

Distribution of Tapestry Health Clients Using Needle Exchange Programs in Holyoke and Northampton, MA



Daiva Yee, GIS For Public Health, Spring 2016



Introduction

Intravenous drug use is a rising problem in Western Massachusetts and is responsible for about 30% of HIV/AIDS cases. Tapestry Health has implemented two needle exchange programs in Northampton in 1995 and Holyoke in 2012 providing clean syringes and safe syringe disposal to reduce sharing and reuse of needles reducing the risk of HIV and hepatitis C transmission (Tapestry Health, 2012).

Tapestry Health seeks to determine the spatial distribution of clients using the two needle exchange sites, comparing the density of clients using the Holyoke site vs. the Northampton site. They are also interested in gathering information on the density of needles distributed and returned to each program as well as basic client demographics for the two programs. Visual interpretation of these data will aid in understanding the use of the two programs and the need for additional needle exchange programs in Western Massachusetts. Tapestry health is working to open additional programs in Greenfield and the Berkshire's.



Methods

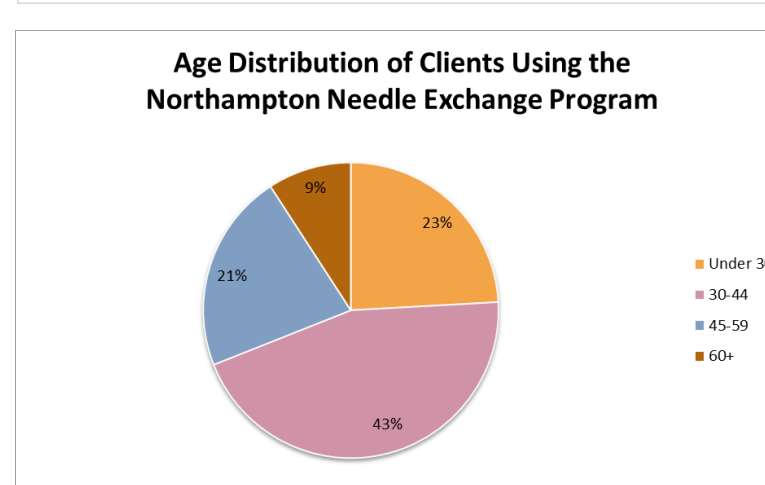
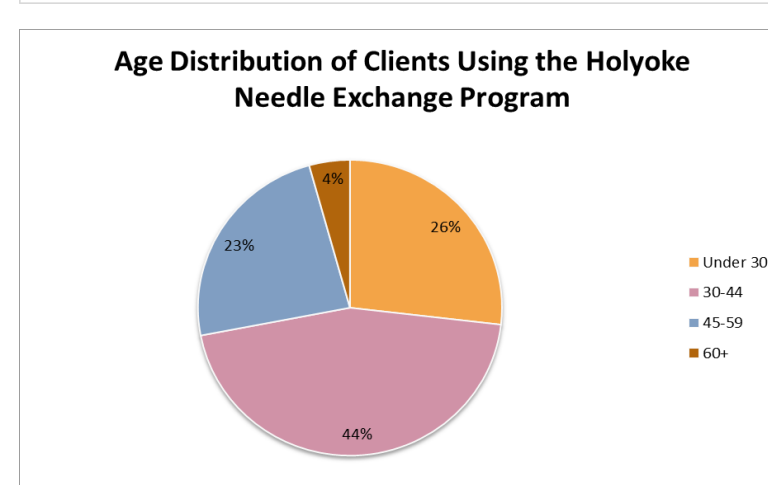
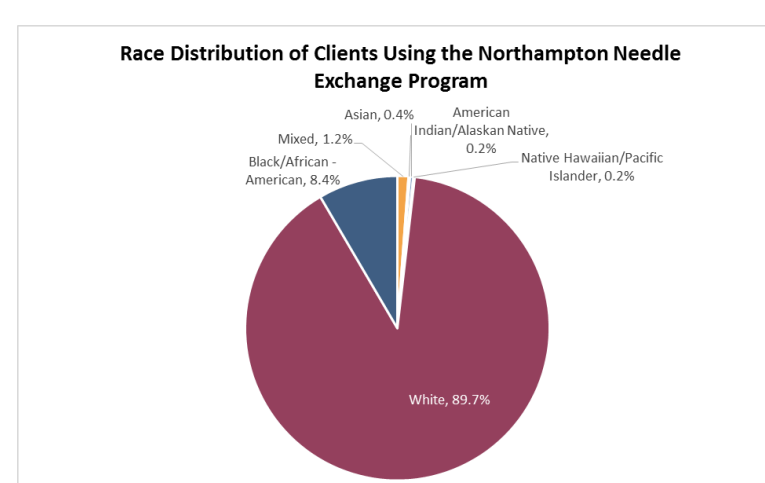
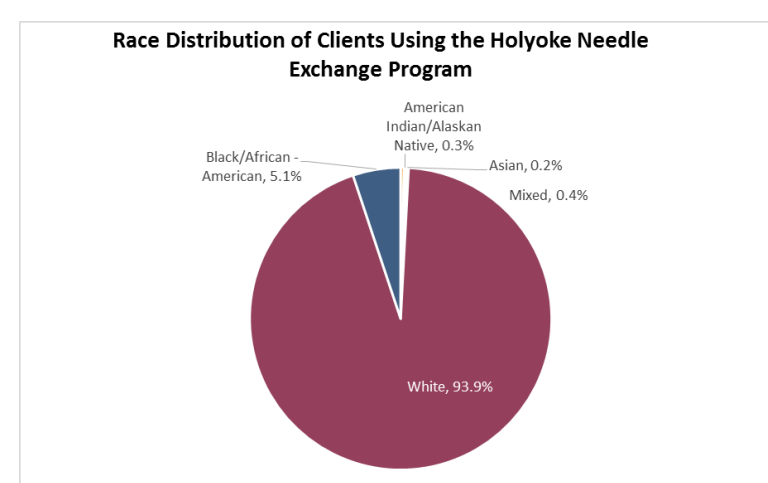
Data was obtained from Tapestry Health on client characteristics, home zip codes, and use of the two needle exchange sites. Data was cleaned and analyzed using Microsoft Excel. A base map including zip codes in Massachusetts was obtained from the MassGIS database.

