

# Clusters of Postpartum Group A *Streptococcus* Infections on a Labor and Delivery Unit June – October 2019

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## BACKGROUND

- Group A Streptococcus (GAS, *Streptococcus pyogenes*) is a human bacterial pathogen that causes disease ranging from pharyngitis to severe invasive infections.<sup>1</sup>
- Invasive GAS is defined as isolation of GAS from normally sterile site (e.g., blood) or isolation of GAS from nonsterile site in presence of streptococcal toxic shock syndrome or necrotizing fasciitis.<sup>2</sup>
- GAS can cause severe postpartum infections and may be transmitted from asymptomatic, colonized healthcare workers (HCWs).
- When 2 or more cases are identified within 6 months, an institution is required to conduct a carrier-disseminator investigation.<sup>2</sup>

## INVESTIGATION

- Eight cases of GAS bacteremia and/or endometritis were identified on L&D unit from June to Dec 2019 (Figure 1)
  - Initial carrier-disseminator investigation initiated July 2019
  - Escalated to broad staff screening October 2019
- HCWs completed screening questionnaire (recent illnesses, skin/soft tissue infections, sick contacts) and cultured for GAS colonization (throat, vaginal, perirectal).
- Any GAS colonized HCW was provided chemoprophylaxis and rescreened 7-10 days after treatment.
- GAS isolates were analyzed by either pulse field gel electrophoresis (PFGE) or whole genome sequencing.

## RESULTS and INTERVENTIONS

- 6 total patients identified with the outbreak strain of GAS
- Over 700 staff in total screened for GAS colonization
- 11 asymptomatic staff with positive screening cultures (plus 1 family contact)
- 5 total (4 staff, 1 family contact) colonized with outbreak strain of GAS
- Isolates clustered closely by whole genome sequencing
  - Identified as *emm* 28 type which has increased association with postpartum infections<sup>1</sup>

