Provincial Primary Care Clinical Pathway: Prevention of Female Recurrent Lower Urinary Tract Infection (rLUTI)

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Recurrent Lower Urinary Tract Infection (rLUTI) is symptomatic and culture-confirmed UTI at a frequency of ≥2 episodes in the last 6 months or ≥3 episodes in the last 12 months. This pathway is for adult patients (18+) with female genitourinary tract anatomy who meet these criteria and may benefit from preventative strategies.

This pathway does not focus on the treatment of acute Urinary Tract Infections (UTIs). For acute UTI:

- Follow Urinary Testing Guidelines as needed
- For treatment guidance, see Bugs & Drugs Urinary Tract
- **Do not** screen or treat asymptomatic bacteriuria except in pregnancy or before invasive urologic procedures

Special Considerations:

- Pregnancy: treat positive culture regardless of symptoms and follow Bugs & Drugs Pregnancy
- Patient undergoing urologic surgery: follow Bugs & Drugs Urinary Procedure
- Older Adults: follow urinary testing guidelines
- Older adults in Continuing Care Facilities: for non-specific behavioural or status changes, assess for non-infectious causes before testing or treating for UTI.

1. History

1. Culture-confirmed prior UTI diagnoses
2. Medical History (diabetes, stones, pregnancy, (peri)menopause, immune compromise, bowel habits, pelvic floor symptoms, cancer, neurological disease, prior pelvic/ urinary surgery/radiation, STI risk)
3. Current medications/allergies
4. History of trauma: mechanical or interpersonal trauma (e.g., sexual assault, intimate partner violence, psychological – (Provider Trauma Training)

2. Assessment

- Identify any symptom triggers (e.g. intercourse)
- Method of contraception
- Pelvic exam
- Rule out any other mimics

- Does patient present with other associated urinary symptoms (e.g. retention, incontinence, prolapse, vaginal dryness, dysfunctional voiding)?

Female LUTS Pathway for acute treatment

3. Investigations

- Complete lab urinalysis with urine culture for every recurrent episode
- Documented evidence of pyuria (> 5-10 WBC's per High Power Field (HPF) on microscopy) and growth of >10e7/L of a single urinary pathogen on culture
- Further investigation is not routinely required for most rLUTI

4. Red Flags

- Persistent hematuria outside infection → Follow Hematuria Evaluation Pathway
- Sepsis and/or infected kidney stone → Send patient to ED. Urgent **Urology referral** for infected kidney stone
- Suspicion of structural or functional abnormalities of genitourinary tract → Order renal/bladder ultrasound; Consider CT scan if ultrasound shows possible abnormality or high suspicion of stone → Any abnormal imaging, **Urology Referral**
- Pyelonephritis → Treat per Bugs & Drugs Pyelonephritis
- Relapse: Recurrent LUTI with same organism within 2 weeks (occasionally up to 4 weeks) after completing therapy → Ensure urinalysis with urine culture complete with recurrent episode; Confirm antibiotic susceptibility of chosen agent; Treat per Bugs & Drugs Pyelonephritis; Consider ultrasound or CT for renal abscess

No red flags

Follow the Algorithm on page 2 for preventative & therapeutic treatment strategies

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5. Preventative & Therapeutic Strategies

Non-antibiotic options should be offered **first** as part of shared-decision making

A. Initial Preventative Strategies:
- Hydration 2-3L/day
- Vaginal estrogen for perimenopausal or post-menopausal patients (see table 1 for options and dosing)
- Provide education on myths: there is no clear association between rLUTI and pre- and post-coital voiding habits, wiping patterns, douching, use of hot tubs, pantyhose or tights, or BMI
- Pelvic floor exercise therapy (for patients with functional urogynecologic conditions)

B. Secondary Preventative Strategies:
- Cranberry (target daily dose: Proanthocyanidins (PAC) content 36-72 mg; 8oz cranberry juice or 500-1000mg concentrated cranberry tablets daily)
- Methenamine hippurate **(only available in Canada if compounded)**
  - 1g PO 2x daily
  - Do not combine with antibiotic prophylaxis)

C. Low-risk approaches without clear supporting evidence:
- Consider avoiding spermicides or spermicide-coated condoms
- Adjunctive probiotics
- D-Mannose

Does the patient have frequent and highly bothersome recurrence?

