

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 urinary tract infection (Adult only)

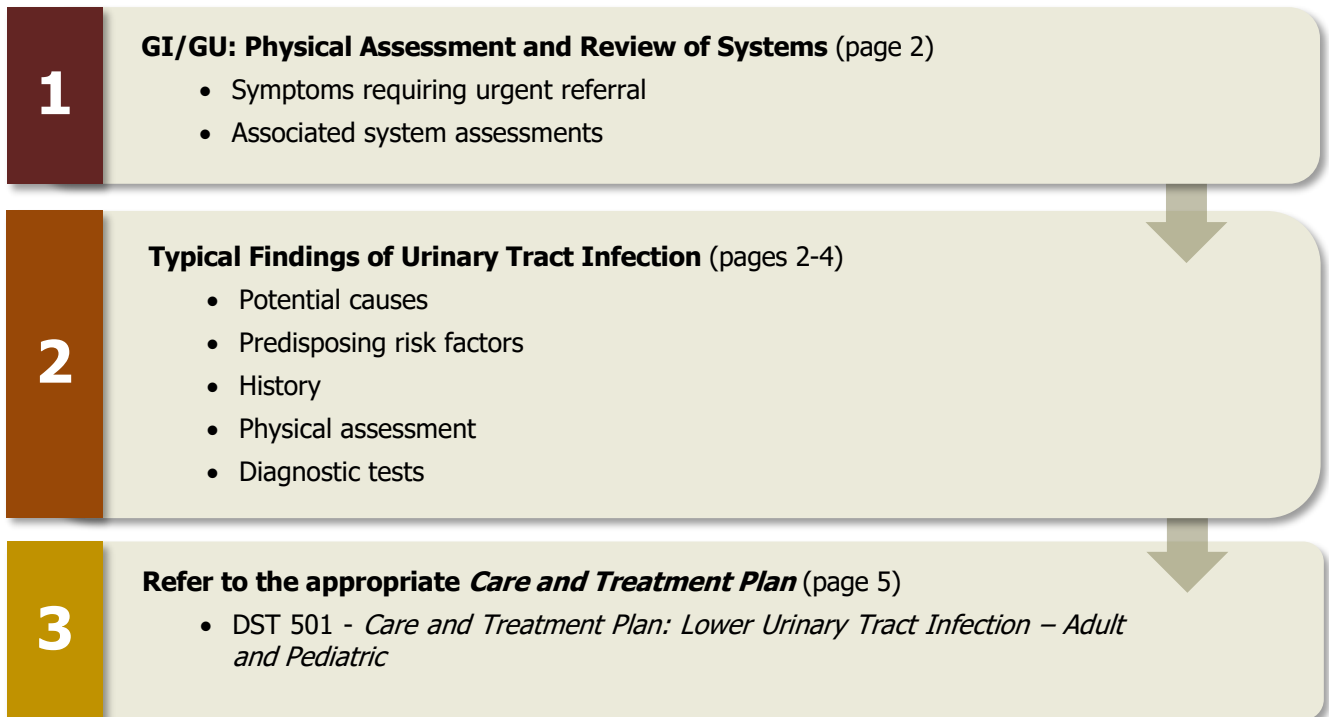
Registered Nurses with **Remote Nursing** Certified Practice (RN(C)) designation are authorized to manage, diagnose, and/or treat the following genitourinary conditions:

- Urinary tract infection (Adults & **2 years of age and older**)

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 that they complete and document their assessments according to regulatory practice standards and their practice setting requirements. Upon arriving at a diagnosis, RN(C)s should consult the relevant *Care and Treatment Plans* to inform the management and treatment of the condition.

Visual Summary of Guideline



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

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

Symptoms Requiring Urgent Referral

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).

