Provincial Male LUTS Primary Care Clinical Pathway

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Applies to patients ≥18 years old with male genitourinary tract who present with any of the following bothersome symptoms:

- **Voiding symptoms** (hesitancy, weak stream, intermittency)
- **Post micturition symptoms** (incomplete emptying and dribbling)
- **Storage symptoms** (frequency, nocturia, urgency and incontinence)

1. History

- Medical history (diabetes, OSA, underlying neurological disease, smoking, CHF)
- Family history (bladder cancer, prostate cancer)
- Prior surgery (urologic or pelvic related)
- Current medications (anticholinergics, antihistamines, diuretics, bronchodilators, and anti-depressants)

2. Assessment

- Assess severity using IPSS
- Examine external genitalia
- Digital Rectal Exam (DRE) **if indicated**

3. Investigations

- Urinalysis
- GFR and Creatinine
- Renal and bladder ultrasound **if appropriate**
- PSA **if indicated**

4. Red Flags

- UTI → Follow UTI Pathway
- Hematuria → Follow Hematuria Evaluation Pathway
- Obstructive renal failure and/or Acute urinary retention (full bladder, significant acute kidney injury, bilateral hydronephrosis) → Catheterize and send to ER
- DRE suspicious for CA
- Elevated PSA
- Anatomical abnormality (refer to Urology Referral Pathway)

Yes → **7. Urology Referral**

No → **5. Management**

Offer Lifestyle and behavioral modifications to all patients:

- Use voiding diary
- Limit caffeine, alcohol, carbonated drinks, and smoking

5. Management: treat based on severity and type of symptoms

Post- Void Dribbling

- Teach urethral milking
- Consider pelvic floor physio

Nocturia

- Fluid management
- Timed voiding/ bladder training
- Consider other etiologies
- Medication options: desmopressin, antimuscarinics, and diuretics

Mild Symptoms IPSS ≤7

- Conservative management recommended
- Consider pharmacological options as outlined in moderate symptoms

If no improvement, or symptoms become worse

6. If no improvement, consider **Urology Advice**

Moderate Symptoms IPSS 8-19

Storage Symptoms

Trial for 4-8 weeks
- Antimuscarinics **or**
- Beta 3 Agonists

If no improvement

Trial for 4-8 weeks
- Antimuscarinics +
- α-blockers

Voiding Symptoms

Trial for 4-8 weeks:
- α-blockers ±
- 5-α reductase inhibitors (if prostate enlargement, may require 6 month tx to see effect)
- PDE5 inhibitor-tadalafil
- Combination therapy if mixed symptoms:
  - Alpha-blocker + antimuscarinics **or** beta-3 agonist

If no improvement

Severe Symptoms IPSS ≥20

Start and refer
- α-blockers ±
- B3 agonist

Call to Action: We need your feedback during this **new** pathway's initial testing phase!

Alberta's Pathway Hub | Background

This primary care pathway was co-designed provincially by Primary Care Providers, Specialist Physicians (Urologists, Geriatricians), Patient and Family Advisors, 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

Lower Urinary Tract Symptoms (LUTS) affect a significant portion of the male population. Studies indicate that approximately 30-50% of men over the age of 50 experience some form of LUTS, with prevalence increasing with age. As men reach 70 years and beyond, prevalence rises to nearly 80% [1].

LUTS are a range of symptoms that affect the lower urinary tract, and have been categorized into storage, voiding, and post-micturition symptoms for this clinical pathway. Storage symptoms encompass frequency, nocturia, urgency and incontinence [2]. Voiding symptoms include hesitancy, weak stream, and intermittency. The primary post-micturition symptom is post-micturition dribbling, which is both common and bothersome. There are many possible causes of LUTS such as abnormalities or abnormal function of the prostate, urethra, bladder or sphincters [3] [2] as well as conditions outside the lower urinary tract.

LUTS left unmanaged, can severely impact quality of life, leading to complications such as urinary retention, recurrent urinary tract infections, or even kidney damage. Additionally, untreated LUTS cause significant emotional and psychological distress, including anxiety and depression. The progression of LUTS can also negatively impact daily functioning, sleep, and social activities [1] [4] [2].

