

Assessment and Diagnostic Guideline: Gastrointestinal and Genitourinary System

Registered Nurses with **RN First Call** Certified Practice (RN(C)) designation are authorized to manage, diagnose, and/or treat the following genitourinary conditions:

- Uncomplicated lower urinary tract infection (adult only)

Registered Nurses with **Remote Nursing** Certified Practice (RN(C)) designation are authorized to manage, diagnose, and/or treat the following genitourinary conditions:

- Uncomplicated lower urinary tract infection (adults and children **2 years of age and older**)

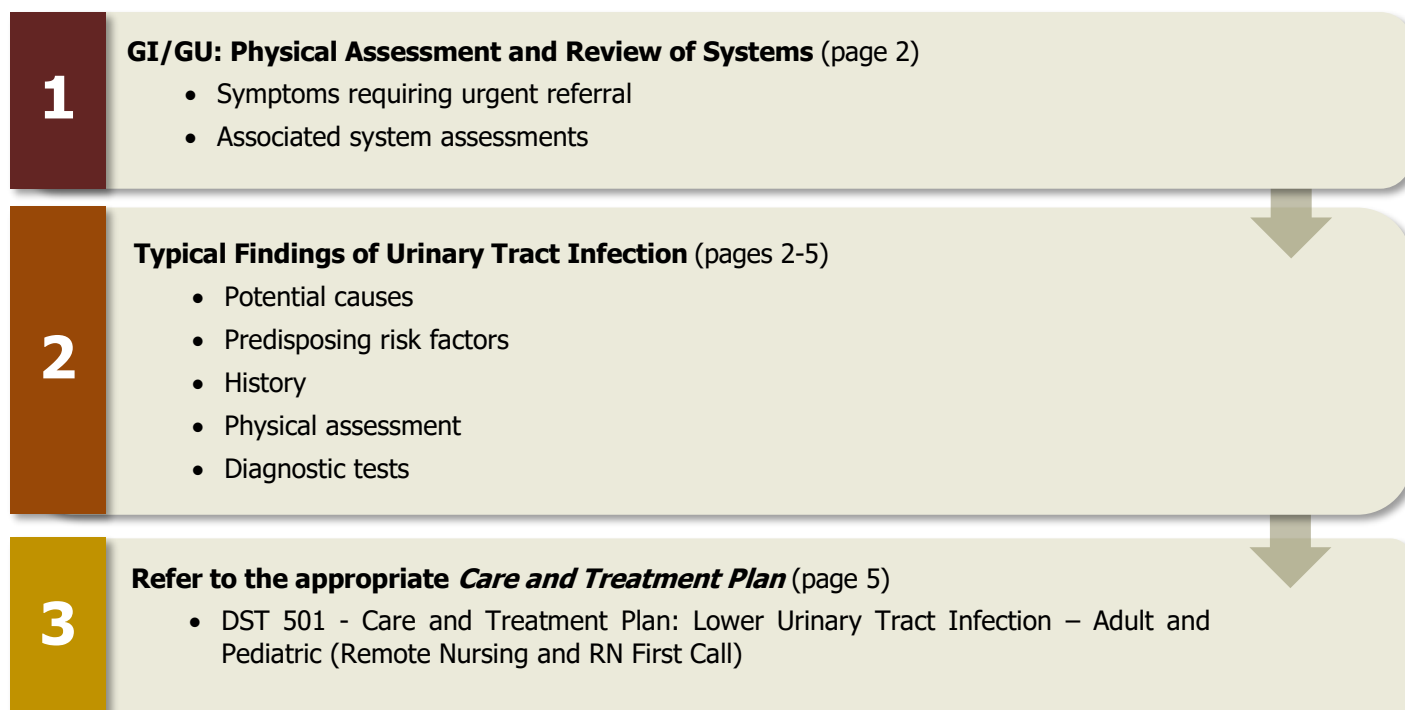
Note: In BC, the term *pediatrics* is often defined as an individual under the age of 19.¹ For the purposes of certified practice DSTs, pediatrics refers to individuals under the age of 19 unless otherwise specified.

This *Assessment and Diagnostic Guideline* provides guidance to RN(C)s when conducting assessments and diagnostic tests related to genitourinary conditions that can be managed and/or treated under the Certified Practice framework. RN(C)s maintain an RN scope of practice, which is expanded in particular circumstances wherein the RN(C) is able to diagnose and treat conditions listed above.