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

Cardiovascular and Pulmonary Examination

- Cardiovascular and pulmonary exam should also be performed

Eyes, Ears, Nose, Throat

- Assess for pharyngitis and conjunctivitis (chlamydial infection, gonorrhea)
- Lymph nodes (auricular, tonsillar, submandibular, supraclavicular, infraclavicular)

Integumentary

- Assess for skin lesions, rashes, polyarthralgia of disseminated gonorrhea, and hydration status

Gastrointestinal and Genitourinary Review of System Questions

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

2) Typical Findings

Lower Urinary Tract Infection (UTI)

Potential Causes

- Escherichia coli is the most common organism, found in 80-90% of cases
- Staphylococcus saprophyticus
- Other enterobacteria

Additional Pediatric Considerations

- Klebsiella
- Group B Streptococcus
- Proteus
- *Staphylococcus epidermis*
- Pseudomonas
- *H. influenza*
- Enterococcus

Predisposing Risk Factors

- Female gender
- Sexual activity
- Previous UTIs
- Pregnancy
- Use of spermicides, diaphragm
- Infrequent voiding
- Dehydration
- Urinary instrumentation (catheterization)
- Renal calculi
- Immunocompromised (human immunodeficiency virus infection)
- Diabetes mellitus
- GU tract anomalies (congenital, urethral stricture, neurogenic bladder, tumour)
- Male-specific factors are anal intercourse, intercourse with a female with a UTI, lack of circumcision, and prostatic hypertrophy.

Additional Pediatric Considerations

- Gender: as or more common in boys as neonates
 - after the neonatal period, the incidence is higher in females
- Bowel and/or bladder dysfunction, such as infrequent voiding, constipation

History

- Urinary frequency
- Urinary urgency
- Dysuria
- Mild dehydration
- Afebrile
- Suprapubic discomfort
- Bladder spasm
- Foul-smelling urine
- Hematuria

Additional Pediatric Considerations

History for Neonates and Infants

- Non-specific, non-urinary symptoms
- May present with sepsis
- Fever
- Irritability
- Poor feeding
- Vomiting
- Diarrhea or constipation
- Jaundice



- Hypothermia
- Failure to thrive
- Decreased activity, lethargy

History for children less than 3 years old

- Abdominal pain
- Fever
- Vomiting
- New onset enuresis
- Strong smelling urine
- Urinary retention

History for children 3 years of age or older

- Enuresis
- Flank or back pain (upper UTI)
- Vomiting
- Fever

Physical Assessment

- Suprapubic tenderness may be mild to moderate
- If flank pain presents, refer or consult with a physician or nurse practitioner, as it suggests ascending infection
- If costovertebral angle (CVA) tenderness presents on percussion, refer or consult with a physician or nurse practitioner as suggests ascending infection

Additional Pediatric Considerations

- May or may not look ill
- Tender abdomen (may need to include reproductive assessment in adolescents)
- Stat of circumcision - male

Note: In the elderly, symptoms do not always follow the classic triad of urgency, frequency, and dysuria. Look for subtle cognitive changes and predisposing factors.

Sexually Active Female

- If appropriate, perform a pelvic exam and full STI screening if abnormal vaginal discharge or symptoms suggestive of vaginitis or STI are present
- If appropriate, offer STI screening (see diagnostic tests section below)

Note: a referral to a physician or nurse practitioner is required for a pelvic exam for any female who has not been sexually active or any female less than 14 years of age.

Sexually Active Male

- Assess for urethral symptoms, discharge, or genital lesions
- If present, offer full STI screening (see diagnostic tests section below)

Note: The RN(C) must be certified in STI management to carry out activities in the BC Centre for Disease Control (BCCDC) STI DSTs. If STI testing is warranted and the RN(C) is not STI certified, refer to a physician or nurse practitioner. If appropriate, offer STI screening (see diagnostic tests section below).



