

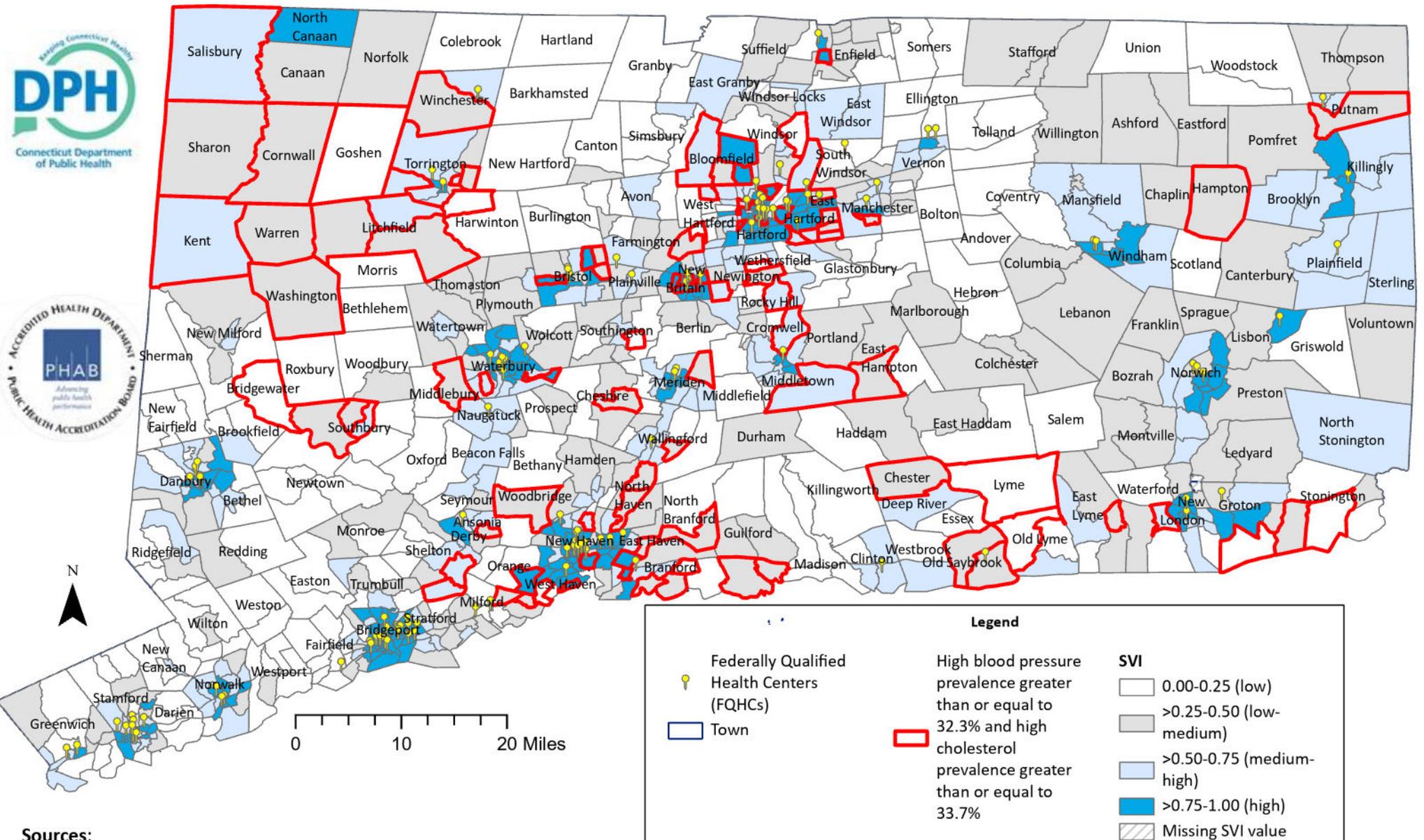


Identifying Connecticut Census Tracts for National Cardiovascular Health Program Recruitment

Using Geographic Information Systems (GIS) to determine priority populations in Connecticut

Connecticut Department of Public Health
Community, Family Health and Prevention Section
September 2023

Map 1. Selecting census tracts based on Social Vulnerability Index, high blood pressure and high cholesterol prevalence, and federally qualified health center locations in Connecticut



Sources:
 CDC PLACES: Census Tract Data (GIS Friendly Format), 2023 release. High blood pressure and high cholesterol prevalence. <https://data.cdc.gov/browse?category=500+Cities+%26+Places>. Accessed on July 17, 2023.
 Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2020 Database Connecticut. https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. Accessed on July 17, 2023.
 HRSA Federally Qualified Health Centers and Look-Alikes, Connecticut as of July 27, 2023. Available at <https://data.hrsa.gov/data/reports/datagrid?gridName=FQHCs>
Author: Stephanie Poulin, MPH, Connecticut Department of Public Health, September 5, 2023.