The Provincial Male LUTS clinical pathway has been developed to enhance the identification, management, and care of patients ≥18 years old with a male genitourinary tract urinary system experiencing bothersome symptoms. This pathway is intended to be inclusive of all individuals with anatomical features typically associated with a cisgender male genitourinary tract. Our goal is to ensure that these guidelines support the care of all patients. The pathway does not address benign prostatic hyperplasia (BPH) or complex conditions such as bladder cancer or neurogenic bladder, which require more specialized evaluation.

1. History

When evaluating LUTS, a comprehensive medical history is essential to guide diagnosis and treatment decisions. The history should focus on the following key areas [3] [5]:

Medical History:

- **Diabetes**: Diabetes can affect bladder function through neuropathy, leading to storage and post micturition symptoms such as urgency, frequency, and incomplete emptying.
- **Obstructive Sleep Apnea (OSA)**: OSA is associated with increased sympathetic tone, which may contribute to bladder dysfunction and nocturnal polyuria.
- **Neurological Diseases**: Conditions like multiple sclerosis, Parkinson's disease, and spinal cord injury can lead to neurogenic bladder, which presents with LUTS such as incontinence, retention, and frequency. This pathway does not address these conditions, and additional consultation may be needed if present.
- **Smoking**: Smoking is a known risk factor for bladder cancer and may also contribute to chronic cough, and vascular disease which can exacerbate LUTS.
- **Congestive Heart Failure (CHF)**: CHF may lead to fluid retention, which can worsen nocturia and frequency, particularly when the patient is lying flat at night.

Family History:

- **Bladder Cancer:** A family history of bladder cancer may increase the patient's risk and should prompt consideration of urological evaluation for other possible causes of LUTS.
- **Prostate Cancer:** A family history of prostate cancer can be an important risk factor for prostate-related LUTS, including obstruction or malignancy. This information can inform the need for further prostate evaluation, such as a digital rectal exam (DRE) or prostate-specific antigen (PSA) testing.

Prior Surgery:

- Prior urological or pelvic surgery, including transurethral resection of the prostate (TURP), prostatectomy, bladder surgeries, or spinal procedures, can influence current urinary symptoms. Scarring, altered anatomy, or previous surgical complications may contribute to or worsen LUTS.

Current Medications:

- A thorough review of current medications is essential, as several drugs can contribute to or worsen LUTS.
- Please reference Appendix A to have further information on medications that contribute to urinary incontinence [6].
- It is important to note the use of anticholinergics, antihistamines, diuretics, bronchodilators, and anti-depressants as they have been shown to be contributing factors to LUTS [7].
- Additionally, review herbal and over-the-counter medicines, to identify drugs that may be contributing to the problem [2].

2. Assessment

To ensure effective assessment in the care of patients with LUTS, shared-decision making is key. Shared decision-making in LUTS and urological conditions is a collaborative process where patients and healthcare professionals work together to make informed decisions about treatment options. It ensures patients are informed about options, risks, and benefits, allowing decisions that align with their values and preferences for more personalized care.

- Utilize Shared Decision Making (NICE Guidelines) resource to support the care of your patients with LUTS.

Assess severity using the **International Prostate Symptom Score (IPSS)** [3] [8]**:**

- IPSS is a widely used tool for assessing the severity LUTS in men. It is a standardized questionnaire that helps evaluate both the severity of symptoms and the impact on the patient's quality of life. It provides valuable insight into the patient's symptom burden and guides treatment decisions.
- In Alberta, Urologists are encouraging the use of the IPSS tool in primary care to support effective referral and advice consults with their specialty.
- The IPSS tool can facilitate productive discussions between healthcare providers and patients, enabling the identification of the most bothersome aspects of LUTS. By highlighting the symptoms that are of greatest concern, it helps prioritize clinical attention and direct management towards the most significant issues affecting the patient.
- While the IPSS is a helpful tool for initial assessment and ongoing monitoring, it should be used in conjunction with history, physical examination (including digital rectal exam), urinalysis, and imaging as needed.
- The IPSS can serve both as an initial assessment tool and to track treatment outcomes. A change of 3.1–5.2 points is typically associated with a clinically significant difference in North America [9].