Choropleth maps were generated to depict the distribution and density of clients using the two programs. Additional choropleth maps were generated to depict the distribution and density of syringes obtained and returned to the exchanges.

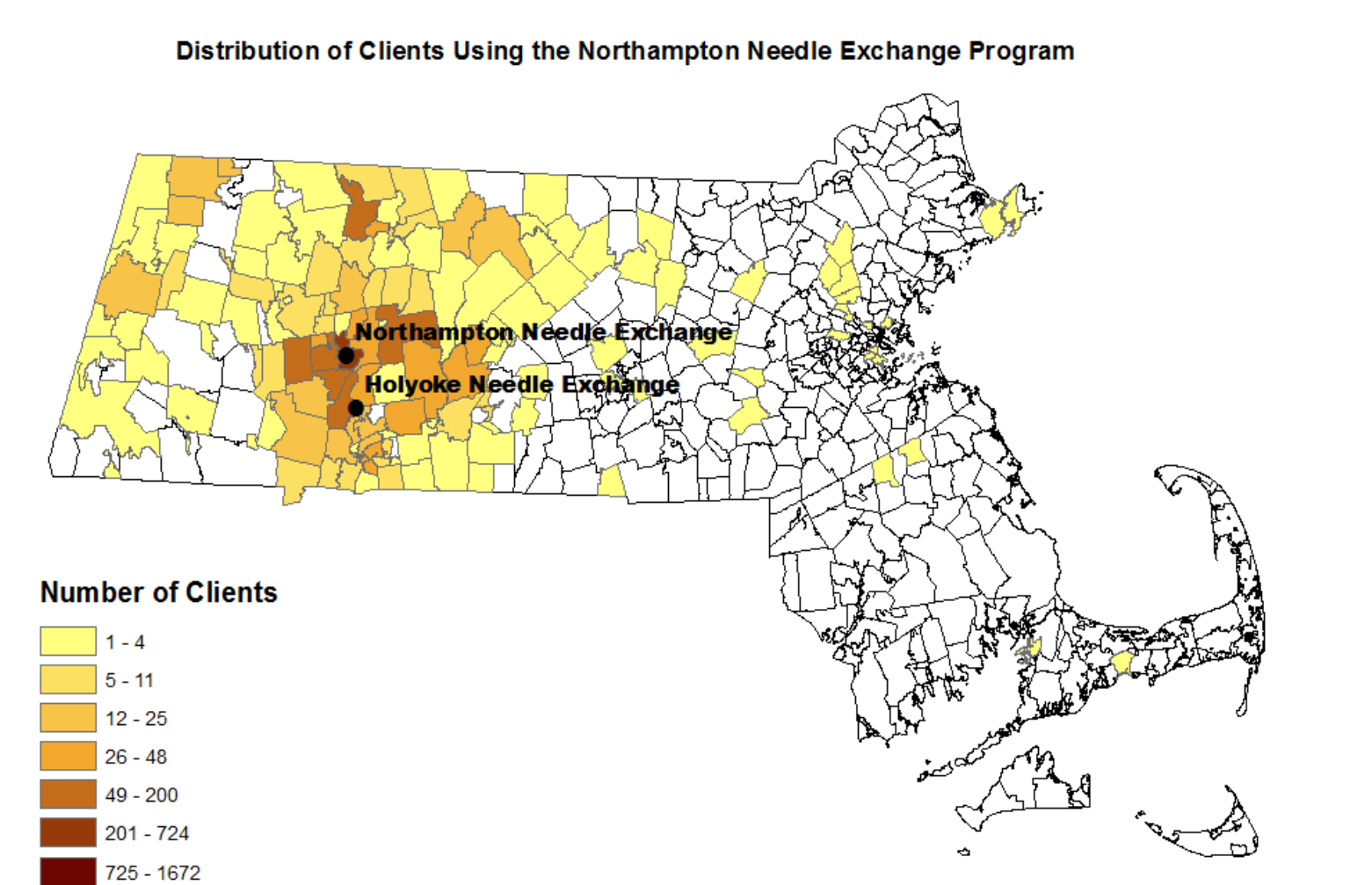
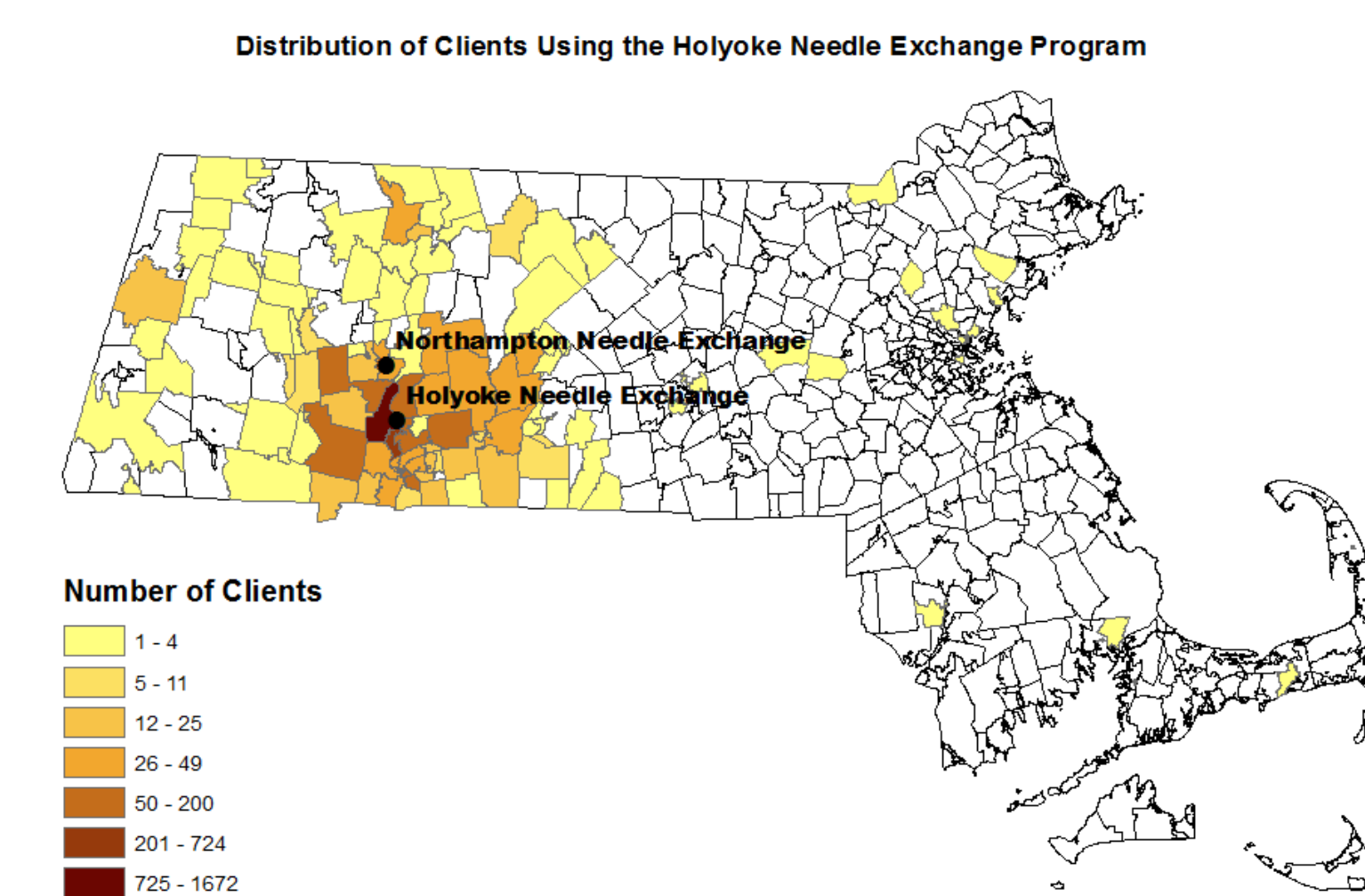
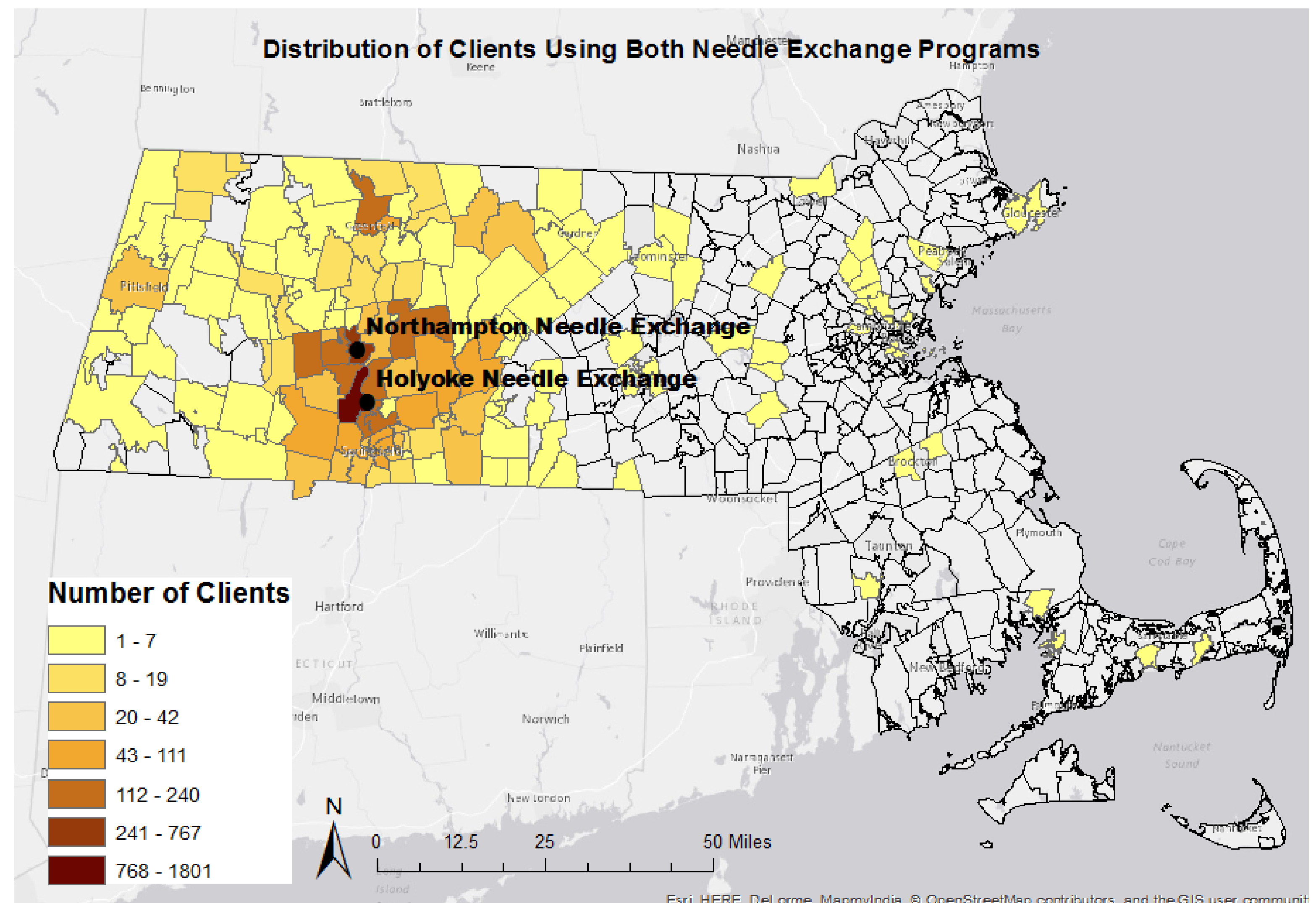
Holyoke and Northampton Needle Exchange program addresses were obtained from Tapestry Health. Using latitude and longitude data, these points were plotted on each map to identify each program site.

