Labour and Delivery:
Prevention of Invasive Group A Streptococcal Disease

Note: This information was developed to support staff and patient safety during labour and delivery. Terms in bold are defined in the Definitions section.
If you have any questions or comments contact IPC at ipcsurvstdsadmin@ahs.ca

Best practice recommendations

Rates of **invasive Group A streptococcal (invasive GAS) disease** in Alberta have increased. In 2003 the rate was 4.24/100,000 and in 2017 the rate was 10.24/100,000. During the study period 87/3511 (2.5%) of these cases were classified as post-partum. The post-partum risk was three times that of the general population, i.e., 1.6/10,000 live births versus 0.5/10,000 in the general population. The majority of infections in post-partum patients were healthcare-associated. Maternal disease, e.g., puerperal sepsis or need for hysterectomy and maternal death due to invasive GAS occurred.

Healthcare providers and patients **colonized** with the organism that causes invasive GAS can be reservoirs and act as sources for disease transmission. Direct contact and contact with large respiratory droplets are the primary means of patient acquisition of GAS. Transmission can occur from:

- patient to the healthcare provider;
- patient to another patient, e.g., mother to newborn;
- healthcare provider to the patient, e.g., via contaminated hands or spread of large respiratory droplets within two metres.

Routine practices which include hand hygiene and **personal protective equipment** (PPE) are important Infection Prevention and Control (IPC) practices for the prevention of transmission.

Routine practices

1. Use routine practices for every patient, every time. The healthcare provider is protected during activities likely to cause splashes, sprays, or contact with blood or body fluids. The patient is protected from exposure to the healthcare provider's respiratory secretions.
   - 1.1 Perform hand hygiene following the four hand hygiene moments outlined in the AHS Hand Hygiene Policy & Procedure:
     a) Moment One: before contact with a patient or patient's environment;
     b) Moment Two: before a clean or aseptic procedure;
     c) Moment Three: after exposure or risk of exposure to blood and/or body fluid; and
     d) Moment Four: after contact with a patient or patient's environment.
   - 1.2 Take all reasonably practical measures to prevent exposure to blood and body fluids. Refer to AHS Occupational Exposure to Blood and Body Fluids Policy for more information.
   - 1.3 The healthcare provider wears PPE including a surgical or procedure **mask** and **eye protection** as indicated by the Point-of-Care Risk Assessment**,** to prevent the risk of exposure to blood and body fluids within two metres of the perineum:
     - from the time of active pushing and perineal exposure and until;
     - the baby is born and placenta is delivered; and/or
     - any required perineal repair is completed.

For more information contact
ipcsurvstdadmin@ahs.ca

Original date: November 2019
Revised date: June 2020

Alberta Health Services
Infection Prevention & Control

1.4 Providing care at or within two metres of the perineum before and after delivery for up to six weeks postpartum, which may, according to clinical judgement, require an extended period of time and thus a prolonged risk of exposure.

1.5 Assessment of other wounds with suspected tissue compromise such as non-intact caesarean section incisions and deep nipple trauma requiring extensive skin care:

- from the time the cervix is fully dilated until the baby is born;
- during placental delivery;
- until surgical repairs are complete; and
- for post-partum exams involving non-intact tissue.

1.6 Information for donning and doffing of PPE can be found on the Personal Protective Equipment webpage.

Note: If PPE is not donned during an emergency situation, don PPE as soon as it is safe to do so.

Definitions

Colonized means the presence of microorganisms on skin, on mucous membranes, in open wounds, or in excretions or secretions, but are not causing signs or symptoms of infection.

Eye protection means personal protective equipment to protect eyes, e.g., goggles, face shields, and visors attached to masks.

Invasive Group A streptococcal (invasive GAS) disease means disease caused by *Streptococcus pyogenes*, a Gram positive cocci. *S. pyogenes* can cause a variety of invasive and non-invasive infections. The most frequently encountered illnesses caused by *S. pyogenes* are sore throat (strep throat) and skin infections such as impetigo or pyoderma. *S. pyogenes* can also cause scarlet fever, puerperal fever, erysipelas, septicemia, cellulitis, mastoiditis, otitis media, pneumonia, peritonsillitis, wound infections, necrotizing fasciitis, and streptococcal toxic shock syndrome.

Mask means a device that covers the nose and mouth to protect the mucous membranes of the nose and mouth from large droplets, splashes, or sprays of blood or body fluids. They can include ear loop procedure masks, surgical masks, or masks with a built-in face shield. By wearing a mask the healthcare provider also protects the patient from the healthcare provider's respiratory emissions.

Personal protective equipment means gowns, gloves, masks, and facial protection used by healthcare providers as barriers to prevent potential exposure to infectious microorganisms. This can include masks and eye protection, face shields or masks with visor attachment, or respirators.

For more information contact
ipcsurvstdadmin@ahs.ca

Original date: November 2019
Revised date: June 2020

References

1. Alberta Health. 2018. Public Health Disease Management Guidelines. Streptococcal Disease – Group A, Invasive. Retrieved from https://open.alberta.ca/publications/streptococcal-disease-group-a-invasive.
2. BC Centre for Disease Control. 2017. Communicable Disease Control Invasive Group A Streptococcal Disease. Retrieved from http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%201%20-%20CDC/iGAS.pdf
3. Daneman A., McGeer A., Low DE., Tyrrell G., Simor AE., McAurthur M., et al. 2005. Hospital acquired invasive group A Streptococcal Infections in Ontario, Canada, 1992-2000. Clinical Infectious Diseases. 41: 334-342. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/16007530.
4. Deutscher M., Lewis M., Zell E.R., Taylor T.H. Jr., Van Beneden C., and Schrag, S. 2011. Incidence and Severity of Invasive Streptococcus pneumoniae, Group A Streptococcus, and Group B Streptococcus Infections Among Pregnant and Post-partum Women. *Clinical Infectious Diseases*, 53(2),114–123. Retrieved from https://academic.oup.com/cid/article/53/2/114/286073.
5. Nadarajah J. Delibasic K. 2019. Epidemiological and Molecular Characterization of a Post-Partum Invasive Group A Streptococcal Outbreak in Ontario Hospital. Poster Board 16. IFIC/IPAC Canada 2019. Conference.
6. Ostrosky, B. 2018. Guide to Infection Control in the Hospital *Streptococcus pyogenes* (Group A Streptococcal Infections). *International Society for Infectious Diseases.* Retrieved from https://www.isid.org/wp-content/uploads/2018/07/ISID_InfectionGuide_Chapter42.pdf.
7. Royal College of Obstetricians and Gynaecologists. 2012. Bacterial Sepsis Following Pregnancy. Green-top Guideline. No. 64b. Retrieved from https://www.rcog.org.uk/globalassets/documents/guidelines/gtg_64b.pdf.
8. Steer JA, Lamagni T, Healy B, Morgan M, Dryden, M, Bhargavi R, et al. Guidelines for prevention and control of group A streptococcal infection in acute healthcare and maternity settings in the UK. J Infect. 2012; 64:1-18 Retrieved from https://www.sciencedirect.com/science/article/pii/S0163445311005354?via%3Dihub.
9. Tyrrell, G.J., Fathima, S., Kakulphimp, J., & Bell, C. 2018. Increasing Rates of Invasive Group A Streptococcal Disease in Alberta, Canada; 2003-2017. *Open Forum Infectious Diseases,* 5 (8), 1-8. Retrieved from https://academic.oup.com/ofid/article/5/8/ofy177/5056739.

For more information contact
ipcsurvstdadmin@ahs.ca

Original date: November 2019
Revised date: June 2020