

screening, routine point prevalence surveys, and interfacility communication as part of an MDRO prevention plan. CDPHE then developed the transfer network into an interactive ArcGIS dashboard enabling facilities to examine their own patient transfer patterns. **Conclusions:** SNA enabled CDPHE to identify at-risk facilities for KPC-CRE transmission and create an interactive tool for facility and public health use. Future applications of patient transfer networks can include geographical grouping of facilities based on transfers to zone healthcare coalitions and conduct preparedness activities, and creating medical operations preparedness plans for emergencies or disasters.

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**Health Equity Factors and Healthcare-Associated Infections in Louisiana Facilities, 2022**

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**Background:** Health equity is a critical consideration in public health research, emphasizing the importance of fair and just access to healthcare resources. This study explores the impact of health equity factors on the incidence rates of Central Line-Associated Bloodstream Infections (CLABSI) and Methicillin-Resistant Staphylococcus aureus (MRSA) across diverse healthcare facilities in Louisiana. **Methods:** We conducted a comprehensive analysis utilizing 2022 data from the National Healthcare Safety Network (NHSN). Fourteen healthcare facilities were randomly selected from nine regions in Louisiana, with guidance from the 2022 NHSN external validation toolkit. Key health equity factors from Health Resources and Service Administration (HRSA) were assessed, including urbanicity, MUA/P, and HPSA\_Primary Care. Risk ratios were calculated to quantify the association between these health equity factors and the incidence rates of CLABSI and MRSA. **Results:** The findings reveal intriguing insights into the relationship between health equity factors and infection rates. In urban settings, the risk of CLABSI was lower (Risk Ratio: 0.634, 95% CI: 0.2442–1.646), contrasting with a significantly higher risk of MRSA (Risk Ratio: 1.7, 95% CI: 1.119–2.582). This suggests a complex interplay between urbanicity and the specific infection types. For MUA/P, no significant impact on CLABSI rates was observed (Risk Ratio: 0.963, 95% CI: 0.4225–2.195), but an increased risk of MRSA emerged (Risk Ratio: 1.652, 95% CI: 1.029–2.652). In healthcare professional shortage areas for primary care (HPSA\_Primary Care), both CLABSI (Risk Ratio: 1.37, 95% CI: 0.5854–3.204) and MRSA (Risk Ratio: 2.098, 95% CI: 1.305–3.372) exhibited elevated risks, though only MRSA risk was statistically significant. **Conclusions:** This research underscores the nuanced relationship between health equity factors and infection rates in healthcare facilities. Urban settings may contribute to a lower risk of CLABSI but a higher risk of MRSA, emphasizing the need for tailored preventive strategies. Living in medically underserved areas appears to heighten the risk of MRSA, warranting targeted interventions. Additionally, healthcare professional shortage areas for primary care demonstrate potential associations with increased risks for both CLABSI and MRSA. These findings provide valuable insights for public health practitioners, policymakers, and healthcare administrators aiming to address health disparities and enhance infection control measures in diverse healthcare settings. Further research is encouraged to unravel the multifaceted dynamics influencing infection rates and to inform targeted interventions for improved health outcomes.

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**OPTIMIS PRO – A Novel Algorithm to Improve Perioperative Antibiotic Administration**

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**Objectives** The selection and dosing of surgical antimicrobial prophylaxis (SAP) to prevent surgical site infections (SSIs) is often improvisational and inappropriate in clinical settings resulting in increased risk of SSI. We therefore developed and implemented a novel computer decision support tool, OPTIMIS PRO (OPTIMIZing PROphylaxis), to improve appropriate SAP selection specific to each patient’s procedure and clinical context. **Methods:** This quality improvement study was conducted at a tertiary hospital network over 2 years, divided into pre-intervention (June 2021-June 2022) and post-intervention (June 2022-June 2023) periods. The intervention was a computer decision support tool programmed within the hospital’s health information system to provide patient-specific SAP recommendations based on four variables: procedure name, patient’s beta-lactam allergy status, MRSA status, and weight. Approximately 3046 unique surgical procedures were identified and a specific best practice SAP recommendation for each surgery was identified based on international practice guidelines, up-to-date literature, and panel expertise input from 14 surgical divisions at our institution. Safety of ceftazolin prophylaxis among patients with self-reported beta-lactam allergy was established in the pre-operative clinic using a validated simple two-item questionnaire (Figure 1). During each standard preoperative preparation, a best practice SAP recommendation alert was then provided to the responsible anesthesiologist based on the inputs from the four aforementioned variables (Figure 2). To assess the impact of the OPTIMIS PRO tool on antibiotic prescribing, we retrospectively audited SAP selection before and after implementation, also assessing appropriateness for each of the specific inputs using evidence-based criteria. **Results:** Over 30 000 OPTIMIS PRO recommendation alerts were logged in the 12-month post-intervention period. A random sample audit of 408 surgical encounters were selected from the pre- and post-intervention period for analysis. Overall, appropriate antibiotic administration rose from 77% (161/208) to 92.5% (185/200) (x2=18.0, p < 0 .001) post-intervention. Usage of

