College of Registered Nurses of Saskatchewan

Sexually Transmitted Infections (STIs): Adult & Pediatric

Genitourinary

Clinical Decision Tools for RNs with Additional Authorized Practice [RN(AAP)s]

Effective Date: June 9, 2022

Background

Sexually transmitted infections (STIs) are typically acquired through sexual contact by exposure to the causative organisms that include bacteria, viruses, and/or parasites (Government of Saskatchewan, 2018). In the majority of cases these organisms are passed from person to person through oral, vaginal, and/or anal sexual contact (Public Health Agency of Canada, 2019). Sexually transmitted infections are often asymptomatic. Vaginal and/or urethral discharge, a burning sensation in the penile urethra, genital ulcers and abdominal pain are most common when symptoms are present (Public Health Agency of Canada, 2019). Approximately 50% of new STIs are diagnosed in the adolescent and young adult population and current guidelines advise testing of all sexually active young adults between the ages of 18 and 25 (Ghanem, 2019; Public Health Agency of Canada, 2019). This Clinical Decision Tool deals with the more prevalent STIs diagnosed in Saskatchewan including non-gonococcal urethritis (i.e., Chlamydia), gonococcal urethritis (i.e., Gonorrhea [GC]), and urethritis caused by a parasite (e.g., trichomoniasis). For more complete and specific information on specific syndromes and infections, refer to the most current *Canadian Guidelines* on Sexually Transmitted Infections (Public Health Agency of Canada, 2019).

It is the professional responsibility of the RN(AAP) to be aware of and adhere to all federal and provincial legislation relating to STIs, and follow employer policy, for example, relating to the treatment of minors.

Immediate Consultation Requirements

The RN(AAP) should seek immediate consultation from a physician/NP when any of the following circumstances exist:

- clients presenting with signs & symptoms of pelvic inflammatory disease (PID) (e.g., severe abdominal and pelvic pain, abnormal vaginal bleeding and perineal pain);
- trichomonas in clients with alcohol use disorder related to potential disulfiram reaction with use of metronidazole and trichomonas in pediatric clients;
- pediatric clients under 12 years of age;
- clients with gross hematuria, severe testicular pain and swelling; and/or
- severe inflammatory disorders such as Stevens-Johnson syndrome or Reiter's syndrome with joint pain, arthritis, conjunctivitis, rash at other body sites, enlargement of lymph nodes, fever causing rigors and night sweats (Interprofessional Advisory Group [IPAG], personal communication, October 20, 2019).

Classification of STIs

Nongonococcal	Gonococcal	Trichomonas
• Non-gonococcal urethritis STIs include chlamydia, *Ureaplasma urealyticum,* and *Mycoplasma genitalium.* • Chlamydia is caused by *Chlamydia trachomatis* (*C. trachomatis)* and can be transmitted through vaginal, anal or oral sex, and during childbirth. • It is known as the 'silent disease' because the majority of people with genital chlamydial infectionhave no symptoms and are unaware of their condition. This provides an ongoing risk of transmission of the infection.	• Gonococcal urethritis is an infection caused by *Neisseriagonorrhoeae* (*N. gonorrhoeae*) a gram-negative bacteria. • Gonorrhea (GC) is a major causeof morbidity among • sexually active individuals. • It is a major cause of penile urethritis and cervicitis and if left untreated can result in pelvicinflammatory disease (PID), ectopic pregnancy, chronic pelvic pain, and infertility. (Ghanem, 2019). • Infections of the pharynx and rectum are prevalent with thosewho have oral and anal intercourse.	• A sexually transmitted vaginal and urethral infection caused by the urogenital protozoan *Trichomonas vaginalis* (*T.vaginalis*). • Trichomonas is associated with an increased risk of human immunodeficiency virus (HIV) acquisition and transmission. • *T. vaginalis* is found inthe prostate, penile urethra, or seminal vesicles, and is usuallyasymptomatic. • Symptoms are similar to urethritis, consisting of clear mucopurulent urethral discharge and ordysuria. • Pruritus, burning, or hot sensation in the penis after sexual intercourse. • *T. vaginalis* has been associated with prostatitis, balanoposthitis, epididymitis, infertility and prostate cancer.

 ©2022 College of Registered Nurses of Saskatchewan

(Ghanem, 2019; Marrazzo, 2019; Sobel, 2019)

Predisposing and Risk Factors

Predisposing and risk factors for sexually transmitted infections in adult patients include:

- history of previous STIs including HIV;
- new and/or multiple sexual partners present or past;
- inconsistent condom/barrier protection (e.g., mouth dam) use or engagement in unsafe sexual practices (e.g., unprotected oral, genital or anal sex; sex with blood exchange, including sadomasochism; sharing sex toys);
- sexually active individuals with substance use disorder;
- sexual contact with a person with a confirmed or suspected STI infection;
- sex workers and their sexual partners;
- sexually active individuals ≤ 25 years of age;
- street involvement, homelessness and incarcerated people, if associated with having sex;
- anonymous sexual partnering (e.g., bathhouse, rave party); and
- victims of sexual assault/abuse (Ghanem, 2019; Marrazzo, 2019; Public Health Agency of Canada, 2019; Sobel, 2019).