Yes

Consider Antibiotic Options:

Antibiotic Prophylaxis
(Do **not** combine with methenamine)
- Continue non-antibiotic preventative strategies
- Confirm acute UTI eradication before initiating antibiotic prophylaxis
- With clear trigger (e.g. intercourse), trial single-dose at time of trigger: see Bugs & Drugs

Therapeutic Options
- Consider patient-initiated therapy in reliable patients with clear return to care instructions
- If persistent bothersome recurrences despite single-dose trial, consider continuous antibiotic prophylaxis.
- For acute UTI episode while on Antibiotic Prophylaxis, perform urinalysis and urine culture and treat per Bugs & Drugs Uncomplicated UTI with different antibiotic than used for prophylaxis

If no improvement

No

Re-evaluate in 6-12 months. Any of the following:
- Poor tolerance to chosen strategy?
- Multiple breakthrough episodes of cystitis?

No

Continue strategy. **If applicable, a trial off antimicrobial prophylaxis is reasonable after 6-12 months.**

Yes

Trial different approach or stop chosen strategy without replacement.

6. Advice, if available - for unusual, atypical, or difficult-to-treat organisms, or failure to respond to treatment, consult **Infectious Disease.** For suspicion of structural issues, or other persistent urinary symptoms, consult **Urology.**

No improvement or ongoing challenges

7. Refer to Infectious Disease or Urology as appropriate

This primary care pathway was co-designed provincially by Primary Care Providers, Specialist Physicians (Infectious Disease, Urology), Patient and Family Advisors, and the Provincial Pathways Unit. It is intended to be used in conjunction with specialty advice services, when required, to support care within the medical home. The information presented is based on current evidence from reputable sources, including Alberta healthcare professionals, peer-reviewed journals, current clinical guidelines, and specialty care recommendations. It is designed to support clinical decision-making but should not replace the professional judgment of a qualified healthcare provider. This resource does not account for the unique circumstances of individual patients. Providers should always apply their clinical expertise and consider patient-specific factors when delivering care.

Note: Throughout this pathway, the terms “women” and “females” includes all individuals with a female genitourinary tract, such as women, Two-Spirited people, trans men, and nonbinary individuals assigned female at birth.

EXPANDED DETAILS

Pathway Primer

Recurrent urinary tract infection (UTI) is a common condition in adult patients with female genitourinary tract anatomy. It is a frequent reason for repeat primary care visits, laboratory testing, antibiotic prescribing, and can greatly impact a patient’s quality of life and psychosocial well-being [1, 2]. Recurrent UTI is defined as two or more symptomatic, culture-confirmed infections within six months, or three or more infections within twelve months [3, 4, 1]. Most infections represent reinfection (new bacteria) rather than relapse (involving the same bacteria, usually from failure of antimicrobial therapy or persistent source of infection and possible structural abnormality), even when caused by the same uropathogen [3, 4]. In most cases, infections are confined to the lower urinary tract and occur in the absence of systemic illness or structural urinary tract abnormality. It is the prevention of these types of infections that are the focus of this pathway. For the purposes of this pathway, we will use the term Recurrent Lower Urinary Tract Infection (rLUTI) to represent recurrent infection within the lower urinary tract.

More than half of women experience at least one UTI in their lifetime [3, 1], and up to 25% will go on to develop recurrent infections [5, 1]. Within Alberta, recurrent UTI is a very common reason for referral to Infectious Disease. Most patients can be managed appropriately within the medical home and this clinical pathway will support this goal.

