

**Notification Timeline:**

**From Lab/Practitioner to Public Health:** Within 72 hours.

**From Public Health to Ministry of Health:** Within 2 weeks.

**Public Health Follow-up Timeline:** Within 72 hours.

**Public Health Purpose for Notification of Chlamydia**

- To reduce morbidity from chlamydia through contact tracing;
- To track epidemiology trends of chlamydia in Saskatchewan including risk factors and distribution;
- To identify at risk populations in order to inform prevention and control programming;
- To monitor the effectiveness of prevention and control measures; and
- To inform the public and medical community about chlamydia.

**Surveillance Case Definition<sup>1</sup>** (Public Health Agency of Canada, 2008)

<b>Confirmed Case – Genital Infections</b>	Laboratory evidence of infection in genitourinary specimens: <ul style="list-style-type: none"> <li>• detection of <i>C. trachomatis</i> by culture;</li> <li><b>OR</b></li> <li>• detection of <i>C. trachomatis</i> nucleic acid;</li> <li><b>OR</b></li> <li>• detection of <i>C. trachomatis</i> antigen.</li> </ul>
<b>Confirmed Case – Extra-genital Infections</b>	Laboratory evidence of infection in rectum, conjunctiva, pharynx and other extra-genital sites: <ul style="list-style-type: none"> <li>• detection of <i>C. trachomatis</i> by culture;</li> <li><b>OR</b></li> <li>• detection of <i>C. trachomatis</i> nucleic acid;</li> <li><b>OR</b></li> <li>• detection of <i>C. trachomatis</i> antigen.</li> </ul>

<sup>1</sup> Surveillance case definitions ensure uniform reporting to allow comparability of surveillance data. The definition is not intended to be used for clinical or laboratory diagnosis or management of cases.

<p><b>Confirmed Case – Perinatally Acquired Infections</b></p>	<p>Laboratory evidence of infection:</p> <ul style="list-style-type: none"> <li>• detection and confirmation of <i>C. trachomatis</i> in nasopharyngeal or other respiratory tract specimens from an infant who developed pneumonia in the first 6 months of life: <ul style="list-style-type: none"> <li>▪ isolation of <i>C. trachomatis</i> by culture; OR</li> <li>▪ demonstration of <i>C. trachomatis</i> nucleic acid; OR</li> <li>▪ demonstration of <i>C. trachomatis</i> antigen.</li> </ul> </li> <p>OR</p> <li>• detection and confirmation of <i>C. trachomatis</i> in conjunctival specimens from an infant who developed conjunctivitis in the first month of life: <ul style="list-style-type: none"> <li>▪ isolation of <i>C. trachomatis</i> by culture; OR</li> <li>▪ demonstration of <i>C. trachomatis</i> nucleic acid; OR</li> <li>▪ demonstration of <i>C. trachomatis</i> antigen.</li> </ul> </li> </ul>
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### Epidemiology and Occurrence

- Common worldwide.
- The epidemiology in Saskatchewan demonstrates:
  - Chlamydia rates in Saskatchewan were 1.5 times those of the national rate over the past decade but were comparable to Manitoba's rates. Saskatchewan's rate has been somewhat stable since 2011 whereas Canada's rate trend is gradually increasing.
  - Chlamydia rates are highest in the northern population of Saskatchewan. This is presumed to be related to barriers in accessing health care services or reluctance to seek health care because of the lack of anonymity in small communities.
  - Chlamydia is mostly commonly diagnosed in females aged 15 to 29 years and in slightly older males aged 20 to 39 years.
  - Commonly reported risk factors include unprotected sex; new or multiple partners in the past 3 months; alcohol use in individuals 15-29 years of cases); and having sex with a person with a known STI.

- Even though chlamydia is often an acute event that is easily treated with antibiotics, many individuals remain asymptomatic, go undiagnosed and can transmit the infection to several partners before it is treated.
- Public Health Agency of Canada (2010) reports there is under-screening of high-risk males and females. Males often have infrequent health maintenance visits.
- Without treatment, infection persists for many months.
- Chlamydia is often a co-infection for those diagnosed with *Neisseria gonorrhoea*.

## Additional Background Information

### Causative Agent

Bacterial infection caused by *Chlamydia trachomatis* serovars D to K.

