

# Provincial Female Urinary Incontinence (UI) Primary Care Clinical Pathway

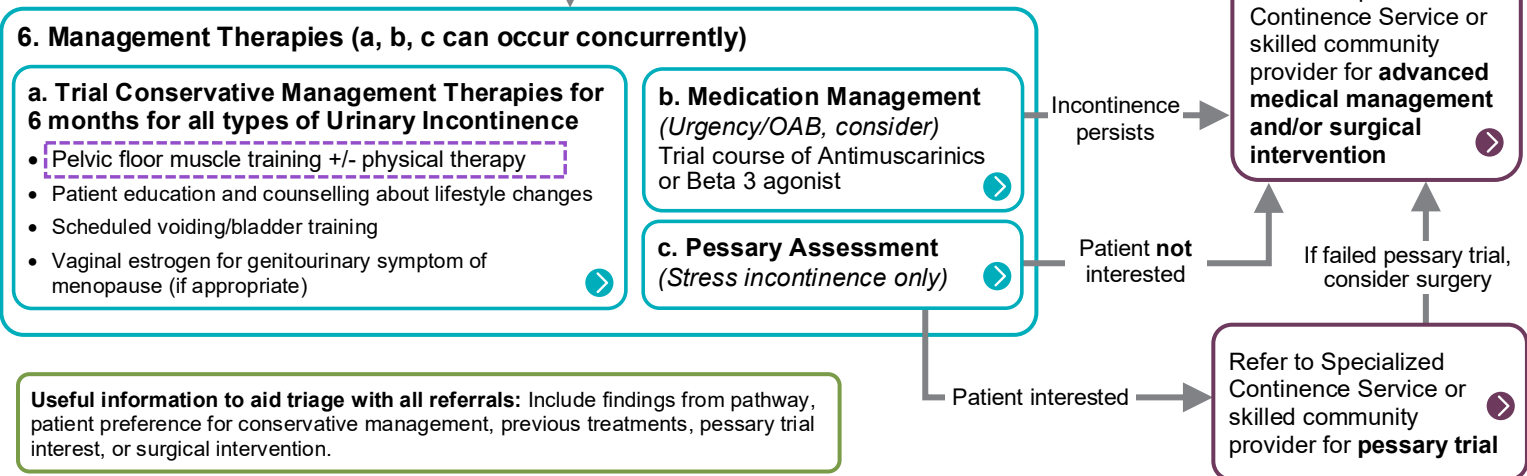
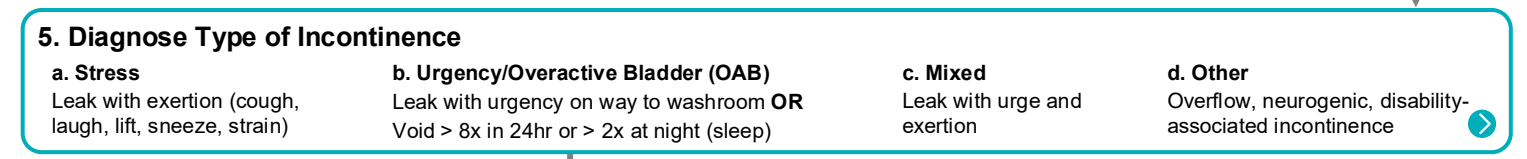
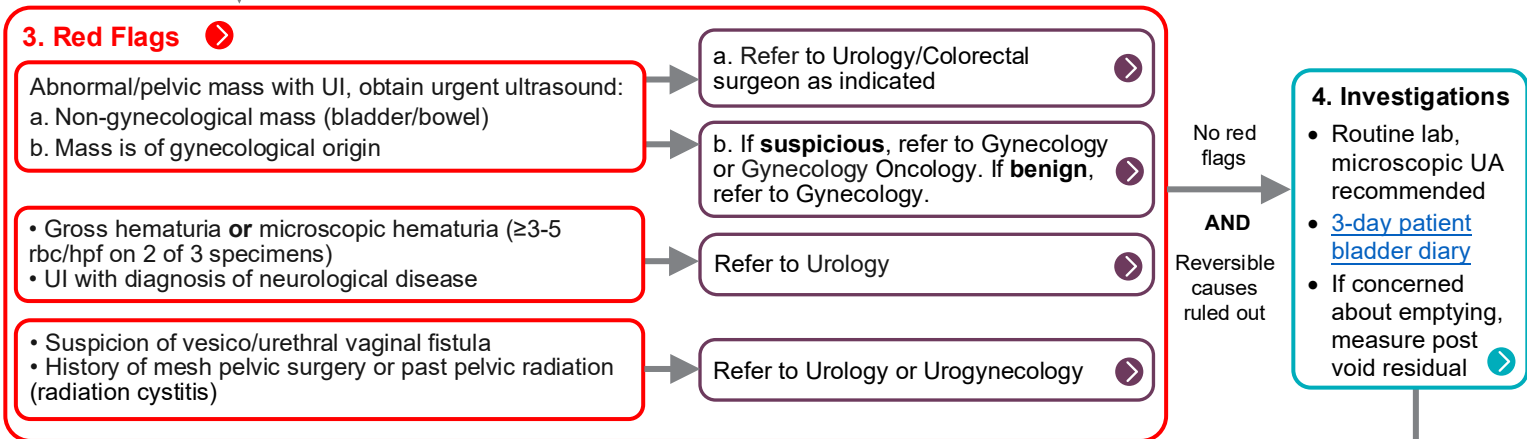
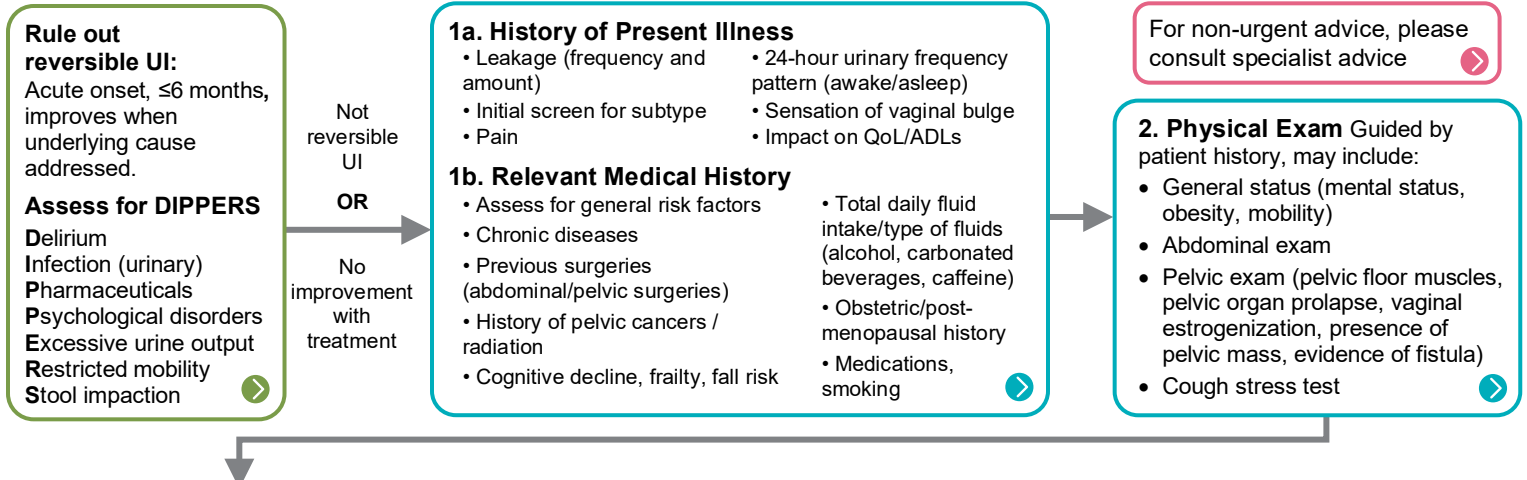
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*This primary care pathway was co-designed provincially by Primary Care Providers, Specialist Physicians (Gynecologists, Urogynecologists, Urologists, Geriatricians), Patient and Family Advisors, Allied Health Care Providers and the Alberta Health Services (AHS) Provincial Pathways Unit. It is intended to be used in conjunction with specialty advice services, when required, to support care within the medical home.*