Several factors increase susceptibility to rLUTI. Risk of rLUTI is higher amongst those who:

- are sexually active, especially with higher frequency or with a new partner within the past year [4],
- are younger (aged 18-27) or older age (especially age 78+) [5],
- used spermicide (including spermicide-coated condoms) within the past year [4, 6, 7, 8],
- are immunocompromised [5],
- have diabetes or multiple co-morbidities [5],
- had more frequent prior-year outpatient and emergency department encounters, oral antibiotic and oral contraceptive prescriptions, and exposure to antibiotic-resistant organisms [5],
- had their first UTI at or before age 15 [4],
- have maternal history of UTIs [4],

- had first infection caused by *E. coli* vs another organism [4, 9].

In post-menopausal women, recurrence is commonly associated with the genitourinary syndrome of menopause (GSM), often involving [4]:

- urinary incontinence
- presence of a cystocele
- post-voiding residual urine

Since repeated antibiotic exposure increasing the risk of antimicrobial resistance, medication adverse effects, and disruption of the genitourinary and gut microbiome, while typically providing only transient protection, preventative management is central to care and the focus of this pathway [2, 5]. In Alberta, prevention strategies that safely reduce antibiotic use are also an important component of antimicrobial stewardship.

Most adult females with rLUTI can be effectively assessed and managed within the primary care medical home, with selective use of specialty advice or referral for atypical presentations, red-flag features, or failure of preventative strategies. This pathway supports primary care providers in delivering consistent, evidence-informed, and patient-centred preventative strategies for adult patients (18+) with a female genitourinary tract and rLUTI.

Acute UTI

This pathway does not focus on the treatment of acute UTIs. For patients exhibiting symptoms or signs of an acute UTI:

- Follow Urinary Testing Guidelines as needed.
    - **Do not** test urine for infection due to:
        - Changes in colour
        - Cloudiness or smell alone
        - Catheter insertion or change

- For treatment guidance, see Bugs & Drugs Urinary Tract

- **Do not** screen or treat Asymptomatic Bacteriuria (ASB) except in pregnancy or before invasive urologic procedures [3, 10]:
    - ASB is defined as presence of bacteria (with or without white blood cells) in the urine in the absence of urinary tract symptoms.
    - Inappropriate treatment of ASB significantly contributes to antimicrobial overuse, antimicrobial resistance, and adverse drug effects including *Clostridioides (Clostridium) difficile* infection.
    - Evidence supports treatment benefit for patients who are pregnant or scheduled to undergo invasive urinary tract procedures where a breach of the urothelial mucosa is likely.
    - There is no evidence supporting benefit of further evaluation or antimicrobial treatment in other populations with ASB, including women with diabetes mellitus and long-term care facility residents.
    - For more information, see: Appropriateness of Care: Asymptomatic Bacteriuria | Alberta Health Services.

Special Considerations

- **Pregnancy** [11]**:**
  - Asymptomatic bacteriuria with uropathogens in pregnant women is associated with increased incidence of pyelonephritis, preterm labour, and low birthweight.
  - Follow Urinary Infection Testing - Pregnancy
  - Treat positive urine culture regardless of symptoms and follow Bugs & Drugs Pregnancy.

- **Patients undergoing invasive urologic surgery** [11]**:**
  - If mucosal bleeding/trauma is anticipated during surgery, take pre-procedure culture and treat per Bugs & Drugs Urinary Procedure to prevent sepsis post-procedure.

- **Older Adults** [11]:
  - The cause of urinary symptoms in older adults is usually multifactorial.
  - Up to 90% of elderly patients with asymptomatic bacteriuria have pyuria, therefore pyuria is **not** a valid diagnostic criterion for UTI in this population.
  - Asymptomatic bacteriuria is **not** associated with incontinence, hypertension, or decreased renal function in this population.
  - In older patients with functional or cognitive impairment, bacteriuria is very unlikely to be a source of delirium or a fall in the absence of localized genitourinary symptoms or signs of infection. Assess for other causes rather than initiating antibiotic therapy.
  - Follow Urinary Testing Guidelines.