Charts depicting age and race distribution in the two needle exchange programs were generated using MS Excel. Mixed race was categorized as any combination of two or more race categories.

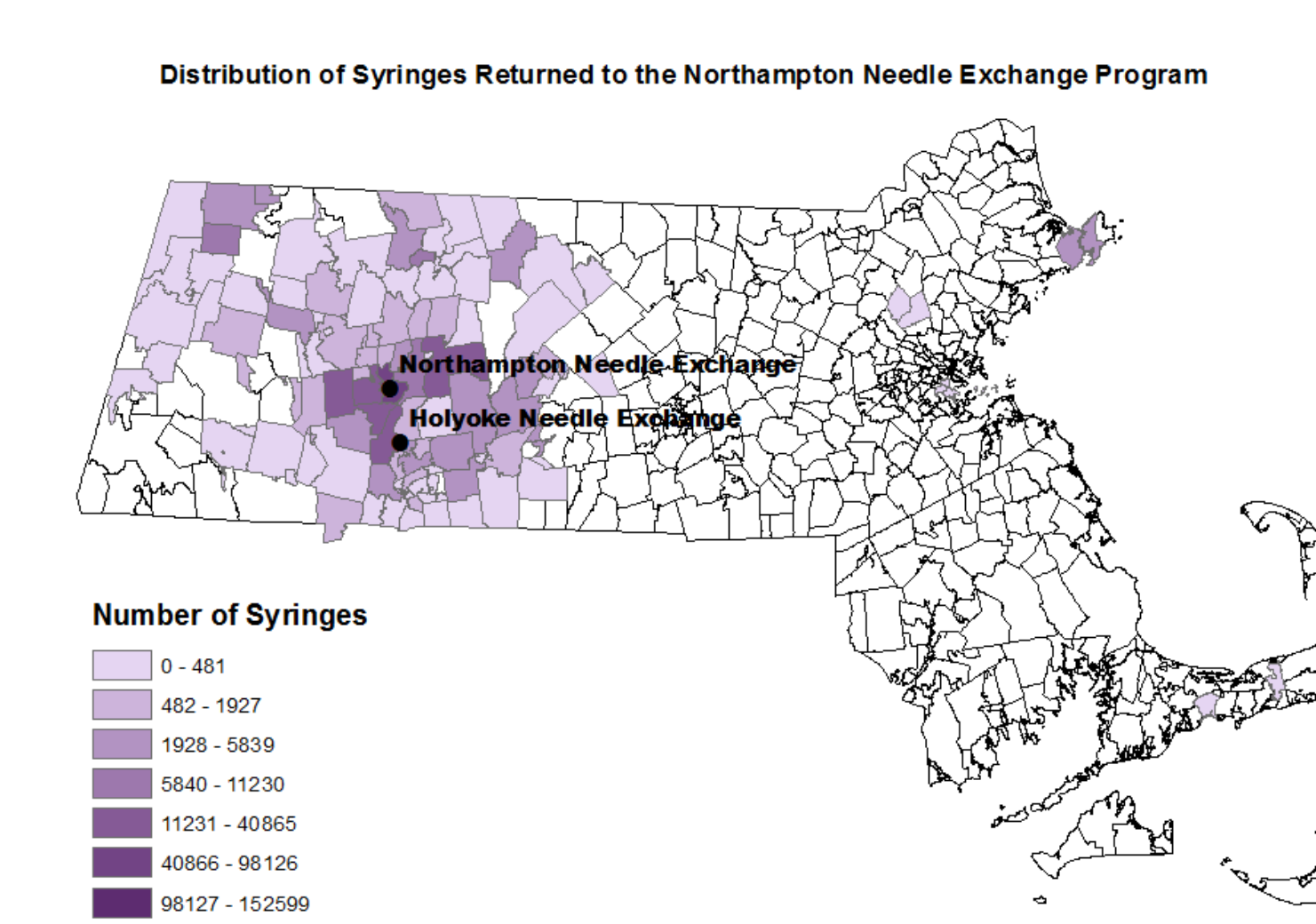
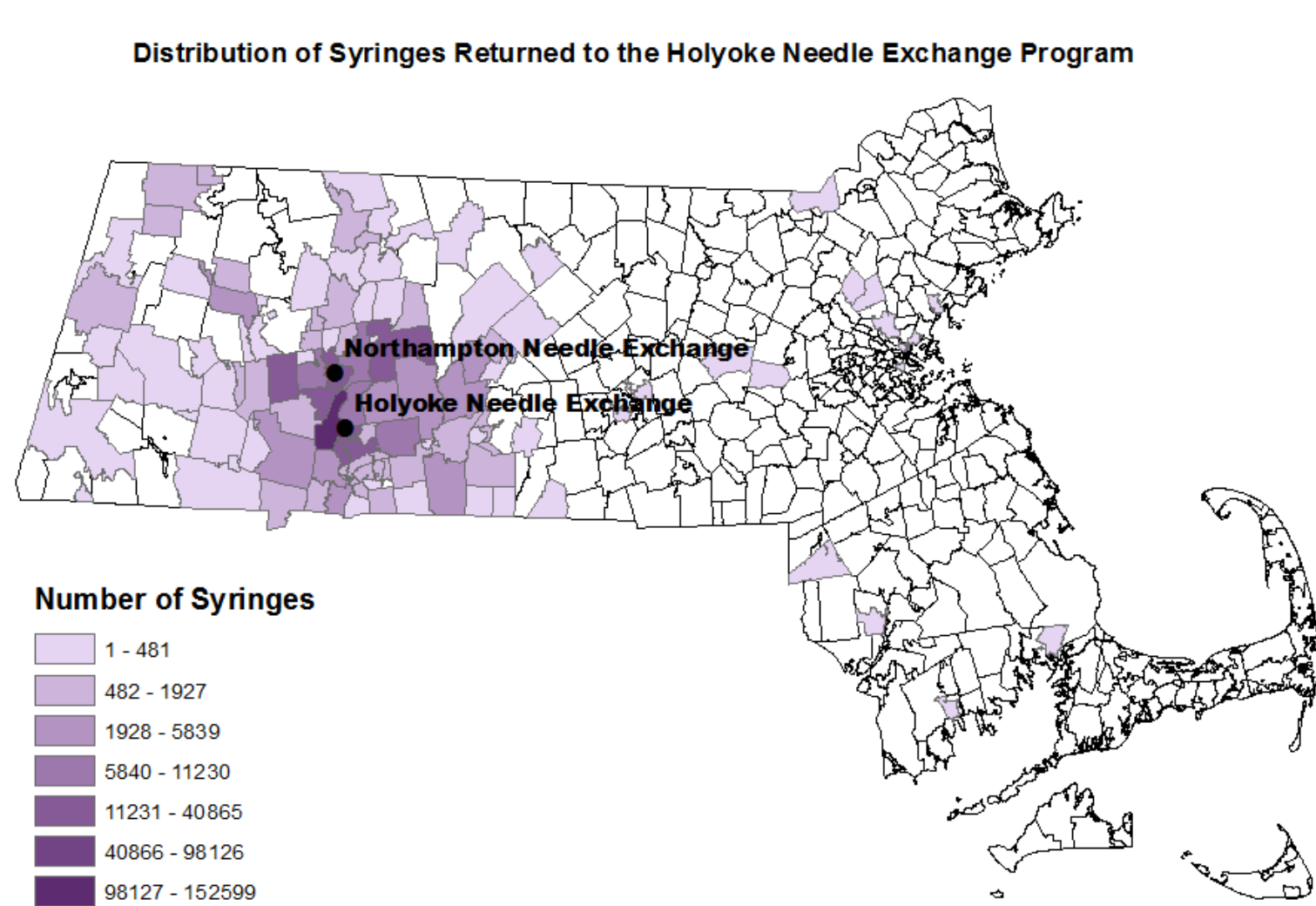