## EXPANDED DETAILS

### Pathway Primer

Urinary incontinence (UI), the involuntary leakage of urine, is common and undertreated [1] [2]. As stated by the Canadian Continence Foundation, as many as 3.3 million people experience urinary incontinence (about 10% of the population). The Canadian Urinary Bladder Survey found that 33% of women over the age of 40 have symptoms of urinary incontinence. Only 26% of people who experience urinary incontinence have discussed it with their doctor [3]. Patients may be reluctant to initiate discussions about their incontinence and urinary symptoms due to embarrassment, lack of knowledge about treatment options, and/or fear of surgery.

All the evaluation and non-surgical management for female urinary incontinence can be safely managed in primary care settings and doing so can expedite care for all patients suffering from UI. This pathway will provide guidance on how to manage most cases of UI within the patient medical home and presents clear criteria for which patients can be referred on to Specialized Continence Services (including Urogynecology, Gynecology, Urology, Continence Clinics) or skilled community physicians. Both facility-based and community-based clinics are available.

While UI is not associated with increased mortality, it can impact many aspects of a patient's health including quality of life, sexual dysfunction, morbidity, incontinence-associated dermatitis and can increase caregiver burden [4].

There are several types of UI:

- Stress incontinence occurs during physical exertion, coughing, sneezing and accounts for 50% of UI in Canada [4] [5].
- Urgency Incontinence causes a sudden need to urinate and accounts for 11% prevalence in the population (increases with increasing age) [5].
- Mixed incontinence is a combination of stress and urgency incontinence.
- Other types of incontinence include neurogenic incontinence (incontinence due to problems with the brain or central nervous system), overflow incontinence (urinary retention causes bladder over distension which leads to dribbling) and disability-associated (previously known as functional) incontinence (challenges related to accessing a washroom due to cognitive, functional or mobility difficulties) [4].

Nonsurgical management for urinary incontinence in women is focused on pelvic floor muscle training (PFMT) using pelvic floor physiotherapy, lifestyle changes, continence pessary fitting, bladder training, behavioural management [6] and pharmacotherapy [7]. Studies suggest that a significant portion of women experience symptomatic cure or improvement of their symptoms with PFMT therapy [8]. The percentage of women who can avoid surgery for pelvic floor disorders through conservative management varies depending on the specific condition, severity of symptoms, and the effectiveness of the conservative treatments applied.

Given that surgery has its own risks, it should only be considered once other management efforts have failed. Across the province, seeing a urogynecologist can be a lengthy wait (up to 18 months). If surgical intervention is indicated, offering conservative management as first line will reduce the wait once referred and improve access to surgical care for all patients. A [quality referral](#) helps specialists appropriately triage patients for care.

## Urinary Incontinence

Urinary incontinence is defined as any involuntary loss of urine. An initial step in assessment is to rule out transient (i.e., reversible) causes of urinary incontinence. Transient UI tends to come on suddenly, lasts six months or less and improves or resolves when the underlying cause is identified and managed [9]. UI that lasts longer than 6 months should be assessed for subtype (e.g., mixed, stress, urgency). A thorough history and physical exam can often identify if the cause of UI is transient and help classify the type of UI.

### Identify and treat transient urinary incontinence

Consider applying a mnemonic like DIPPERS to identify and manage reversible causes of UI. Reversing the precipitating factor may be enough to restore continence without proceeding further [10].

- **Delirium or confusion.**
- **Infection:**
  - Screen for acute urinary tract infection (UTI) which can cause or aggravate incontinence and treat if appropriate. Urinalysis is recommended if patient is symptomatic as UI can worsen with acute UTI, along with urgency and frequency, all of which are seen in Overactive Bladder (OAB).
  - Current guidelines advise AGAINST treatment of asymptomatic bacteriuria in non-pregnant women [11]. If a physician chooses to treat a positive urine C&S, then patients should be monitored for sustained improvement in symptoms of UI, urgency, and frequency.
  - If symptoms revert to baseline, then likely the positive urinalysis was actually a reflection of asymptomatic bacteriuria and further workup for non-UTI causes of UI should be pursued.
- **Pharmaceuticals:** Investigate if prescribed medications are contributing to symptoms of UI. Commonly prescribed medications known to cause UI symptoms or worsen existing symptoms include antihypertensives, pain relievers (e.g., opioids), certain nervous system medications (e.g. antidepressants, antipsychotics), and anticholinergics, among others [12]. See Appendix A for a list of medications that contribute UI. You may also wish to consult with your community pharmacist.
- **Psychological disorder:** Especially depression [10].
- **Excessive urine output:** Polyuria is defined as urine output of >3 L/day. A list of causes of polyuria can be found in the [Merck Manual-Some Causes of Polyuria Table](#).
- **Reduced mobility.**
- **Stool impaction:** Stool impaction constipation can be an aggravating factor for UI.

**If no reversible causes of UI are identified or symptoms do not improve/resolve after treatment for reversible causes, proceed to collect a detailed patient history for urinary incontinence.**

## 1a. History of Present Illness (Urinary Incontinence)

This section includes discussion of the characteristics of the urinary incontinence and collecting a relevant medical history.

