Institut national d'excellence en santé et en services sociaux
Québec

QUÉBEC'S NATIONAL MEDICAL PROTOCOL No. 628011

NATIONAL PROTOCOL FOR THE TREATMENT OF *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION IN AN ASYMPTOMATIC PERSON

Developed in collaboration with an advisory committee consisting of Québec clinicians and experts

Validated by the Comité d'excellence clinique en usage optimal du médicament, des protocoles médicaux nationaux et ordonnances of the Institut national d'excellence en santé et en services sociaux (INESSS)

This protocol was developed for nurses authorized to prescribe under the *Regulation respecting certain professional activities that may be engaged in by a nurse*, which was made under the *Medical Act*[1]

CLINICAL SITUATION OR TARGET POPULATION[2]

An asymptomatic person 14 years of age or older who has screened positive for *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infection

An asymptomatic person 14 years of age or older identified as a sexual partner of a person[3] with *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infection

CONTRAINDICATIONS TO THE APPLICATION OF THIS PROTOCOL

- The presence of at least one sign or symptom consistent with *C. trachomatis* or *N. gonorrhoeae* infection (see Appendix IV)
- The presence of a contraindication to the use of a recommended drug, with no appropriate alternative treatment
- Sexual partner of a person who has tested positive for *C. trachomatis* with a lymphogranuloma venereum (LGV) genotype

INSTRUCTIONS

ASYMPTOMATIC PERSON WHO HAS SCREENED POSITIVE FOR *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION

1. ASSESSMENT OF HEALTH STATUS

1.1 Signs and symptoms

Check:

- That there are no signs or symptoms consistent with *C. trachomatis* or *N. gonorrhoeae* infection (see Appendix IV)

1.2 Post-test counseling

Consult the Guide québécois de dépistage des ITSS.

1.3 Medication history

Inquire about:

- Any history of allergic reaction to an antibiotic in the class of penicillins, cephalosporins, macrolides, tetracyclines, aminoglycosides or quinolones
- Any contraindication to the use of a drug recommended for the treatment of *C. trachomatis* or *N. gonorrhoeae* infection

[1] *Medical Act* (chapter M-9, s. 19, 1st par., subpar. *b*).
[2] For a sexual assault victim: also follow the recommendations in the Guide d'intervention médicosociale.
[3] A "person with *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infection" is an asymptomatic or symptomatic individual who is laboratory-positive OR who has a syndrome consistent with a *C. trachomatis* or *N. gonorrhoeae* STBBI assessed by a physician, an SNP, or a nurse who uses a collective prescription to manage such a syndrome.

1.4 Pelvic inflammatory disease risk factors

Inquire about pelvic inflammatory disease (PID) risk factors:

- Having undergone a voluntary termination of pregnancy or an invasive gynecological procedure (e.g., an endometrial biopsy, a hysteroscopy, hysterosonography or hysterosalpingography) in the past month
- A levonorgestrel-releasing intrauterine system or a copper intrauterine device installed in the past month
- A history of at least one episode of *C. trachomatis* or *N. gonorrhoeae* infection in the past year
- A previous history of PID

1.5 Physical examination

1.5.1 Pelvic examination

Perform a pelvic examination if the person **has at least one PID risk factor**.

A nurse who is not qualified to perform pelvic examinations must refer the person to a nurse who is authorized to prescribe and qualified to perform pelvic examinations, a specialized nurse practitioner (SNP) or a physician.

1.5.1.1 Speculum examination

Inspect the cervix and vaginal walls.

Look for the following: unusual vaginal discharge, inflammatory appearance of the vaginal walls and cervix, a purulent or mucopurulent endocervical exudate, endocervical bleeding (brittle cervix) or petechiae on the genital mucosa (strawberry cervix).

1.5.1.2 Bimanual examination

Examine the uterus and adnexal structures.

Look for the following: lower abdominal tenderness, adnexal tenderness (unilateral or bilateral), cervical motion tenderness, masses or other structural abnormalities.

