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Poster T3

The Frontier of Healthcare Optimization: Using Geo Mapping to Reach the Most Vulnerable Patients

Keywords: Geomapping, Vulnerable population, mobile clinics

Background: Geo mapping is used in healthcare for disease surveillance and to optimize equitable access. The Texas Children's Mobile Clinic Program (TC-MCP) provides free high-quality healthcare to under-resourced children in the Houston area through two fully equipped primary care mobile clinics. TC-MCP supports lower socioeconomic status areas by visiting community centers, churches, and schools where >90% of children qualify for free or reduced lunch. However, families continue to travel long distances to receive care from the mobile clinics.

Objective: To optimize TC-MCP routes and sites using Geomapping to reach the most vulnerable children in the greater Houston area.

Designs/Methods: Using Childhood Opportunity Index 2.0 (COI), a free, online Geomapping tool that takes into account 29 indicators within 3 domains (education, health and environment, and social and economic), TC-MCP mapped COI for all patients seen from Jan 1-Dec 31, 2022. A retrospective electronic health record chart review was performed to examine patient addresses. The COI scale is 0-100 with 100 representing the child with the highest opportunity to succeed, and COI is expressed in a 5-point scale (very low, low, moderate, high, very high).

Results: During those 12 months, there were 5,440 patients seen by the TC-MCP (50% female, 79% Hispanic). The COI using census track data and nationally normed values showed that 75% of patients came from very low or low COI, 14% come from moderate COI, and 11% come from high and very high COI. When examining only the "health and environment" domain, 93% of patients came from homes in low/very low COI. When examining COI by insurance status, 40% of patients with Medicaid/CHIP came from a home of moderate COI and 36% from low COI. While 36% of uninsured patients came from a home of moderate COI and 38% from low COI. Fourteen percent of all TC-MCP sites are in areas of moderate COI.

Conclusions: Modifying clinic sites strategically from areas of moderate COI to areas of low or very low COI may help reach the most vulnerable children in the greater Houston area. In addition, increasing outreach in lowest COI areas may increase patient numbers from those areas. and, partnering with other mobile clinics to comprehensively increase coverage for pediatric patients across the area is a possible next step.