Map 1. Selecting census tracts based on Social Vulnerability Index, high blood pressure and high cholesterol prevalence, and federally qualified health center (FQHC) locations in Connecticut

Impact Statement

Map 1 highlights the census tracts in Connecticut with the highest high blood pressure and high cholesterol prevalence and Social Vulnerability Index (SVI) scores. Additionally, the map illustrates federally qualified health center (FQHC) locations across the state, which the Connecticut Department of Public Health (DPH) can target for potential partnerships for the National Cardiovascular Health Program (CDC-RFA-DP-23-0004).

Description

This map displays census tracts with a combined high blood pressure prevalence above 32.3% and high cholesterol prevalence above 33.7% among adults ages 18 years and older in the state of Connecticut obtained from the Centers for Disease Control and Prevention (CDC) PLACES dataset for the year 2021. The map also displays the CDC and Analytics Agency for Toxic Substances and Disease Registry's (ATSDR) Social Vulnerability Index for each census tract. The census tracts with medium-high to high Social Vulnerability Index scores and the greatest prevalence of high blood pressure and high cholesterol are located in Bloomfield, Bristol, Cromwell, East Hartford, East Haven, Enfield, Hamden, Hartford, Kent, Litchfield, Middletown, New Britain, New Haven, Newington, Orange, Rocky Hill, Salisbury, Shelton, South Windsor, Southbury, Stratford, Torrington, Waterbury, Waterford, West Hartford, and West Haven.

Methodology

Software Used

SAS Enterprise Guide 7.1 (64-bit) and ArcGIS Pro 3.1.2 were used.

Data Used

The data source for high blood pressure and high cholesterol prevalence is the 2023 release of CDC PLACES. This release includes 2021 Behavioral Risk Factor Surveillance System (BRFSS) prevalence estimates and Census 2010 population counts and geographic boundaries. More information is available at <https://www.cdc.gov/places/index.html>.

CDC/ATSDR SVI uses Census 2020 data to rank census tracts on 16 social factors, including poverty, lack of vehicle access, crowded housing, and racial and ethnic minority status. More information is available at <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>.

Information on FQHCs are available through the Health Resources and Services Administration (HRSA) at <https://data.hrsa.gov/data/reports/datagrid?gridName=FQHCs>. The data used in Map 1 were current as of July 27, 2023.

Methods Used

CDC PLACES and SVI datasets were merged in SAS by census tract. This new dataset was joined to the Connecticut census tract shapefile in ArcGIS Pro. Census tracts with high blood pressure prevalence above 32.3% and high cholesterol prevalence above 33.7% were selected, saved as a layer, and presented as the census tracts outlined in red. The SVI is displayed in quartiles, represented as shades of gray and blue. Point-based data identifying FQHC locations are represented as yellow push pins.

Major Findings

The census tracts with medium-high to high SVI scores and the greatest prevalence of both high blood pressure and high cholesterol are located in Bloomfield, Bristol, Cromwell, East Hartford, East Haven, Enfield, Hamden, Hartford, Kent, Litchfield, Middletown, New Britain, New Haven, Newington, Orange, Rocky Hill, Salisbury, Shelton, South Windsor, Southbury, Stratford, Torrington, Waterbury, Waterford, West Hartford, and West Haven. The majority of these census tracts have a FQHC located within their boundaries or nearby.

Over 43,000 adults in the outlined census tracts with medium-high to high SVI have high blood pressure. Nationally, 75% of adults with high blood pressure, do not have it controlled. If this percent is applied to the selected census tracts, approximately 32,500 adults have uncontrolled high blood pressure. A goal of the Connecticut cardiovascular health activities is to increase control of high blood pressure. If blood pressure control increased by 25% over the 5-year cooperative agreement, almost 10,000 additional adults will have controlled high blood pressure.[1]

Almost 42,000 adults in the outlined census tracts with medium-high to high SVI have high cholesterol. According to the Centers for Disease Control and Prevention (CDC), 45.5% of adults with high cholesterol do not take medication for high cholesterol. If this percent is applied to the selected census tracts, approximately 19,000 adults with high cholesterol are not taking medications for it. A goal of the Connecticut cardiovascular health activities is to increase control of high cholesterol. If the percent of adults with high cholesterol taking medications increased by 25% over the 5-year cooperative agreement, an estimated 10,500 additional adults will take medications for high cholesterol.[2]

How This Map Will Be Used

This map will be used by the Connecticut DPH to select health care organizations to recruit for the early cohorts of the National Cardiovascular Health Program-supported learning collaboratives. Later cohorts may expand to Connecticut census tracts with lower SVI scores or high blood pressure or high cholesterol prevalence or health care organizations other than FQHCs. Organizations from census tracts with no data will be considered on a case-by-case basis.