2. FURTHER INVESTIGATION

2.1 Look for other sexually transmitted and blood-borne infections

Complement the screening by looking for other infections based on the indications for screening for sexually transmitted and blood-borne infections (STBBI) listed in the tool ITSS à rechercher selon les facteurs de risque décelés. If applicable, obtain specimens as indicated in the following tools: Prélèvements et analyses recommandés chez une personne asymptomatique – Infections à *Chlamydia trachomatis* ou à *Neisseria gonorrhoeae* et lymphogranulomatose vénérienne and Prélèvements et analyses recommandés chez une personne asymptomatique – Syphilis, hépatites B et C, VIH.

2.2 Culture specimens for *N. gonorrhoeae* when an infection has been detected only by nucleic acid amplification testing

When possible, if a gonococcal infection has been detected only by nucleic acid amplification testing (NAAT), culture the infected sites (endocervix (female), urethra (male), pharynx or rectum) to determine the strain's sensitivity before initiating treatment:

- In females, the recommended genital specimen for culture is an endocervical swab. Endocervical swabbing requires a speculum examination
- In males, the recommended genital specimen for culture is a swab of urethral secretions

Obtaining culture specimens should, however, not delay treatment.

2.3 Details concerning specimens

Regardless of the type of specimen, it is important to consult the laboratory at the facility concerned for details on the tests used locally (e.g., suitable specimen collection sites, the types of specimens accepted, the applicable specimen collection conditions, storage and transport).

3. TREATMENT APPROACH

Consult the optimal usage guide entitled " STBBI – Uncomplicated *C. trachomatis* or *N. gonorrhoeae* Infection ".

For persons registered with the Régie de l'assurance maladie du Québec (RAMQ) and who have a valid health insurance card, claim slip or temporary proof of eligibility for medication: enter on the prescription the **code K** (for the infected person)[4].

See decision algorithms A and B in Appendices I and II.

4. COMMUNICATION WITH A PRESCRIBER

The nurse sends information on the type of infection and the treatment being administered to the treating physician or the SNP, if they do not have access to this information in the chart of the person being treated and if he/she authorizes this. For this purpose, the nurse uses the communication form (information).

5. TEST OF CURE

Consult the optimal usage guide entitled "STBBI – Uncomplicated *C. trachomatis* or *N. gonorrhoeae* Infection ".

6. FOLLOW-UP

Inquire about any adverse effects of the pharmacological treatment.

7. SITUATIONS REQUIRING A REASSESSMENT OR FURTHER INVESTIGATION

- PID risk factors present and pelvic examination not possible (refer to physician, SNP, or nurse authorized to prescribe and qualified to perform pelvic examinations)
- The appearance of signs or symptoms consistent with *C. trachomatis* or *N. gonorrhoeae* infection
- The presence of signs or symptoms suggestive of PID during the pelvic examination
- Intolerance to the medication

Microbiological test results:

- Positive screening test results for other STBBI
- Positive test result for *C. trachomatis* with an LGV genotype
- Positive result on the test of cure

Use the communication form (attention required).

[4] The cost of 1% lidocaine without epinephrine is covered by the free program in the context of treating an STI or an associated syndrome when "diluent for ceftriaxone" is noted on the prescription.

ASYMPTOMATIC PERSON IDENTIFED AS A SEXUAL PARTNER OF A PERSON WITH *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION

For an asymptomatic person to be identified as a sexual partner of a person[5] with *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infection, the available information must be precise and reliable enough to **identify the infection to which the person was exposed**. This information can be obtained from one of the following sources:

- Laboratory test result for the person in whom an STBBI has been detected
- Notification card
- Communication with the physician, SNP or nurse of the person in whom an STBBI has been detected
- Communication with a public health professional
- Communication with the sexual partner or the person in whom an STBBI has been detected.