Health History and Physical Exam

Subjective Findings

The circumstances of the presenting complaint should be determined. A comprehensive sexual history is recommended and should include:

- site(s) and date(s) of sexual contact (vaginal, oral, anal);
- history of injection drug use;
- use of condoms/barriers;
- birth control method;
- date of last menstrual period;
- personal history of substance use, including injection drug use and needle-sharing;
- previous history of STIs;
- present symptoms of STIs in client and partner(s);
- enlargement of lymph nodes;
- fever or chills; and/or
- proctitis (Ghanem, 2019; Marrazzo, 2019; Public Health Agency of Canada; 2019; Sobel, 2019).

Clients with gonorrhea are often co-infected with Chlamydia and other STIs such as syphilis or HIV. Transmission and acquisition of HIV is more likely with all STIs, but more so with gonococcal infections (Public Health Agency of Canada, 2019).

 ©2022 College of Registered Nurses of Saskatchewan

Objective Findings

The following signs and symptoms may be present with sexually transmitted infections:

Nongonococcal Urethritis
• often asymptomatic; • vaginal discharge; • vaginal irritation, itching, or burning; • vaginal bleeding after intercourse; • penile urethral itch and/or discharge; • testicular pain and/or swelling or symptoms of epididymitis; • dyspareunia; • lower abdominal pain; • rectal pain and discharge with proctitis with anal intercourse; • genital rashes or lesions; • mid-cycle, or excessive menstrual bleeding; • dysuria, frequency, urgency, nocturia, hematuria; • joint pain, arthritis, conjunctivitis, rash at other body sites, enlargement of lymph nodes, fever; and/or • meningitis.

(Marrazzo, 2019; Public Health Agency of Canada; 2019; Sobel, 2019)

Gonorrhea and Chlamydia
• often asymptomatic, • mucopurulent cervical or urethral discharge, • cervicitis, • cervical friability, and/or • adnexal tenderness. • urethral discharge, and/or • scrotal swelling and tenderness of epididymis.

(Ghanem, 2019; Marrazzo, 2019; Public Health Agency of Canada; 2019)

Trichomonas
• external genitalia reddened; • copious frothy, greenish-yellow-to-grey, foul-smelling (rancid odour) purulent exudate; • cervix excoriated and bleeds easily due to cervical subepithelial hemorrhages or petechiae (often referred to as strawberry cervix); and/or • vaginal tenderness. • balanitis, • balanoposthitis, • penile urethral discharge, • penile urethral irritation, and/or • symptoms of prostatitis.

(Public Health Agency of Canada; 2019)

 ©2022 College of Registered Nurses of Saskatchewan

Differential Diagnosis

The following should be considered as part of the differential diagnosis:

- herpes simplex virus,
- bacterial vaginosis (BV),
- candidal vulvovaginitis,
- vaginitis due to frequent douching and/or exposure to other irritants,
- pelvic inflammatory disease (PID),
- urinary tract infection (UTI),
- malignancy,
- pyelonephritis,
- reactive arthritis, and/or
- chemical irritation (Government of Saskatchewan 2018; Public Health Agency of Canada; 2019).

Making the Diagnosis

Presumptive diagnosis can be made based on history and physical findings. Definite diagnosis is confirmed with laboratory testing (Public Agency of Canada, 2018).

Investigations and Diagnostic Tests

The urine nucleic acid amplification test (NAAT) is the test of choice to diagnose Chlamydia and GC. Chlamydia and GC can be tested simultaneously with the same urine sample. Post exposure testing with a NAAT can be done as soon as desired since it is not necessary to wait 48 hours after exposure to collect samples as in the case of cultures. Laboratory testing for trichomoniasis is performed through vaginal or penile swab collection.

Offer testing for syphilis, hepatitis B and C, Herpes simplex 1 and 2 and HIV for all clients suspected of having any STI. A pregnancy test must be done for all people of reproductive age.

Management and Interventions

Goals of Treatment

The primary goals of immediate treatment are to relieve symptoms, identify specific STI(s), treat both the client and contacts, prevent recurrence, and prevent complications (Public Health Agency of Canada, 2019).

Non-Pharmacological Interventions

The RN(AAP) should recommend consistent use of barrier methods of contraception (e.g., condom) (Public Health Agency of Canada, 2019).

