**BACKGROUND**

- Group A streptococcus is usually transmitted by mucosal membrane contact with infectious exudates from skin lesions, wounds, or respiratory droplets from nasal and throat discharge.
- The incidence of invasive group A streptococcus (iGAS) infections is increasing in Alberta (Figure 1).
- iGAS Puerperal sepsis (PS) is a rare but recognized complication of vaginal deliveries which can have devastating consequences including maternal death.

**OBJECTIVES**

We aimed to analyze the incidence and implications of PS cases within the Calgary Zone using epidemiologic and molecular techniques.

**METHODS**

- PS cases from parturition to 6-weeks post-partum between 2013–2018 were identified as confirmed (invasive disease with GAS isolated from sterile site) or probable (GAS isolated from non-sterile site in the absence of other causes).
- Cases were adjudicated by public health and infection control physicians as hospital/delivery acquired or community-acquired.
- Available isolates from patients and health care workers (HCW) had emm typing, sic gene, and/or whole genome sequencing performed.
- Use of masking and personal protective equipment (PPE) was determined from delivery records.

**RESULTS**

- Eighteen cases were identified (1.6 cases/10,000 live births) with 16 (88.9%) adjudicated as hospital/delivery-acquired.
- There was 1 maternal death, 8 intensive care unit admissions, and 6 emergency hysterectomies.
- Ten emm types were identified (Table).
- Two tempo-spatially related cases had emm1, sic gene, and core single-nucleotide variant (SNV) analysis matched isolates to an isolate identified in an unmasked HCW (cases 1 and 2 in Table). Two tempo-spatially related cases who had the same delivery team had emm11 and were found to match with core SNV analysis (cases 6 and 7 in Table and Figure 2).
- Masks were not used in 13 (72.2%) cases, with information about PPE unavailable for the remaining 5 cases.
- Our data generated a masking policy during all deliveries, passed on February 28, 2020.

**CONCLUSIONS**

- PS secondary to hospital/delivery-acquired iGAS is a potentially preventable infection.
- Our epidemiologic and molecular data, which found that most cases of iGAS were hospital/delivery-acquired, underscores the need to carefully adjudicate all cases of PS and implement policy interventions for appropriate use of PPE for all vaginal deliveries.

**REFERENCES**