- The IPSS provides a symptom-based measure but does not assess the underlying causes of LUTS, which may require additional diagnostic testing. The IPSS tool can be printed off [10] and given to your patient to complete or use an electronic version [11] and complete during your consultation appointment with your patient.
    - The IPSS consists of seven questions that assess the following domains:
        - Frequency of urinary symptoms (e.g., how often the patient experiences daytime and nighttime urination).
        - Urgency (e.g., urgency to urinate or difficulty delaying urination).
        - Weak stream (e.g., the strength of the urinary stream).
        - Intermittency (e.g., difficulty starting and stopping urination).
        - Incomplete emptying (e.g., feeling that the bladder is not fully empty after urination).
        - Straining (e.g., the need to strain or push during urination).
        - Nocturia (e.g., the number of times the patient wakes up at night to urinate).
- Each question is scored on a scale of 0 to 5, with 0 indicating "not at all" or "none of the time" and 5 indicating "almost always" or "most of the time." The total score can range from 0 to 35, with higher scores indicating more severe symptoms.
- Additionally, the IPSS includes a Quality of Life (QoL) question, which assesses the overall impact of symptoms on the patient's daily life. This question is scored on a scale from 0 to 6, with 0 indicating "delighted" and 6 indicating "terrible."
- The IPSS total score and the Quality of Life (QoL) score help categorize the severity of LUTS and guide management decisions:
    - Mild Symptoms (Total IPSS: 0–7)
    - Moderate Symptoms (Total IPSS: 8–19)
    - Severe Symptoms (Total IPSS: 20–35)
- The QoL score helps to assess the impact of symptoms on the patient's daily life. A higher QoL score, particularly scores of 4 or above, suggests that symptoms are significantly bothersome and may require more aggressive treatment.

Examine external genitalia

- When examining the external genitalia of patients with lower urinary tract symptoms (LUTS), the following steps should be performed:
    - Inspection: Check for any visible abnormalities such as lesions, redness, scarring, or signs of infection (e.g., rashes or swelling).
    - Palpation: Gently palpate for tenderness, masses, or any irregularities, including hernia hydrocele or undescended testes in males.
    - Examine the foreskin for phimosis.
    - Examine the urethral meatus: Look for signs of discharge, inflammation, or stenosis, which could contribute to LUTS.
    - Inspect the penis for curvature (e.g., Peyronie’s disease) or other abnormalities that may affect urination.

Digital Rectal Exam (DRE)

- Some studies suggest that DRE may enhance the detection of clinically significant prostate cancer. Men undergoing prostate cancer screening should have DRE performed at the same intervals as PSA testing, with decisions about screening made through shared decision-making between the patient and their healthcare provider. This approach ensures that the patient's values, preferences, and individual risk factors are considered in the decision-making process [12].

- The Canadian Urological Association (CUA) guidelines recommend a DRE for men with lower urinary tract symptoms who may benefit from prostate cancer screening, particularly:
  - Men aged 50+
  - The necessity of a DRE may be tailored based on clinical judgment and individual risk factors
- DRE is performed to assess the size, shape, and consistency of the prostate gland [8].
- Any findings of asymmetry, hard areas, or nodules could raise suspicion for prostate cancer and warrant further investigation.

3. Investigations

The comprehensive investigation of LUTS in men should include [2] [5] [3]:

- **Urinalysis** to rule out infection or hematuria.
- **GFR and creatinine** to evaluate renal function.
- **Renal and bladder ultrasound** if appropriate [2]:
  - The NICE guidelines recommend the ultrasound be performed early in the evaluation of male LUTS when there are concerns about obstruction, infection, or anatomical issues that might influence the management plan. It is typically performed non-invasively and is a helpful tool in providing information about bladder volume, post-void residual urine, and renal anatomy.
  - Suspected urinary tract obstruction: If there are signs or symptoms suggestive of urinary retention, such as a markedly reduced urine stream, difficulty starting or stopping urination, or acute urinary retention, an ultrasound may be indicated to assess for obstruction.
  - Hematuria: In cases of unexplained blood in the urine, ultrasound can help identify any underlying structural abnormalities, such as stones or tumors, in the kidneys or bladder. Please follow the Alberta Clinical Pathway for Hematuria Evaluation.
  - Recurrent urinary tract infections (UTIs): If a patient presents with recurrent UTIs and LUTS, ultrasound may be used to assess the kidneys and bladder for structural or anatomical abnormality such as upper tract abnormality, stones, masses, or ineffective emptying.
  - Renal impairment: If there is evidence of kidney dysfunction, such as elevated serum creatinine levels or other signs of renal impairment, an ultrasound is recommended to evaluate for potential underlying causes like hydronephrosis or other structural abnormalities.
  - Unexplained or worsening LUTS: In cases where symptoms are worsening or unexplained despite standard treatments, ultrasound can be useful in ruling out any anatomical causes.
- **Prostate Specific Antigen (PSA)** testing if appropriate:
  - The Canadian Urological Association (CUA) has developed evidence-based recommendations to guide providers on prostate cancer screening and early diagnosis for Canadian men, which are based on recent updates from several large, randomized, prospective trials, as well as the emergence of several new diagnostic tests.
  - Complete shared decision-making conversations and determine appropriateness for testing. PSA testing should be offered to patients with a life expectancy of at least 10 years, for whom the knowledge of prostate cancer would influence management decisions, as well as to those for whom PSA levels could impact the management of their voiding symptoms.

4. Red Flags

When evaluating men with LUTS, certain red flag symptoms may indicate more serious underlying conditions that require prompt action or referral to a specialist.

- **Urinary Tract Infection (UTI)** should be managed according to the UTI Clinical Pathway. Consider other causes of LUTS, such as bladder stones or prostatitis, if symptoms do not resolve with UTI treatment.
- **Hematuria:** The presence of visible blood in the urine (gross hematuria) or microscopic hematuria (detected on urinalysis) can be a sign of serious underlying conditions, such as bladder cancer, kidney stones, or a bleeding disorder. Hematuria warrants a thorough evaluation as indicated by the Alberta Clinical Pathway for Hematuria Evaluation.
- **Obstructive Renal Failure / Acute Urinary Retention:** Acute urinary retention, characterized by an inability to void, or obstructive renal failure, with signs of a full bladder, reduced renal function, and bilateral hydronephrosis (swelling of the kidneys due to urine buildup), requires immediate intervention.

  Action:
  - **Catheterization**: Immediate urinary catheterization is necessary to relieve retention and prevent further renal damage.
  - **Referral to Emergency Room (ER)**: After catheterization, the patient should be sent to the ER for further evaluation and management. The patient may require additional imaging, monitoring of renal function, and management of the underlying cause (e.g., BPH, prostate cancer, or bladder outlet obstruction).

Several clinical findings suggest that the patient may have a more serious underlying urological condition and require referral to a urologist for further evaluation and management.

- **DRE Suspicious**: A DRE that reveals abnormalities such as an enlarged, irregular, or hard prostate may suggest prostate cancer or other serious conditions.
- **Elevated PSA**: An elevated prostate-specific antigen (PSA) level may be indicative of prostate cancer, though it can also be elevated in BPH or prostatitis.
- **Anatomical abnormality**: Depending upon type and nature, referral may be warranted. See urology referr al guidelines.

Note: Severe **dysuria** or **pelvic pain**, especially when accompanied by other symptoms like hematuria, may indicate prostate cancer, bladder cancer, or prostatitis and likely requires further investigation.

If no red flags, then focus in on the severity and type of symptoms for continued management.

5. Management

The management of LUTS requires an individualized approach based on the categorization and severity of symptoms. Each category has specific therapeutic pathways outlined below, however, lifestyle and behavioral modifications should be front of mind and considered for all patients where appropriate.

These include [3]:

- Introducing a voiding diary to better understand symptoms, guide management and to help measure any change over time.
- Limit caffeine, alcohol, carbonated drinks, and smoking as all these can exacerbate symptoms. Often patients are unaware of these variables and changing behaviors can lead to meaningful and functional improvements in symptoms.
- For storage LUTS suggestive of overactive bladder, offer supervised bladder training, advice on fluid intake, lifestyle advice and, if needed, containment products (e.g., pads or collecting devices) to achieve social continence until a diagnosis and management plan have been discussed.