- **Older Adults in Continuing Care Facilities:**
  - For non-specific behavioural or status changes, assess for non-infectious causes before testing or treating for UTI.
  - For more information on recommended clinical practice for this population, see Using Antibiotics Wisely in Long-Term Care from Choosing Wisely Canada.

1. History

This section outlines relevant medical history that should be collected when identifying and managing rLUTI:

- **Culture-confirmed prior UTI diagnoses:**
  - rLUTI consists of two or more symptomatic and culture-confirmed episodes of lower urinary tract infection within six months, or three or more episodes within twelve months.
  - Check Netcare for past UTI diagnoses
  - Ask patient about, and make note of, any diagnoses of UTI made and treated by another provider, including a community pharmacist.

- **Medical History:**
  - Including history of diabetes, stones, pregnancy, (peri)menopause, immune-compromise, bowel habits, pelvic floor symptoms, cancer, neurological disease, prior pelvic/urinary surgery/radiation, STI risk.
  - Current medications or allergies.
  - History of trauma:
    - Inclusive of any mechanical trauma, interpersonal trauma (e.g., sexual assault, intimate partner violence, psychological), birthing trauma, or childhood traumas (death of a family member, severe illness, sexual trauma, parental separation), which have all been linked to increased risk of pelvic and lower urinary tract symptoms.
    - A number of provider supports are available:
      - AHS Provider Trauma Training
      - Trauma-informed Physical Examinations and STBBI Testing
      - Trauma-Informed Care Implementation Resource Center - Trauma-Informed Care Implementation Resource Center.

2. Assessment

- **Identify any symptom triggers:**
  - Intercourse may be a primary trigger for LUTI symptoms, with management implications.
  - Patient may self-identify other potential triggers.

- **Method of contraception:**
  - Using spermicide or spermicide-coated condoms for birth control may raise the risk of LUTIs.

- **Pelvic exam:**
  - Look for any structural or functional abnormalities

- **Rule out other mimics:**
  - When assessing for rLUTIs, other lower urinary tract disorders in females must be considered and ruled out because there may be overlapping symptoms. These may include:
    - Overactive Bladder (OAB): see Provincial FUI Clinical Primary Care Pathway.
    - Painful bladder syndromes (e.g. interstitial cystitis): treat accordingly.
    - Sexually Transmitted Infections (STIs): STIs such as gonorrhea or chlamydia may cause urethritis or Pelvic Inflammatory Disease (PID). Treat accordingly.
    - Vulvovaginal disease such as vaginitis or dermatologic disease.

        - Genitourinary Syndrome of Menopause (GSM): declining estrogen may cause symptoms like vaginal dryness, itching, dyspareunia, and urinary issues such as urgency, frequency, and UTIs: see Provincial Perimenopause and Menopause Primary Care Clinical Pathway
        - Pelvic floor muscle dysfunction

- **Other associated urinary symptoms:**
    - If patient presents with symptoms of retention, incontinence, prolapse, or dysfunctional voiding:
        - See Provincial Female LUTS pathway for acute treatment.
        - Chronic presence of these symptoms can be misdiagnosed as LUTI [4].
        - If these patients also have rLUTI, also review the Preventative & Therapeutic Strategies section.

3. Investigations

- **Urinalysis:**
    - **Routine lab urinalysis with urine culture should be completed for every episode of recurrent LUTI.**
    - Obtain a good quality sample using midstream urine, in/out catheterization, or at the time of catheter exchange in those chronically catheterized.
    - A positive urine culture will:
        - confirm bacterial infection,
        - inform if episode is recurrence or relapse, and
        - aid antibiotic management.
    - **A note of caution: Urine Dipstick**
        - The overall clinical value of the urine dipstick is limited in diagnosing UTI, leading to recommendations to abandon its use for this purpose, particularly in seniors, who have a high prevalence of asymptomatic bacteriuria. In acutely symptomatic pre-menopausal women, the lack of pyuria (negative leukocyte esterase) on urine dipstick has a high negative predictive value in ruling out LUTI. [12, 13, 14].

