



Ophthalmia Neonatorum

Practice Resource for
Health Care Providers

May 2024



**Perinatal
Services BC**

Provincial Health Services Authority

Territory acknowledgement

We respectfully acknowledge that this document was developed at Perinatal Services BC on the unceded, traditional and ancestral territories of the Coast Salish People, specifically the x̣ṃəθḳʷəỵəm (Musqueam), Sḳẉx̣ẉú7mesh Úx̣ẉumixw (Squamish Nation) and sə́ḷílwətał (Tsleil-Waututh Nation) who have cared for and nurtured the lands and waters around us for all time. We give thanks for the opportunity to live, work and support care here.

Note

The information contained in this practice resource reflects the information and guidance from recent position statements published by the Canadian Paediatric Society. This document is intended for use by physicians, midwives, nurse practitioners, acute care and public health nurses who provide health care to newborns in British Columbia.

This document is provided for guidance and is not meant to replace clinical judgment.

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Introduction

Ophthalmia Neonatorum (ON) is defined as acute conjunctivitis of any cause during the neonatal period and presents with conjunctival erythema, edema of the eyelids and ocular discharge. Causes of ON can be chemical, viral or bacterial. In most instances, ON is a mild illness. The exception is ophthalmia due to infection with *Neisseria gonorrhoeae* and can progress quickly to corneal ulceration, perforation of the globe, and permanent visual impairment.^{1,2}

Credé introduced ocular prophylaxis at birth in 1881 to prevent blindness caused by *Neisseria gonorrhoeae* at a time when the maternal infection rates were high, and there was no effective treatment for gonococcal ON. The only agent approved in Canada for eye prophylaxis to prevent gonococcal ON is 0.5% erythromycin ointment¹ however, the Canadian Antimicrobial Resistance Surveillance System (2022) reported a 32.6% failure rate when treating *Neisseria gonorrhoeae* with erythromycin.³ Erythromycin ointment does not prevent *Chlamydia trachomatis* Ophthalmia Neonatorum.¹ Based on these facts, CPS does not recommend using erythromycin for ocular prophylaxis but recommends screening of all pregnant women/people for and treating *Neisseria gonorrhoeae* or *Chlamydia trachomatis* during pregnancy.¹

Rates of ON caused by *Neisseria gonorrhoea* or *Chlamydia trachomatis* decreased significantly in the global north, and several high-income countries and some Canadian provinces and territories have repealed requirements for prophylaxis of ophthalmia neonatorum. In July 2018 the government of British Columbia [repealed section 17](#) of the Health Act Communicable Disease Regulation that mandated universal newborn eye prophylaxis.

Incidence

Boisvert et al. identified 12 cases of ON in Canada caused by either *Neisseria gonorrhoea* or *Chlamydia trachomatis* between November 1, 2018, and October 31, 2020. Six cases did not receive ocular prophylaxis; data was unavailable for the remaining 6 cases, or prophylaxis was given. There were no reported complications, such as corneal ulcers, ocular perforation, or severe inflammation of the globe, among all 12 cases.⁴ According to BCCDC data, no cases of gonococcal ophthalmia neonatorum were reported between 2019 and 2023.⁵

Recommendations

All pregnant women/people should be screened for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* as early as possible in pregnancy. Rescreen pregnant women/people in the third trimester if not in a stable monogamous relationship. Screen pregnant women/people who were not screened during pregnancy at delivery or very soon after delivery, using the most rapid tests available.^{1,6,7}