If the available information is not precise and reliable enough to identify the infection to which the person was exposed:

- Screen for STBBI: Determine which infections should be screened for based on the tool ITSS à rechercher selon les facteurs de risque décelés and obtain the appropriate specimens based on the following tools: Prélèvements et analyses recommandés chez une personne asymptomatique – Infections à *Chlamydia trachomatis* ou à *Neisseria gonorrhoeae* et lymphogranulomatose vénérienne and Prélèvements et analyses recommandés chez une personne asymptomatique – Syphilis, hépatites B et C, VIH
- Prescribe pharmacological treatment only if the screening test result is positive. In such case, see the section entitled "ASYMPTOMATIC PERSON WHO HAS SCREENED POSITIVE FOR *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION" above for the management of a person infected with *C. trachomatis* or *N. gonorrhoeae*

1. ASSESSMENT OF HEALTH STATUS

It is preferable to assess the sexual partner's health condition before prescribing so that he/she receives the best preventive care. In certain circumstances, accelerated partner therapy (APT) may be used after carefully weighing the pros and cons. However, APT is an exceptional measure. For additional information, consult the quick-reference guide for clinicians and the quick-reference guide for pharmacists.

1.1 Signs and symptoms

Check:

- That there are no signs or symptoms consistent with *C. trachomatis* or *N. gonorrhoeae* infection (see Appendix IV)

1.2 Health history

Record:

- The date of the last STBBI screening and the results
- The person's STBBI history

1.3 Medication history

Inquire about:

- Any history of allergic reaction to an antibiotic in the class of penicillins, cephalosporins, macrolides, tetracyclines, aminoglycosides or quinolones
- Any contraindication to the use of a drug recommended for the treatment of *C. trachomatis* or *N. gonorrhoeae* infection

[5] A "person with *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infection" is an asymptomatic or symptomatic individual who is laboratory-positive OR who has a syndrome consistent with a *C. trachomatis* or *N. gonorrhoeae* STBBI assessed by a physician, an SNP, or a nurse who uses a collective prescription to manage such a syndrome.

1.4 STBBI risk factors

Inquire about STBBI risk factors and assess the indications for STBBI screening. Consult the tool ITSS à rechercher selon les facteurs de risque décelés.

2. LABORATORY TESTS

2.1 Specimens and microbiological tests

Obtain specimens to screen for *C. trachomatis* infection, *N. gonorrhoeae* infection or both. In general, specimen collection sites are determined on the basis of sexual practices (exposed sites). For more information on the sites from which specimens are to be collected and the tests to be ordered for the asymptomatic sexual partner, consult the tool Prélèvements et analyses recommandés chez une personne asymptomatique – Infections à *Chlamydia trachomatis* ou à *Neisseria gonorrhoeae* et lymphogranulomatose vénérienne.

In addition, if risk factors for other STBBI are present:

- Determine the STBBI to be screened for based on the tool ITSS à rechercher selon les facteurs de risque décelés
- Obtain the screening specimen(s) for the other STBBI of interest as indicated in the following tools: Prélèvements et analyses recommandés chez une personne asymptomatique – Infections à *Chlamydia trachomatis* ou à *Neisseria gonorrhoeae* et lymphogranulomatose vénérienne and Prélèvements et analyses recommandés chez une personne asymptomatique – Syphilis, hépatites B et C, VIH

2.2 Details concerning specimens

Regardless of the type of specimen, it is important to consult the laboratory at the facility concerned for details on the tests used locally (e.g., suitable specimen collection sites, the types of specimens accepted, the applicable specimen collection conditions, storage and transport).

3. TREATMENT APPROACH

Prescribe an **epidemiological treatment** without waiting for the screening test results.

Consult the optimal usage guide entitled “STBBI – Uncomplicated *C. trachomatis* or *N. gonorrhoeae* Infection “.

For persons registered with the Régie de l’assurance maladie du Québec (RAMQ) and who have a valid health insurance card, claim slip or temporary proof of eligibility for medication: enter on the prescription the **code L** (for sexual partners) or the **code M** (for APT-treated partners)[6].

See decision algorithm C in Appendix III.

4. COMMUNICATION WITH A PRESCRIBER

The nurse sends information on the type of infection and the treatment being administered to the treating physician or the SNP, if they do not have access to this information in the chart of the person being treated and if he/she authorizes this. For this purpose, the nurse uses the communication form (information).

5. FOLLOW-UP

When the result of the screening test is obtained, if it is positive for *C. trachomatis* or *N. gonorrhoeae*, see the section entitled “ASYMPTOMATIC PERSON WHO HAS SCREENED POSITIVE FOR *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION” above for the management of a person infected with *C. trachomatis* or *N. gonorrhoeae.* Complement the initial intervention and adjust the treatment, if necessary.

