THE IMPACT OF COVID-19 ON HEALTHCARE-ASSOCIATED INFECTIONS IN TEXAS: A ZIP CODE LEVEL ANALYSIS

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Conference Room Zoom link:

https://binghamton.zoom.us/j/98482533838?pwd=OxpLZB7Sk3ebxRBfUkZi4drVpFaZKT.1

Abstract

This study examines temporal and geographic trends in standardized infection ratios (SIRs) for major healthcare-associated infections (HAIs) in Texas using ZIP code–level data reported to the Centers for Medicare and Medicaid Services (CMS) from 2018 to 2024. Because quarterly reports were interrupted during the COVID-19 pandemic, missing SIR values were statistically imputed, and results were validated through complete-case analysis. Infection trends were evaluated across pre-COVID (the years leading up to late 2019), during-COVID (runs from late 2019/early 2020 through early-to-mid 2021 in our research), and post-COVID (after 2021) periods using nonparametric methods. Kruskal–Wallis tests and Dunn post-hoc comparisons showed significant phase-to-phase differences for most HAIs, with CLABSI, MRSA, CDI, and SSI-Colon exhibiting notable increases during the pandemic. A parallel assessment with the Social Vulnerability Index (SVI) revealed only weak associations with SIR values. Overall, the findings indicate that COVID-19 disrupted infection prevention efforts in heterogeneous and infection-specific ways, highlighting gaps in healthcare system resilience and the need for strengthened surveillance and preparedness strategies.