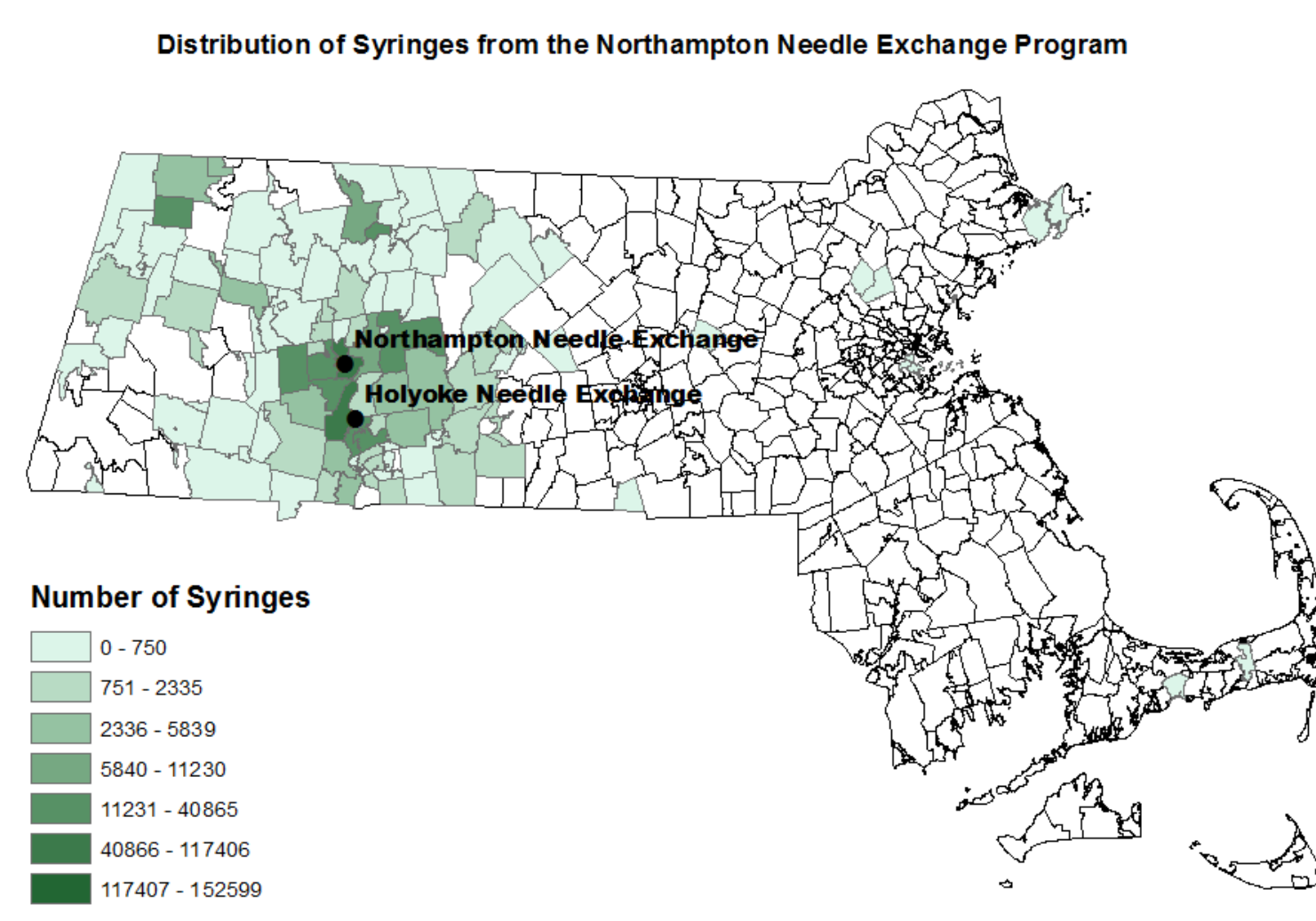
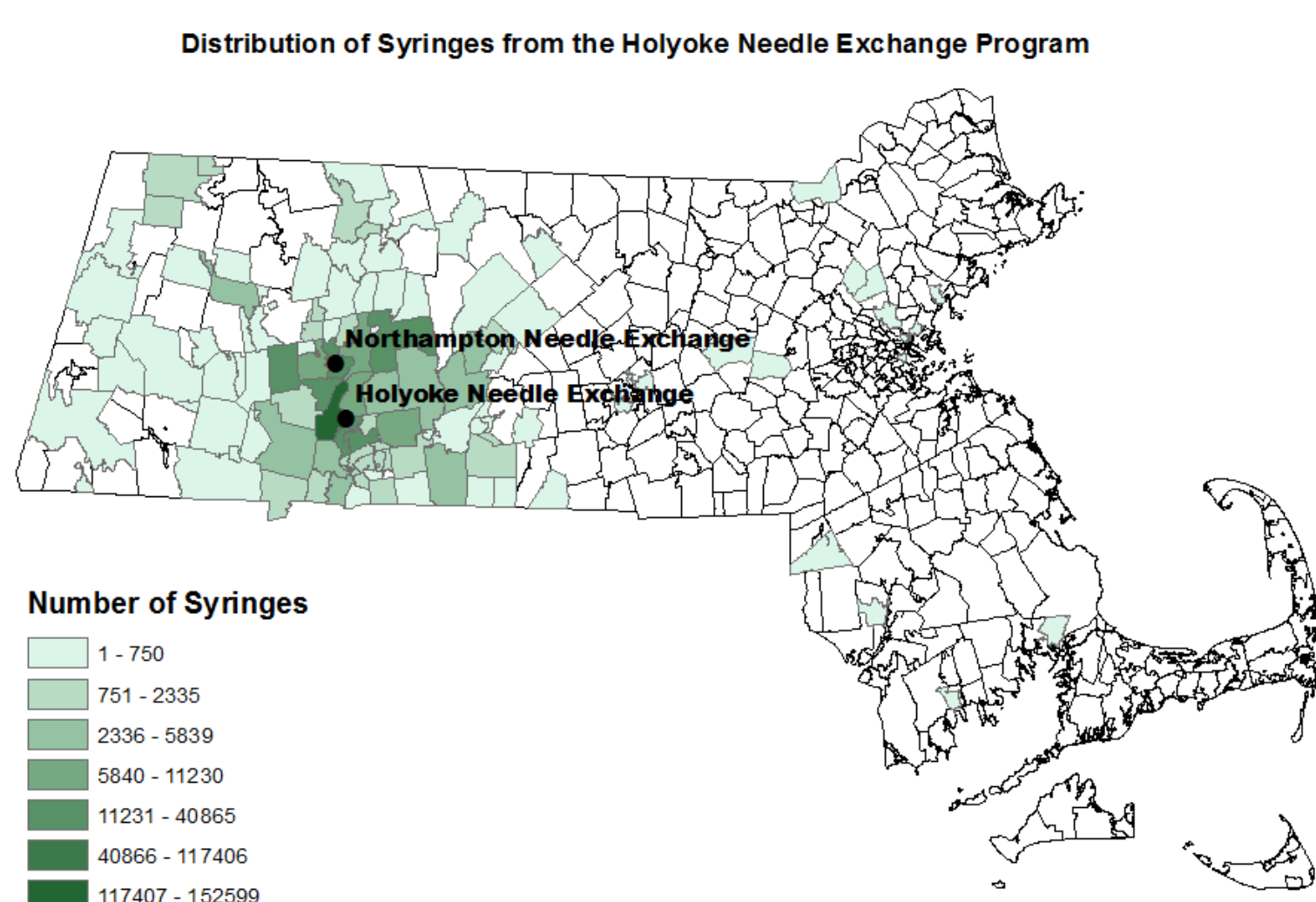
Client Demographics



