



Gonococcal Infections

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1. CASE DEFINITION

Confirmed Case

- Genital Infection
 - > Laboratory confirmation of infection in genitourinary specimens
 - » Isolation of *Neisseria gonorrhoeae* (*N. gonorrhoeae*) by culture **OR**
 - » Detection of *N. gonorrhoeae* nucleic acid (e.g., PCR)
- Extra-genital Infection
 - > Laboratory confirmation of infection from pharynx, rectum, joint, conjunctiva, blood or other extra-genital sites
 - » Isolation of *N. gonorrhoeae* by culture **OR**
 - » Detection of *N. gonorrhoeae* nucleic acid (e.g., PCR)
- Perinatally Acquired Infection
 - > Laboratory confirmation of infection from a neonate in the first 4 weeks of life leading to the diagnosis of gonococcal conjunctivitis, scalp abscess, vaginitis, bacteremia, arthritis, meningitis or endocarditis
 - » Isolation of *N. gonorrhoeae* by culture **OR**

- » Detection of *N. gonorrhoeae* nucleic acid (e.g., PCR)

2. DIAGNOSIS

- Diagnosis is established by the identification of *N. gonorrhoeae* at the infected site
- Nucleic acid amplification testing (NAAT) is the most sensitive testing method and can increase the number of cases diagnosed
 - > NAAT testing may be done at time of presentation without individuals having to wait 48 hours post-exposure
- Culture allows for testing of antimicrobial susceptibility
 - > Cultures obtained less than 48 hours after exposure may give false negative results
- Depending on the clinical situation consideration should be given to using **both** culture and NAAT, especially in symptomatic patients
- Culture must be done as part of antimicrobial surveillance in the following circumstances*
 - > Non-genital sites (e.g. eye, pharynx, rectum)
 - > Infection likely acquired outside of the NWT
 - > Treatment failure
 - > Sexual abuse of children
 - > Sexual assault
 - > Evaluation of pelvic inflammatory disease
 - > NWT designated sentinel sites participating in Enhanced Surveillance of Antimicrobial Gonorrhoea (ESAG)

*NAAT testing may be the only choice due to NWT transport and viability constraints in some regions.

RECOMMENDED ROUTINE SPECIMEN SITES AND TESTS

Site	Test	Specimen Collection Requirements	
		Culture	NAAT
Urethral*	Culture or NAAT	Charcoal transport medium	Gen-Probe APTIMA® Unisex swab
Endocervical or vaginal	Culture or NAAT	Charcoal transport medium	Gen-Probe APTIMA® Unisex swab
Urine	NAAT	Not available	Gen-Probe APTIMA® Urine collection kit
Oropharyngeal	Culture	Charcoal transport medium	Gen-Probe APTIMA® Unisex swab
Rectal	Culture	Charcoal transport medium	Gen-Probe APTIMA® Unisex swab

*If symptomatic

- NAAT testing can be used to detect rectal and oropharyngeal *N. gonorrhoeae* and *C. trachomatis* but confirmation of positives should be performed with culture or a second NAAT as in the case with chlamydia
- For infants under 6 months, a lab analysis of nasopharynx or respiratory specimens should be done
- For more information please refer to
 - > [Canadian Guidelines on Sexually Transmitted Infections](#)
 - > [Alberta Provincial Laboratory Guide to Services](#)

3. REPORTING

As described in the [NWT Public Health Act 2009](#), health care professionals and laboratories shall provide the Chief Public Health Officer or designate with the information required by the regulations, within the time set out in the regulations.

Health Care Professionals

- Confirmed or probable cases are to be reported to the Office of the Chief Public Health Officer (OCPHO) by fax within **24 hours** after diagnosis is made or opinion is formed, **AND**
- Complete and fax the [NWT Case Investigation Form](#) to the OCPHO within **24 hours**

Laboratories

- Report all positive results to the OCPHO within **24 hours**

4. OVERVIEW

For more information about gonorrhea:

- Gonorrhea: [Canadian Guidelines on Sexually Transmitted Infections](#)
- Health Canada: [Gonorrhea - Canada.ca](#)
- Centres for Disease Control and Prevention: [Gonorrhea](#)
- World Health Organization: [WHO Gonorrhea](#)

Causative Agent

- *Neisseria gonorrhoeae* aerobic gram negative bacteria

Clinical Presentation

- Infection is often asymptomatic in females and symptomatic in males
- In both males and females rectal and pharyngeal infections are more likely to be asymptomatic

Site of Gonorrhea	Symptoms
Genital	<p>Males</p> <ul style="list-style-type: none"> • Mucopurulent urethral discharge (81%) • Dysuria (53%) <p>Females</p> <ul style="list-style-type: none"> • 40% asymptomatic • If symptomatic: mucopurulent endocervical discharge and cervical friability
Extra-Genital	<p>Pharyngeal</p> <ul style="list-style-type: none"> • Often asymptomatic • If symptomatic: persistent sore throat not responsive to antibiotics or resolved within 10 days <p>Anorectal</p> <ul style="list-style-type: none"> • Often asymptomatic • If symptomatic: pruritus, tenesmus, discharge <p>Eye</p> <ul style="list-style-type: none"> • Conjunctivitis <p>Blood</p> <ul style="list-style-type: none"> • Bacteremia (0.5 – 1%) <p>Meningitis, arthritis, skin lesions and endocarditis occur rarely</p>
Perinatally Acquired	<ul style="list-style-type: none"> • Ophthalmia neonatorum