- **Urine Culture & Sensitivity:**
    - It is important to have documented evidence of pyuria (> 5-10 WBC's per High Power Field (HPF) on microscopy) and growth of >10e7/L of a single urinary pathogen on culture
    - The most common pathogen for LUTI is *E. coli.* Other common pathogens for LUTI include: *S. saprophyticus,* Enterococci, and other *Enterobacterales (*e.g. *Klebsiella sp., Proteus sp.)*. See Bugs & Drugs for more details.

- **Further investigation is not routinely required for most rLUTI.**

4. Red Flags

When evaluating a patient for rLUTI, certain red flag symptoms may indicate more serious underlying conditions that require prompt action or referral to Urology.

- **Persistent hematuria outside infection:** follow Hematuria Evaluation Pathway

- **Sepsis and/or infected kidney stone:**
  - Send patient to the Emergency Department.
  - Submit an Urgent Urology referral for an infected kidney stone.

- **Suspicion of structural or functional abnormalities of genitourinary tract:**
  - Worrisome symptoms or history may include: history of stones or nephrolithiasis, isolation of *Proteus* spp, voiding abnormalities, flank pain, possible stone, recurrent upper tract infections, prior urologic intervention such as ureteroscopy.
  - Order renal/bladder ultrasound.
  - Consider CT scan if ultrasound shows possible abnormality or high suspicion of stone.
  - Any abnormal imaging, refer to **Urology** following Provincial Adult Urology Referral Pathway.

- **Pyelonephritis:**
  - Treat per Bugs & Drugs Pyelonephritis.

- **Relapse - Recurrent LUTI with same organism within 2 weeks (occasionally up to 4 weeks) after completing therapy:**
  - Suggests failure of antimicrobial therapy or a persistent source of infection and possible structural abnormality.
  - Ensure urinalysis with urine culture complete with recurrent episode.
  - Confirm antibiotic susceptibility of chosen agent.
  - Treat per Bugs & Drugs Pyelonephritis.
  - Consider ultrasound or CT for renal abscess.

5. Preventative & Therapeutic Strategies

There are many different preventative strategies patients can try to prevent rLUTIs. **Non-antibiotic options** should **always** be offered **first** as part of shared-decision making to reduce antibiotic exposure. All discussions regarding preventative strategies should be non-judgmental and avoid stigma or patient self-blame.

Initial Preventative Strategies

- **Hydration:**
  - A general target of 2 to 3 liters of fluid daily is recommended [4], especially for patients currently consuming <1.5 liters per day [3].
- **Vaginal estrogen for perimenopausal or post-menopausal patients:**
  - Effective at reducing incidence of rLUTI in this population [4].
  - See Table 1 below for vaginal hormone therapy options and recommended dosage.
- **Education on myths:**
  - rLUTI is **not** caused by poor hygiene, and there is no clear association between rLUTI and pre- and post-coital voiding habits, wiping direction, voiding frequency, douching, use of hot tubs, pantyhose or tights, or BMI [4, 11].
  - The above are unlikely to be harmful if patient finds them helpful.
- **Pelvic floor exercise therapy:**
  - May be useful to prevent rLUTI for patients with functional urogynecological conditions [4].