RN(C)s must ensure they complete and document their clinical reasoning through assessments according to BCCNM practice standards and their practice setting requirements. Upon arriving at a diagnosis, RN(C)s are required to follow the relevant *Care and Treatment Plans* to inform the management and treatment of the condition (per BCCNM limits and conditions for certified practice).

Note: A *consultation* refers to the RN(C) collaborating with members of the care team, such as a physician, nurse practitioner, or pharmacist, to support decision-making processes related to the diagnosis, treatment, and management of the diseases, disorders, and conditions that the RN(C) is authorized to diagnose, treat, and manage. A *referral* is when an RN(C) refers a patient to a medical care provider for further treatment, care, or management. This occurs when patients are presenting with symptoms outside of what is provided in this document, including symptoms that require urgent referral.

Visual Summary of Guideline



1) Gastrointestinal and Genitourinary: Physical Assessment and Review of Systems

*Refer to *DST 100 Assessment and Diagnostic Guideline: General* as needed.

Symptoms Requiring Urgent Referral²⁻⁴

The first step is to identify those GI/GU presentations that require urgent referral and those conditions that can be managed safely by an RN(C).

An **uncomplicated** lower urinary tract infection (UTI, also known as cystitis) is an infection of the lower sections of the urinary tract (including the urethra) and/or bladder and is associated with consistently positive treatment outcomes. Uncomplicated UTIs are more common in clients with vaginas due to shorter urethral length and other anatomical and physiological differences, including normal vaginal flora, pH, and environmental conditions.

Infection of (or progression to) the upper urinary tracts (including the ureters) or kidney(s) is indicative of pyelonephritis and considered **complicated**, with a higher risk of treatment failure or escalation of illness. Pyelonephritis presents as a more severe infection, potentially including fever or other systemic symptoms, flank pain or CVA tenderness, documented pyelonephritis or bacteremia, and sepsis; these cases do not fall within the definition of lower UTI and may not be managed by RN(C)s.

While UTIs are much less common in clients with penises (longer urethras and other anatomical and physiological differences), sex assigned at birth and gender are no longer considered categorical indicators of complexity. Careful review of each client presentation is required to assess for the complexity of illness and risk factors.

This *Assessment and Diagnostic Guideline* informs RN(C)s about the diseases, disorders, and conditions they are authorized to diagnose, treat and manage. Patients presenting with symptoms outside of what is provided in this document require referral to a physician or nurse practitioner.

Associated Systems

Sexually Transmitted Infection

- If symptoms of STI (sexually transmitted infection) are present, complete the appropriate system assessment per [BC Center for Disease Control STI DST 900](#). Autonomous STI diagnosis and treatment for RN(C)s require Certified Practice Designation in Reproductive Health: Sexually Transmitted Infection. Otherwise, a consultation, patient-specific order, or referral is required.

Gastrointestinal and Genitourinary Review of System Questions

- See the 'Review of systems: Gastrointestinal and Genitourinary' section of *DST 100 Assessment and Diagnostic Guideline: General* if not already done.

2) Typical Findings

Uncomplicated Urinary Tract Infection (UTI)

Potential Causes³⁻⁵

- *Escherichia coli* (70-95% of cases)
- Other *Enterobacteriales*: *Klebsiella* species and *Proteus mirabilis*
- *Staphylococcus saprophyticus*

Additional Pediatric Considerations^{6,7}

- *Escherichia coli* (80-90% of cases, with higher prevalence in female patients)⁸
- *Klebsiella* species
- *Proteus* species
- *Enterobacter* species

- *Enterococcus* species
- *Citrobacter* species
- *Staphylococcus saprophyticus*
- *Staphylococcus aureus* (rare)

Predisposing Risk Factors^{2,4,5,9}

Common for all genitalia:

- Urinary catheterization
- Urethral manipulation
- Sexual activity, including new or multiple partners
- Structural or functional urinary tract abnormalities, including:
 - Abnormal urination (e.g., incomplete emptying and neurogenic bladder)
 - Abnormal urinary tract anatomy or function (including ureterocele)
 - Cystocele (vaginal prolapse)
- Bowel or bladder incontinence (including clients wearing diapers)
- Dehydration
- First UTI before age 15
- Immune system suppression or inadequacy
- Poor personal hygiene
- Urinary tract calculi
- Post-kidney transplants (due to immunosuppressive drugs and vesicoureteral reflux)
- Diabetes mellitus

Specific to clients with vaginas:

- Shorter urethras
- History of cystitis
- Changes in the vagina microbiome, including the use of spermicide or spermicide-coated condoms
- Diaphragm use
- Pregnancy
- Vulvovaginal atrophy or dryness related to menopause
- Frequent pelvic examinations