- **Constructing a differential diagnosis for pharyngitis**

- > **Gonococcal pharyngitis**

- » 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 sore throat, pharyngeal exudates, and/or cervical lymphadenitis

- » Absence of rhinorrhea, cough or conjunctivitis
 - » 'Off season' severe sore throat
 - » No history of strep throat within the past year
 - » Negative for strep
 - » Does not respond as expected to treatment
 - » Persists longer than 7-10 days
 - To maximize throat culture accuracy, the tonsillar region and posterior pharyngeal wall should be swabbed
 - **Constructing a differential diagnosis for acute proctitis**
 - > **Gonococcal 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
 - » *N. gonorrhoeae* 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, reactive arthritis
- Males
 - > Epididymitis, reactive arthritis, occasionally infertility

Transmission

- Direct inoculation of infected secretions from one mucous membrane to another, usually through sexual activity or the birth process (vertical transmission)

Incubation Period

- 2 - 7 days with a range of 1-14 days

Clinical Guidance

- For patient specific clinical management consult your local health care professional, paediatrician or infectious disease specialist
- Suspected treatment failure is defined as:
 - > No sexual contacts between treatment and test of cure **AND**
 - > Positive NAAT taken at least 2-3 weeks post treatment **OR**
 - > Positive culture taken at least 72 hours post treatment
- Management and treatment of gonococcal infections [Canadian Guidelines on Sexually Transmitted Infections](#)
- NWT Desk Reference Treatment of uncomplicated Gonorrhoea: [Clinician Desk References | HSS Professionals](#)
- Guidelines for the epidemiological follow-up of chlamydia and gonorrhoea in the NWT: [Lost to Follow-Up Flow Chart: Guidelines for the Epidemiological Follow-Up of Chlamydia and Gonorrhoea in the NWT | HSS Professionals](#)

5. PUBLIC HEALTH MEASURES

Rapid clinical and public health responses are required to control gonorrhoea.

Management of Cases

- Interview case for history of exposure, risk assessment, and contact tracing
- Screen for other sexually transmitted infections and blood-borne infections (STBBIs) such as chlamydia, syphilis, human papillomavirus (HPV), human immunodeficiency virus (HIV), hepatitis B (HBV), and hepatitis C (HCV)
 - > HIV transmission and acquisition is enhanced in people with gonococcal infections
- Update immunizations for hepatitis A (HAV), hepatitis B (HBV), HPV and Tetanus (Tdap) as per the [NWT Immunization Schedule | HSS Professionals](#)
- Treatment considerations:
 - > Treatment for gonorrhoea should include treatment for chlamydia regardless of chlamydia test result
 - > Direct observation therapy (DOT) is preferable when available
 - > Immediate treatment is recommended in men and women with suspected urethritis, cervicitis or proctitis
 - > Index and contacts to abstain from unprotected sex until at least 3 days and ideally 7 days after completion of treatment
- The *NWT Public Health Act 2009* and *NWT Child and Family Services Act* found here: [Legislation and Policies | Health and Social Services](#) 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
- See the Government of Canada Age of Consent website: [Age of Consent to Sexual Activity](#)

Follow-up

- Repeat screening is recommended 6 months post treatment
- Test of cure (TOC) for *N. gonorrhoeae* is not routinely indicated if a recommended treatment agent has been taken, symptoms and signs disappear and there is no re-exposure to an untreated partner
- Follow-up cultures for TOC from all positive sites should be done 3-7 days after the completion of therapy in the following circumstances:
 - > All pharyngeal infections
 - > Persistent symptoms or signs post-therapy
 - > Cases treated with a regimen other than the preferred treatment
 - > Quinolones were given for treatment in the absence of susceptibility testing
 - > Case is linked to another case with documented antimicrobial resistance to the treatment given
 - > Antimicrobial resistance is documented
 - > Case is linked to a treatment failure case who was treated with the same antibiotic
 - > Treatment failure for gonorrhea has occurred previously in the patient
 - > Compliance is uncertain
 - > Re-exposure to an untreated partner
 - > Pregnancy
 - > Pelvic inflammatory disease (PID) or disseminated gonococcal infection
 - > Case is a child
 - > Women undergoing therapeutic abortion (TA) who have a positive test result for gonococcal infection
 - > A false-positive NAAT result is suspected
- If **NAAT** is the only choice for test of cure (due to NWT transport and viability constraints), tests should not be done until 2–3 weeks after completion of treatment

Management of Contacts

• Partner Notification

Trace Back	Who
60 days*	<ul style="list-style-type: none">• 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 prior to 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
- OCPHO will assist with contacting partners living out of the NWT

Prevention

- Appropriate treatment and follow-up
- Safer sex education
- Comprehensive screening
- Re-screening

6. PUBLIC & HEALTH CARE PROFESSIONAL EDUCATION

- Government of Canada website for Gonorrhea: [Gonorrhea](#)
- [Public Health Agency of Canada Sexual Health and Sexually Transmitted Infections](#)

7. EPIDEMIOLOGY

- For more information on epidemiology of gonorrhea in the NWT see: [Epidemiological Summary of Communicable Diseases | HSS Professionals](#)

8. REFERENCES

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4. Case Definitions for Communicable Diseases under National Surveillance - 2009: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/index-eng.php>
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