- **Duration:** How long has this been bothering you? Has it gotten worse?
- **Leakage:** Ask patient how often they experience leaking (e.g., daily, weekly, monthly) and the amount they typically leak (e.g., drops, soak underwear, soaking pad(s)) and when leaking typically occurs (e.g., coughing, exertion).
  - Ask patient about the behavioral adaptations they make for incontinence. For example, do they limit fluid intake, wear pads, or limit travel?
- **24-hour urinary frequency pattern:** Ask about daytime frequency and nocturia, urgency, feeling of incomplete emptying.
  - Nocturia is defined as the need to urinate  $\geq 1$  time while sleeping and may be bothersome to the patient (e.g., daytime fatigue and decreased QoL) [13]. Patients who report symptoms consistent with nocturia, should be asked to complete a 3-day bladder diary as this can aid to distinguish between nocturia and nocturnal polyuria (overproduction of urine at night which may lead to nocturia). Patients with nocturnal polyuria should be referred to specialized continence services.
- **Initial screen for type of urinary incontinence (Table 1):** Consider the subtype of UI that the patient may be experiencing based on responses to previous questions.
- **Sensation of vaginal bulge:** Pelvic organ displacement and prolapse may occur when there is a loss of connective tissue and muscle that supports the pelvic floor, resulting in the descent of pelvic organs through the vaginal opening. Risk factors include a history of vaginal birth(s), age (postmenopausal), parity and conditions that cause increased pressure on pelvic floor (e.g., obesity, chronic cough/constipation). Patients may describe a pelvic pressure or heaviness, feeling like something is 'falling out' of their vagina, or feeling a lump inside or outside of the vagina [14] [15]. Pelvic organ prolapse is rarely painful [14].
- **Pain:** Approach care of those with pain differently than those without pain. Incontinence is not usually painful, therefore, pain should be investigated and managed independently as a separate condition.
- **Impact on Quality of Life/ADLs:** In many cases, UI can have significant impact on the patient's quality of life/ADLs and lead to patients isolating at home (e.g., quitting their job/volunteer roles, avoiding social engagements or public outings like grocery shopping) due to fear of having an accident. For others, the impact may be less significant. Either way, it is critical to have this conversation with the patient as the level of impact to their quality of life may influence the treatment options the patient is willing to engage in.

**Table 1: Types of Urinary Incontinence**

Type	Questions to Ask	Definition	Risk Factors
<b>Stress</b>	<ul style="list-style-type: none"> <li>Do you leak with exertion (cough, laugh, lift, sneeze, strain)?</li> </ul>	<ul style="list-style-type: none"> <li>This is the most commonly experienced type of UI in women.</li> <li>Stress UI is marked by leakage of small amounts of urine when performing activities that place pressure on the bladder, such as coughing, sneezing, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Performing high impact sports, such as running, quick start and stop, and jumping activities.</li> <li>Childbearing and vaginal birth.</li> </ul>
<b>Urgency</b>	<ul style="list-style-type: none"> <li>Do you leak with urge on the way to the washroom?</li> <li>Do you void &gt; 8x in 24h or &gt; 2x at night?</li> </ul>	<ul style="list-style-type: none"> <li>Urge is marked by a strong, sudden need to urinate before being able to reach the toilet.</li> <li>Patients with urge may also leak when drinking water or hearing running water.</li> <li>OAB features any combination of frequent urination, nocturia, or urgency with or without leakage of urine.</li> </ul>	<ul style="list-style-type: none"> <li>Risk factors for urgency incontinence/OAB include age, obesity, parity, caffeine intake, medical comorbidities (diabetes, history of pelvic radiation, treatment with anti-estrogen medications such as Aromatase inhibitors), vaginal atrophy, menopause, stroke, and neurological conditions (Multiple Sclerosis, Parkinson's).</li> </ul>
<b>Mixed Type</b>	<ul style="list-style-type: none"> <li>Do you leak with both?</li> <li>Which is greater – urge or stress?</li> </ul>	<ul style="list-style-type: none"> <li>A combination of stress and urge symptoms.</li> </ul>	
<b>Other Types</b>			
<b>Overflow</b>	<ul style="list-style-type: none"> <li>Do you have trouble emptying completely?</li> <li>Do you have a hard time starting your stream?</li> </ul>	<p><b>Overflow:</b> Marked by frequent leakage of urine without the urge to empty the bladder or inability to urinate normal volumes.</p>	
<b>Neurogenic</b>		Loss of bladder control due to problems with the brain, central nervous system.	Some neurological conditions can aggravate or impact the bladder, such as Diabetes, Parkinson's, Multiple Sclerosis.
<b>Disability-Associated (Functional) Incontinence</b>	<ul style="list-style-type: none"> <li>Do you have difficulty mobilizing to the bathroom?</li> <li>Do you have difficulty getting on and off toilet?</li> </ul>	Occurs when a person's bladder and/or bowel are functioning but they are unable to access the toilet. This may be due to a physical or cognitive condition.	

See [Appendix B](#) for the 3 Incontinence Questions (3IQ) that can be used in primary care settings to help clinicians distinguish between stress and urge incontinence.

## 1b. Relevant Medical History Related to UI:

- **Assess for general risk factors for UI**
  - Lifestyle habits, such as any activity with heavy lifting, smoking, alcohol, inadequate or inappropriate fluid intake (too much or too little).
  - Chronic coughing (whether from health conditions such as asthma or from habits like smoking).
  - Obesity.
  - Ask patient if there are foods or drinks that make their UI worse. Caffeinated and carbonated beverages, and alcohol can impact bladder functioning. Other foods/drinks that could be explored include citrus fruit, chocolate, tomatoes, vinegars, dairy products, artificial sweetener, and spicy foods (anecdotal evidence).
  - Women who are advancing in their age are more likely to notice an increase in bladder issues, although UI is not to be an expected result of aging.
- **Chronic diseases:** Including diabetes, neurological conditions, obstructive sleep apnea, chronic cough, constipation, heart failure, mental health conditions, lumbar disk disease, chronic kidney disease, obesity and metabolic syndrome [4].
- **Previous surgeries:** Including previous surgeries for UI, pelvic organ prolapse, hysterectomy or complex pelvic surgery [4].
- **Obstetric/post-menopausal history:** Including number of pregnancies, types of obstetric delivery, menstrual history and menopause (e.g., HRT) [4].
- **Intercourse:** Pain with intercourse would be red flag for muscle dysfunction and referral to pelvic floor physiotherapy could be of benefit.
- **Cognitive decline, frailty, risk of falls:** Factors that may impede access to bathroom facilities.
- **Past history of pelvic cancers / radiation.**
- **Medications (see [Appendix A](#)):** Some commonly prescribed medications may cause an impact and aggravate UI, such as medications for diabetes, hypertension, or sleep disorders. Discuss with patient the advantages and disadvantages of the medication in question and where possible, offer alternative medications that do not cause urinary incontinence.

## SPECIAL CONSIDERATIONS IN OLDER ADULTS

- The cause of urinary incontinence in older adults is usually multifactorial.
- Older adults taking five or more medications are almost five times more likely to be taking a medication that contributes to urinary symptoms (when adjusting for age, sex, and comorbidity) [16].
- Disability-associated incontinence (previously referred to as functional incontinence) can often be overlooked, particularly when another subtype of incontinence has been identified. It is important, particularly in older adults, to assess for disability-associated incontinence and manage accordingly with physical and occupational therapy supports that aim to maintain/improve mobility and address barriers in the home (e.g. putting in place continence appliances for the home).
- If mobility is a concern, physiotherapy through homecare should be considered.

## 2. Physical Exam

The physical exam should be guided by information gained from the patient history.

- **General status** (mental status, obesity, mobility): Conduct a general status assessment to determine the patient's ability to access and successfully use the toilet.
- **Abdominal exam:** Palpate for an enlarged bladder or other abdominal mass [17].
- **Neuro exam:** Consider a limited neurologic exam if appropriate (e.g., patient present with fatigue and other nonspecific symptoms that may indicate MS). Lower extremity weakness, decreased rectal tone, fecal incontinence, and decreased sensation of the perineum may flag that there is a neurogenic component to their UI.
- **Pelvic exam:** All patients who present with UI as chief complaint, require a comprehensive pelvic exam. The exam should begin with the patient having a comfortably full bladder. This will permit a simple assessment for stress incontinence and the cough stress test. The [Trauma-informed physical examinations and STBBI testing](#) guide may be a helpful resource. If unable complete the pelvic exam due to physical limitations (mobility concerns, body habitus), consider referral to specialized continence service.

