Quality Improvement Assessment of an Emergency Department-Based HIV and Syphilis Testing and Care Collaborative

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Background

Emergency Departments (ED) are considered to be the social safety nets of the US healthcare system. This is especially true for the patient populations most at risk for HIV and syphilis. The HIV/Syphilis Testing and Care Collaborative (HIVTCC) was implemented in 2017 in Cleveland's University Hospitals (UHCMC) system to improve testing and linkage-to-care within the ED population. Since implementation, the program has not been formally evaluated. The purpose of this study is to evaluate how well the HIVTCC has been functioning and to identify barriers and areas for future improvement.

Learning Objectives

1. Become more efficient in working with and organizing large data sets.
2. Gain experience with GIS methodologies, including data cleaning, analysis, and ensuring HIPAA.
3. Begin to describe how the HIVTCC functions within UHCMC EDs.
4. Work collaboratively with interdisciplinary researchers and departments.

Practicum Deliverables

1. Accepted IRB proposal.
2. Preliminary mapping and description of study population.

Lessons Learned

1. The IRB process often brings attention to details that were not considered when initially designing the study.
2. Geospatial mapping requires increased attention to patient confidentiality to ensure that maps are not able to identify individual patients and even buildings.

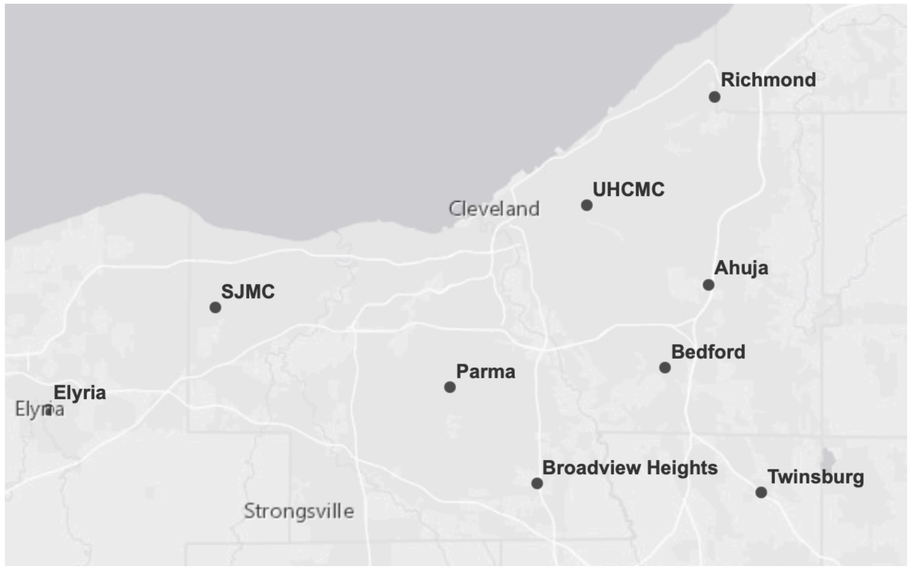

Figure 1. Map of University Hospitals Cleveland Medical Center (UHCMC) ED Locations with the majority of HIV and syphilis testing.

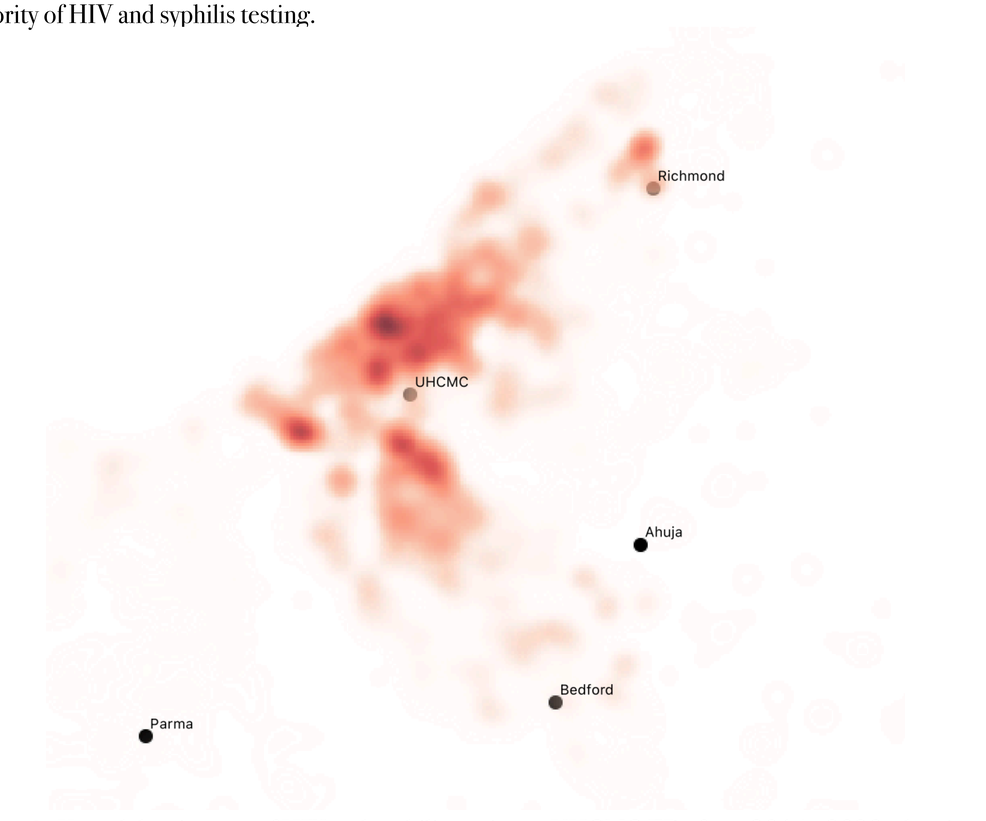

Figure 2. Kernel density map of HIV and syphilis testing at UHCMC EDs from 2014 - 2020, showing the geographic distribution of the study's patient population. This map shows areas of high density around UHCMC main campus and Richmond EDs.*

*Base map not used to protect patient data and follow HIPAA guidelines.

Population

The study population includes all patients (n= 9925), aged 18 - 89, who were tested for HIV and/or syphilis at UHCMC EDs (Figure 1) between January 1st, 2014 and December 31st, 2020, with specific attention to differences pre- (n= 2,409) and post- (n = 8,078) implementation of the HIVTCC.

Activities and Methods

1. After the IRB was submitted and approved, records of all HIV and syphilis testing results from 2014 - 2020, as well as relevant patient data including test date and location, were pulled from UHCMC's Core Laboratory.
2. Geospatial mapping was performed using geocoded data provided by the Curtis GIS Lab. The data was mapped in QGIS, and kernel density analysis was performed to produce hotspot maps (Figure 2), designating areas of high densities of testing.
3. Retrospective chart review and data analysis was performed for all patients tested for HIV and/or syphilis. This work will continue for the Capstone component of this study.

Public Health Implications

1. Figure 2 indicates areas of high density of testing for HIV and syphilis, allowing us to better understand the population that the HIVTCC is reaching.
2. By evaluating the HIVTCC for future quality improvement, this study will add to the body of literature on using EDs as sites for public health intervention, specifically for HIV and STIs.
3. Evaluation of clinical and public health programming is essential to ensuring that the program is reaching target populations.