Diagnostic Tests

- Urinalysis
 - Dipstick test: blood, protein, nitrites, leukocytes
 - Consider microscopic urinalysis: white blood cells, red blood cells, bacteria
- Consider labs for renal function: creatinine, BUN, glomerular filtration rate
- Urine culture and sensitivity are generally not required for an uncomplicated UTI
- Collect a urine sample for culture and sensitivity prior to starting antibiotics if:
 - This is a complicated UTI
 - This is the second presentation of a UTI within a one-year time frame
 - Patient presents with treatment failure (persistent UTI symptoms up to 10 days post-treatment)
 - Patient presents with fever, chills, rigour, or flank pain (refer or consult a physician or nurse practitioner)
 - Dipstick urine test is negative, but symptoms are indicative of a UTI
- For complicated UTIs, ensure urine culture and sensitivity are tested 1-2 weeks after antibiotics are completed
- If symptoms or history indicate, offer full STI screening as per the appropriate STI DST, if STI-certified
- If full STI screening is declined, obtain a urine specimen for CT/GC NAAT
- If STI signs or symptoms are also present ensure follow-up as there may be more than one condition present (e.g., UTI and STI)
- Consider urine pregnancy test if indicated

Note: If urinary frequency, urgency or dysuria and dipstick is positive for leukocytes and/or nitrites, it may be treated as a lower UTI.

Note: If STI symptoms are also present, ensure follow-up, as there may be more than one condition present (e.g., UTI and STI).

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*

References

More recent editions of any of the items in the References List may have been published since this DST was published. If you have a newer version, please use it.

- American College of Obstetricians and Gynecologists. (2008). [ACOG Practice Bulletin No. 91: Treatment of urinary tract infections in non-pregnant women](#). *Obstetrics & Gynecology*, 111(3), 785-94. Retrieved from
- Amir, B., & Farrell, S. (2008). SOGC [Committee opinion on urodynamics testing](#). *Journal of Obstetrics and Gynaecology Canada*, 30(212), 717-27.
- Anti-Infective Review Panel. (2019). *Anti-infective guidelines for community-acquired infections*. Toronto, ON: MUMS Guideline Clearinghouse.
- [Antimicrobial Therapy](#). 50 Stanford Guide. 2020.
- AMN Healthcare Education Services. (2014). [Focused gastrointestinal assessment](#). AMN Healthcare.
- Ball, J. W., Dains, J. E., Flynn, J. A., Solomon, B. S., & Stewart, R. W. (Eds.). (2015). *Seidel's guide to physical examination* (8th ed.). St. Louis, MO: Elsevier.
- Ball, J. W., Dains, J. E., Flynn, J. A., Solomon, B. S., & Stewart, R. W. (2018). *Seidel's Guide to Physical Examination: An Interprofessional Approach*. Ninth edition. St. Louis, Missouri: Mosby.
- Barad, D. H. (2020). General [Gynecologic Evaluation](#). In *The Merck Manual: Professional Version, 6*. Kenilworth, NJ, USA: Merck Sharp & Dohme Corp.
- BC Cancer Agency. (2012). [What is the Fecal Immunochemical Test \(FIT\)?](#)
- Benton, T.J. [Urinary tract infections in men](#). 2018. BMJ. Best Practice.
- Blondel-Hill, E., & Fryters, S. (2012). *Bugs and drugs: An antimicrobial infectious diseases reference*. Edmonton, AB: Alberta Health Services.
- Bono, M.J. & Reygaert, W.C. (2020). [Urinary Tract Infection](#). StatPearls Publishing LLC.
- British Columbia Centre for Disease Control. (2013). [Antimicrobial resistance trend in the province of British Columbia](#). Vancouver, BC: Author.
- Canadian Pharmacists Association. (2014). *Therapeutic choices* (7th ed.). Ottawa, ON: Author.
- Canadian Pharmacists Association. *Compendium of Therapeutic Choices*. 2019 Edition. Ottawa, ON: Author
- Cash, J. C., & Glass, C. A. (Eds.). (2014). *Family practice guidelines* (3rd ed.). New York, NY: Springer.
- Cash, J. C., & Glass, C. A. (Eds.). (2017). *Family practice guidelines* (4th ed.). New York, NY: Springer
- Chen, Y. A., & Tran, C. (Eds.). (2011). *The Toronto notes 2011: Comprehensive medical reference and review for the Medical Council of Canada Qualifying Exam Part 1 and the United States Medical Licensing Exam Step 2* (27th ed.). Toronto, ON: Toronto Notes for Medical Students.
- Christiaens, T. C. M., De Meyere, M., Verschraegan, G. Peersman, W., Heytens, S., & De Maeseneer, J. M. (2002). Randomised controlled trial of nitrofurantoin versus placebo in the treatment of uncomplicated urinary tract infection in women. *British Journal of General Practice*, 52(482), 729-734.

