



Chlamydial Infections

CHAPTER CONTENT

1. Case Definition
2. Diagnosis
3. Reporting
4. Overview
5. Public Health Measures
6. Education
7. Epidemiology
8. References

1. CASE DEFINITION

Confirmed Case

• Genital Infection

- > Laboratory evidence of infection in genitourinary specimens (e.g., endocervical, urethral or vaginal swab; urine)
 - » Isolation of *Chlamydia trachomatis* by culture **OR**
 - » Detection of *C. trachomatis* nucleic acid (e.g., Polymerase Chain Reaction [PCR]) **OR**
 - » Detection of *C. trachomatis* antigen

• Extra-genital Infection

- > Laboratory evidence of infection in rectum, conjunctiva, pharynx or other extra-genital sites from the appropriate specimen (e.g., rectal, conjunctiva, throat or skin swab)
 - » Isolation of *C. trachomatis* by culture **OR**
 - » Detection of *C. trachomatis* nucleic acid (e.g., PCR) **OR**
 - » Detection of *C. trachomatis* antigen

• Perinatally Acquired Infection in Infant

- > Laboratory evidence of *C. trachomatis* infection in nasopharyngeal or other respiratory tract specimens (e.g., nasopharyngeal swab, nasopharyngeal suction, throat swab) or in urine from an infant who developed pneumonia in the first 6 months of life:
 - » Isolation of *C. trachomatis* by culture **OR**
 - » Detection of *C. trachomatis* nucleic acid (e.g., PCR) **OR**
 - » Detection of *C. trachomatis* antigen **OR**
- > Laboratory evidence of *C. trachomatis* in conjunctival specimens from an infant who developed conjunctivitis in the first month of life:
 - » Isolation of *C. trachomatis* by culture **OR**
 - » Detection of *C. trachomatis* nucleic acid (e.g., PCR) **OR**
 - » Detection of *C. trachomatis* antigen

2. DIAGNOSIS

- Diagnosis can be made by clinical presentation but requires laboratory confirmation because not all infections are symptomatic
- Laboratory confirmation is established by the identification of *C. trachomatis* at the infected site
- Nucleic acid amplification testing (NAAT) is the most sensitive testing method and can increase the number of cases diagnosed
- Culture is the preferred method for medico-legal purposes as it is more specific than NAAT
- Currently, only culture is recommended for throat specimens

- NAAT testing may be done at the time of presentation without individuals having to wait 48 hours post-exposure
- Specimens are collected by urine (NAAT) or swab (NAAT or rarely culture)
- In the NWT, NAAT testing is the first choice for the detection of rectal, and oropharyngeal *C. trachomatis* Confirmation of positives should be performed with a second NAAT
- For perinatal acquired infection in infants, lab analysis of nasopharynx or respiratory specimens should be done
- *C. trachomatis* IgM serology is useful for diagnosing *C. trachomatis* pneumonia in infants less than three months of age
- For more information refer to:
 - > [Canadian Guidelines on Sexually Transmitted Infections](#)
 - > [Alberta Provincial Laboratory Guide to Services](#)

Lymphogranuloma venereum (LGV)

- LGV, another type of sexually transmitted infection caused by different serovars of the *C. trachomatis*, occurs commonly in the developing world and has more recently emerged as a cause of outbreaks of proctitis among men who have sex with men (MSM) worldwide
 - > LGV investigation is referred to the National Microbiology Laboratory, Winnipeg, Manitoba for genotyping
 - > If LGV is suspected, contact the Alberta Provincial Lab microbiologist/virologist on call. [Supplementary statement for the management of Lymphogranuloma venereum \(LGV\) cases and contacts](#)

3. REPORTING

As set out in the [NWT Public Health Act, Reportable Disease Control Regulations \(Section 4\) and Disease Surveillance Regulations \(Sections 6-10 and Schedule 3\)](#) health care professionals and laboratories are legally required to report a diagnosis or formed opinion of a reportable

disease to the Chief Public Health Officer (CPHO) or designate **within the timeframe identified in the regulations.**

As set out in the [Child and Family Services Act Section 8](#), health care professionals have a legal duty to report suspected cases of child abuse, as it relates to reportable sexually transmitted infections (STIs), to the appropriate authority.