 ©2022 College of Registered Nurses of Saskatchewan

Pharmacological Interventions

The pharmacological interventions recommended for the treatment of gonococcal and nongonococcal urethritis, and trichomoniasis are in accordance with The Saskatchewan Communicable Disease Control Manual (Government of Saskatchewan, 2018), Canadian Guidelines on Sexually Transmitted Infections (Public Health Agency of Canada, 2019), Anti-infective Guidelines for Community-acquired Infections (Anti-infective Review Panel, 2019) and RxFiles: Drug comparison charts. (RxFiles Academic Detailing Program, 2021).

All confirmed cases and known contacts must be treated. Directly observed therapy with single-dose regimens, if able, is strongly recommended.

Treatment of Nongonococcal Urethritis

This includes *C. trachomatis*, *U. urealyticum*, and *M. genitalium.* Doxycycline and moxifloxacin are contraindicated in pregnancy.

	Drug	Dose	Route	Frequency	Duration
Pediatric					
	Azithromycin	10-15 mg/kg (maximum 1 g dose)	p.o.	once	n/a
Adult					
	Azithromycin	1000 mg	p.o.	once	n/a
OR	Azithromycin	250 mg tablets (500 mg on day 1 and then 250 mg daily)	p.o.	once daily	5 days
OR	Doxycycline	100 mg	p.o.	b.i.d.	7 days
Adult (allergic to Azithromycin and Doxycycline)					
	Erythromycin	500 mg	p.o.	q.i.d.	7 days
OR	Erythromycin	250 mg	p.o.	q.i.d.	14 days
OR	Moxifloxacin	400 mg	p.o.	once daily	7-14 days

Treatment of GC

Due to the high incidence of co-infection with Chlamydia, it is recommended that clients diagnosed with *N. Gonorrhoeae* also be treated for *C. Trachomatis*. Doxycycline is contraindicated in pregnancy.

 ©2022 College of Registered Nurses of Saskatchewan

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 12 years of age)					
	Cefixime	8 mg/kg single dose (maximum 400 mg)	p.o.	once	n/a
OR	Ceftriaxone	25-50 mg/kg singledose (maximum 250 mg)	IM	once	n/a
PLUS	Azithromycin	10-15 mg/kg (maximum 1 g dose)	p.o.	once	n/a
OR	Doxycycline	100 mg	p.o.	b.i.d.	7 days
Adult					
	Cefixime	800 mg	p.o.	once	n/a
OR	Ceftriaxone	250 mg	IM	once	n/a
PLUS	Azithromycin	1000 mg	p.o.	once	n/a
OR	Doxycycline	100 mg	p.o.	b.i.d.	7 days
OR	Ceftriaxone as monotherapy (patient weight < 150 kg)	500 mg	IM	once	n/a
OR	Ceftriaxone as monotherapy (patient weight >150 kg)	1 gram	IM	once	n/a

 ©2022 College of Registered Nurses of Saskatchewan

Treatment of Trichomoniasis

Refer pediatric patients to physician/NP.

	Drug	Dose	Route	Frequency	Duration
Adult					
	Metronidazole	2 g	p.o.	once	n/a
OR	Metronidazole	500 mg	p.o.	b.i.d.	7 days

Client and Caregiver Education

The RN(AAP) provides client and caregiver education as follows:

- Counsel client about appropriate use of medications (dose, frequency, importance of compliance, etc.).
- Counsel that both the index case and partner(s) should avoid unprotected sexual contact for at least seven days after completion of therapy.
- Recommend barrier protection for all sexual activity as it may reduce the risk of contracting an STI.
- Review risk factors related to STI transmission and ways to mitigate these.
- Recommend human papilloma virus (HPV) and hepatitis B vaccinations.
- Advise that currently in Saskatchewan, STIs must be reported to the Medical Officer of Health and that all sexual contacts during the 60 days preceding the onset of symptoms should be tested and empirically treated regardless of clinical findings (Government of Saskatchewan, 2018; Public Health Agency of Canada, 2019).

Monitoring and Follow-Up

For clients diagnosed with STIs, the RN(AAP) should:

- Complete and send appropriate STI reportable forms and contact tracing forms to the appropriate authority as per employer policy (Government of Saskatchewan, 2018; Public Health Agency of Canada, 2019).
- For clients diagnosed with nongonococcal urethritis including Chlamydia, the RN(AAP) should:
- Follow-up in seven days when the course of antibiotics is completed to ensure symptom resolution, adherence to the medication, and to determine if there has been re-exposure, and/or if there are new sexual partners.
- Treat current sexual partner(s) and those within the past 60 days even if asymptomatic.
- Advise that test of cure is not routinely indicated if a recommended treatment has been completed, signs and symptoms resolve, and there has been no re-exposure to an untreated partner.
- Test of cure is recommended when:

 ©2022 College of Registered Nurses of Saskatchewan

- treatment completed but signs and symptoms persist,
- compliance to therapy is suboptimal,
- client is pre-pubertal,
- client is pregnant,
- previous treatment failure, or
- client is diagnosed with PID or disseminated gonococcal infection (Government of Saskatchewan, 2018; Public Health Agency of Canada, 2019).