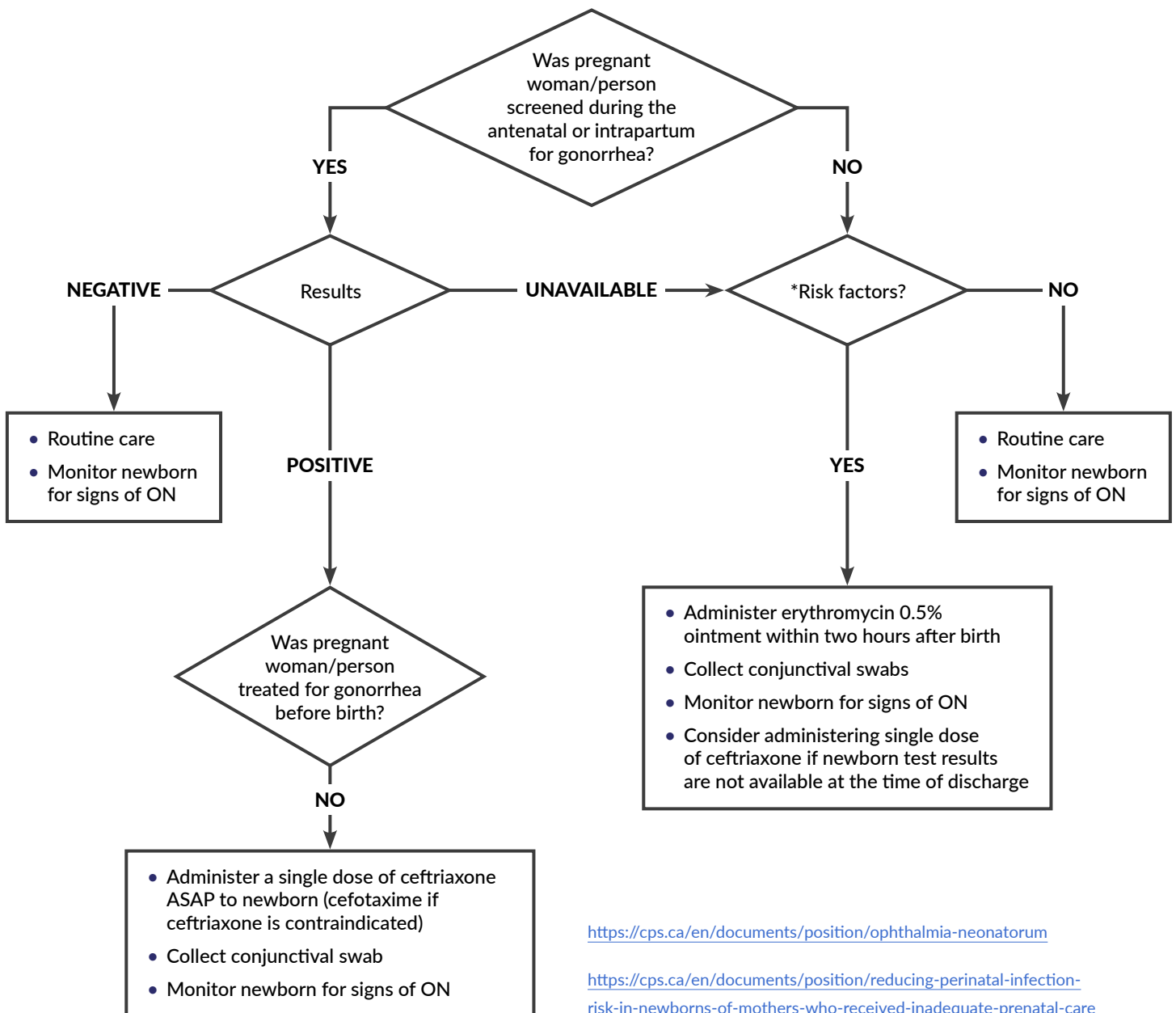
1. Screen all pregnant women/people for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* during pregnancy.
 - Those infected should be treated during pregnancy and tested again after treatment to ensure therapeutic success.
 - Additional screening in each trimester is recommended for pregnant women/people with ongoing risk factors such as:⁸
 - Sexually active and under 25 years of age.
 - Sex with a person who has gonorrhea.
 - Sex with a new partner or multiple partners during current pregnancy (e.g., non-monogamous relationship), without barrier protection.
 - History of sexually transmitted and blood-borne infections (STBBI) or involvement in activities that may increase the risk for potential exposure to STBBI (e.g., street involvement, substance use).
 - Processes should be in place to ensure communication regarding screening results between primary care providers and others caring for a pregnant woman/person during pregnancy, birth, and the care of the newborn. Processes should be in place to ensure that newborns exposed at birth to *Neisseria gonorrhoeae* receive treatment.
2. Newborns whose mother/birth parent tested positive for gonorrhea but did not receive treatment before delivery should receive a single dose of ceftriaxone (50 mg/kg, to a maximum of 125 mg) intramuscular (IM) or intravenous (IV) as soon as possible after birth. A single dose of cefotaxime (100 mg/kg) is an acceptable alternative when ceftriaxone is contraindicated.^{1,6}
3. Newborn investigations:
 - Collect conjunctival swabs from all newborns exposed to *Neisseria gonorrhoea* or *Chlamydia trachomatis*.^{1,6}
 - Collect blood and cerebrospinal fluid cultures in addition from unwell, exposed newborns.^{1,6}