[6] The cost of 1% lidocaine without epinephrine is covered by the free program in the context of treating an STI or an associated syndrome when "diluent for ceftriaxone" is noted on the prescription.

6. SITUATIONS REQUIRING A REASSESSMENT OR FURTHER INVESTIGATION

- The appearance of signs or symptoms consistent with *C. trachomatis* or *N. gonorrhoeae* infection
- Intolerance to the medication

Microbiological test results:

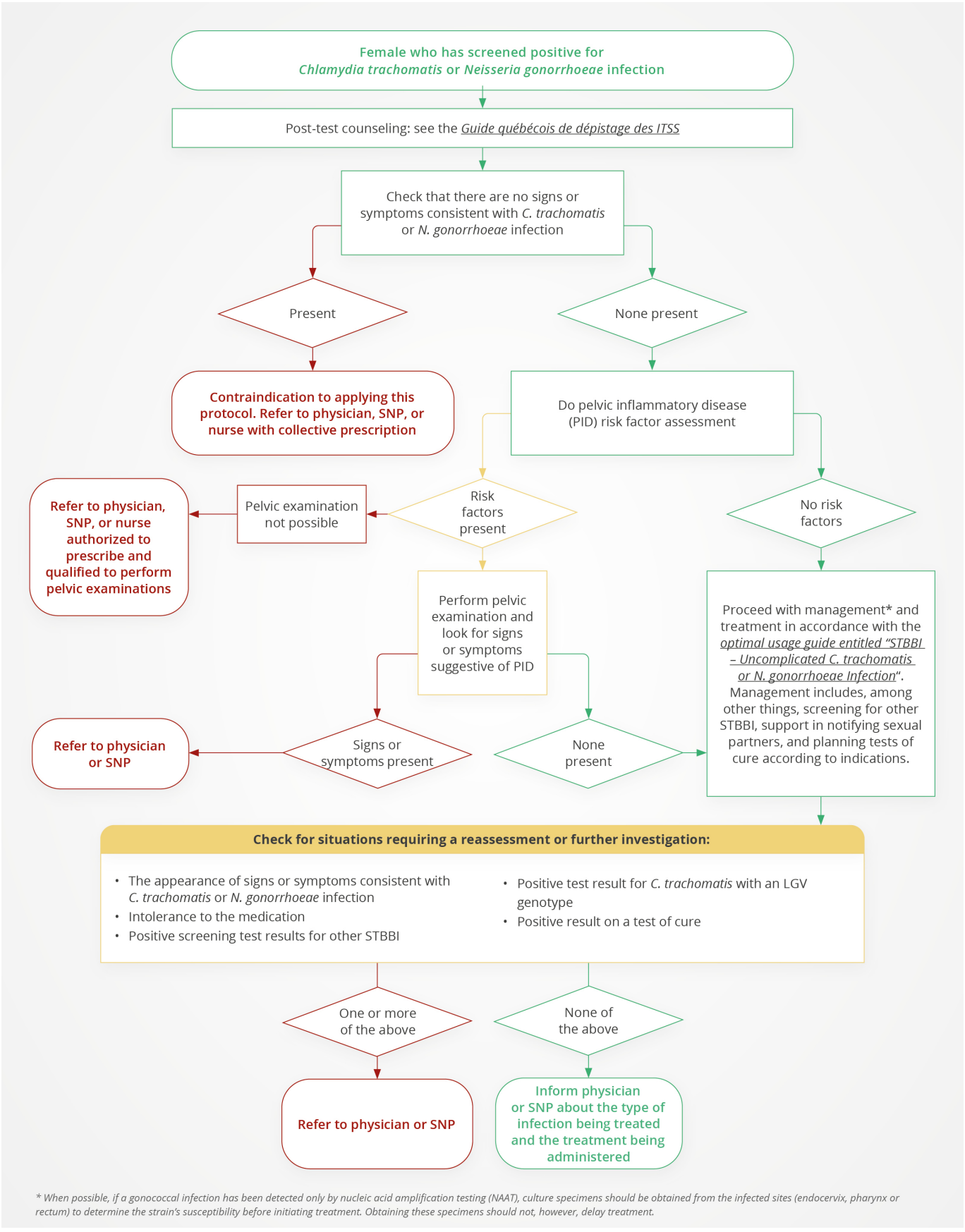
- Positive screening test results for other STBBI
- Positive test result for *C. trachomatis* with an LGV genotype
- Positive result on a test of cure

Use the communication form (attention required).