Table 1: Pharmacological Options for GSM [15]

Pharmacological Options for GSM			
Type	Trade Names	Strengths Available	Starting Doses
Vaginal Hormone Therapy			
Conjugated estrogen (CE)	Premarin® Vaginal Cream	0.625 mg/gram vaginal cream Refillable applicator	0.5 g vaginally daily for 14 days, then 0.5 g 2–3 times weekly
17 β estradiol	Vagifem® vaginal inserts	10 µg vaginal tablet with applicator	One tablet vaginally daily for 14 days, then one tablet twice weekly
17 β estradiol	Imvexxy® vaginal ovules	4 µg, 10 µg vaginal ovules	One ovule vaginally daily × 14 days, then twice weekly
17 β estradiol	Estring® vaginal ring	2 mg/vaginal ring	Inserted every 3 months. This is a good option for patients who may have challenges administering other medications independently.
Estrone	Estragyn® 0.1% vaginal cream	1 mg/gm vaginal cream Refillable applicator	0.5 g vaginally daily for 14 days, then 0.5 g 2–3 times weekly
Prasterone (DHEA)	Intrarosa® vaginal ovules	6.5 mg ovule	One ovule inserted vaginally daily. New treatment, non-estrogen option, but converts to estrogen and androgens inside the vagina.

For additional information for patients on vaginal estrogen therapies, see Low-Dose Vaginal Estrogen Therapy from Your Pelvic Floor (International Urogynecological Association).

Secondary Preventative Strategies

- **Cranberry:**
  - Variety of formulations available, including juice, tablets, and powder.
  - Optimal formulation and dose remains unknown, though effect is thought to be linked to proanthocyanidins (PAC) present in cranberries [3].
  - Target daily dose Proanthocyanidins (PAC) content 36-72 mg [16].
  - While cranberry products are not standardized or regulated, and information regarding PAC content not always readily available, a general recommendation of 8 oz cranberry juice once or twice daily or 500-1000mg concentrated cranberry tablets total daily dose is appropriate [4].
  - For patients who select cranberry juice, provide education on finding unsweetened cranberry juice, not cranberry cocktail, for lower levels of glucose and higher levels PAC content.
  - **A word of caution:** due to high glucose and caloric intake, cranberry juice may not be appropriate for all patients [4].
- **Methenamine hippurate:**
  - Only available in Canada as a compounded product.
  - Recommended dose, 1g orally 2x daily [4].
  - **Do not** combine with antibiotic prophylaxis, particularly trimethoprim-sulfamethoxazole [4].
  - Cost-prohibitive treatment option for many patients.

Low-risk approaches without clear supporting evidence

The strategies below do not have clear supporting evidence but are unlikely to be harmful if patient prefers to try strategies in addition to the above.

- **Avoid spermicides or spermicide-coated condoms** [4] [11]:
  - Use of spermicides has been found to be associated with rLUTI, likely through disruption of the normal vaginal/urethral microbial ecosystem, though no clear evidence that avoiding these products will prevent rLUTI.
  - Patient trial of alternative products that do not contain spermicides would be appropriate.
- **Adjunctive probiotics** [4]**:**
  - Probiotics cannot be recommended to prevent rLUTI due to lack of efficacy data.
  - Other than cost, there is low risk of harm, and patients may choose to use.
  - *Lactobacillus* sp. appear to be important in urogenital health, but optimal dose and route of therapy are unclear.
- **D-mannose** [3] [4]**:**
  - This natural sugar is thought to prevent binding between bacteria and bladder cells, but there is no convincing evidence of efficacy.
  - In a recent clinical trial of 598 women, D-mannose did not prevent rLUTI [17].
  - Optimal dosing and product standardization are also problematic.
  - Thus, D-Mannose cannot be recommended at this time; this information can be provided to those who may be interested in its use.

Antibiotic Options

- **Antibiotic Prophylaxis**
  - **Only to be considered if patient has frequent and highly bothersome recurrence. Non-antibiotic options should always be considered first.**
  - **Do not** combine with methenamine.
  - Continue non-antibiotic preventative strategies.
  - Confirm acute UTI eradication through history, urinalysis, and culture, before initiating antibiotic prophylaxis.
  - With clear trigger (e.g. intercourse), trial single-dose at time of trigger: see Bugs & Drugs.