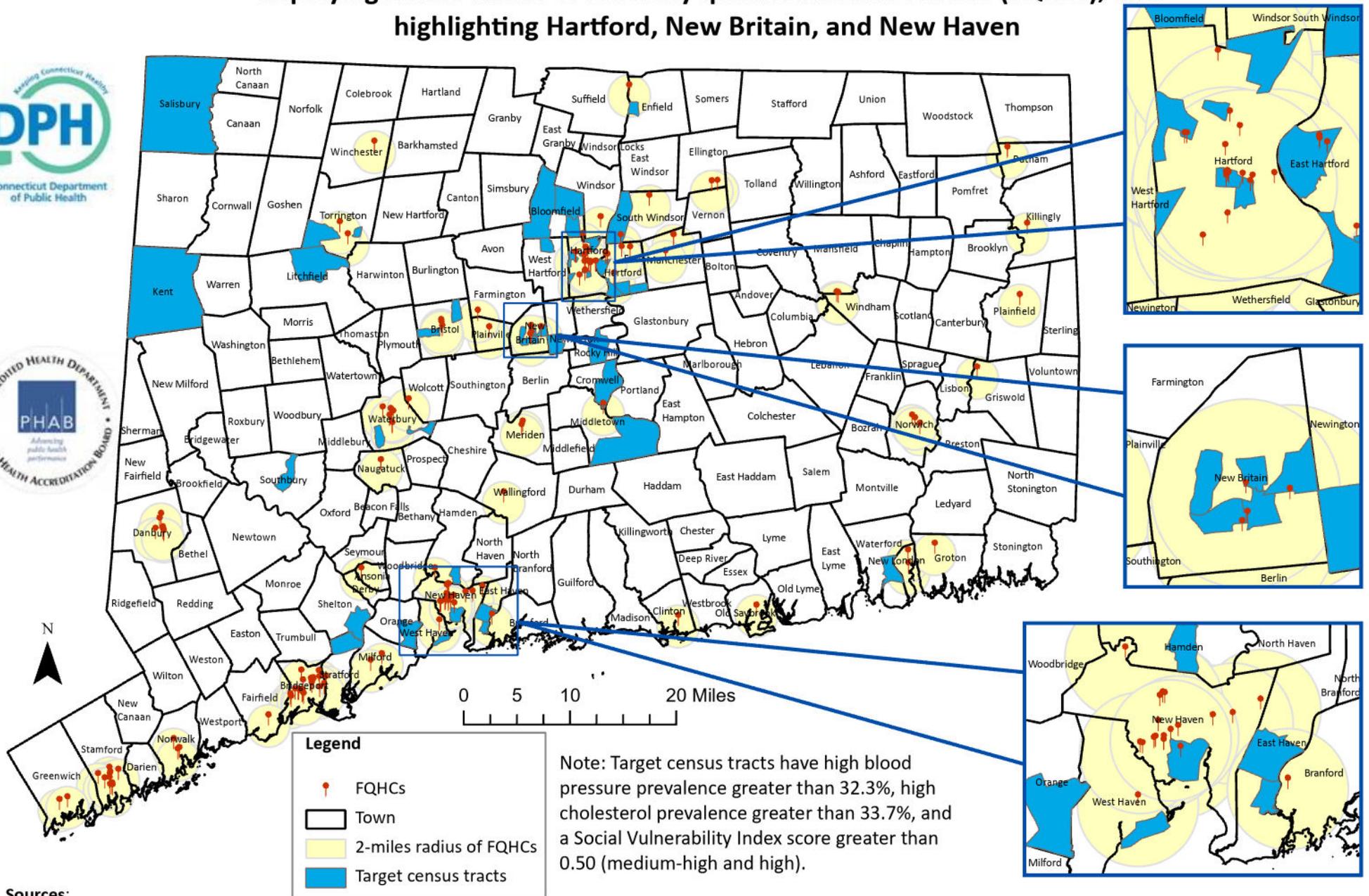
How to Cite this Map

Stephanie Poulin, Connecticut Department of Health; Map 1. Selecting census tracts based on Social Vulnerability Index, high blood pressure and high cholesterol prevalence, and federally qualified health center (FQHC) locations in Connecticut; available from www.ct.gov/dph/heartstrokedata.

References

1. Centers for Disease Control and Prevention (CDC). *Facts about Hypertension*. 2023 July 6, 2023 [cited 2023 August 29]; Available from: <https://www.cdc.gov/bloodpressure/facts.htm>.
2. CDC. *High Cholesterol Facts*. 2023 May 15, 2023 [cited 2023 August 29]; Available from: <https://www.cdc.gov/cholesterol/facts.htm>.

