

This decision support tool is effective as of February 2014. For more information or to provide feedback on this or any other decision support tool, email certifiedpractice@crnbc.ca

LOWER URINARY TRACT INFECTION (FEMALE)

DEFINITION

Bacterial infection of the bladder, also known as cystitis is caused by bacteria multiplying in urine. Lower urinary tract infection (UTI) occurs in the urethra and lower parts of the bladder and is a common infection in young sexually active women.

RN(C)s¹ are limited to treatment of uncomplicated lower UTI caused by bacteria in sexually active women who are 14 years of age and greater.

Uncomplicated UTI is defined as symptoms of bladder infection in non-pregnant sexually active women who have symptoms of less than 7 days duration that are restricted to the lower urinary tract and with no history of renal or urinary tract anomaly or disease, chronic disease, or recent bladder instrumentation.

POTENTIAL CAUSES

- *Escherichia coli* (*E. coli*) is the most common organism in 80-90% of cases
- *Staphylococcus saprophyticus*
- other enterobacteria

PREDISPOSING RISK FACTORS

- diabetes mellitus
- diaphragm or spermicide use
- female anatomy

¹ Note: RN(C) is an [authorized title](#) recommended by CRNBC that refers to CRNBC-certified RNs, and is used throughout this Decision Support Tool (DST).

CRNBC monitors and revises the CRNBC certified practice decision support tools (DSTs) every two years and as necessary based on best practices. The information provided in the DSTs is considered current as of the date of publication. CRNBC-certified nurses (RN(C)s) are responsible for ensuring they refer to the most current DSTs.

The DSTs are not intended to replace the RN(C)'s professional responsibility to exercise independent clinical judgment and use evidence to support competent, ethical care. The RN(C) must consult with or refer to a physician or nurse practitioner as appropriate, or whenever a course of action deviates from the DST.

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- foreign body
- genito-urinary tract anomalies – congenital, urethral stricture, neurogenic bladder, tumor
- immuno-compromised (e.g., HIV infection)
- pregnancy
- previous UTI
- renal calculi
- sexual activity
- trauma
- urinary instrumentation (e.g., catheterization) – refer to physician or nurse practitioner (NP)

TYPICAL FINDINGS

Cardinal Symptoms

- frequency
- dysuria
- urgency

Other

- mild dehydration
- suprapubic discomfort
- bladder spasm
- foul smelling urine
- hematuria
- if symptoms of vaginal discharge or irritation are present a UTI is unlikely and the client requires a full STI assessment

Physical Assessment

- hydration status
- suprapubic tenderness – may be mild to moderate
- flank pain – if present refer or consult – suggests upper UTI
- fever, rigor, chills – if present refer or consult – suggests upper UTI

DIAGNOSTIC TESTS

- urinalysis:
 - dipstick test: blood, protein, nitrites, leukocytes
 - consider microscopic urinalysis: WBC, RBC, bacteria
- urine culture & sensitivity (C&S) is generally not required with uncomplicated lower UTI – consider a urine C&S if:
 - this is the second presentation of a UTI within a one-year time-frame
 - the client presents with fever, chills, rigor, or flank pain (and refer or consult)
 - dipstick test is negative and symptoms are indicative of a likely UTI
- offer full STI screening
- consider urine pregnancy test if indicated

CLINICAL EVALUATION

May treat as lower urinary tract infection if:

- frequency, urgency or dysuria are present

AND

- urine dipstick test is positive for leukocytes and/or nitrites

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- relieve symptoms
- prevent complications and ascending infection
- eradicate infection

TREATMENT OF CHOICE

Treatment	Notes
<p>First Choice</p> <p>Nitrofurantoin (monohydrate/macrocrystal formulation – Macrobid®) 100 mg po bid for 5 days</p>	<ol style="list-style-type: none"> 1. Medications for the treatment of lower UTI are not included in the provincial STI drug program and as such BCCDC does not provide medication information sheets for client information/medication reconciliation for second choice treatment (not utilized in BCCDC STI clinical settings for RN(C) dispensing). 2. Treatment outlined is recommended for clients 14 years of age or greater. For clients aged 12 or 13 years, consult/refer to physician or NP 3. Macrobid® demonstrates less resistance to <i>E. coli</i> than Septra® and is recommended as first choice for treatment of Lower UTI.
<p>Second Choice</p> <p>Trimethoprim 160 mg/sulphamethoxazole 800 mg, (Bactrim DS® or Septra DS®) tab po bid for 3 days</p>	<ol style="list-style-type: none"> 4. DO NOT USE Macrobid® if there is a history of allergy to nitrofurantoin or dantrolene (Dantrum®). 5. DO NOT USE Bactrim® or Septra® if there is a history of allergy to sulpha drugs 6. Consult physician or NP if client is unable to use first or second choice treatment recommendations. 7. If a serious allergic reaction develops such as difficulty breathing and/or severe itchiness, have the client inform clinic staff immediately. If symptoms develop after leaving the clinic, advise the client to seek immediate emergency care. 8. See BCCDC Client and Medication Information Sheets for Macrobid® further medication reconciliation and client information. Available at: http://smartsexresource.com/health-providers/resources/categories/Medication%20handouts

PREGNANT OR BREASTFEEDING WOMEN

Refer all pregnant or breastfeeding women to a physician or nurse practitioner for treatment.

MONITORING AND FOLLOW-UP

If symptoms do not begin to resolve in 48-72 hours or if symptoms progress despite treatment, client should return to the clinic for reassessment.

PARTNER COUNSELLING AND REFERRAL

Partner follow-up is not required.

POTENTIAL COMPLICATIONS

- ascending infection - pyelonephritis
- chronic UTI

CLIENT EDUCATION

Counsel client regarding:

- how to take medication, proper dosing, expected side effects, and follow-up
- returning to the clinic if fever develops or symptoms do not improve in 48-72 hours
- potential causes of lower UTI : having a new sexual partner and/or recent intercourse, and the use of spermicides
- behavioral measures that are not scientifically proven but may help to reduce uropathogens or irritants from entering the urethra: bubble baths, voiding before and after intercourse, condom use during intercourse, appropriate cleaning of sex toys between partners and/or avoid sharing sex toys, increasing fluid intake to 8-10 glasses per day and avoiding douching

CONSULTATION AND/OR REFERRAL

Consult or refer to a physician or nurse practitioner all clients:

- who are pregnant or breastfeeding
- clients under the age of 14 years
- who have symptoms suggestive of an upper urinary tract infection:
- flank pain, severe back or abdominal pain, chills, fever $>38^{\circ}\text{C}$, rigor, nausea or vomiting
- with recurrent lower UTI – second episode of lower UTI within one month or more than 3 episodes in one year
- recent urinary tract instrumentation
- with a history of urologic or renal surgery or kidney stones
- with chronic health concerns – diabetes, neurogenic bladder, renal disease, long-term catheterization, spinal cord injury, immunocompromised
- who have had symptoms of lower UTI for 7 days or longer

DOCUMENTATION

As per agency policy

REFERENCES

For help obtaining any of the items on this list, please contact CRNBC Helen Randal Library at circdesk@crnbc.ca

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

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