REFERENCES

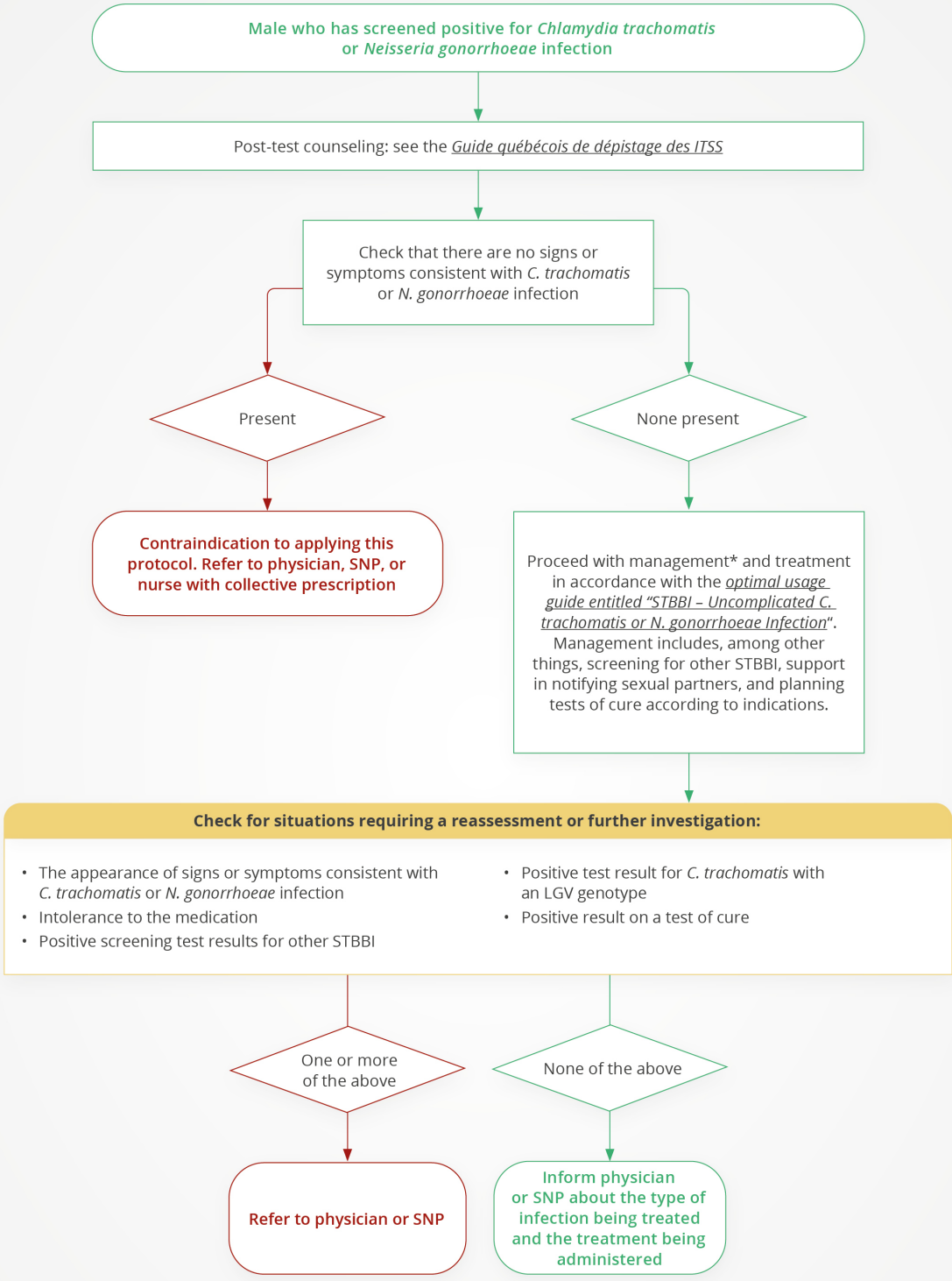
This protocol is based on the latest scientific data and best practice recommendations, which were enhanced with contextual information and experiential knowledge provided by Québec clinicians and experts. For details on the process used to develop this national medical protocol and to consult the references, see the supporting report.