Post void dribbling

- Post void dribble is the loss of a few drops of urine after passing urine and occurs when the urethra fails to empty completely until the person moves/walks away from the toilet.
- It can often be treated effectively by teaching the person bulbar urethral massage (urethral milking), whereby the person uses their fingertips in a forward and upward direction from under the scrotum, towards the penis to help remove this residual urine. The accompanying patient handout includes further direction to the patient.
- Additionally, post void dribbling can be due to weakness in pelvic floor muscles which are often amenable to pelvic floor physiotherapy. Consider discussing a referral with patient, however this is a paramedical service that patients have to pay for privately or through extended healthcare benefits.

Nocturia

- Nocturia is a common symptom in patients characterized by frequent urination during the night, leading to disrupted sleep and decreased quality of life. Effective management requires a comprehensive approach tailored to the underlying causes of nocturia, incorporating lifestyle modifications and, when necessary, pharmacological therapy [13].
- The primary goals of treatment for nocturia are to:
    - Reduce the frequency of nocturnal voids
    - Improve total sleep duration and quality
    - Enhance quality of life (QoL)
    - Minimize the impact of associated comorbidities (e.g., cardiovascular or renal issues)
- A variety of lifestyle changes can significantly benefit patients with nocturia, including:
    - Fluid Management:
        - Limiting fluid intake at least 2 hours before bed, especially caffeine and alcohol.
        - Restricting total fluid consumption to less than 2 liters per day, unless contraindicated as per heart failure management.
    - Bladder Emptying and Physical Environment:
        - Encourage patients to empty their bladder before going to sleep to reduce the likelihood of nocturnal voiding.
        - Ensure easy access to the toilet or use a bedside commode to minimize the effort and time spent in the middle of the night, particularly in older patients.
    - Exercise and Weight Management:
        - Increase physical activity (a daily evening walk of 30 mins is associated with improvement) and fitness levels, including pelvic floor exercises if indicated.
        - Encourage weight loss for overweight or obese patients, as this may reduce nocturia.
    - For Specific Conditions:
        - For patients with peripheral edema due to conditions like congestive heart failure or chronic venous insufficiency, elevating the legs above heart level a few hours before bedtime can help reduce fluid accumulation and nocturnal urination.
        - For those on diuretics, recommend taking the medication earlier in the day. Use of late afternoon diuretics is considered below.
    - Dietary Modifications:
        - Reducing dietary salt intake can decrease nocturnal urination, especially in patients with cardiovascular or renal disease.

- Consider other etiologies:
    - Investigate for other etiologies including sleep disorders (e.g., obstructive sleep apnea, periodic limb movements), cardiovascular diseases (e.g., hypertension, heart failure), endocrine issues (e.g., diabetes mellitus), and neurological conditions (e.g., Parkinson's disease) that may contribute to nocturia.
- Pharmacological Treatment:
    - In addition to lifestyle changes, pharmacological therapy may be required for managing nocturia, particularly when underlying causes are identified. As part of a comprehensive management plan, a medication review is critical. Medications such as diuretics, antihypertensives, and sedatives can contribute to nocturia. Reviewing and adjusting medications can significantly improve nocturia symptoms, particularly in older patients who may be taking multiple drugs.
        - Desmopressin for nocturnal polyuria.
        - Antimuscarinics or mirabegron for overactive bladder.
        - Diuretics, given at least 5h before bedtime.

Mild Symptoms (IPSS ≤7)

For patients with mild symptoms, the goal is to monitor the condition and consider conservative management options.

- Start with lifestyle and behavioral modifications, along with watchful waiting.
- Immediate pharmacological treatment is not required for mild symptoms unless they remain bothersome or lifestyle and behavioral modifications have been ineffective at improving symptoms [14].
- If decision to start medications, consider following pharmacologic management as outlined below with Moderate Symptoms.