During the **pelvic exam**, assess for:

- Skin excoriation [18].
- Pelvic floor muscles and pelvic organ prolapse (Video in [Provider Resources](#) that covers types of prolapse, assessment, risk factors, urinary incontinence symptoms, and how to perform a cough stress test).
- Vaginal atrophy/lack of estrogenization: This condition can effectively be treated with [vaginal estrogen](#) [19].
- Evidence of fistula: Risk factors for fistula include obstetrical trauma, previous pelvic surgery, radiation, pelvic inflammatory disease (PID), diverticulitis, inflammatory bowel disease.
- Rectal concerns: Consider rectal exam to assess for fecal impaction/constipation, rectal tone and strength, priori anal sphincter tears, rectovaginal fistula, tumor, hemorrhoids, fissure. The [Chronic Constipation Primary Care Pathway](#) and [Perianal Disease Primary Care Pathway](#) are available as resources.
- **Cough Stress Test:** As cited by Lukacz et al. (2017), leakage during the cough stress test has a positive predictive value of 78-97% for stress incontinence [19].
  - **How to perform a cough stress test:** Patient needs a comfortably full bladder. Examine urethra in dorsal lithotomy position. Ask patient to cough as forcefully as they can and observe for urine. If no leakage is observed, coughing can be repeated three more times (total of four coughs) before the test is considered to be negative [20]. Alternatively, place a folded paper towel in underwear and have patient stand with legs apart and cough (standing pad test). Inspect paper towel for urine loss. After the completion of the cough stress test, the patient may empty their bladder.

### 3. Red Flags

**Abdominal or pelvic masses found upon examination should be referred for an urgent ultrasound.** For all masses, you may call for [Advice](#) for clarification on next steps or referral.

Next steps are as follows:

- a. Non-gynecological mass (bladder/bowel): Refer to Urology or Colorectal Surgeon as indicated.
- b. Mass of gynecological origin:
  - Suspicious mass with UI symptoms, refer to Gynecology or Gynecology Oncology.
  - Benign mass with UI symptoms, refer to Gynecology.

**Suspected vesicovaginal fistula:** Risk factors for vesicovaginal fistula include radiation, difficult or prolonged labours or use of forceps, and post pelvic floor surgery (most common is post hysterectomy).

- History: Most common finding is constant urinary leakage and incontinence both day and night. It can be difficult to see during exam but urine pooling in the vagina is a common finding. It is often painless.
- Exams: A voiding cystourethrogram (must have post void images) and/or CT urogram are helpful.
- Referral: Specialized continence service, Urology, or Urogynecology depending on local context and availability.

**Suspected urethrovaginal fistula:**

- History: Almost exclusively iatrogenic.
- Exams: Voiding cystourethrogram.
- Referral: Specialized continence service, Urology, or Urogynecology depending on local context and availability.

Patients with **gross or microscopic hematuria:** Refer to Urology.

- For more information on microscopic hematuria management, refer to the [Microscopic hematuria | CMAJ](#).
- See the [Hematuria Evaluation Primary Care Clinical Pathway](#).

**History of mesh pelvic surgery or past pelvic radiation:**

- With mesh pelvic surgery, there is a risk of mesh erosion which can present as recurrent UI. The risk of mesh erosion increases with time. Refer to Urogynecology.
- There is a risk of radiation cystitis with a history of past pelvic radiation (the risk increases with increased length of time since radiation). Refer to Urogynecology or Urology.

**UI with diagnosis of neurological disease** (e.g., MS, Parkinson's disease, spinal cord injury, history of stroke): Patients should be referred to Urology for a comprehensive evaluation. These patients often require lifelong surveillance and management for symptoms of UI.



## 4. Investigations

**Urinalysis:** A routine microscopic urinalysis is recommended to rule out proteinuria, leukocytes, nitrates, and glycosuria.

- If urinalysis is positive for glycosuria, perform a screen for diabetes mellitus.
- If urinalysis is positive for leukocytes, nitrates, or hematuria, send urine for culture and treat if positive. Evaluate for resolution of UI symptoms.

If this is a recurrent UTI, treat as indicated. Recurrent UTI is defined as >3 documented infections within a year, or 2 UTIs within 6 months.

Current guidelines advise AGAINST treatment of asymptomatic bacteriuria in non-pregnant women [11].

Collect a urine C&S as indicated.

**Bladder diary:** A [bladder diary](#) completed by the patient is very helpful to confirm the type of UI. A record of 3 days to get a picture of symptoms of daily life (at work and at home). [Bladder and Bowel Record \(albertahealthservices.ca\)](#).

### Measuring post void residual (PVR)

- The most common reason for high post void residuals in women is prolapse.
- If concerned about voiding dysfunction or recurrent UTI, physicians can measure pre and post void residual using a pelvic ultrasound/bladder scanner, or by in and out catheterization.
- Interpretation of PVR results must be considered in relation to patient symptoms. Generally, PVR measurements less than 100 ml are normal and PVR measurements over 200 ml are likely to be abnormal.
  - If PVR results are between 100-200 ml consider specialty advice or refer patient to specialized continence service.
  - For patients with abnormally high post void residual (> 200 ml), with or without accompanying symptoms (such as recurrent urinary tract infections, urinary frequency, urinary urgency or nocturia), consider a referral to a specialized continence service.
  - If the patient's PVR is >250 ml refer to specialized continence service. Catheterization may provide immediate relief for these patients: Self-catheterization (**first line**, less risk of complications and infection) or an in-dwelling catheter as a temporary solution. Care option may be influenced by patient ability, preference and resources available. Support for catheterization may be available through urgent care, ER or home care.
- Patients with high PVR benefit from an assessment of creatinine levels as poor bladder emptying may negatively impact kidney function.
- If symptoms and PVR results indicate specialty referral, include results of the PVR in the referral as this aids with triage.
- Further need for investigations such as cystoscopy, uroflowmetry, and urodynamic testing will be determined by specialized continence service.

## 5. Diagnose Type of Incontinence

See [Table 1](#) and/or [Appendix B](#).

## 6. Management Therapies (a, b, c can occur concurrently)

### 6a. Conservative management strategies

Treatment plans for UI should be based on the nature of the predominant symptoms (stress versus urgency incontinence), the patient's treatment goals and expectations, the patient's ability to complete the treatment plan (e.g., insurance and financial situation), and tolerance of potential adverse effects [19]. **Conservative management strategies should be offered as first line treatment for all types of UI** (low risk and cost). Strategies should be trialed for at least 6 months to assess efficacy. If the patient has mixed incontinence, choose the treatment option that best addresses the chief complaint.

Patient education is a key factor in supporting patients with UI. While this condition is common, it is not often discussed due to patient embarrassment and inaccurate expectations about the course of the condition and available treatment options. Supporting patients in building adequate knowledge and understanding of UI (what it is, why it happens, and the personal impact it is having on the patient's life) can support patient's readiness to engage in management activities.