Health Care Professionals

- Confirmed cases are to be reported to the Office of the Chief Public Health Officer (OCPHO) by faxing (867) 873-0442 the completed [NWT Case Investigation Report Form](#) within **24 hours** after diagnosis is made or the opinion is formed

Laboratories

- Report all positive results to the OCPHO by fax (867) 873-0442 within **24 hours**

Legal Considerations

- The *Public Health Act* and *Child and Family Services Act* supersede physician/patient confidentiality concerns and require notification to the appropriate authority without patient consent for all reportable STIs and in cases where [child abuse](#) is suspected
- The age of consent is the age at which a young person can legally agree to sexual activity. For more information go to the [Government of Canada Age of Consent to Sexual Activity for more information](#)

4. OVERVIEW

For more information about chlamydia:

- The government of Canada Canadian Guidelines on Sexually Transmitted Infections: [Canada/chlamydia](#)
- Centres for Disease Control and Prevention: [CDC/chlamydia](#)
- World Health Organization: [WHO/chlamydia](#)

Causative Agent

- *Chlamydia trachomatis* bacteria

Clinical Presentation

- 85-90% of infections in men and women are asymptomatic and can persist for months
- When symptoms do occur there is a wide variety of clinical manifestations such as:

Females	Males	Neonates and infants
Most often asymptomatic > Cervicitis > Vaginal discharge > Dysuria > Lower abdominal pain > Abnormal vaginal bleeding > Dyspareunia > Conjunctivitis > Proctitis	Often asymptomatic > Urethral discharge > Urethritis > Urethral itch > Dysuria > Testicular pain > Conjunctivitis > Proctitis	Conjunctivitis in neonates > Pneumonia in infants <6 months of age

- Clients having unprotected anal and oral sex are at risk for pharyngeal and rectal infections
- Pharyngeal and rectal infections are often asymptomatic
- See the following for constructing a differential diagnosis for acute chlamydial proctitis:
 - > Typically 15-29 years of age but can be acquired outside these age ranges if the clinical index of suspicion is high
 - > Sexually active
 - > Presents with tenesmus, anorectal pain, rectal fullness, constipation, anorectal bleeding and mucopurulent discharge
 - > Cannot be distinguished from other infectious causes of proctitis by symptoms alone

- > May be high in women reporting receptive anal intercourse and/or a genital infection
- > *C. trachomatis* can be transmitted to the anal canal via a genital infection due to the proximity of the vagina, even in the absence of receptive anal intercourse
- > The infection is most common among men who engage in sexual activity with members of the same sex, regardless of how they identify themselves

Major Complications

- Females: pelvic inflammatory disease, ectopic pregnancy, infertility, chronic pelvic pain, Reiter's syndrome (reactive arthritis)
- Men: epididymal-orchitis, occasionally infertility, Reiter's syndrome
- Babies born to mothers with untreated chlamydial infections are at risk for developing conjunctivitis and pneumonia

Transmission

- *C. trachomatis* is the most commonly diagnosed and reported bacterial sexually transmitted infection in the Northwest Territories (NWT)
- Spreads person-to-person by sexual contact (oral, vaginal, cervical, urethral or rectal routes), or through the birth process (vertical transmission)
- *C. trachomatis* is communicable for as long as the person harbours the organism which could be for many months in untreated symptomatic or asymptomatic individuals

Incubation Period

- The usual incubation period from the time of exposure to onset of symptoms is 7-14 days but can be as long as six weeks

Clinical Guidance

- For patient-specific-clinical management consult your local healthcare professional, paediatrician or infectious disease specialist
- Management and treatment of specific chlamydial infections is given in the [Canadian Guidelines on Sexually Transmitted Infections](#)

- NWT Desk References
 - > [NWT Clinical Practice Guidelines for the Treatment of Uncomplicated Chlamydia](#)
- Resistance to treatment is rarely an issue, but information on apparent treatment failure is available in the [Canadian Guidelines on Sexually Transmitted Infections](#)

5. PUBLIC HEALTH MEASURES

Management of Case

- Interview case for the history of exposure, risk assessment, and contact tracing
- Screen for other sexually transmitted infections and blood-borne infections (STBBIs) such as gonorrhoea, syphilis, human papillomavirus (HPV), human immunodeficiency virus (HIV), hepatitis B (HBV), and hepatitis C (HCV)
- Offer routine vaccines and vaccines available for vaccine-preventable STBBIs such as HBV, HPV and possibly HAV for those having anal-oral sex and illicit drug users: [NWT Immunization schedule](#)
- Empirical co-treatment for gonorrhoea is recommended
- Caution case to abstain from unprotected intercourse until 7 days after completion of treatment of both case and partner
- Provide education regarding the prevention of sexually transmitted infections
- Test of cure (TOC) is not routinely indicated if a recommended treatment is taken **AND** signs and symptoms disappear, **AND** there is no re-exposure to an untreated partner, except:
 - > where compliance is suboptimal
 - > if an alternative treatment regimen has been used
 - > in all pre-pubertal children
 - > in all pregnant women
- If indicated, TOC for NAAT testing is recommended 3- 4 weeks post-treatment