Distribution of Clients



Distribution of Syringes



Results

Overall, the greatest number of clients using needle exchange programs are from Holyoke with 1801 clients. The second greatest number of clients are coming from Northampton with 767 clients. Greenfield and Chicopee follow with 240 and 224 clients respectively.

In looking at clients using the Holyoke needle exchange program, again the greatest number are coming from Holyoke with 1672 clients and the second greatest number are from Chicopee with 390 clients. South Hadley has the third highest with 111 and Westfield follows with 89 clients.

The majority of clients using the Northampton needle exchange program are from Northampton with 724 clients and the second highest are coming from Greenfield with 200 clients. Easthampton and Holyoke follow with 135 and 129 clients respectively.

The majority of clients using both exchanges are white followed by black/African-American and most are between the ages of 30-44.

Discussion

As expected, the majority of clients using needle exchange programs tend to cluster around the programs in Holyoke and Northampton. There are a greater number of clients using the Holyoke program than the Northampton program, signifying a greater need for the Holyoke exchange. The greater number of clients using the Holyoke exchange is correlated with a greater number of syringes distributed and returned to the Holyoke exchange vs. those from the Northampton exchange.

The high density of clients and syringes in the Northern part of the region suggests a need for a needle exchange program in these areas. Tapestry Health is working to open an additional program in Greenfield, which would target these populations.

The racial distribution of clients reflects the racial demographics of Western Massachusetts, with the majority of the population being white followed by black/African-American (US Census Bureau, 2015). The age distribution observed reflects the age distribution of IV drug users.

The primary limitation of the study was some inconsistency in data collection. Some judgments were made to categorize and clean the data.

Sources

United States Census Bureau. "Population Estimates. July 1, 2015. (V2015)." *United States QuickFacts from the US Census Bureau*. N.p., 1 Jul. 2015.

Tapestry Health. "Needle Exchange." *Needle Exchange*. N.p., 2012.
Data Sources: MassGIS, Tapestry Health