If surgical intervention is indicated, offering conservative management as first line will reduce the wait once referred. Strategies for self-management and primary care support (Note: the information below is also reflected in the accompanying [patient pathway](#)):

- Patient education ([patient resources section](#)) on pelvic floor health and female UI.
- Scheduled voiding: Can help reduce the occurrence of urgency incontinence and reduce symptoms in women who have infrequent, large volume voids. Voiding intervals should be tailored to each individual patient (for example, every 3 hours during the day) [19].
- Fluid management: Promote intake of small amounts of fluid throughout the day. Recommend small drinks each hour (1/2 cup or 125 mL/hour) instead of large, infrequent drinks.
- Maintaining a healthy weight.
- Treatment of constipation: [Chronic Constipation Primary Care Pathway](#).
- Urge suppression techniques: When a strong urge to urinate occurs, patients should be encouraged to suppress the urge and delay voiding. Urge suppression techniques include mindful distraction (e.g., counting backwards from 100), pelvic floor muscle exercises (e.g., Kegel exercises), controlled breathing and relaxation (e.g., slow deep breaths in through the nose and out through the mouth with a focus on relaxing the body), staying still, postural adjustments (e.g., crossing one's legs).
- Pelvic floor physiotherapy (self-referral to private physiotherapy or AHS Rehab Line) is a specialized area of physical therapy that assesses and treats pelvic floor dysfunction through a variety of therapeutic techniques and exercises. It addresses issues such as muscle weakness, hypertonicity (overactivity), coordination problems, and pain syndromes.
  - Pelvic floor retraining focuses on exercises and techniques aimed at strengthening, relaxing, or better coordinating the pelvic floor muscles.
  - Although pelvic floor retraining should ideally be guided by a trained professional, not all women will have access to pelvic floor physiotherapy. Primary care providers can provide simple instructions for exercises for patients who are able to contract their pelvic floor muscles. Squeeze for 5-10 seconds while breathing normally and then completely relax for 10 seconds. Repeat 12-20 times, 3-5 times per day. It may take 3-4 months to see ongoing benefit, but patients may notice improvement in a few weeks. Patients should be instructed not to interrupt the flow of urine when voiding.

- If no improvement is seen with pelvic floor physiotherapy after 6 months and/or the physiotherapist feels that the patient will not or is not progressing with therapy (shared decision making), alternative therapies should be considered.
- Biofeedback pelvic floor devices (e.g., PeriFit, Elivie Trainer, and kGoal) and vaginal cones (e.g., LadySystem) may also be beneficial. These therapies are often supported by a healthcare provider in healthcare settings, but patients can purchase/rent devices for use at home.
- Offering various incontinence pad products [19].
- Optimal treatment of nocturia includes identifying and managing underlying causes (e.g., co-morbidities and medication adjustments) and lifestyle modifications. These include [13]:
  - Restricting total fluid consumption to < 2 L per day and minimizing fluid intake ≥ 2 hours before bed (especially caffeine and alcohol).
  - Emptying bladder before going to bed.
  - Barrier-free access to toilet or toilet chair.
  - Increasing exercise and fitness levels, including pelvic floor exercises, if indicated.
  - Reducing dietary salt intake.
  - Promoting weight loss if overweight or obese.
  - Obstructive Sleep Apnea assessment and treatment when applicable.
  - For patients with peripheral edema of the lower extremities due to congestive heart failure or chronic venous insufficiency: General measure for chronic venous insufficiency can be recommended or referral to specialty can be made.
  - For patients taking diuretics: Consider adjust the timing of medications to minimize bothersome side effects.
- Offer prompted voiding for adults with cognitive impairment ([EAU Strong recommendation](#)) [4].
- Eliminate/minimize bladder irritants.
  - If potential dietary triggers are identified, trial elimination of trigger for 2 weeks and assess for improvement in symptoms. If the patient reports no improvement, they can end the trial.
  - Counsel on **smoking** cessation and provide resources (e.g., [Becoming Tobacco Free](#)).
  - Counsel on limiting/eliminating **alcohol** (e.g., [Health Canada's Guidance on Alcohol and Health, Alcohol Diary](#)).
  - Advise a daily intake of no more than 400 mg of caffeine/day according to [Health Canada](#). Visit [Learning About Caffeine](#) for more information.
  - Complete a [bladder diary](#) to identify any foods or fluids causing symptoms. A referral to a registered dietitian can help patient maintain a healthy diet and avoid unnecessary food restrictions. Visit [Alberta Referral Directory](#) and search for nutrition counselling.
- Electronic (eHealth) and mobile (mHealth) health interventions are now emerging to support the management of urinary incontinence, particularly for stress urinary incontinence (there is limited research on how these interventions improve urgency urinary incontinence and overactive bladder). The most effective strategies use self-management and motivational principles for behaviour change. EHealth and mHealth should be used in conjunction with conservative management strategies and trained healthcare provider guidance. Examples of ehealth/mHealth interventions includes smart phone applications, online education programs, and virtual/telehealth care options [21].

## 6b. Medication Management

There are no FDA approved medications for stress incontinence [19]. It is important to note that medication therapy typically needs to be trialed for a minimum of 6 weeks before any significant improvement is noted. Follow-up appointments should be scheduled 12 weeks after medication therapy is initiated, and dosing adjustments may be needed. A complete trial of medication therapy may take 6-12 months.

### Vaginal estrogen for conservative management/pessary use

In the presence of genitourinary syndrome of menopause, vaginal estrogen can provide benefit for urgency symptoms and comfort for pessary use. Intravaginal and systemic estrogen can be used at the same time. Patient preference should be discussed.

- **Premarin pv cream** 0.5 – 1 gm pv qhs x 2 weeks, then 2-3 x / week.
- **Vagifem** 10 mcg pv qhs x 2 weeks, then 2-3 x / week.
- **Estragyn 0.5-1g** pv qhs x 3 weeks on, 1 week off.
- **Estring**, 1 ring pv q3 months. This is a good option for patients who may have challenges administering other medications independently.
- **Intrarosa** (Prasterone/DHEA): Daily use of vaginal inserts. New treatment, non-estrogen option but converts to estrogen and androgens inside the vagina.
- **Ospemifene** (Osphena): 60 mg po daily. SERM. This medication is breast protective and may be more acceptable for those with significant history of breast cancer. It is more expensive (not covered by ABC). Indicated for menopause.

Additional information for patients on vaginal estrogen therapies from Your Pelvic Floor (International Urogynecological Association) website: [Low-Dose Vaginal Estrogen Therapy](#).

### Oral drug therapy for overactive bladder and urgency incontinence

Antimuscarinics are considered first-line for the treatment of urgency incontinence and OAB. There is good evidence demonstrating superiority to placebo [22] and, broadly speaking, all antimuscarinics have similar efficacy [23]. Higher doses, where licensed, have greater efficacy but are associated with a higher likelihood of adverse events (dry mouth being the most common). Ideally, start with the lowest dose for tolerability and titrate the dose for additional efficacy.

Rule out contraindications for antimuscarinics (e.g., uncontrolled closed angle glaucoma, myasthenia gravis, potential interactions with existing drugs, history of urinary retention). For a complete list see the relevant drug information leaflet.

