

Appendix B: Provincial Case Definitions for Diseases of Public Health Significance

Disease: Group A Streptococcal Disease, invasive (iGAS)

Effective: February 2019

Group A Streptococcal Disease, invasive (iGAS)

1.0 Provincial Reporting

Confirmed cases of disease

2.0 Type of Surveillance

Case-by-case

3.0 Case Classification

3.1 Confirmed Case

- Isolation of Group A Streptococcus (*Streptococcus pyogenes*) or deoxyribonucleic acid (DNA) detection by nucleic acid amplification test (NAAT) from a normally sterile site (e.g., blood, cerebrospinal fluid, joint, pleural, pericardial fluid) with or without evidence of clinical severity,

OR

- Isolation of Group A Streptococcus from a non-sterile site (e.g., skin) with evidence of severity.

4.0 Laboratory Evidence

4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of invasive Group A Streptococcal (iGAS) Disease:

- Positive Group A Streptococcus culture from a normally sterile site (e.g., blood, cerebrospinal fluid, joint, pleural, pericardial fluid);
- Positive Group A Streptococcus culture from a non-sterile site (e.g., skin) with evidence of severity (refer to section 5.0 below);
- Positive NAAT for *Streptococcus pyogenes* from a normally sterile site

4.2 Approved/Validated Tests

- Standard culture with serogrouping for Group A Streptococcus.
- NAAT for *Streptococcus pyogenes* DNA.

4.3 Indications and Limitations

- Isolates from iGAS cases should be forwarded to the Public Health Ontario Laboratory for further characterization.
- Once confirmed that the isolate is GAS (24-48hrs from the day specimens are received) all specimens are then forwarded to the National Microbiology Laboratory (NML) for EMM typing. Outbreak specimens are given priority and sent to NML as soon as cultures are confirmed as GAS (Pulsed-Field Gel Electrophoresis (PFGE) is done on outbreak isolates at Public Health Ontario Laboratory). Turn-around-time for NML varies between 2-4 weeks. NML may be able to expedite testing, if the clinical circumstances warrant this. **Note:** NML receives all iGAS specimens throughout Canada, as such, special request must be discussed with, and done by Public Health Ontario Laboratory.

5.0 Clinical Evidence

Evidence of severe invasive disease may be manifested as several conditions. The following are considered evidence of severe invasive disease:

- Streptococcal toxic-shock syndrome (STSS) which is characterized by hypotension (systolic blood pressure ≤ 90 mm Hg in adults or < 5 th percentile for age for children) and at least two (2) of the following signs:
 - renal impairment (creatinine ≥ 177 $\mu\text{mol/L}$ for adults);
 - coagulopathy (platelet count $\leq 100,000$ mm^3 or disseminated intravascular coagulation);
 - liver function abnormality (AST [SGOT], ALT [SGPT] , or total bilirubin $\geq 2x$ upper limit of normal for age);
 - adult respiratory distress syndrome (ARDS);
 - generalized erythematous macular rash that may desquamate.

OR

- Soft-tissue necrosis,* including necrotizing fasciitis or myositis or gangrene;

OR

- Meningitis;

OR

- Death;

OR

- A combination of any of these conditions.

* Soft-tissue necrosis should not include chronic soft-tissue necrosis/gangrene, or acute or chronic cellulitis. Soft-tissue necrosis should be acute in nature and deeper than the skin (e.g., necrotizing fasciitis, myositis and gangrene), as determined by the clinician.

6.0 ICD 10 Code(s)

A40.0 Septicaemia due to group A streptococcus

A49.1 Streptococcal infection, unspecified

B95.0 Group A Streptococcus as the cause of diseases classified elsewhere, e.g.:

A48.3 Toxic shock syndrome

O85 Puerperal sepsis

M72.6 Necrotizing fasciitis

M00 Pyogenic arthritis

G00.2 Streptococcal meningitis

7.0 Sources

Public Health Agency of Canada. Invasive Group A Streptococcal. In: Case Definitions for Communicable Diseases under National Surveillance. Canada Communicable Disease Report. 2009;35S2.

8.0 Document History

Table 1: History of Revisions

Revision Date	Document Section	Description of Revisions
March 2017	General	New Template
March 2017	1.0 Provincial Reporting	Removal of "...and probable..."
March 2017	4.1 Laboratory Confirmation	Addition of "... (e.g., skin) and "...with evidence of severity (refer to section 5.0 below)" to the second bullet point. Removal of "See section 3.1 and 5" from the second..."
March 2017	5.0 Evidence of Severity	Addition of "AST" and "ALT"
March 2017	9.0 Document History	Updated
February 2019	General	Minor revisions were made to support the regulation change to Diseases of Public Health Significance.

