Ministry of Health

Ontario Public Health Standards:
Requirements for Programs, Services and Accountability

Infectious Disease Protocol

Appendix 1: Case Definitions and Disease-Specific Information

Disease: Group B Streptococcal disease, neonatal

Effective: May 2022

Ontario

Group B Streptococcal disease, neonatal

☐ Communicable

☐ Virulent

Health Protection and Promotion Act (HPPA)

Ontario Regulation (O. Reg.) 135/18 (Designation of Diseases)

Provincial Reporting Requirements

☒ Confirmed case

☒ Probable case

As per Requirement #3 of the "Reporting of Infectious Diseases" section of the *Infectious Diseases Protocol, 2018* (or as current), the minimum data elements to be reported for each case are specified in the following:

- O. Reg. 569 (Reports) under the HPPA;[3]
- The iPHIS User Guides published by Public Health Ontario (PHO); and
- Bulletins and directives issued by PHO.

Type of Surveillance

Case-by-case

Case Definition

Confirmed Case

Laboratory confirmation of Group B *Streptococcus* (*Streptococcus agalactiae*) from a normally sterile site in a newborn (e.g., cerebrospinal fluid [CSF]), with clinically compatible signs and symptoms of invasive disease in a newborn up to 28 days after birth.

Probable Case

Clinically compatible signs and symptoms with a clinical diagnosis of invasive Group B Streptococcal disease in a newborn up to 28 days after birth, whose mother has laboratory confirmation of Group B *Streptococcus (Streptococcus agalactiae)* from a lower vaginal or anorectal specimen or from a normally sterile site (e.g., blood);

OR

Clinically compatible signs and symptoms with a clinical diagnosis of invasive Group B Streptococcal disease in a newborn up to 28 days after birth and laboratory confirmation of Group B *Streptococcus (Streptococcus agalactiae)* isolated from the placenta or amniotic fluid.

Outbreak Case Definition

The outbreak case definition varies with the outbreak under investigation. Please refer to the *Infectious Diseases Protocol, 2018* (or as current) for guidance in developing an outbreak case definition as needed.

The outbreak case definitions are established to reflect the disease and circumstances of the outbreak under investigation. The outbreak case definitions should be developed for each individual outbreak based on its characteristics, reviewed during the course of the outbreak, and modified if necessary, to ensure that the majority of cases are captured by the definition. The case definitions should be created in consideration of the outbreak definitions.

Outbreak cases may be classified by levels of probability (*i.e.,* confirmed and/or probable).

Clinical Information

Clinical Evidence

Clinically compatible signs and symptoms are characterized by the following:

- Early onset disease (<7 days), characterized by sepsis, pneumonia, and less frequently meningitis, osteomyelitits or septic arthritis

OR

- Late onset disease (≥7 days to 1 month), characterized by sepsis and meningitis.

Clinical Presentation

Two distinct forms of illness can occur:[1]

- Early onset disease (1 – 7 days after birth) presents with sepsis, respiratory disease, apnea, shock, pneumonia and meningitis.
- Late onset disease (≥7 days to several months after birth) presents with sepsis and meningitis, however **note that only illness up to 28 days after birth is reportable.**

Laboratory Evidence

Laboratory Confirmation

Any of the following will constitute a confirmed case of Group B Streptococcal Disease of the newborn:

- Positive Group B *Streptococcus* (*Streptococcus agalactiae*) culture from a normally sterile site (e.g., CSF, blood, pleural or joint fluid) in infants
- Positive nucleic acid amplification test (NAAT) for Group B *Streptococcus* from a normally sterile site in infants

Approved/Validated Tests

- Standard culture for Group B *Streptococcus* with serogrouping
- NAAT for Group B *Streptococcus*

Indications and Limitations

Not applicable

For further information about human diagnostic testing, contact the Public Health Ontario Laboratories.

Case Management

In addition to the requirements set out in the Requirement #2 of the "Management of Infectious Diseases – Sporadic Cases" and "Investigation and Management of Infectious Diseases Outbreaks" sections of the *Infectious Diseases Protocol, 2018* (or as current), the board of health shall investigate cases to determine the source of infection. Refer to Provincial Reporting Requirements above for relevant data to be collected during case investigation. Treatment is under the direction of the attending health care provider.