- **Therapeutic Options**
  - Consider patient-initiated therapy in reliable patients with clear return to care instructions.
  - If persistent bothersome recurrences despite single-dose trial at time of trigger (post-intercourse prophylaxis), consider continuous antibiotic prophylaxis.
  - For acute UTI episode while on Antibiotic Prophylaxis, perform urinalysis and urine culture and treat per Bugs & Drugs Uncomplicated UTI with different antibiotic than used for prophylaxis.
  - If no improvement, seek non-urgent Advice.

Follow-Up

- Regardless of chosen preventative strategies, re-evaluate after 6-12 months.
- If strategies are working well, continue use.
- If using antimicrobial prophylaxis, a trial off is reasonable after 6-12 months.
- If patient exhibits poor tolerance to chosen strategies or experiences multiple breakthrough episodes of cystitis, trial different approach or stop chosen strategies without replacement.

6. Advice Options

If patient presents with sepsis or a possible infected kidney stone, direct to hospital through RAAPID or the ER. Call RAAPID or 911.

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	Netcare eReferral		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, PCA 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. PCA 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@primarycarealberta.ca.

- **Urgent Referral –** for patients presenting with possible infected kidney stone, send patient to the Emergency Department and submit an Urgent Urology referral for an infected kidney stone following the Provincial Adult Urology Referral Pathway.
- For patients with unusual, atypical or difficult-to-treat organisms, or failure to respond to treatment, refer to Infectious Disease using the Alberta Referral Directory.
- For patients with abnormal imaging, or suspicion of complicating factors of rLUTI, refer to Urology following the Provincial Adult Urology Referral Pathway.
- Alberta Referral Directory is a helpful resource for all referral information.

BACKGROUND

About this pathway

- This pathway was developed in collaboration with Infectious Disease, Urology, primary care physicians, patient and family advisors, and the 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 three years or earlier if there is a clinically significant change in knowledge or practice. The next scheduled review is **September 2029**. However, we welcome feedback at any time. Please send us your feedback.

PROVIDER RESOURCES

Resource	Link
Guideline: Canadian Urological Association (CUA)/American Urological Association (AUA)/Society of Urodynamics (SUFU)	Recurrent Uncomplicated Urinary Tract Infections in Women: AUA/CUA/SUFU Guideline (2025) - American Urological Association
Guideline of guidelines: management of recurrent urinary tract infections in women	Guideline of guidelines: management of recurrent urinary tract infections in women - PMC
State-of-the-Art Review: Recurrent Uncomplicated Urinary Tract Infections in Women	State-of-the-Art Review: Recurrent Uncomplicated Urinary Tract Infections in Women - PubMed
UpToDate	Recurrent simple cystitis in female adults
AHS Evidence-based criteria for urinary infection testing	Evidence based criteria for urinary infection testing Algorithm
Bugs & Drugs	Urinary Tract Treatment Options

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 Preventing Recurrent Urinary Tract Infection **Coming June 2026**
MyHealth Alberta > Health Information & Topics > Urinary Tract Infection	MyHealth.Alberta.ca
International Urogynecological Association -Your Pelvic Floor	Offers information for patients on vaginal estrogen therapies: Low-Dose Vaginal Estrogen Therapy
Urology Care Foundation	www.urologyhealth.org/urology-a-z/u/urinary-tract-infections-in-adults
Pelvic Floor Physiotherapy Resources	
Adult Community Rehabilitation	Find local pelvic floor resources: www.albertahealthservices.ca/rehab/Page15329.aspx
Pelvic Health Physiotherapy Webinars	myhealth.alberta.ca/Alberta/Pages/Pelvic-HealthPhysiotherapy-Webinars.aspx
Pelvic Floor Therapy – how to find a pelvic floor therapist	cpta.ab.ca. You can also call the AHS Rehabilitation Advice Line (1-888-379-0563 Monday to Friday 9 a.m. to 5 p.m.)

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