Older patients are potentially at high risk for cognitive impairment secondary to antimuscarinics. Trospium and darifenacin are not associated with cognitive decline, although fesoterodine and solifenacin show mixed results. Typically, the more traditional antimuscarinics have a higher risk (tolterodine and oxybutynin).

All OAB drugs take 12 weeks to achieve maximum efficacy; effects are noticeable within two to four weeks.

Most recent guidelines have been updated and advise that medication progression does not need to occur in a stepwise manner. Insurance coverage can still impact a patient's medication progression. Alberta Blue Cross mandates that either solifenacin or tolterodine (details below) is prescribed initially. Step therapy, requiring authorization, is required for prescription of other drugs, after initial failure, either due to inefficacy or intolerability of the initial prescription. See [Appendix C](#) for additional information about insurance considerations.

**Steps to take:**

After making a symptomatic diagnosis, prescribe initial agent and review after six weeks before adjusting dose if required (suboptimal efficacy). Wait 12 weeks before switching drug. Multiple switching of antimuscarinic medication (>2) is of no benefit.

If, after 12 weeks of therapy of 2 drugs, there is either no improvement or you suspect something else going on, then make a specialist referral.

Data suggest that if the patient favours safety over efficacy, mirabegron is the optimal choice, if the patient favours efficacy, then flexible (dose adjusting) use of fesoterodine is the optimal drug.

**Antimuscarinics for Urgency/ Overactive Bladder (OAB)****Initial covered medications (first-line)**

- **Solifenacin** 5 mg po daily. Can increase to 10 mg po daily if well tolerated and suboptimal efficacy after 4-6 weeks.
- **Tolterodine** LA 4 mg po daily. Can increase to 8 mg po daily if well tolerated and suboptimal efficacy after 1 month. For severe hepatic or renal impairment, tolterodine 2mg IR is available.

**Special authorization medications** (Criteria for coverage: Treatment failure with solifenacin/tolterodine OR inability to tolerate the medications)

- **Fesoterodine** 4 mg po daily. Can increase to 8 mg po daily if well tolerated and suboptimal efficacy after 4-6 weeks. Few CNS adverse events in trials of older adults and frail older adults.
- **Trospium** 20 mg po twice daily. Limit dose to 20 mg once daily in patients 75 years or older as well as patients with CrCl <30 ml/min.
- **Darifenacin** 7.5 mg po once daily. May increase to 15 mg once daily if required. Low CNS adverse events. Main adverse event is constipation.

**Additional information for Antimuscarinics**

**Monitor for side effects:** Dry eyes, dry mouth, constipation, headache, blurred vision, dizziness.

Recommend early review of medication efficacy and adverse effects with bowel management, fluid management, dose modification, or alternative antimuscarinic before abandoning effective antimuscarinic therapy (AUA / SUFU).

**Beta 3 Agonist for Urgency/ Overactive Bladder (OAB)**

- **Mirabegron:** Start at 25 – 50 mg po daily for a duration of 8-12 weeks. Requires at least 4 weeks to determine efficacy. Contraindicated in uncontrolled hypertension. This medication has a lower side effect profile. Main reported adverse events are headache, UTI. Mirabegron is a **second-line medication** covered by Alberta Blue Cross.

**Additional information for Beta 3 Agonists**

**Rule out contraindications** for Beta 3 Agonists: Severe uncontrolled hypertension, patients who are pregnant, hypersensitivity to any of the drug ingredients.

**Caution** – CYP2D6 interactions: Appropriate monitoring and dose adjustment may be necessary.

**Monitoring parameters that warrant discontinuation:** New onset urinary retention, monitor BP if there is history of severe uncontrolled hypertension and discontinue if elevation > 10 mmHg systolic blood pressure (sBP), tachycardia or rhythm changes.

## 6c. Pessary Assessment





- Pessaries should be considered in all women presenting with bothersome pelvic organ prolapse and/or stress urinary incontinence (SOGC Guideline). Young women, women who want to preserve their fertility, women who want to avoid surgery, those who may not be good surgical candidates, and patients who only experience symptoms in specific circumstances may be particularly good candidates for a pessary fitting [24].
- Pessaries may be used in the treatment of stress incontinence or pelvic organ prolapse.
- Pessaries are used to reduce pressure on the bladder and bowel, increase urethral length and provide gentle compression of the urethra against the pubic bone [24]. They are made of medical grade silicone.
- Pessaries can provide immediate symptom relief and have minimal risks (in contrast to surgery). Minor complications may be associated with pessary use and include vaginal discharge, odor, irritation, bleeding and pain [14].
- Women can be successfully fitted with a pessary up to 75% of the time.
- Most women who report successful pessary use at 4 weeks continue to use a pessary at 5 years.
  - Short term (2-6 months) continued use rates of approximately 80 % (63 to 92%).
  - Long term (2 or more years of follow-up) continuation rates of 75-86 % [25].
- Patient acceptance of pessaries varies from 42 to 100 percent and is related to appropriate counselling and encouragement from the provider.
- Pessaries are low cost if supplied and fitted in an AHS setting (about \$50). Patients who opt for pessary fitting and insertion through private clinics can often be seen more quickly, though the cost is often significantly higher.
- Vaginal erosions can be treated by removing the pessary and providing optional vaginal estrogen supplementation [26].
- Over-the-counter pessary devices, such as the Poise Impressa and Uresta are also available for stress incontinence. They are inserted into the vagina and apply light pressure on the urethra to slow or stop the flow of urine during activities. Starter kits are available to help patients find the right size.

Refer to specialized continence service (e.g., Urogynecology, Urology, continence clinics) or skilled community physician for pessary trial. Services and supports available may vary by zone.

## Advice and Referral Information

In addition to where specified in the clinical pathway algorithm, you can request non-urgent advice at any point when uncertain about medications, next steps in treatment, investigations, or resources available.

**Of note:** Fees may apply for services available through Urogynecology and Urology (clinic dependent).

Zone	Program	Online Request	Phone Number
<b>Urgent Telephone</b>			
All Zones	<a href="#">RAAPID</a> 	N/A	<b>North:</b> 1-800-282-9911 or 780-735-0811 <b>South:</b> 1-800-661-1700 or 403-944-4486
<b>Non-Urgent Electronic</b>			
Calgary (Gynecology), Edmonton (Urology, Gynecology)	<a href="#">eReferral Netcare</a> 		N/A
<b>Non-Urgent Telephone</b>			
Edmonton, North (Gynecology)	<a href="#">ConnectMD</a> 	<a href="#">Online Request</a>	1-844-633-2263
Calgary (Urology, Gynecology)	<a href="#">Specialist Link</a> 	<a href="#">Online Request</a>	403-910-2551

## Referral Process

Referral pathways are guidelines to help referring providers know what information, labs and diagnostic imaging are required with their referral to a specialty. These pathways are co-designed with Primary and Specialty Care, AHS Operations, and patients to ensure the right amount of information is included throughout the referral process to triage the patient as quickly as possible.

To ensure referring providers have referral information at their fingertips, referral pathways may link to clinical pathways when available. AHS manages referral pathways and extensive work is ongoing as part of the [Alberta Surgical Initiative](#). If you have questions or want to know more about the referral pathway development process, please email [access.ereferral@ahs.ca](mailto:access.ereferral@ahs.ca).