Moderate Symptoms (IPSS 8–19)

Storage Symptoms:

These symptoms are often related to bladder overactivity and include:

- Urgency
- Frequency
- Incontinence

Pharmacological treatment for Storage Symptoms [3]:

- Pharmacological treatment should be tailored to address bladder overactivity and improve storage function. A trial period of 4-8 weeks is recommended to assess efficacy, with adjustments based on patient response.
- **Antimuscarinics**
    - Indication: First-line therapy for storage symptoms associated with overactive bladder (OAB). These drugs work by blocking muscarinic receptors in the bladder, which alters the sensory afferent input from the bladder, allowing suppression of urgency.
    - Examples: Oxybutynin (avoid IR oxybutynin in older adults), tolterodine, solifenacin, fesoterodine.
    - Treatment Duration: Trial for up to 12 weeks to assess symptom relief.
    - Effectiveness: Effective in improving symptoms such as urgency, frequency, and nocturia.
    - Caution: May cause dry mouth, constipation, blurred vision, and cognitive side effects (especially in older adults). Use with caution in patients with cognitive impairment or glaucoma. Contradicted in uncontrolled narrow angle glaucomas.

- **Beta-3 Agonists**
    - Indication: Beta-3 agonists are recommended for overactive bladder (OAB) in patients who do not respond to antimuscarinics or those who experience intolerable side effects from antimuscarinics. Beta-3 agonists reduce urgency frequency and urgency incontinence.
    - Example: Mirabegron.
    - Treatment Duration: Trial for up to 12 weeks.
    - Effectiveness: Mirabegron is effective in improving storage symptoms.
    - Caution: Mirabegron is contraindicated in patients with uncontrolled hypertension. The main adverse events are headache, urinary tract infection and rarely, sinusitis.

Voiding Symptoms:

These symptoms are often related to bladder outlet obstruction. They include:

- Weak stream
- Straining to void
- Frequency and nocturia also common in men with predominant voiding Sx

Pharmacologic treatment for voiding symptoms:

- **Alpha-Blockers**
    - Indication: First-line therapy for voiding symptoms related to benign prostatic enlargement (BPE), as they relax the smooth muscle of the bladder neck and prostate, improving urine flow.
    - Examples: Tamsulosin, alfuzosin, doxazosin.
    - Treatment Duration: Trial for 4-8 weeks.
    - Effectiveness: Effective for reducing symptoms like weak stream and straining.
    - Caution: May cause dizziness, orthostatic hypotension, and retrograde ejaculation. Use with caution in older patients or those with low blood pressure.

- **5-Alpha Reductase Inhibitors (5-ARIs)**
    - Indication: Consider for prostate enlargement (≥40g) in men with moderate to severe LUTS, particularly if there is a significant increase in prostate volume.
    - Examples: Finasteride, dutasteride.
    - Treatment Duration: Requires a longer trial (up to 6 months) to evaluate effects, as it works by reducing prostate size, which improves voiding symptoms over time.
    - Effectiveness: Reduces prostate size and improves urine flow, especially in those with significant prostate enlargement.
    - Caution: May cause reduced libido, erectile dysfunction, and ejaculation disorders.

- **PDE5 Inhibitors**
    - Indication: For patients with nocturia and/or LUTS with or without erectile dysfunction. PDE5 inhibitors can help improve sexual function, which may indirectly benefit symptoms of LUTS, especially if erectile dysfunction is contributing to voiding issues.
    - Examples: Tadalafil, sildenafil.
    - Effectiveness: Can improve symptoms of BPH and erectile dysfunction simultaneously.
    - Caution: Should not be used with nitrates due to risk of severe hypotension. Side effects may include headache, flushing, and dyspepsia.