Colgan, R., & Williams, M. (2011). [Diagnosis and treatment of acute uncomplicated cystitis](#). American Family Physician, 84(7), 771-776.

Dains, J. E., Baumann, L. C., & Schiebel, P. (Eds.). (2015). [Advanced health assessment and clinical diagnosis in primary care](#). St. Louis, MO: Elsevier.

Dains, J. E., Baumann, L. C., & Schiebel, P. (Eds.). (2019). Advanced health assessment and clinical diagnosis in primary care. St. Louis, MO: Elsevier.

DynaMed. (2013, December 17). Clinical prediction of urinary tract infection (UTI).

DynaMed. (2015, November 19). Uncomplicated urinary tract infection (UTI)(pyelonephritis and cystitis).

Esau, R. (Ed.). (2012). *British Columbia's Children's Hospital pediatric drug dosage guidelines* (6th ed.). Vancouver, BC: Children's & Women's Health Centre of B.C

Estes, M. E. Z. (2014). *Health assessment and physical examination* (5th ed.). Clifton Park, NY: Cengage Learning.

Fisher, D. J. (2015, June 18). [Pediatric urinary tract infection](#).

Grabe, M., Bartoletti, R., Bjerkklund Johansen, T.E., Cai, T., Cek, M., Koves, B.,...Wullt, B. (2015). [Guidelines on urological infections](#). European Association of Urology, 33–40.

Gradwohl, S., Bettcher, C., Chenoweth, C., Van Harrison, R., & Zoschink, L. (2011). [Urinary tract infection - Guidelines for clinical care](#). Guidelines for Clinical Care - Ambulatory, University of Michigan Health System.

Grigoryan, L., Trautner, B. W., & Gupta, K. (2014). Diagnosis and management of urinary tract infections in the outpatient setting: A review. Journal of the American Medical Association (JAMA), 312(16), 1677–1684. doi:10.1001/jama.2014.12842

Grude, N., Tveten, Y., Jenkins, A., & Kristiansen, B. (2005). Uncomplicated urinary tract infections: Bacterial findings and efficacy of empirical antibacterial treatment. Scandinavian Journal of Primary Health Care, 23, 115-119.

Guidelines and Protocols Advisory Committee. (2009). [Macroscopic and microscopic urinalysis and the investigation of urinary tract infections](#). Victoria, BC: Author.

Gupta, K., Hooton, T. M., Naber, K. G., Wullt, B., Colgan, R., Miller, L. G....Soper D. E. (2011). International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: A 2010 update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. Clinical Infectious Diseases, 52(5), e103-e120.

Health Canada, First Nations and Inuit Health Branch. (2012, November). [Clinical practice guidelines for nurses in primary care: Adult care](#).

Hooton, T. M. [Acute simple cystitis in men](#). UpToDate, Jul 20, 2020.

Hooton, T. M. & Gupta, K. [Acute complicated urinary tract infection \(including pyelonephritis\) in adults](#). UpToDate, Aug 21, 2019.

Hooton, T. M. & Gupta, K. [Acute simple cystitis in women](#). UpToDate, Aug 21, 2019.

Jackson, M. A. (2007). Evidence-based practice for evaluation and management of female urinary tract infection. Urologic Nursing, 27(2), 133-136.