### Symptoms

Table 1. Symptoms and Signs

Females	Males	Neonates and infants
<ul style="list-style-type: none"> <li>● Most often asymptomatic</li> <li>● Cervicitis (strawberry/friable cervix, cervical discharge)</li> <li>● Vaginal discharge</li> <li>● Dysuria</li> <li>● Lower abdominal pain</li> <li>● Abnormal vaginal bleeding</li> <li>● Dyspareunia (deep pelvic pain)</li> <li>● Conjunctivitis</li> <li>● Proctitis</li> </ul>	<ul style="list-style-type: none"> <li>● Often asymptomatic</li> <li>● Urethritis (urethral discharge, dysuria)</li> <li>● Urethral itch</li> <li>● Testicular pain</li> <li>● Conjunctivitis</li> <li>● Proctitis</li> </ul>	<ul style="list-style-type: none"> <li>● Conjunctivitis in neonates</li> <li>● Pneumonia in infants &lt;6 months of age</li> </ul>

Source: Canadian Guidelines on Sexually Transmitted Infections, 2017.

Table 2. Complications

Females	Males
<ul style="list-style-type: none"> <li>● Pelvic inflammatory disease</li> <li>● Ectopic pregnancy</li> <li>● Infertility</li> <li>● Chronic pelvic pain</li> <li>● Reiter syndrome</li> </ul>	<ul style="list-style-type: none"> <li>● Epididymo-orchitis</li> <li>● Reiter syndrome</li> </ul>

Source: Canadian Guidelines on Sexually Transmitted Infections, 2017.

### Reservoir

Humans.

### Mode of Transmission

- Genital infection is transmitted sexually.
- Studies have reported that among men who have sex with men, extra-genital chlamydia infections were documented in 75-85% of in men who did not have urethral infections. Likewise, extra-genital infections were documented in a smaller proportion (14-44%) of women engaging in receptive anal intercourse (Danby, 2016). Use a risk-based assessment to determine appropriate specimen collection.
- Ocular infections are presumably caused by inoculation of the eye with infected genital secretions (self-inoculation), (Sowka, J., et al., 2000).
- Oculogenital infection is transmitted from genital tract of mother to her newborn infant.

### Incubation Period

At least one week, most commonly 2-3 weeks, can be as long as 6 weeks.

### Period of Communicability

Unknown, poorly defined.

### Specimen Collection and Transport

#### *Genital Infection:*

- Urine for polymerase chain reaction (PCR) in men and women. Initial 10 to 20 mL of the urine stream (not mid-stream).
- Serology is not useful for the diagnosis of acute genital chlamydial infections.
- Post-exposure testing with a nucleic acid amplification test (NAAT) can be done as soon as desired, since it is not necessary to wait for 48 hours after exposure to collect samples as in the case of cultures.

#### *Extra-genital Infection:*

- Culture is recommended for throat and rectal specimens, since NAATs have not been adequately evaluated on these specimens.

#### *Perinatally Acquired Infections:*

- *C. trachomatis* IgM serology is useful for diagnosing *C. trachomatis* pneumonia in infants less than 3 months of age.

For information on specimen sources and culture media refer to [Attachment – Transport Media for Specific STIs](#).

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## Public Health Investigation

### I. Case

Refer to [Attachment – Confidential Notification of Chlamydia and Gonorrhea](#) to assist.

#### History

- Patients should be informed that their sexual history is confidential. Key elements to inquire about include:
  - Onset of illness
  - Risk factors including:
    - sexual contact with a chlamydia-infected person;
    - more than two sexual partners in the past 6 months;
    - vulnerable populations (for example persons who inject drugs, individuals who receive food shelter money or drugs for sex, street youth, aboriginal etc.).
  - Sexual contacts in order to interrupt the cycle of transmission. Travel history may be of significance in contact tracing.

#### Treatment

*Treatment for chlamydia is indicated for the following:*

- *a positive chlamydia test;*
- *presumptive diagnosis of a syndrome compatible with a chlamydial infection, (without waiting for the test results of *C. trachomatis*);*
- *laboratory diagnosis of chlamydial infection in a sexual partner;*
- *empirical co-treatment when a diagnosis of *N. gonorrhea* is made. DO NOT wait for test results of *C. trachomatis* due to the significant probability of coinfection (20-42%) and the possibility of false negative results.*

See [Attachment – STI Treatment Guidelines](#) for reference, however, the latest version of the Canadian Guidelines on Sexually Transmitted Infections should be referred to for current treatment guidelines at <https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines.html>

## **Public Health Interventions**

Refer to [Attachment - Chlamydia and Gonorrhea Data Collection Worksheet - Public Health Follow-up](#) to support public health follow-up.

### **Assessment**

- Assess for contacts.

### **Communication**

- Individuals may be difficult to reach in the era of technology and mobile phones. It is important to attempt to contact individuals using various methods such as phone calls at various times of the day. Some individuals' mobile service contracts only allow for text messaging. It is important to have policies and procedures that support the use of alternate modes of communication to assist in case follow-up.
- The primary care provider is an essential partner in the management of chlamydia. It is important to provide updates to care providers when they have referred cases to public health to assist in follow-up.