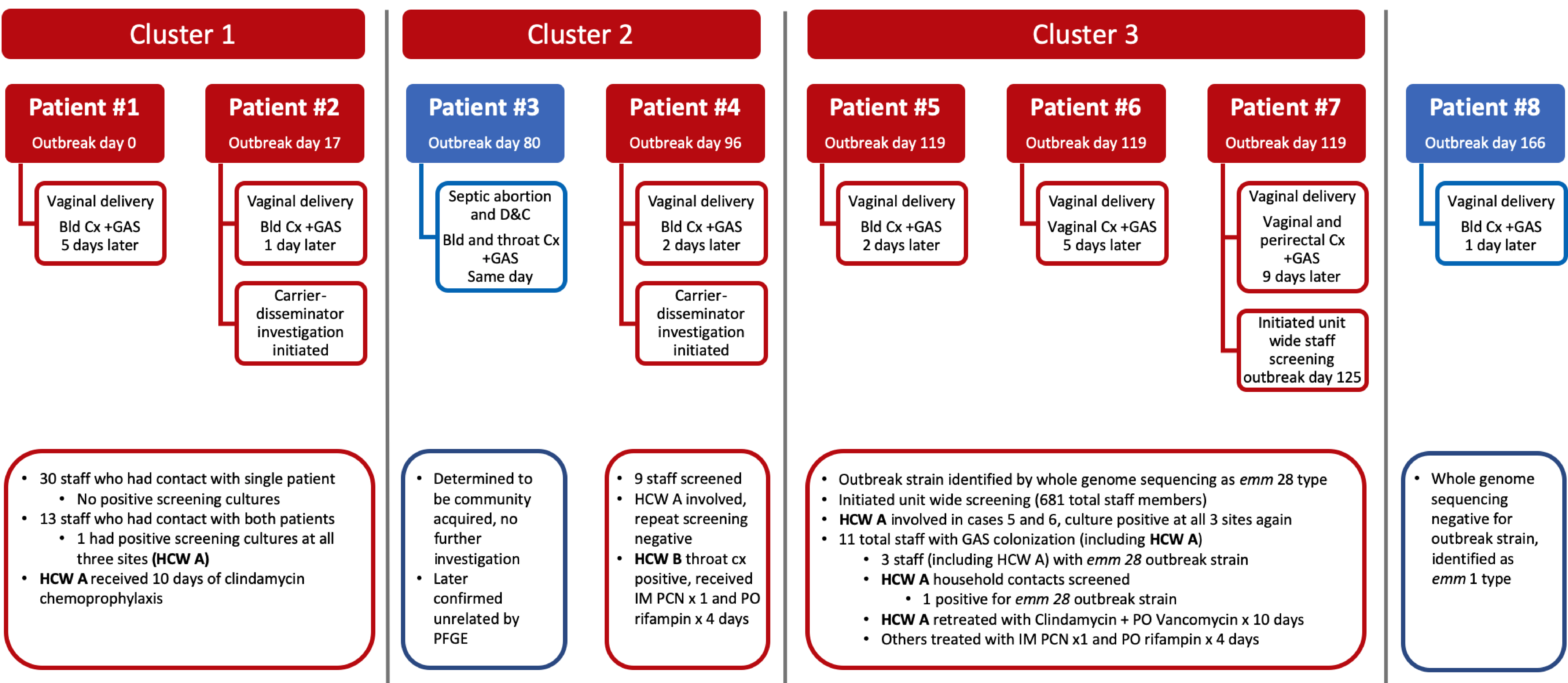


Figure 1: Timeline

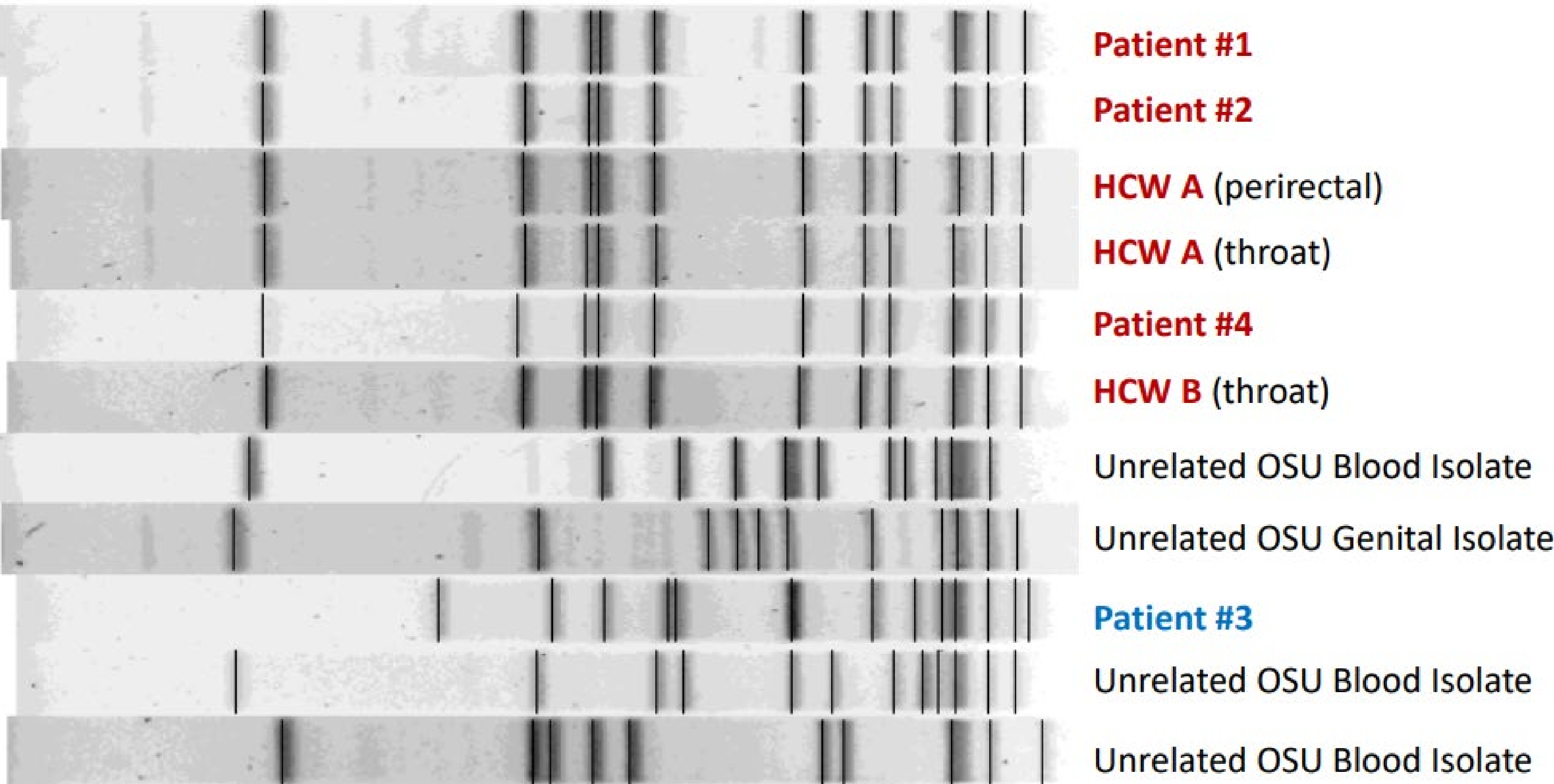


Figure 2: Pulsed-field Gel Electrophoresis

## LESSONS LEARNED

- Coordination between inpatient medical teams, infection control, microbiology and the health department is crucial.
- Prompt screening of employees and treatment of colonized staff in a timely manner is critical to stop the spread to not only patients but also other staff.
- Do not hesitate to seek assistance from the CDC when standard outbreak management measures are unsuccessful.

## REFERENCES

<sup>1</sup>Jain I, Sarkar P, Danger JL, et al. A Mobile Genetic Element Promotes the Association Between Serotype M28 Group A Streptococcus Isolates and Cases of Puerperal Sepsis. *The Journal of Infectious Diseases*. 2019;220(5):882-891.

<sup>2</sup>Prevention of Invasive Group A Streptococcal Disease among Household Contacts of Case Patients and among Postpartum and Postsurgical Patients: Recommendations from the Centers for Disease Control and Prevention. *Clinical Infectious Diseases*. 2002;35(8):950-959.