

## **Patient Variable Influencing Trends in Congenital Syphilis in Colorado**

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### **Abstract**

Colorado is one of five states in which rates of maternal syphilis increased by more than 400% from 2016 to 2022, prompting the declaration of a congenital syphilis epidemic. The factors contributing to this rapid rise remains unclear. We conducted a retrospective chart review of pregnant patients with documented syphilis infection who received care at a single tertiary care center in Colorado between 2019 and 2024. This study aims to characterize demographic and clinical factors associated with maternal syphilis and to explore the relationship between access to point-of-care (POC) testing and timing of treatment initiation. We hypothesize that maternal syphilis is associated with limited prenatal care and racial and ethnic disparities, and that greater availability of POC testing is associated with earlier treatment during pregnancy. Preliminary analyses suggest that patients diagnosed with syphilis during pregnancy frequently experience overlapping social and medical vulnerabilities, including high rates of substance use, mental health conditions, and coexisting sexually transmitted infections. Current limitations in available data precludes definitive assessment of POC testing implementation and timing. Future directions include expansion of the cohort through inclusion of an additional safety-net healthcare system. These findings highlight the need for targeted interventions to improve early screening, strengthen access to comprehensive prenatal care, and address structural barriers to care that are critical to reducing maternal and congenital syphilis in Colorado and similar high-risk regions.