- **Urgent Referral** – Call surgeon on call via [RAAPID](#) or call 911.
- Provincial Referral Pathways are available on [Alberta's Pathway Hub](#):
  - [Provincial Adult Urology Referral Pathway](#)
  - [Provincial Adult Gynecology Referral Pathway](#)
- [Alberta Referral Directory](#) is also a helpful resource for all referral information.

**Skilled community physicians for referral for pessary fittings and advanced medical management:** Local women's health clinics may be available in your area. Consider contacting your local PCN for possible names of physicians in your area accepting referrals for urinary incontinence or pelvic floor conditions.

### **Pelvic floor clinics and physiotherapy**

[Alberta Referral Directory](#) is also a helpful resource for all referral information. There are multiple private clinics that provide pelvic floor physiotherapy. Patients can contact the Rehab Advice Line for support with wayfinding. PCNs could also help support wayfinding for skilled community physicians who support pessary care.

### **Information to include with your referral to aid with triage:**

- Detailed patient history of UI symptoms, past surgeries, medications prescribed to manage UI.
- Results of all exams and investigations.
- Patient bladder diary: [Bladder Diary](#).
- When referring to the Pelvic Floor Clinic, please specify if your patient has a preference for pessary fitting or surgical intervention.
- Prior attempt of management in community with pessary and pelvic floor physiotherapy.

### **Nutrition Services**

To refer your patient to a Registered Dietitian:

- Visit [Alberta Referral Directory](#) and search for nutrition counselling.
- To learn more about programs and services offered in your zone, visit [ahs.ca/Nutrition](https://ahs.ca/Nutrition).
- Health Link has Registered Dietitians available to answer nutrition questions. If a patient has a nutrition question, they can complete a self-referral at [ahs.ca/811](https://ahs.ca/811) or call 811 and ask to talk to a dietitian.



## Appendix A: Medications that contribute to urinary incontinence [12]

Medications	Effects on Continence
Alpha adrenergic agonists	Increase smooth muscle tone in urethra and prostatic capsule and may precipitate obstruction, urinary retention, and related symptoms
Alpha adrenergic antagonists (Alpha blockers)	Decrease smooth muscle tone in the urethra and may precipitate stress UI in women
Angiotensin converting enzyme inhibitors	Cause cough that can exacerbate UI
Anticholinergics	May cause impaired emptying, urinary retention, and constipation that can contribute to UI. May cause cognitive impairment and reduce effective toileting ability.
Calcium channel blockers	May cause impaired emptying, urinary retention, and constipation that can contribute to UI. May cause dependent oedema which can contribute to nocturnal polyuria
Cholinesterase inhibitors	Increase bladder contractility and may precipitate urgency UI
Diuretics	Cause diuresis and precipitate UI
Lithium	Polyuria due to diabetes insipidus
Opioid analgesics	May cause urinary retention, constipation, confusion, and immobility, all of which can contribute to UI
Psychotropic drugs Sedatives Hypnotics Antipsychotics Histamine (H1) receptor antagonists	May cause confusion and impaired mobility and precipitate UI Anticholinergic effects Confusion
Selective serotonin re-uptake inhibitors	Increase cholinergic transmission and may lead to urinary UI
Sodium-glucose cotransporter 2 (SGLT2) inhibitor	Glycosuria and polyuria, increased propensity to urinary tract infection
Others Gabapentin Glitazones Non-steroidal anti-inflammatory agents	Can cause oedema, which can lead to nocturnal polyuria and cause nocturia and night-time UI

Table used with permission from Dr. Adrian Wagg

## Appendix B: Three Incontinence Questions Questionnaire [19]

A simple questionnaire that can be used in primary care settings to help distinguish between urgency and stress incontinence. Questionnaire featured in JAMA [19] with permission from the Annals of Internal Medicine [27].

- First question establishes that incontinence has occurred in the last 3 months.
- Second question familiarizes the patient the types of incontinence.
- Third question determines the category of incontinence.

Figure 1. The 3 Incontinence Questions Questionnaire

1. During the last 3 months, have you leaked urine (even a small amount)?  Yes  No (questionnaire completed)
2. During the last 3 months, did you leak urine (check all that apply):
  - a. When you were performing some physical activity, such as coughing, sneezing, lifting, or exercise?
  - b. When you had the urge or the feeling that you needed to empty your bladder, but you could not get to the toilet fast enough?
  - c. Without physical activity and without a sense of urgency?
3. During the last 3 months, did you leak urine most often (check only one):
  - a. When you were performing some physical activity, such as coughing, sneezing, lifting, or exercise?
  - b. When you had the urge or the feeling that you needed to empty your bladder, but you could not get to the toilet fast enough?
  - c. Without physical activity and without a sense of urgency?
  - d. About equally as often with physical activity as with a sense of urgency?

### Definitions of type of urinary incontinence based on response to question 3

Response	Type of incontinence
a. Most often with physical activity	Stress only or stress predominant
b. Most often with the urge to empty the bladder	Urge only or urge predominant
c. Without physical activity or sense of urgency	Other cause only or other cause predominant
d. About equally with physical activity and sense of urgency	Mixed

Response to the third question enables classification of incontinence subtype.  
Reproduced with permission from the *Annals of Internal Medicine*.<sup>17</sup>

## Appendix C: Insurance Considerations

- Only one first line antimuscarinic needs to be trialed before starting Beta-3 agonist medications.
- Alberta Blue Cross formulary ([https://idbl.ab.bluecross.ca/idbl/DBL/dbl\\_full\\_list.pdf](https://idbl.ab.bluecross.ca/idbl/DBL/dbl_full_list.pdf)) includes all drugs covered as of April 1, 2024. Solifenacin, tolterodine and oxybutynin are listed in section 86 (smooth muscle relaxants) while darifenacin, fesoterodine, trospium and mirabegron are listed together with their special authorization criteria.
- Non-Insured Health Benefits (NIHB) (<https://nihb-ssna.express-scripts.ca/en/0205140506092019/16/160407>) includes a link to the Drug Benefits list. OAB medications are listed in section 86:12.04 Antimuscarinics and 86:12.08 Beta-adrenergic agonists.

## BACKGROUND

### About this pathway

- This pathway was developed in collaboration with Primary Care Providers, Gynecologists, Urogynecologists, Urologists, Geriatricians, Allied Health Care Providers, Patient and Family Advisors, and the Alberta Health Services (AHS) Provincial Pathways Unit.
- Condition-specific clinical pathways are intended to offer evidence-based guidance to support primary care providers in caring for patients with a range of clinical conditions.

### Authors and conflict of interest declaration

This pathway was initially developed in 2021 under the auspices of the Calgary Zone Pelvic Floor Clinic, Urology, Family Medicine, and the Physician Learning Program. Development of the initial Calgary Zone pathway was led by family physicians, urogynecologists, and urologists.

In 2024, the Women's Health Committee identified the need for a provincial female urinary incontinence pathway. In response to the identified need and in collaboration with gynecologists, urogynecologists, primary care physicians, patient and family advisors, and the Alberta Health Services (AHS) Provincial Pathways Unit, the Calgary Zone developed pathway was reviewed and revised (co-designed) to create a provincial primary care clinical pathway for use in Alberta. Representatives from Female Urology and Geriatrics also reviewed and provided feedback on the pathway.

