Invasive Group A Streptococcal Infections (IGAS)

Purpose

To prevent transmission of invasive group A streptococcal (GAS) disease.
To provide guidance to health care provider on how to:

- Identify
- Isolate
- Inform

Definitions

Close Contact: As defined by the BCCDC Invasive Group A Streptococcal Disease guideline. Contact tracing and chemoprophylaxis (use of antibiotics to prevent infection with group A streptococcus) is only indicated for severe invasive GAS disease.

Group A streptococcal infections are caused by a bacteria called *Streptococcus pyogenes*. People can carry group A streptococcus (GAS) on their skin and in their noses with no symptoms of illness. It can cause many different infections ranging from mild to severe. Severity of infection may be categorized as the following:

- **Non-invasive/Local:** The most frequently encountered illness caused by GAS are "strep throat", and skin infections such as impetigo (skin infection common in children). Non-invasive/Localized GAS infections do NOT require public health follow-up.

- **Invasive:** Infections that occur when GAS enters a normally sterile body site (blood, Cerebral Spinal Fluid (CSF), pleural fluid, bone or joint fluid, or deep tissue). Invasive infections are reportable and notifiable and can be categorized as non-severe or severe. Non-severe invasive GAS does NOT require public health follow-up whereas severe invasive GAS does require public health follow-up (see "Severe Invasive"). Refer to the Notification section of this document located in Best Practices.

- **Severe Invasive:** Severe invasive GAS cases are notifiable and occur when invasive disease results in severe life-threatening illness. They may require public health follow-up as determined by the Medical Health Officer (MHO). Refer to the Notification section of this document located in Best Practices. This may include:

    - **Streptococcal Toxic Shock Syndrome (STSS):** is characterized by hypotension and at least two of the following signs:
        a) Renal Impairment
        b) Coagulopathy
        c) Liver function abnormality
        d) Acute respiratory distress syndrome (ARDS)
        e) Generalized erythematous macular rash that may peel or slough.

- **Soft-Tissue Necrosis (including Necrotizing fasciitis (NF) "Flesh Eating Disease", myositis or gangrene):** Typically begins with a small wound or trauma. Pain at the site may be the initial symptom. Within 24hrs, the area becomes red, swollen, warm, and tender. Infection quickly spreads potentially requiring surgical intervention such as debridement or amputation to remove necrotic tissue.
- **GAS Meningitis**
- **GAS pneumonia**
- **Other life-threatening conditions or a confirmed case resulting in death**

Note: in this document the term "patient" is inclusive of resident and client.

Overview

Illness Presentation:

Invasive group A streptococcal disease can present in various forms depending on where the infection is occurring.

Symptoms of blood infection (sepsis): Fever, chills, headache, generally not feeling well, pale skin, lack of energy, rapid breathing, and increased heart rate.

Early symptoms of necrotizing fasciitis: severe pain and swelling, often rapidly getting worse; fever, redness around wound.

Early symptoms of Streptococcal Toxic Shock Syndrome (STSS): fever, sudden severe pain, often in arm or leg; dizziness; confusion; feelings of having "the flu"; and a flat red rash over a large area of the body.

Mode of transmission

- Direct person-to-person contact with infected droplets in saliva or nasal secretions (e.g., coughing, sharing of food/utensils or cigarettes).
- It can also occur through contact with secretions (e.g., saliva, wound discharge, nasal secretions) from an infected person.
- Environmental transmission via contaminated surfaces and equipment may be possible. However, it's likely a less common mode of transmission.

Incubation Period

- The incubation period for invasive group A streptococcal disease has not been determined.
- The incubation period for non-invasive group A streptococcal disease is usually 1-3 days.

Period of communicability

- If group A streptococcal is untreated, patient can remain contagious to others for 10 – 21 days (depending on severity of infection).
- Transmissibility generally ends after 24 hours of appropriate antibiotic therapy.

Diagnostic Testing

- Invasive group A streptococcal disease is confirmed through laboratory testing of specimens taken from normally sterile sites (e.g., blood, CSF, joint fluid, deep tissue specimen collected during surgery).
- Refer to IHA Microbiology specimen ordering, collection, and transportation for guidance on specimen handling microbiology-guide-to-specimen-ordering-collection-and-transport-information.pdf

Best Practices

Additional Precautions

- In addition to Routine Practices, Droplet & Contact Precautions are required for all confirmed or suspected patients with group A streptococcal infection.
- The appropriate Droplet & Contact Precaution sign is to be posted outside the patient's door or designated bed space.

Patient Placement and Accommodation

- Single room with dedicated bathroom is preferred.
- Door may remain open.
- If single room unavailable refer to Recommendations for Cohorting Patients with strict bedside isolation, and dedicated toilet/commode and patient equipment.
- Droplet and Contact Precaution sign placed at the entrance to the patient room, cubicle, and designated bed space.

