

National chorioamnionitis trends: Geospatial analysis of vulnerable communities

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Abstract

INTRODUCTION: Chorioamnionitis is a pregnancy complication that can lead to adverse maternal and infant outcomes. Though risk factors such as prolonged labor, smoking, and alcohol among others have been studied, there has yet to be an epidemiological study on what communities are most impacted. This study attempts to identify at risk communities and the socioeconomic factors that differentiate them.

METHODS: CDC natality database as well as American Community Survey, and state level maternity data were used for geospatial analysis of births affected by chorioamnionitis in all 553 counties with populations over 100,000. Hotspots and coldspots were identified and ANOVA analysis was conducted across 85 socioeconomic variables.

RESULTS: The analysis found statistically significant hotspots, $p < 0.05$, with high percentages of chorioamnionitis, mean of 0.61%, SD of 0.51, along southern California, San Francisco, Portland, Salt Lake City, and Denver. Those hotspots also tend to have higher percentages of inductions, augmentations, and steroid & antibiotic treatments. Hotspots had a high percentage of Hispanic race, 25.79%, and a low percentage of African American race, 4.31%. Coldspots had a lower percentage of Hispanic race, 8.84%, and higher percentage of African American race, 11.19%. The percentage of poverty and average maternal age were not found to be statistically significant in comparison of chorioamnionitis hotspots with coldspots.

CONCLUSION / IMPLICATIONS: With the knowledge of risk factors and the identification of chorioamnionitis hotspots, prevention resources and community level education can be properly allocated.