Co-Design Team Project Membership	
Name and Designation/ Post Nominals	Organization
Alta Magee	Patient and Family Advisor, South Zone
Dr. Annick Poirier, MD FRCS	Urogynecologist, Edmonton Zone
Dr. Charlene Lyndon, MD FRCS	OBGYN, Calgary Zone
Dr. Lilah Rossi, MD CCFP	Family Physician, Edmonton Zone
Rosemary Brown	Patient and Family Advisor, Central Zone
Dr. Theresa Watson, MBChB CCFP	Family Physician, North Zone

### Pathway review process, timelines

- Primary care pathways undergo scheduled review every 3 years, or earlier if there is a clinically significant change in knowledge or practice. The next scheduled review is December 2027. However, we welcome feedback at any time. Please send us your [feedback here](#), or email your comments to [AlbertaPathways@ahs.ca](mailto:AlbertaPathways@ahs.ca).

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### DISCLAIMER

This pathway represents evidence-based best practice but does not override the individual responsibility of healthcare professionals to make decisions appropriate to their patients using their own clinical judgment given their patients' specific clinical conditions, in consultation with patients/alternate decision makers. The pathway is not a substitute for clinical judgment or advice of a qualified healthcare professional. It is expected that all users will seek advice of other appropriately qualified and regulated healthcare providers with any issues transcending their specific knowledge, scope of regulated practice or professional competence.

## PROVIDER RESOURCES

Resources	More Information/Links
<b>Tests and Assessments</b>	
How to conduct an assessment for pelvic prolapse	Pelvic Floor Clinic Video: Pessary Training Course for Pelvic Organ Prolapse and UI: <a href="http://www.youtube.com/watch?v=myaZRv79Y0">www.youtube.com/watch?v=myaZRv79Y0</a> . This video provides an overview of types of prolapse, assessment, risk factors, urinary incontinence symptoms, and how to perform a cough stress test.  For more information, please see: <a href="#">Pelvic organ prolapse   The BMJ</a>
<b>Clinical Practice Guidelines &amp; Recommendations</b>	
Society of Obstetricians and Gynecologists of Canada (SOGC)	<a href="#">No. 353-Treatments for Overactive Bladder: Focus on Pharmacotherapy – An Addendum (ogc.com)</a>
Canadian Urological Association (CUA)	<a href="#">CUA guideline on adult overactive bladder - PubMed (nih.gov)</a>
American Urological Association (AUA)/Society of Urodynamics (SUFU)	<a href="#">Diagnosis and Treatment of Overactive Bladder (Non-Neurogenic) in Adults: AUA/SUFU Guideline Amendment 2019   Journal of Urology (auajournals.org)</a>
American College of Obstetricians and Gynecologists (ACOG)	<a href="#">Urinary Incontinence in Women   ACOG</a>  <a href="#">Asymptomatic Microscopic Hematuria in Women   ACOG</a>

## PATIENT RESOURCES

Resources	More Information/Links
<b>Patient Pathway</b> on MyHealth Alberta > A webpage and two PDF formats are available to allow for easy printing, download, or scanning a QR code with the patient's smart phone for more information at their convenience	<a href="#">Your Journey with Female Urinary Incontinence</a>
<b>Pelvic Health Physiotherapy Webinars</b> on MyHealth Alberta -> Webinar about pelvic health and wellness	<a href="#">Pelvic health physiotherapy webinars (alberta.ca)</a>
<b>Pelvic Floor Clinic (Calgary Zone)</b> Patient-facing video modules on: (1) Introduction to the pelvic floor (2) Pelvic Organ Prolapse (3) Urinary Incontinence (4) Bowel Management (5) The next step	<a href="#">Pelvic Floor Health   Alberta Health Services</a> Helping Patients Choose Pelvic Floor Treatments is part of the online education video series and is covered in The Next Step video. Videos: Found in the Patient Education Section (bottom of page)
<b>MyHealth Alberta</b> Health topic: Urinary Incontinence in Women – a comprehensive overview of causes, symptoms, treatments, and self-care options.	<a href="#">Urinary Incontinence in Women</a> <a href="#">Stress Incontinence in Women: Should I Have Surgery?</a> Patient decision-making tool <a href="#">Behavioural Methods for Urinary Incontinence</a> including Kegel exercises
<b>Pelvic Floor Therapy</b> How to find a pelvic floor therapist	<a href="#">College of Physiotherapists of Alberta</a> AHS Rehabilitation Advice Line: 1-833-379-0563 Monday to Friday
<b>Your Pelvic Floor</b> Additional information for patients on vaginal estrogen therapies.	<a href="#">International Urogynecological Association: Your Pelvic Floor</a> <a href="#">International Urogynecological Association: Low-Dose Vaginal Estrogen Therapy - Your Pelvic Floor</a>
<b>Voices for Pelvic Floor Disorders</b> Supported by the American Urogynecologic Society. Many patient-oriented resources that explain pelvic floor conditions.	<a href="#">Voices for PFD (Pelvic Floor Disorders)</a> <ul style="list-style-type: none"> <li>• Patient brochures on a range of topics: Pelvic Floor Muscle Exercises and Bladder Training, Overactive Bladder, Pelvic Organ Prolapse, Stress Urinary Incontinence, Surgery: What to Expect, Vaginal Pessaries</li> <li>• Other handouts: Voiding diaries, Kegel exercise instruction sheet</li> </ul>
<b>Canadian Continence Foundation</b> Comprehensive overview of many bladder health conditions for female and male.	<a href="#">Continence Information and Resources on Treating Bladder &amp; Bowel Incontinence</a> <ul style="list-style-type: none"> <li>• Overview of UI and types: <a href="#">Learn About Urinary Incontinence and Bladder Control Problems</a></li> <li>• Interactive Learning modules for patients (OAB, Pelvic Organ Prolapse, Stress Urinary Incontinence): <a href="#">Interactive Learning   Pelvic Health &amp; Continence</a></li> <li>• Tips for Bladder Control: <a href="#">How to Deal With Your Bladder Control</a></li> </ul>
<b>Canadian Society for Pelvic Medicine</b>	<a href="#">CSPM - For Patients (canadiansocietyforpelvicmedicine.org)</a> Offers a vaginal pessary self-care guide (video) and other resources for patients.
<b>Adult Community Rehabilitation</b> Information for Albertans	<a href="#">Adult Community Rehabilitation   Alberta Health Services</a> <ul style="list-style-type: none"> <li>• Pelvic Health can be selected from the drop-down menu</li> </ul>
<b>Supports to quit smoking</b> (Alberta Quits)	<a href="#">albertaquits.ca</a>
<b>Nutrition Services</b>	
Online Learning Module on Weight Management	<a href="#">myhealth.alberta.ca/learning/modules/Weight-Management</a>
Nutrition Handouts	<a href="#">www.ahs.ca/nutritionhandouts</a>
Ask a Dietitian a Nutrition Question	Complete a self-referral at <a href="#">ahs.ca/811</a> or call 811 and ask to talk to a dietitian.

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