Contact Management

Not applicable for individual cases with the exception of outbreaks of GBS.

Outbreak Management

Outbreaks of GBS have been found to occur through nosocomial transmission. In the instance of a GBS outbreak in newborns, investigation of contacts and source of infection should be completed.

Please see the *Infectious Diseases Protocol, 2018* (or as current) for the public health management of outbreaks or clusters in order to identify the source of illness, manage the outbreak and limit secondary spread.

Prevention and Control Measures

Personal Prevention Measures

Prenatal screening for GBS is carried out by the clinician providing prenatal care. There are clinical recommendations for the use of intravenous antibiotics, at the onset and throughout labour, to women who are colonized with GBS, and those who are at high risk of delivering an infected infant (which may include other conditions such as premature labour, premature rupture of membranes, intra-partum fever, prolonged rupture of membranes). The antibiotics aim to interrupt transmission of GBS to newborns and to decrease infection and mortality.[1] For more information

regarding the practice of obstetrics and gynaecology, please refer to The Society of Obstetricians and Gynaecologists of Canada (SOGC).

Infection Prevention and Control Strategies

Nosocomial transmission of GBS has been identified related to improper infection prevention and control practices in delivery rooms and nurseries. Ensure routine practices are followed during hospitalization.[4]

Refer to PHO's website to search for the most up-to-date information on Infection Prevention and Control (IPAC).

Disease Characteristics

Aetiologic Agent - Group B *streptococci* (GBS) (*Streptococcus agalactiae*) are gram-positive cocci, which are the most common cause of sepsis and meningitis in "at risk" newborns.[1]

Modes of Transmission - Early onset transmission occurs via the infected birth canal as well as in utero. Late onset transmission can also be through person to person contact.[1]

Incubation Period – For early onset disease, the incubation period is from 1-7 days, presenting most frequently within the first 24 hours of life. The incubation period for late onset GBS disease in infants is unknown, as it can occur from ≥ 7 days to several months, but typically within 3-4 weeks.[2]

Period of Communicability - Group B *streptococci* are transmissible to infants during labour if the mother is colonized, however, a negative vaginal culture at the time of labour does not guarantee absence of colonization.[2]

The period of communicability is unknown but can extend throughout the duration of colonization or disease. Infants can remain colonized for several months after birth and after treatment for systemic infections.[2]

Reservoir - Humans; commonly found in the gastrointestinal, reproductive, and urinary tracts; less commonly in the pharynx.[1,2]

Host Susceptibility and Resistance - Neonates are universally susceptible; risk is

greater among premature babies.[1] Recurrent GBS disease affects an estimated 1% to 3% of appropriately treated infants.[2]

Please refer to PHO's Reportable Disease Trends in Ontario reporting tool for the most up-to-date information on infectious disease trends in Ontario.

For additional national and international epidemiological information, please refer to the Public Health Agency of Canada and the World Health Organization.

References

1. Heymann DL, editor. Control of Communicable Diseases Manual. 20 ed. Washington, D.C: American Public Health Association; 2015.
2. Committee on Infectious Diseases, American Academy of Pediatrics. Section 3: Summaries of Infectious Diseases: Group B Streptococcal Infections. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, editors. Red Book: 2018 Report of the Committee on Infectious Diseases. 31 ed. Itasca, IL: American Academy of Pediatrics; 2018.
3. Health Protection and Promotion Act, R.S.O. 1990, Reg. 569, Reports, (2018). Available from: https://www.ontario.ca/laws/regulation/900569
4. Ontario Agency for Health Protection and Promotion, Provincial Infectious Diseases Advisory Committee. Routine Practices and Additional Precautions in All Health Care Settings. Toronto, ON: Queen's Printer for Ontario; 2012. Available from: https://www.publichealthontario.ca/en/Health-Topics/Infection-Prevention-Control/Routine-Practices-Additional-Precautions

Case Definition Sources

Heymann DL, editor. Control of Communicable Diseases Manual. 20 ed. Washington, D.C: American Public Health Association; 2015.

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Document History

Revision Date	Document Section	Description of Revisions
April 2022	Entire Document	New template. Appendix A and B merged. No material content changes.
April 2022	Epidemiology: Occurrence section	Removed.
April 2022	ICD Codes	Removed.