If using a urine test (NAAT) for test of cure, wait three to four weeks after completion of treatment. However, if the client's symptoms improved but then worsened again, they may have been reinfected and retesting for both Chlamydia and GC is recommended (Government of Saskatchewan, 2018; Public Health Agency of Canada, 2019).

For clients diagnosed with **GC**, the RN(AAP) should:

- Follow-up in seven days when the course of antibiotics is completed to ensure symptom resolution, adherence to the medication, and to determine if there has been re-exposure, and/or if there are new sexual partners.
- Treat current sexual partner(s) and those with exposure within the past 60 days even if asymptomatic.
- Perform test of cure three to four weeks after the completion of therapy.
- Tests should not be done sooner to avoid false-positive results due to the presence of non-viable organisms (Anti-Infective Review Panel, 2019; Government of Saskatchewan, 2018; Public Health Agency of Canada, 2019).

For clients diagnosed with **trichomoniasis** the RN(AAP) should:

- Instruct client to abstain from intercourse until client and partner(s) have finished treatment and are asymptomatic.
- Follow-up in seven to 10 days after completion of therapy and assess for any ongoing signs or symptoms.
- Test for cure is performed if symptoms persist (Government of Saskatchewan, 2018; Public Health Agency of Canada, 2019).

Complications

The complications which may be associated with STIs include:

- pelvic pain,
- pregnancy complications (e.g., ectopic),
- conjunctivitis,
- arthritis,
- pelvic inflammatory disease,
- infertility,
- heart disease, and

 ©2022 College of Registered Nurses of Saskatchewan

- certain cancers, such as HPV-associated cervical and rectal cancers (Government of Saskatchewan, 2018; Public Health Agency of Canada, 2019).

Referral

Refer to a physician/NP if client presentation is consistent with those identified in the *Immediate Consultation Requirements* section; if there is a failure to respond to the prescribed treatment; and clients diagnosed with HIV, hepatitis B, hepatitis C, or syphilis (IPAG, personal communication, October 20, 2019).

 ©2022 College of Registered Nurses of Saskatchewan

References

Anti-Infective Review Panel. (2019). *Anti-infective guidelines for community-acquired infections.* MUMS Guideline Clearinghouse.

Ghanem, K.G. (2019). *Clinical manifestations and diagnosis of Neisseria gonorrhoeae infection in adults and adolescents.* https://www.uptodate.com/contents/clinical-manifestations-and-diagnosis-of-nei sseria-gonorrhoeae-infection-in-adults-and-adolescents

Government of Saskatchewan. (2018). *Section 5: Sexually transmitted infections.* http://www.ehealthsask.ca/services/manuals/Documents/cdc-section-5.pdf

Marrazzo, J. (2019). *Clinical manifestations and diagnosis of Chlamydia trachomatis infection.* https://www.uptodate.com/contents/clinical-manifestations-and-diagnosis-of-chl amydia-trachomatis-infections?search=clinical%20manifestations%20and%20dia gnosis%20of%20chlamydia&source=search_result&selectedTitle=1~150&usage_t ype=default&display_rank=1

Public Health Agency of Canada. (2019). *Canadian guidelines on sexually transmitted infections.* http://www.phac-aspc.gc.ca/std-mts/sti-its/cgsti-ldcits/index-eng.php

RxFiles Academic Detailing Program. (2021). *RxFiles: Drug comparison charts.* (13th ed.). Saskatoon Health Region.

Sobel, J. D. (2019). *Trichomoniasis.* https://www.uptodate.com/contents/trichomoniasis?search=trichomonas%20vaginalis&source=search_result&selectedTitle=1~43&usage_type=default&display_rank=1

NOTICE OF INTENDED USE OF THIS CLINICAL DECISION TOOL

This CRNS Clinical Decision Tool (CDT) exists solely for use in Saskatchewan by an RN with additional authorized practice as granted by the CRNS. The CDT is current as of the date of its publication and updated every three years or as needed. A member must notify the CRNS if there has been a change in best practice regarding the CDT. This CDT does not relieve the RN with additional practice qualifications from exercising sound professional RN judgment and responsibility to deliver safe, competent, ethical and culturally appropriate RN services. The RN must consult a physician/NP when clients' needs necessitate deviation from the CDT. While the CRNS has made every effort to ensure the CDT provides accurate and expert information and guidance, it is impossible to predict the circumstances in which it may be used. Accordingly, to the extent permitted by law, the CRNS shall not be held liable to any person or entity with respect to any loss or damage caused by what is contained or left out of this CDT.

CRNS © This CDT is to be reproduced only with the authorization of the CRNS.