Specific to clients with penises:

- Insertive anal intercourse

Additional Pediatric Considerations⁶

- Bowel and/or bladder dysfunction or changes (such as infrequent voiding, constipation, or other changes to output)
- Clients with vaginas (e.g. shorter urethra) have a 2-4 times higher incidence of UTI than those with penises
 - Higher prevalence for infant clients with an uncircumcised penis, compared with those with a circumcised penis, is related to hygiene practices and diaper use
- Prevalence of UTI is highest in clients with penises <1 year old, and those with vaginas <4 years old

Note: Adolescent pediatric clients, particularly after sexual maturation, will have more similar risk factors to those listed for adults than to infants and younger children.^{6,7}

History^{2,4,5}

- Urinary frequency
- Urinary urgency
- Urinary hesitancy
- Dysuria (pain or burning/discomfort during urination)
- New incontinence or nocturia
- Suprapubic pain or discomfort
- Bladder spasm
- Hematuria
- Previous or frequent history of UTIs

If any causes of illness other than an uncomplicated lower UTI are suspected after a thorough evaluation, RN(C)s must refer to or consult a physician or nurse practitioner.

Note: Elderly or cognitively impaired patients, those with spinal cord injuries, and clients with indwelling Foley catheters or atypical anatomy may present uniquely and require extra consideration. Symptoms such as foul-smelling urine or changes in mental status are not specifically diagnostic for UTI and require further investigation.

Note: A history of fever, chills, nausea and vomiting, rigors, flank pain, recurrent UTIs or other symptoms of systemic illness (including malaise or general feeling unwell) is more indicative of an upper or complicated UTI and requires a consultation or referral to a physician or nurse practitioner.

Additional Pediatric Considerations^{7,10}

- Constipation
- Changes in volume or characteristics of output (most easily noted in children still using diapers)
- New onset of bed wetting or daytime wetting (more notable in children out of diapers or “potty trained”)

Physical Assessment^{2,4,5}

- Suprapubic tenderness may be present on palpation (10-20% of cases)
- Costovertebral angle (CVA) tenderness
 - Identification of flank or CVA tenderness is more indicative of an upper or complicated UTI and requires a consultation or referral to a physician or nurse practitioner.

Note: Any identification or suspicion of organ prolapse (clients with vaginas), prostatitis (clients with prostates), or vaginal/urethral discharge requires further examinations beyond what is consistent with an uncomplicated lower UTI and therefore also requires consultation or referral to a physician or nurse practitioner.

Sexually Active Clients

If symptoms of STI (sexually transmitted infection) are present, complete the appropriate system assessment per [BC Center for Disease Control STI DST 900](#). Autonomous STI diagnosis and treatment for RN(C)s require Certified Practice Designation in Reproductive Health: Sexually Transmitted Infection. Otherwise, a consultation, patient-specific order, or referral is required.

Diagnostic Tests^{2,4,5}

- Urine pregnancy test (if unable to rule out based on patient demographics/history)
- Urinalysis (mid-stream urine)
 - Dipstick test (assessing for nitrites, leukocytes)
 - Consider laboratory urinalysis
- Urine microscopy
- Urine culture and sensitivity (C&S)

- Urine cultures with suspected UTI should always be collected for clients in higher risk groups, including clients with penises, pediatric clients, immunosuppressed clients, those with underlying urological abnormalities, pregnant patients, those with recurrent UTI diagnoses, and those with diabetes mellitus
- Depending on clinical context and employer policies, C&S may be routinely requested based on urinalysis results for identification of antibiotic-resistant organisms or for clients who do not improve with initial empiric treatment

Additional Pediatric Considerations^{7,11}

- Urine collected via the bag method should only be used for urine dip or urinalysis, as contamination of the sample can affect urine culture results
 - If a urine culture is needed from a pediatric patient, a midstream or catheterization sample is required

Note: If further investigations related to kidney function or ongoing illness are required (such as glomerular filtration rate (GFR), serum urea, or creatinine clearance), consult with or refer to a physician or nurse practitioner for a client-specific order.¹²

Note: RN(C)s are authorized to initiate a client-specific ordering for screening and diagnostic tests only when outlined in the decision support tools for their certified practice designation(s) and, according to employer policies, processes, and resources are in place, as outlined by BCCNM.^{12,13}

3) Refer to the appropriate Care and Treatment Plan

Based on the differential diagnosis established with assessment and diagnostic tests above, proceed to the appropriate care and treatment plan:

- **DST 501** - Care and Treatment Plan: Lower Urinary Tract Infection – Adult and Pediatric

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