Patient Flow and Transport

- Limit transport to essential and diagnostic purposes only.
- Communication of Droplet and Contact Precautions is essential when a patient goes to another department or unit.
- Notify receiving department/facility and Emergency Health Services or other transport staff prior to transport.
- Transporting staff to wear a medical mask and eye protection within two meters of patient including during transport.
- Perform a Point of Care Risk Assessment prior to interacting with the patient to determine if additional PPE is required
- Don Personal Protective Equipment as per Additional Precautions sign and Point of Care Risk Assessment
- After assisting patient, doff PPE inside patient room (except mask and eye protection) and clean hands prior to transport.
- If direct patient care is required during transport, don new gown and gloves.
- Patient should wear medical mask during transport if tolerated. Contact Infection Prevention and Control if not tolerated.

Before transport consider/follow **the 5 C's**, educate, and assist the patient if necessary:

1. **C**ommunicate: notify receiving department if patient is on Additional Precautions.
2. **C**o-operative: is the patient able to follow instructions.
3. **C**lean hands: assist patient if required to clean their hands.

4. **C**lean clothes/clean sheet: patient to wear clean gown or clothes/cover with clean sheet.
5. **C**over/contain sources:
    - Cover wounds with clean dressings
    - Contain urine/feces or other body fluids
    - Cover cough: If coughing and/or on Contact and Droplet or Airborne Precautions, place medical mask on patient (if tolerated). Contact IPAC if not tolerated.

Personal Protective Equipment (PPE)

- Perform a Point of Care Risk Assessment prior to interacting with the patient to determine if additional PPE is required.
- PPE to be available directly outside the room.
- Perform hand hygiene before accessing any clean PPE.
- Medical mask and eye protection to be worn within two metres of the patient.
- Don PPE as per How to Don Personal Protective Equipment.
- Doff PPE as per How to doff Personal Protective Equipment and perform hand hygiene.
- The same PPE should not be worn for more than one patient.

Patient Care Equipment

- Dedicated patient care equipment to a single patient (e.g., blood pressure cuffs, commodes etc.).
- When equipment cannot be dedicated, clean and disinfect between every use.
- Do not take extra supplies into patient's room.
- Do not take patient chart into patient's room.
- Do not take medication chart into patient's room.
- Clean and disinfect equipment used for transport after each use.

Cleaning and Disinfection of Patient Environment

- Patient room to be cleaned and disinfected daily as per EVS cleaning protocol.
- Environmental Services (EVS) to be notified by health care provider when patient is discharged or transferred.
- Environmental Services to complete an **Additional Precautions Discharge Clean & Disinfection** of room/bed space and bathroom.
- Additional Precautions sign remains in place until the Additional Precautions Discharge Clean and Disinfection is complete, and signage is only removed by Environmental Services.

Waste, Laundry, Dishes, and Cutlery

- Use Routine Precautions.

Discontinuing Precautions

- Contact Infection Preventionist and/or Medical Microbiologist on-call PRIOR to discontinuing precautions.
- Precautions may be discontinued after the patient has received 24 hours of effective antibiotic therapy.
- If patient is not improving (improvement defined as afebrile, stabilized blood pressure, patient feeling better) after 24hrs of antibiotic therapy additional precautions should not be removed.

Notifications (invasive cases only)

- Any suspect or confirmed cases of **invasive group A streptococcal disease** are **immediately** notifiable to the Communicable Disease Unit (1-866-778-7736) Monday – Friday 08:30-16:30 or Medical Health Officer on-call (1-866-457-5648) after hours, weekends, and STATs.
- Notify the Infection Preventionist and/or Medical Microbiologist on-call. suspected or confirmed cases of invasive group A streptococcal disease.
- All laboratories notify the Communicable Disease Unit for review by the Medical Health Officer of all positive laboratory results from sterile sites.
- Infection Preventionist to investigate all **severe** invasive group A streptococcal cases as directed by Medical Health Officer and complete a Communicable Disease Notification Tool.

Management of Close Contacts in the Healthcare Setting

Close Contact: As defined by the BCCDC Invasive Group A Streptococcal Disease guideline.

- Medical Health Officer will determine if an invasive group A strep infection is severe and therefore close contacts require chemoprophylaxis treatment (use of antibiotics to prevent group A strep infection).
- Contact tracing and chemoprophylaxis is **only indicated** for **severe** invasive group A streptococcus disease**.**
- Infection Preventionist to complete contact tracing for admitted patients.
- Communicable Disease Unit to follow-up with any close contacts that have been discharged.

Management of Exposed Health Care Provider

- Follow up provided by Medical Health Officer and/or Provincial Workplace Health Contact Centre (PWHCC) – See BCCDC Communicable Disease Manual- Invasive Group A Streptococcal Disease.
- Individuals who believe they have had a breach in PPE or exposure to a communicable disease while at work should contact the Provincial Workplace Health Contact Centre (PWHCC) at 1-866-922-9464 for an assessment or email OHN@WHcallcentre.ca. (The PWHCC is for IH employees only.)

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	July 2024	Entire document	Formatting
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