### **Education**

- Provide disease information as well as information on prevention and control measures including safer sex practices and behavioural practices that support improved decision-making and reducing risk of reinfection and other STIs.
- Provide education on treatment; patients and contacts should abstain from unprotected intercourse until treatment of all partners is complete (i.e., 7 days after completion of a multiple-dose treatment or for 7 days after single-dose therapy).

### **Immunization**

- Recommend immunizations for as per the Saskatchewan Immunization Manual. Sexual risk factors may render individuals eligible for Hepatitis A and B vaccines.

### **Referral**

- Refer to harm reduction or other supportive services as indicated (see [Introduction and General Considerations](#))

### **Testing**

- Additional testing including HIV should be recommended for individuals based on the risk assessment and testing history.
- Test of cure for *C. trachomatis* is **not routinely indicated WHEN** a recommended treatment is taken **AND** symptoms and signs disappear **AND** there is no re-exposure to an untreated partner.

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- Test of cure **should be performed** 4 weeks following completion of treatment in the following circumstances:
    - recommended treatment taken but signs and symptoms persist;
    - in all pregnant women;
    - where compliance is suboptimal;
    - if an alternative treatment has been used; and
    - in all prepubertal children.
  - Repeat testing in all individuals is recommended 6 months post-treatment, as re-infection risk is high. Positive NAAT test results within 30 days of treatment are considered a duplicate case unless re-infection is likely to have occurred.

## II. Contacts

Contact tracing relies on the cooperation of the patient; it is important that health care providers offer supportive, non-judgmental advice and assistance to patients and their contacts. Most individuals feel notifying partners is the 'right thing to do'; however, they also want advice and support for this from their health care provider.

It is important to understand the patient's particular situation and identify individual barriers to notifying contacts. Inform patients that for many individuals who discuss their STI diagnosis with a partner, the experience is better than they had anticipated (Australian Government Department of Health, 2016).

<b>Table 2. Definitions of Contacts</b>	
<b>Sexual Contact</b>	<ul style="list-style-type: none"> <li>• All individuals who have had sexual contact with the index case within 60 days prior to symptom onset or date of diagnosis.</li> <li>• If there is no partner during this period, the last sexual partner should be identified.</li> </ul>
<b>Neonatal Contact</b>	<ul style="list-style-type: none"> <li>• Neonates born to infected mothers</li> </ul>

### Public Health Interventions

#### **Assessment**

- Assess for symptoms.

#### **Communication**

- Individual follow-up of contacts is important to intercept the transmission of STIs. These individuals must be notified of their exposure within 72 hours.

- Offer supportive, non-judgmental advice and assistance to contacts.

### **Education**

- Provide disease information as well as information on prevention and control measures including safer sex practices to all contacts and behavioural practices that support improved decision-making and reducing risk of reinfection and other STIs.
- Provide education on treatment. Patients and contacts should abstain from unprotected intercourse until treatment of both partners is complete (i.e., 7 days after completion of a multiple-dose treatment or for 7 days after single-dose therapy).

### **Immunization**

- Recommend immunizations contacts are eligible for as per the Saskatchewan Immunization Manual. Sexual risk factors may render individuals eligible for Hepatitis A and B vaccines.

### **Testing**

- Recommendations for testing for other sexually transmitted infections including HIV should be made.

### **Treatment**

- Provide treatment for chlamydia to contacts at the same time of testing. It is not advised to await test results for these individuals.
- The Saskatchewan College of Physicians and Surgeons bylaws<sup>2</sup> support the use of expedited partner therapy (EPT) given by physicians.

## **Prevention Measures**

Refer to the [Sexually Transmitted Infections Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered as well as provides information on high-risk groups and activities.

### **Immunization**

Currently no vaccine for *C. trachomatis*.

### **Education**

Education should be provided regarding healthy dating relationships and consent. The Saskatchewan Prevention Institute has several resources to support these topics.

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<sup>2</sup> <http://cps.sk.ca/iMIS/Documents/Legislation/Legislation/Regulatory%20Bylaws.pdf>

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**Revisions**

<b>Date</b>	<b>Change</b>
October 2018	Updated contact tracing timelines from 90 days to 60 days in alignments with the Canadian STI Guidelines.
September 2018	Incorporated Public Health Purpose of Notification. Added <b>Epidemiology and Occurrence</b> section. Reorganized chapter and applied new format. References reaffirmed or updated as necessary. Aligned with Panorama and included the Panorama Data Collection Worksheet.
August 2018	Removed reference to preventative treatment for ophthalmia neonatorum with erythromycin ophthalmic prophylaxis.

## References

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