- Repeat testing for all individuals with chlamydia is recommended six months post-treatment

Management of Contacts

Contact tracing

Trace Back	Who
60 days*	Sexual partners
	Newborns of infected mothers

**If there was no partner during this period, then the last partner should be tested and treated.*

- All partners who have had sexual contact with the index case within 60 days before symptom onset or date of specimen collection (if the index case is asymptomatic) should be [notified, tested and empirically treated](#) regardless of clinical findings and without waiting for test results
- Screen contacts for other STBBIs such as gonorrhoea, syphilis, HPV, HIV, HBV, and HCV
- Offer contacts routine vaccines and vaccines available for vaccine-preventable STBBIs such as HBV, HPV and possibly HAV for those having anal-oral sex and illicit drug users: [NWT Immunization schedule](#)
- Provide contacts with education regarding the prevention of sexually transmitted infections
- OCPHO will assist with contacting partners living out of the NWT
- Guidelines for the epidemiological follow-up of chlamydia and gonorrhoea in the NWT is provided in the [Lost to Follow-Up Flowchart](#)

Prevention

- Consistent use of safe sex practices as per the [Canadian Guidelines on Sexually Transmitted Infections](#)
- Screening of at-risk groups as per the [Canadian Guidelines on Sexually Transmitted Infections](#)
- Screen pregnant women at the first prenatal visit

- Pregnant women who are positive or at high-risk of reinfections should be rescreened at the third trimester
- Repeat screening is recommended 6 months post-treatment
- Cases and contacts should abstain from unprotected intercourse until 7 days after completion of treatment of both case and partner

6. PATIENT & HEALTH CARE PROFESSIONAL EDUCATION

- Government of Canada: [Chlamydia](#)
- Public Health Agency of Canada: [Sexual Health and Sexually Transmitted Infections](#)
- Government of the NWT: [NWT HSS Public Website Chlamydia](#)

7. EPIDEMIOLOGY

- For more information on the epidemiology of chlamydia in the Northwest Territories (NWT) see: [Epidemiological Summary of Communicable Diseases](#)

8. REFERENCES

1. Alberta Health Notifiable Disease Guidelines: <https://www.alberta.ca/notifiable-disease-guidelines.aspx>
2. Alberta Health Services Bugs and Drugs: <http://www.bugsanddrugs.org/>
3. Alberta Health Services The Provincial Laboratory for Public Health (ProvLab): <https://www.albertahealthservices.ca/lab/page3317.aspx>
4. Centers for Disease Control and Prevention: <https://www.cdc.gov/std/chlamydia/>
5. The Government of Canada Department of Justice age of consent: <http://www.justice.gc.ca/eng/rp-pr/other-autre/clp/faq.html>
6. The Government of Canada website – Chlamydia: <https://www.canada.ca/en/public-health/services/diseases/chlamydia.html>
7. NWT Case Investigation Report Form: <http://www.professionals.hss.gov.nt.ca/tools/forms/communicable-disease>
8. NWT Child and Family Services Act: <https://www.hss.gov.nt.ca/en/about/legislation-and-policies>
9. NWT Epidemiology of Chlamydia: <https://www.hss.gov.nt.ca/professionals/tools/policies-and-guidelines-standards-and-manuals/epi-summary-communicable-diseases>
10. NWT Lost to follow-up policy CPI # 135: https://www.hss.gov.nt.ca/professionals/sites/default/files/page-135-lost-to-follow-up-flow-chart_0.pdf
11. NWT Public Health Act: <https://www.hss.gov.nt.ca/en/about/legislation-and-policies>
12. NWT Treatment of Chlamydia Desk Reference: http://www.professionals.hss.gov.nt.ca/sites/default/files/treatment_of_uncomplicated_chlamydia.pdf
13. Public Health Agency of Canada, Canadian Guidelines on Sexually Transmitted Infections: <https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/sexually-transmitted-infections.html>
14. World Health Organization on Chlamydia: <http://www.who.int/reproductivehealth/publications/rtis/chlamydia-treatment-guidelines/en/>