and are important causes of incontinence. Culprit medications for urinary incontinence commonly seen in the medication lists of older adults include diuretics, calcium channel blockers, selective serotonin reuptake inhibitors, and cholinesterase inhibitors. Additionally, drugs that cause peripheral edema, such as gabapentin and nonsteroidal anti-inflammatory drugs, can cause nocturnal polyuria and nocturia, while angiotensin converting enzyme inhibitors may cause constipation and excessive straining. Sacral nerve sensation can be tested to screen for a neurological cause of incontinence and the anal wink can be elicited. A digital rectal exam should be performed to look for impacted stool, test anal contraction strength, and, in men, determine prostate size and consistency. An abdominal exam should be performed to palpate for any masses and percuss the bladder. The legs should be examined for pitting edema and signs of chronic venous stasis. Prior to voiding, female patients should be asked to perform an upright and supine stress test, during which the geriatrician will look for urine leakage with coughing or sneezing. A pelvic exam is performed with the patient in the supine position to look for atrophic vaginitis, anterior or posterior vaginal prolapse, or cystocele. Pelvic floor muscle strength should be tested in both male and female patients, as many do not know how to contract the appropriate muscles, or may have a weak contraction. Cognitive screening is necessary in select cases, for both diagnosis of functional incontinence and to help tailor treatment options to the patient’s cognitive abilities.

For the vast majority of older patients with urinary or fecal incontinence, only limited investigations are needed. For urinary incontinence, one of the most useful tools is the bladder diary, which allows the clinician to get a better sense of fluid intake, as well as urination patterns and severity of symptoms. A 7-day bladder diary has been shown to produce a stable and reliable measurement of incontinence episodes in community dwelling older women,\textsuperscript{19} and a 3-day frequency and volume chart has been shown to provide a valid measurement of functional bladder capacity in community dwelling older men.\textsuperscript{20} Additionally, such charts can be used to diagnose nocturnal polyuria as a cause of nocturia in older men.\textsuperscript{21} Patients should have a postvoid residual (PVR) measurement to screen for urinary retention causing overflow incontinence. It should be noted, however, that in one study of asymptomatic ambulatory older women, more than 10\% of patients had a PVR greater than 100 mL, suggesting the result needs to be considered in the context of the patient’s clinical presentation.\textsuperscript{22} For patients presenting with lower urinary tract symptoms and urinary incontinence, urinalysis should be performed, with culture and sensitivity testing if the sample is positive for leukocytes, nitrates, or both. If repeat urinalysis after treatment is again positive, retreatment should not occur in the absence of new symptoms such as fever or dysuria as the patient may have asymptomatic bacteriuria. Asymptomatic bacteriuria is common in older adults and does not warrant antibiotic therapy. There are few studies looking at the role of other investigations such as uroflowmetry and...
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invasive urodynamics, especially in the frail older adult, and such investigations should not be performed routinely in this population. Similarly, a thorough history and physical exam are often sufficient to make a diagnosis of fecal incontinence, and more extensive investigations such as anal manometry and anal ultrasound are only required in select patients who have not benefited from initial medical management.23

Lifestyle and behavioral interventions, as outlined above in the discussion of strategies employed by the nurse continence advisor and the pelvic floor physiotherapist, should be the first-line treatment for urinary incontinence in the geriatric population. Unfortunately, older patients generally have more severe incontinence than younger patients, and may experience only a partial restoration of continence with conservative therapy alone. For male and female patients with storage symptoms, including urgency and frequency, antimuscarinics remain the mainstay of treatment. A number of studies have reported on antimuscarinics in older patients and shown that these drugs can significantly improve symptoms, including the number of urgency and incontinence episodes, as well as micturition frequency.24-31

Dry mouth and constipation are the most common side effects of the antimuscarinics, and are intolerable for some older patients, resulting in a high discontinuation rate.32 The efficacy and adverse effect profiles of all available antimuscarinics is generally thought to be equivalent, with the exception of oxybutynin, which is associated with increased risk of cognitive impairment and should be avoided in frail older patients.32 The newer oral anticholinergics, including darifenacin, fesoterodine, solifenacin, tolterodine, and trospium, have properties that limit their penetration of the blood-brain barrier. The cost of these agents varies considerably across the country, depending on the provincial and territorial drug plan, and this should be factored into the choice of treatment.

Mirabegron, a beta-3 adrenergic agonist that relaxes the detrusor muscle during the urine storage phase, is the newest option for the treatment of urgency incontinence. Pooled analyses of phase 3 registration trials of mirabegron show efficacy in people older than 65 and 75, with evidence of safety over a year-long extension period, with hypertension and urinary tract infection among the most common adverse effects.33 Studies in the frail older adult have yet to be done.

Invasive treatments for women, such as botulinum toxin for urgency incontinence and mid-urethral tapes for stress incontinence, have been shown to be effective in selected older patients, but there is little information on their utility and safety in the frail older adult.34,35 Older men with obstructive symptoms for benign prostatic hyperplasia may benefit from transurethral prostate resection, but there is little data on other incontinence surgeries for older men. Before considering surgery, the clinician should assess the older patient for any underlying medical and functional causes of incontinence to ensure that surgery is warranted.

Medical management of fecal incontinence depends on the underlying cause. Fibre supplementation is recommended as a first-line treatment for mobile older adults who can reliably consume enough fluid.36 The evidence for treatment of chronic constipation in older adults is described elsewhere, with the best evidence supporting osmotic laxatives in this population.37 Antidiarrheal medications may be required in some older patients with chronic, noninfectious fecal incontinence, with loperamide being the preferred agent as it acts locally on the intestine and does not cross the blood-brain barrier.38

Other multidisciplinary team members

In addition to the health professionals discussed above, other members of the geriatric multidisciplinary team may be required to participate in the older adult’s care. For example, an occupational therapist may be needed to assist patients with incontinence related to dexterity limitations, and a general physiotherapist may be needed to conduct a detailed mobility assessment in patients with a history of falling.
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Summary
Frail older adults are often medically complex patients and require an incontinence assessment that includes a review of physical, psychological, and social health. Functional status, quality of life, and goals of care must also be considered. The geriatric multidisciplinary team is experienced in such holistic assessments, and in balancing the treatment of multiple health conditions. With the prospect of a growing geriatric population, we need more continence clinics staffed with a variety of health professionals who understand frailty and are skilled in the diagnosis and management of multifactorial incontinence. Recognizing incontinence as a treatable condition can undoubtedly improve the quality of life for all older adults affected, and will make a significant difference in the lives of frail patients.

Competing interests
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References
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