APPENDIX I – TREATMENT AND FOLLOW-UP DECISION ALGORITHM A: FEMALE WHO HAS SCREENED POSITIVE FOR *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION



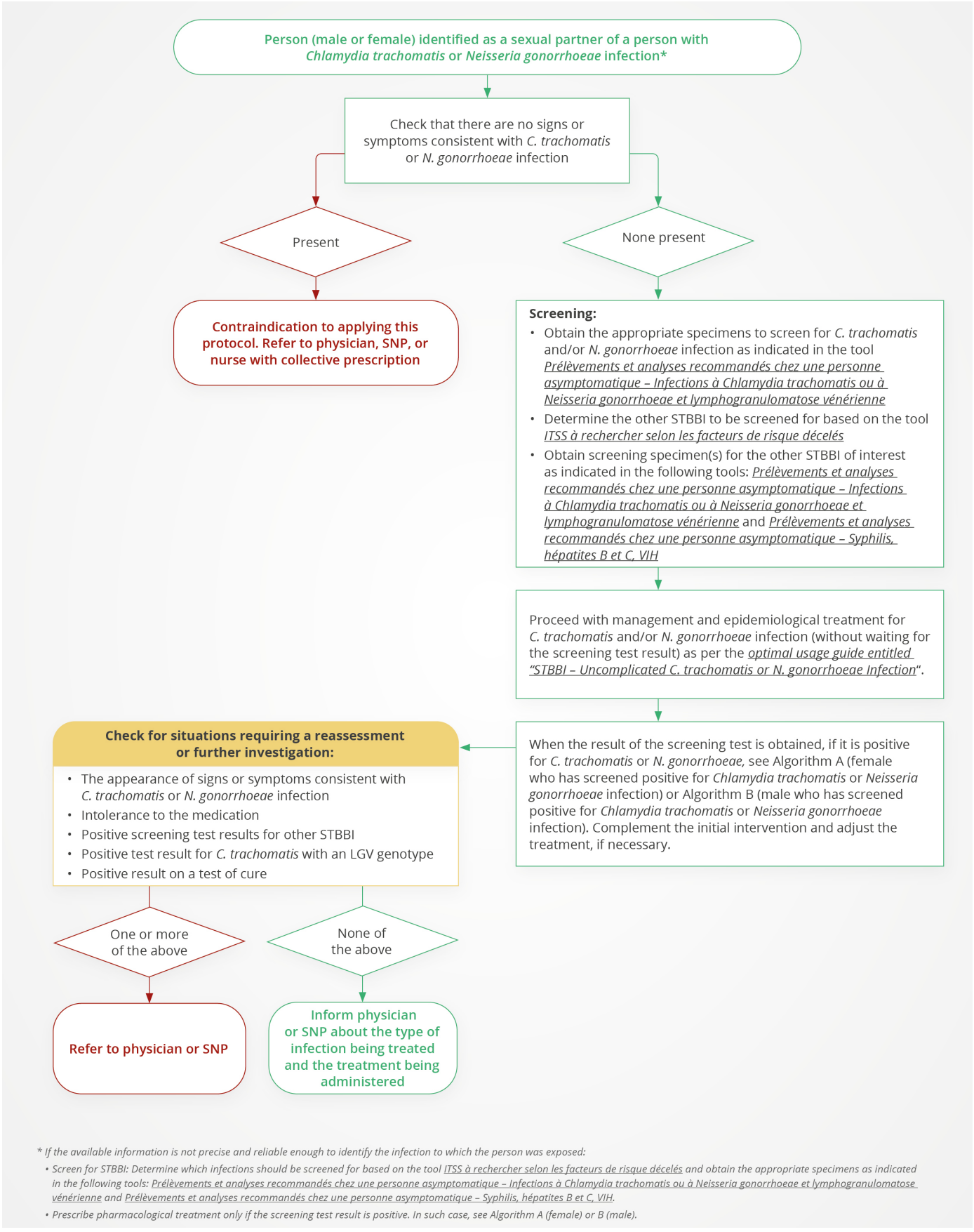
** When possible, if a gonococcal infection has been detected only by nucleic acid amplification testing (NAAT), culture specimens should be obtained from the infected sites (endocervix, pharynx or rectum) to determine the strain's susceptibility before initiating treatment. Obtaining these specimens should not, however, delay treatment.*