- Jarvis, C. (2014). *Physical examination and health assessment* (2nd Canadian ed.). Toronto, ON: Elsevier Canada.
- Jarvis, C. (2020). *Physical examination and health assessment* (8th ed.). Toronto, ON: Elsevier Canada.
- Jensen, B., & Regier, L. D. (Eds.). (2014). *RxFiles: Drug comparison charts* (10th ed.). Saskatoon, SK: RxFiles.
- Lee, M., Bozzo, P., Einarson, A., & Koren, G. (2008, June). Urinary tract infections in pregnancy.
- Lewington, A. [Urinary tract infections in women](#). 2020. BMJ. Best Practice.
- Lexicomp. (Lexi-Drugs). [Wolters Kluwer Clin Drug Inf](#) Inc. 2020.
- Matuszkiewicz-Rowińska, J., Małyszko, J., & Wieliczko, M. (2015). Urinary tract infections in pregnancy: old and new unresolved diagnostic and therapeutic problems. *Archives of medical science : AMS*, 11(1), 67–77.
- Mehnert-Kay, S.A. (2005). [Diagnosis and management of uncomplicated urinary tract infections](#). *American Family Physician*, 72(3), 451-456.
- Milo, G., Katchman, E., Paul, M., Christiaens, T., Baerheim, A., & Leibovici, L. (2009). Duration of antibacterial treatment for uncomplicated urinary tract infection in women (review). *Cochrane Database of Systematic Reviews*, (1).
- Mody, L., & Juthani-Metha, M. (2014). Urinary tract infection in older women: A clinical review. *Journal of the American Medical Association*, 311(8), 844-854. Doi: 10.1001/jama.2014.303
- Moleski, S. .M (2020). [Evaluation of the Gastrointestinal Patient](#). In [The Merck Manual: Professional Version, 3](#). Kenilworth, NJ, USA: Merck Sharp & Dohme Corp.
- Naber, K. G., Bergman, B., Bishop, M. C., Bjerkland-Johansen, T. E., Botto, H., Lobel, B.,...Selvaggi, F. P. (2001). [EAU guidelines for the management of urinary and male genital tract infections](#). *European Urology*, 40, 576-588.
- Nicolle, L., Anderson, P. A. M., Conly, J., Mainprize, T. C., Meuser, J., Nickel, J. C.,...Zhanel, G. G. (2006). [Uncomplicated urinary tract infection in women: Current practice and the effect of antibiotic resistance on empiric treatment](#). *Canadian Family Physician*, 52, 612-618.
- Porter, R. S., & Kaplan, J. L. (Eds.). (2011). *The Merck Manual of Diagnosis and Therapy* (19th ed.). Whitehouse Station, NJ: Merck & Co., Inc.
- Rane, A., & Dasgupta, R. (Eds.). (2001). *Urinary tract infection: Clinical Perspectives on Urinary Tract Infection*. London, UK: Springer
- Reese, D. G., & McCutcheon, J. A. (2019). Section 2.7 Focused Assessments in Chapter 2: Patient Assessment, Version 1.4. In *Clinical Procedures for Safer Patient Care- Focused Assessments*.
- Sabih, A. & Leslie, S.W. (2019). [Complicated Urinary Tract Infections](#). StatPearls Publishing LLC.
- Sawyer, S. S. (2012). *Pediatric physical examination and health assessment*. Sudbury, MA: Jones & Bartlett Learning.
- Shah, C., & Goundrey-Smith, S. (2013). Managing the symptoms of urinary tract infection in women. *Journal of Community Nursing*, 27(4), 88-92.
- Sheerin, N. (2011). [Urinary tract infection](#). *Medicine*, 39(7), 384-389.
- Stephen, T. C., Skillen, D. L., Day, R. A., & Bickley L. S. (2010). *Canadian Bates' guide to health assessment for nurses*. Philadelphia, PA: Lippincott, Williams & Wilkins.

Tanagho, E. A., & McAninch, J. W. (Eds.). (1995). *Smith's General Urology* (14th ed.). Norwalk, CT: Appleton & Lange.

University of Michigan Health System. (2014, September). [Urinary tract infection: Guidelines for clinical care: Ambulatory](#) (Rev.). Ann Arbor, MI: Author.

White, B. (2011). [Diagnosis and treatment of urinary tract infections in children](#). *American Family Physician*, 83(4), 409-415.