- **Combination Therapy for Mixed Symptoms**
    - Indication: For patients who have mixed symptoms, including both voiding and storage symptoms (e.g., urgency, frequency), combination therapy may be more effective than monotherapy.
    - Combination options:
        - Alpha-Blocker + Antimuscarinics: Useful for patients with both obstructive symptoms (e.g., poor flow) and irritative symptoms (e.g., urgency, frequency). Antimuscarinics help reduce bladder overactivity.
            - Examples of Antimuscarinics: Oxybutynin, tolterodine.
            - Effectiveness: Improves both flow and bladder storage, making it a good option for patients with mixed LUTS.
        - Alpha-Blocker + Beta-3 Agonist: If the patient has voiding symptoms plus overactive bladder, combining an alpha-blocker (for prostate-related obstruction) with a beta-3 agonist (to relax bladder smooth muscle) can be effective.
            - Example of Beta-3 Agonist: Mirabegron.
            - Effectiveness: Works well in patients with BPH and overactive bladder symptoms, improving both voiding and storage.
    - Caution: Combination therapy increases the risk of side effects. Antimuscarinics can cause dry mouth, constipation, and blurred vision.
- Patients seeking minimally invasive surgical treatment options to avoid medical therapies or side effects of medical therapy (retrograde ejaculation) can be referred for possible treatment.

Severe Symptoms (IPSS ≥20)

For patients with severe symptoms, more aggressive management may be required to alleviate significant discomfort and improve urinary function. This may involve a combination of pharmacological treatment and surgical or minimally invasive interventions.

- Pharmacological therapy for severe LUTS can include alpha-blockers and beta-3 agonists (either alone or in combination).
- Combination therapy is especially useful for patients with mixed voiding and storage symptoms.
- Surgical or minimally invasive interventions may be necessary for patients with severe symptoms that do not improve with medication, and a urology referral is recommended.

6. Advice Options

For patients who have not shown improvement after completing the conservative and pharmacologic management of their post-void dribbling or nocturia, you may consider Urology Advice as outlined below.

You may also check the advice service websites:

- *eReferral - Advice and Consult Requests - Reasons for Referral.pdf (albertanetcare.ca)*
- *List of Specialties & Specialty Resources - ConnectMD (pcnconnectmd.com)*
- *Homepage (specialistlink.ca)*

Zone	Program	Online Request	Phone Number
Urgent Telephone			
All Zones	RAAPID	N/A	**North:** 1-800-282-9911 or 780-735-0811 **South:** 1-800-661-1700 or 403-944-4486
Non-Urgent Electronic			
All Zones	eReferral Netcare		N/A
Non-Urgent Telephone			
Calgary	Specialist Link	Online Request	403-910-2551
Edmonton, North	ConnectMD	Online Request	1-844-633-2263

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, imaging or resources available.

7. 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.

- **Urgent Referral** – Call urologist on call via RAAPID or call 911.
- Follow the Provincial Urology, Adult Referral Pathway.
- Alberta Referral Directory is also a helpful resource for all referral information.

BACKGROUND

About this pathway

- This pathway was developed in collaboration with Primary Care Providers, Urologists, Geriatricians, 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

- The authors represent a multi-disciplinary team. Names of the content creators and their conflict-of-interest declarations are available on request by emailing albertapathways@primarycarealberta.ca.

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Pathway review process, timelines

Primary care pathways undergo scheduled review every two to three years or earlier if there is a clinically significant change in knowledge or practice. The next scheduled review is **January 2028**. However, we welcome feedback at any time. Please send us your feedback here.

Copyright information

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.

Appendix A: Medications that contribute to urinary incontinence [6]

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 men
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

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PROVIDER RESOURCES

Resource	Link
Canadian Urological Assoication " Update 2022-Canadian Urological Association guideline on male lower urianry tract symptoms/benign prostatic hyperlasia"	cua.org/system/files/Guideline-Files/7906_V2.pdf
National Institute for Health and Care Excellence, "Lower urinary tract symptoms in men:management," NICE Clinical Guidelines	nice.org.uk/guidance/cg97
European Association of Urology, "Guidelines on the Management of Non-neurogenic Male LUTS," EAU Guidelines. Edn. presented at the EAU Annual Congress Paris April 2024. ISBN 978-94-92671-23-3.	d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Non-Neurogenic-Male-LUTS-2024.pdf

PATIENT RESOURCES

Resource	Link
Patient Pathway 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.	**Your Journey with Male LUTS** **myhealth.alberta.ca/HealthTopics/male-LUTS-pathway/Documents/male-luts-pathway_summary.pdf**

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