APPENDIX II – TREATMENT AND FOLLOW-UP DECISION ALGORITHM B: MALE WHO HAS SCREENED POSITIVE FOR *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION



** When possible, if a gonococcal infection has been detected only by nucleic acid amplification testing (NAAT), culture specimens should be obtained from the infected sites (urethra, pharynx or rectum) to determine the strain's susceptibility before initiating treatment. Obtaining these specimens should not, however, delay treatment.*

APPENDIX III – TREATMENT AND FOLLOW-UP DECISION ALGORITHM C: PERSON (MALE OR FEMALE) IDENTIFIED AS A SEXUAL PARTNER OF A PERSON WITH *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION



** If the available information is not precise and reliable enough to identify the infection to which the person was exposed:*

- *Screen for STBBI: Determine which infections should be screened for based on the tool ITSS à rechercher selon les facteurs de risque décelés and obtain the appropriate specimens as indicated in the following tools: Prélèvements et analyses recommandés chez une personne asymptomatique – Infections à Chlamydia trachomatis ou à Neisseria gonorrhoeae et lymphogranulomatose vénérienne and Prélèvements et analyses recommandés chez une personne asymptomatique – Syphilis, hépatites B et C, VIH.*
- *Prescribe pharmacological treatment only if the screening test result is positive. In such case, see Algorithm A (female) or B (male).*

APPENDIX IV – TABLE OF SIGNS AND SYMPTOMS CONSISTENT WITH *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION

SIGNS AND SYMPTOMS CONSISTENT WITH *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION	
Cervicitis	▶ Abnormal vaginal discharge ▶ Intermenstrual or postcoital vaginal bleeding ▶ Mucopurulent or purulent endocervical exudate
Urethritis	▶ Burning on urination ▶ Urethral discomfort ▶ Urethral discharge
Epididymitis/epididymo-orchitis	▶ Progressive and typically unilateral testicular pain ▶ Tenderness of the epididymis or testicle upon palpation ▶ Palpable swelling of the epididymis ▶ Urethral discharge ▶ Hydrocele ▶ Scrotal erythema or edema on the affected side ▶ Fever
Pelvic inflammatory disease	The following manifestations, associated or not with cervicitis, are indicative of pelvic inflammatory disease: ▶ Deep dyspareunia ▶ Fever ▶ Lower abdominal tenderness, adnexal tenderness (unilateral or bilateral) or cervical motion tenderness.
Proctitis	▶ Mucopurulent rectal discharge ▶ Anorectal pain ▶ Bloody stool ▶ Tenesmus ▶ Constipation
Other	▶ Pharyngitis: throat redness and pain ▶ Bartholinitis (inflammation of the Bartholin glands): swelling, redness, heat, pain ▶ Painful inguinal or femoral lymphadenopathy and buboes (associated with lymphogranuloma venerum) ▶ Exceptionally, gonococcal infection may be complicated with joint involvement (gonococcal arthritis) or systemic involvement with fever and skin lesions (gonococcemia)

APPENDIX V – GENERAL INFORMATION ON ANTIBIOTICS USED FOR THE TREATMENT OF *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION

The general information on antibiotics used for the treatment of *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infection presented below is not exhaustive.