4. In the presence of maternal [risk factors](#), discuss with the mother/birthing parent who was not screened for *Neisseria gonorrhoeae* during pregnancy or before delivery, or if the test results are unavailable at the time of birth,⁶ the risks and benefits of erythromycin to prevent conjunctivitis caused by *Neisseria gonorrhoeae*. [Administer erythromycin](#) 0.5% ointment within two hours after birth.
 - Without preventative measures, 30–50% of newborns exposed to *Neisseria gonorrhoeae* at birth will develop gonococcal ophthalmia.^{1,7} Most cases present in the first week post-birth with bilateral purulent eye discharge and significant eyelid edema.⁶
 - A Cochrane review found that newborns given topical ocular prophylaxis will likely have a lower chance of conjunctivitis within one month of birth than newborns not given (moderate-certainty evidence). The medications evaluated were tetracycline 1%, erythromycin 0.5%, povidone-iodine 2.5%, and silver nitrate 1%.⁹
 - 0.5% erythromycin ointment is the only agent approved in Canada for newborn eye prophylaxis to prevent ophthalmia neonatorum caused by *Neisseria gonorrhoeae*.¹
 - Administer erythromycin 0.5% ointment after completion of the first feed and during skin-to-skin contact with parent/caregiver.
5. Prophylactic erythromycin eye ointment within two hours of birth is recommended for newborns of mothers/birthing parents with unknown histories and who are unavailable for testing.
 - [Administer erythromycin](#) 0.5% ointment after completion of the first feed and during skin-to-skin contact with parent/caregiver.
 - Monitor these newborns closely for signs of infection and collect conjunctival swabs for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*.^{1,6}
 - If tests results of newborn swabs are unknown by the time of discharge, and there may be barriers to accessing timely treatment for ophthalmia neonatorum, consider an appropriate treatment plan. This may include a single dose of ceftriaxone.¹
6. Monitor all newborns for [signs of ophthalmia neonatorum](#). It is imperative for both health care providers and [parents or caregivers](#) to recognize the signs of gonococcal ophthalmia neonatorum and to respond appropriately.¹ If infection is suspected, collect conjunctival specimens and test for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*.^{1,6}
7. The newborn with established gonococcal disease will need additional investigations and management; consult a specialist in pediatric infectious diseases and consider referral to a higher level of care if indicated.
8. Erythromycin ocular prophylaxis is not recommended for newborns of mothers/birthing parents with untreated chlamydia infection. Closely monitor these newborns for signs of conjunctivitis and collect conjunctival swabs for a *C. trachomatis* culture if indicated.^{1,6}

Monitor all newborns for signs of ophthalmia neonatorum. It is imperative for both health care providers and parents or caregivers to recognize the signs of gonococcal ophthalmia neonatorum and to respond appropriately.

Screening and management of Ophthalmia Neonatorum caused by Neisseria gonorrhoea

Communicate screening results and treatment between maternal and newborn care providers. Processes should be in place to ensure that newborns exposed at birth to Neisseria gonorrhoea receive treatment.



<https://cps.ca/en/documents/position/ophthalmia-neonatorum>

<https://cps.ca/en/documents/position/reducing-perinatal-infection-risk-in-newborns-of-mothers-who-received-inadequate-prenatal-care>

How to recognize Ophthalmia Neonatorum ^{1, 7, 10, 11}

Clinical presentation	<i>Neisseria gonorrhoeae</i>	<i>Chlamydia trachomatis</i>	Other causes
Onset (age)	Within first 4 days of life	5–14 days of life	Variable
Erythema of eyes	Yes	Yes	Variable
Inflammation of eye lids	Extensive and excessive	Minimal	Minimal
Corneal involvement	Usual, risk of corneal ulceration or rupture	Rarely	Rarely
Discharge	Acute bilateral mucopurulent discharge	Unilateral or bilateral mucopurulent conjunctivitis	Minimal, tends to be unilateral
Additional concerns	Perforation of the globe leads to visual impairment	Chlamydial pneumonia. Infant will be afebrile with nasal congestion, prolonged cough, tachypnea and rales	



Swelling and purulent drainage are characteristic of gonococcal ophthalmia neonatorum.

Procedure to administer ocular 0.5% erythromycin ointment

1. Use gloves when administering erythromycin.
2. To prevent cross contamination, use a single-use tube of 0.5% erythromycin and discard remainder of tube after administering to both eyes.
3. Before administration, wipe each eyelid gently with sterile cotton to remove foreign matter and to permit adequate eversion of the lower lid.
4. Apply a line of 0.5% erythromycin ointment, about 1 cm long, in the inferior conjunctival fornix, by pulling the lower eyelid gently down. Care is needed to prevent injury to the eye or the eyelid from the tip of the tube.
5. Gently massage the closed eyelids to help spread the ointment to all areas of the conjunctiva.
6. In the very premature newborns whose eye lids are fused at the time of birth, apply the erythromycin ointment without separating the eyelids. Ointment absorption through the immature skin is expected.

Appendix

Information for families: Eye infection and your newborn baby

INFORMATION FOR FAMILIES

Eye infection and your newborn baby

Most of the time, puffy or red eyes in your baby are caused by a blocked tear duct or infection by viruses or bacteria. Some eye infections may be serious and need special medication.

Contact your doctor or go to the emergency department or health clinic at once if your baby is under two weeks old and:

- Your baby's eyes are red
- Your baby's eyes have thick pus
- Your baby's eyelids are swollen or puffy

Your baby's eyes need to be examined to find out if it is an infection that needs to be treated.



Credit: Dr P. Marazzi / Science Photo Library

This information sheet is available for download from www.perinatalservicesbc.ca

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