Optimizing the Location of Pharmacy-Based HIV Testing in Dallas, Texas

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The Importance of HIV Testing

The U.S. Centers for Disease Control and Prevention (CDC) recommends routine HIV screening in healthcare settings for all adolescents and adults, aged 13-64, and repeat screening at least annually for those at high risk [1]. Awareness of an HIV positive status prompts behavioral changes, and receiving antiretroviral therapy (ART) reduces the viral load and HIV transmission [2].

The Risk of HIV

HIV transmission is a biological event dependent on social context and behavioral practices [3]. A community where many people have HIV increases the chances of exposure to HIV through behaviors such as unprotected sex and needle sharing during drug use. In the United States the HIV epidemic is concentrated in socially marginalized and disenfranchised communities.

Pharmacy-Based HIV Testing

Pharmacy-based HIV testing is intended to expand access to HIV testing. The program, successfully implemented in other states and countries, helps to normalize the act of seeking an HIV test by offering it in a setting alongside less stigmatized screening tests [4-6]. Pharmacy-based screening programs can also link positive testers to confirmatory testing services.

Objective

To select areas within the city of Dallas to implement a pilot project on pharmacy-based HIV testing.

Methods and Materials

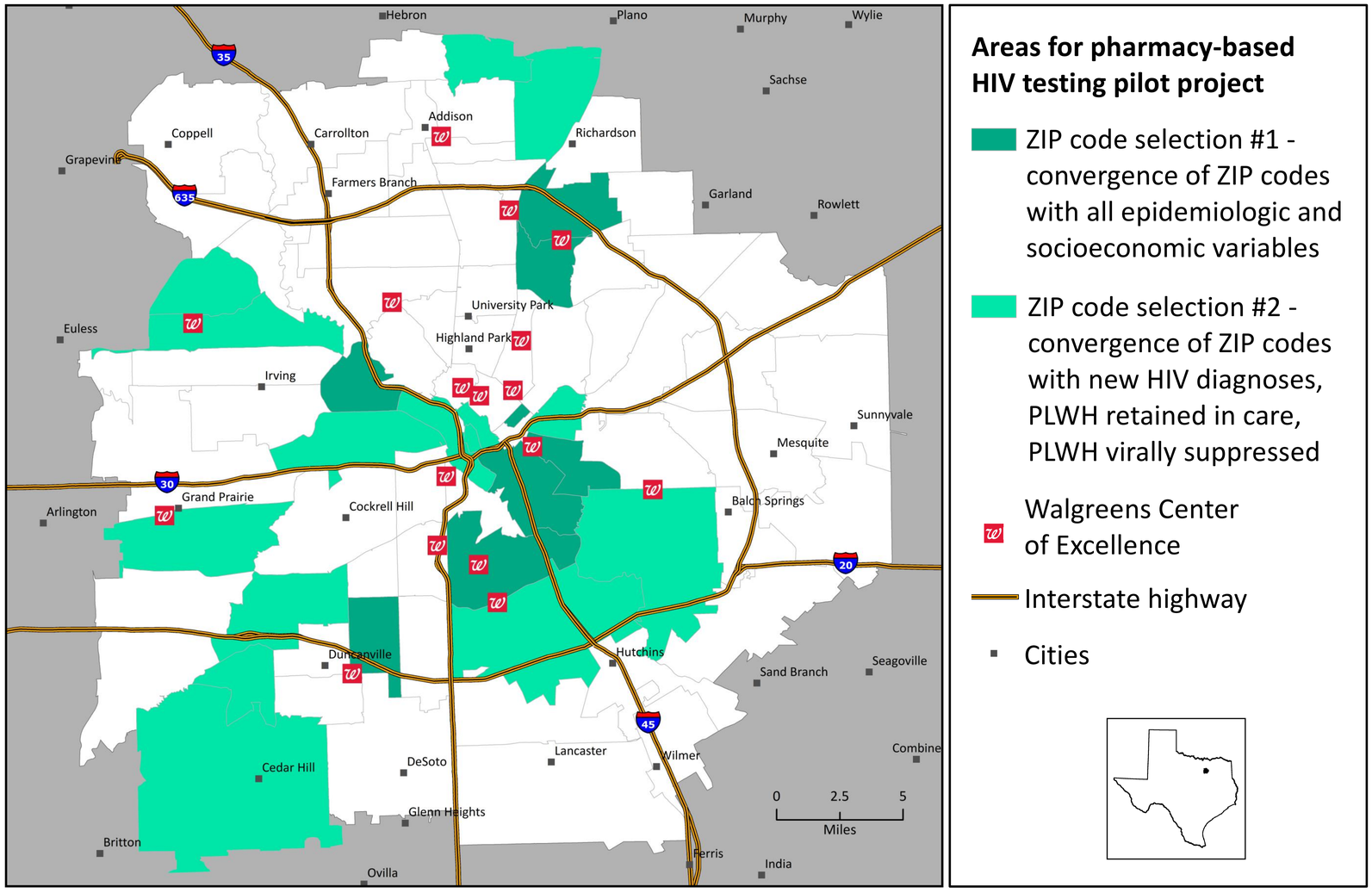
Developed the following map layers of HIV epidemiological data and socioeconomic data using ArcGIS software (ESRI 2017, ArcGIS Desktop: Release 10.5.1 Redlands, CA):

- HIV epidemiological data from the Texas Department of State Health Services (DSHS) in 2016: rate of people living with HIV (PLWH), 5-year case rate of new HIV diagnoses, PLWH retained in HIV care, PLWH with viral load suppression
- Socioeconomic variables from the U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates: percent of population below the federal poverty line, percent of population without health insurance coverage

Analyzed the data using the following steps:

- Aggregated data at the ZIP code level and classified each map layer into four quantiles
- Depending on the variable, selected the top two or bottom two quantiles to create a composite map of the variables
- Overlaid selected layers to define two areas for targeting pharmacy-based HIV testing
- Identified pharmacies from the Walgreens website store locator that met the definition of Walgreens Centers of Excellence providing HIV care [7]

Results of Area Selection



Limitations

The HIV epidemiological data is based on the residential ZIP code, but persons might be exposed to HIV in areas other than a residential setting. Also, local community variables not considered here may impact decisions to seek an HIV test, such as access to screening sites and attitudes toward HIV screening, among others.

GIS as a Public Health Tool

The use of a GIS software facilitated a data-driven process to select potential city areas to implement the pilot project. This project can be conducted at one or more of the Walgreens Centers of Excellence in the selected areas within the city.

While HIV testing is offered at CDC funded testing sites and in other public and private settings, barriers to HIV testing persist. If successful by reaching persons at high risk for HIV infection, similar GIS analysis will aid the evaluation process to locate pharmacy-based HIV testing in other cities in Texas.

References

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TEXAS Department of State Health Services