	Amoxicillin	Azithromycin	Cefixime
Contraindications	▶ History of allergic reaction to penicillins (penicillin G or V, ampicillin, amoxicillin, cloxacillin, piperacillin)	▶ History of allergic reaction to macrolides (e.g., azithromycin, clarithromycin, erythromycin) ▶ History of cholestatic jaundice or liver dysfunction associated with the prior use of azithromycin	▶ History of allergic reaction to cephalosporins
Precautions	▶ None	▶ Severe hepatic failure ▶ Severe renal failure (creatinine clearance < 10 ml/min) ▶ Myasthenia gravis ▶ Congenital or acquired QT interval prolongation	▶ History of allergic reaction to penicillins (e.g., penicillin G or V, ampicillin, amoxicillin, cloxacillin, piperacillin)
Most common drug adverse effects	▶ Gastrointestinal effects: diarrhea, nausea, vomiting	▶ Gastrointestinal effects: diarrhea, abdominal pain, nausea, vomiting	▶ Gastrointestinal effects: diarrhea, nausea
Most significant drug interactions	▶ Allopurinol ▶ Vitamin K antagonist (e.g., warfarin): INR monitoring 4 to 5 days after the start of treatment is recommended ▶ Methotrexate (at a chemotherapeutic dose)	▶ Drugs that prolong the QT interval (e.g., amiodarone, citalopram, domperidone, haloperidol, sotalol) ▶ Drugs that are glycoprotein P/ABCB1 substrates (e.g., colchicine, digoxin, dabigatran)	▶ No significant interaction (single dose)

	Ceftriaxone[7]	Ciprofloxacin
Contraindications	▶ History of allergic reaction to cephalosporins	▶ History of allergic reaction to quinolones
Precautions	▶ History of allergic reaction to penicillins (e.g., penicillin G or V, ampicillin, amoxicillin, cloxacillin, piperacillin)	▶ Pregnancy, breastfeeding ▶ Persons under 18 years of age ▶ Myasthenia gravis ▶ Congenital or acquired QT interval prolongation ▶ History of *Clostridium difficile*-associated disease ▶ Cardiovascular history ▶ Renal failure ▶ Athletes and the elderly (risk of tendinopathy)
Most common drug adverse effects	▶ Gastrointestinal effects: diarrhea, nausea ▶ Injection site discomfort	▶ Gastrointestinal effects: diarrhea, nausea, vomiting
Most significant drug interactions	▶ No significant interaction (single dose)	▶ Warfarin, acenocoumarol ▶ Dairy products, calcium- or iron-fortified foods, antacids, calcium/iron/magnesium/zinc supplements ▶ Sildenafil ▶ Drugs that prolong the QT interval (e.g., amiodarone, citalopram, domperidone, haloperidol, sotalol)

[7] Preferred diluent for ceftriaxone: 1% lidocaine without epinephrine (use lidocaine 1% without epinephrine only if there is no history of allergic reaction to lidocaine or other local anaesthetic).

APPENDIX V – GENERAL INFORMATION ON ANTIBIOTICS USED FOR THE TREATMENT OF *CHLAMYDIA TRACHOMATIS* OR *NEISSERIA GONORRHOEAE* INFECTION (CONT'D)

The general information on antibiotics used for the treatment of *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infection presented below is not exhaustive.

	Doxycycline	Gentamicin
Contraindications	▶ History of allergic reaction to tetracyclines (e.g., doxycycline, minocycline, tetracycline, tigecycline) ▶ Pregnancy ▶ Myasthenia gravis	▶ History of allergic reaction to aminoglycosides (e.g., amikacin, gentamicin, streptomycin, tobramycin)
Precautions	▶ Esophageal abnormality (e.g., stenosis, achalasia)	▶ Since the maximum volume for intramuscular injection is 3 ml per injection, gentamicin should not be diluted with 1% lidocaine without epinephrine. ▶ Myasthenia gravis
Most common drug adverse effects	▶ Photosensitivity ▶ Gastrointestinal effects: diarrhea, abdominal pain, nausea, vomiting ▶ Esophageal irritation	▶ Injection site discomfort
Most significant drug interactions	▶ Vitamin K antagonist (e.g., warfarin): INR monitoring 4 to 5 days after the start of treatment is recommended ▶ Antacids, bismuth subsalicylate or multivitamins (calcium, iron, magnesium) ▶ Anticonvulsants (e.g., barbiturates, carbamazepine, phenytoin) ▶ Class of retinoids (e.g., acitretin, isotretinoin)	▶ No significant interaction (single dose)