Map 2. Connecticut census tracts to target for cardiovascular health learning collaboratives, displaying 2-mile radius of federally qualified health centers (FQHCs), and highlighting Hartford, New Britain, and New Haven



Sources:
 CDC PLACES: Census Tract Data (GIS Friendly Format), 2023 release. High blood pressure and high cholesterol prevalence. <https://data.cdc.gov/browse?category=500+Cities+%26+Places>. Accessed on July 17, 2023.
 Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2020 Database Connecticut. https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. Accessed on July 17, 2023.
 HRSA Federally Qualified Health Centers and Look-Alikes, Connecticut as of July 27, 2023. Available at <https://data.hrsa.gov/data/reports/datagrid?gridName=FQHCs>

Author: Stephanie Poulin, MPH, Connecticut Department of Public Health, September 5, 2023.

Map 2. Connecticut census tracts to target for cardiovascular health learning collaboratives, displaying 2-mile radius of federally qualified health centers (FQHCs), and highlighting Hartford, New Britain, and New Haven

Impact Statement

Map 2 features the census tracts in Connecticut with the highest high blood pressure and high cholesterol prevalence and Social Vulnerability Index (SVI) scores and highlights Hartford, New Britain, and New Haven. Additionally, the map illustrates federally qualified health center (FQHC) locations across the state and the 2-mile radii of the FQHCs. The Connecticut Department of Public Health (DPH) may use this information to determine potential partnerships for the National Cardiovascular Health Program (CDC-RFA-DP-23-0004).

Description

This map displays in blue the Connecticut census tracts that have adult high blood pressure prevalence greater than 32.3%, adult high cholesterol prevalence greater than 33.7%, and a Social Vulnerability Index score greater than 0.50 (medium-high and high). Prevalence data are from the Centers for Disease Control and Prevention (CDC) PLACES dataset for the year 2021. The Social Vulnerability Index is produced by the CDC and Analytics Agency for Toxic Substances and Disease Registry (ATSDR). These census tracts are located in Bloomfield, Bristol, Cromwell, East Hartford, East Haven, Enfield, Hamden, Hartford, Kent, Litchfield, Middletown, New Britain, New Haven, Newington, Orange, Rocky Hill, Salisbury, Shelton, South Windsor, Southbury, Stratford, Torrington, Waterbury, Waterford, West Hartford, and West Haven. The map also displays the locations of federally qualified health center sites as red push pins. Zoomed in extents of the maps for Hartford, New Britain, and New Haven are presented. Target census tracts in Hartford are in the center and west-center portions of the city while federally qualified health center locations are in central Hartford. In New Britain, target census tracts and federally qualified health centers are located in the center of the city. In New Haven, target census tracts are in the southern, Long Wharf region, while federally qualified health centers run through the middle of the city.

Methodology

Software Used

SAS Enterprise Guide 7.1 (64-bit) and ArcGIS Pro 3.1.2 were used.

Data Used

The data source for high blood pressure and high cholesterol prevalence is the 2023 release of CDC PLACES. This release includes 2021 Behavioral Risk Factor Surveillance System (BRFSS) prevalence estimates and Census 2010 population counts and geographic boundaries. More information is available at <https://www.cdc.gov/places/index.html>.

Using GIS to determine priority populations in Connecticut, September 2023

CDC/ATSDR SVI uses Census 2020 data to rank census tracts on 16 social factors, including poverty, lack of vehicle access, crowded housing, and racial and ethnic minority status. More information is available at <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>.

Information on FQHCs are available through the Health Resources and Services Administration (HRSA) at <https://data.hrsa.gov/data/reports/datagrid?gridName=FQHCs>. The data used in Map 2 were current as of July 27, 2023.

Methods Used

CDC PLACES and SVI datasets were merged in SAS by census tract. This new dataset was joined to the Connecticut census tract shapefile in ArcGIS Pro. Census tracts with high blood pressure prevalence above 32.3%, high cholesterol prevalence above 33.7%, and a SVI score above 0.50 were selected, saved as a layer, and presented in blue. Point-based data identifying FQHC locations are represented as red push pins. The ArcGIS Pro Buffer Analysis Tool was used to create circles with 2-mile radii around FQHC sites. Smaller map frames zoomed in to Hartford, New Britain, and New Haven were added to the map.

Major Findings

The census tracts with medium-high to high SVI scores and the greatest prevalence of both high blood pressure and high cholesterol are located in Bloomfield, Bristol, Cromwell, East Hartford, East Haven, Enfield, Hamden, Hartford, Kent, Litchfield, Middletown, New Britain, New Haven, Newington, Orange, Rocky Hill, Salisbury, Shelton, South Windsor, Southbury, Stratford, Torrington, Waterbury, Waterford, West Hartford, and West Haven. The majority of these census tracts are located in the 2-mile radius of an FQHC.

How This Map Will Be Used

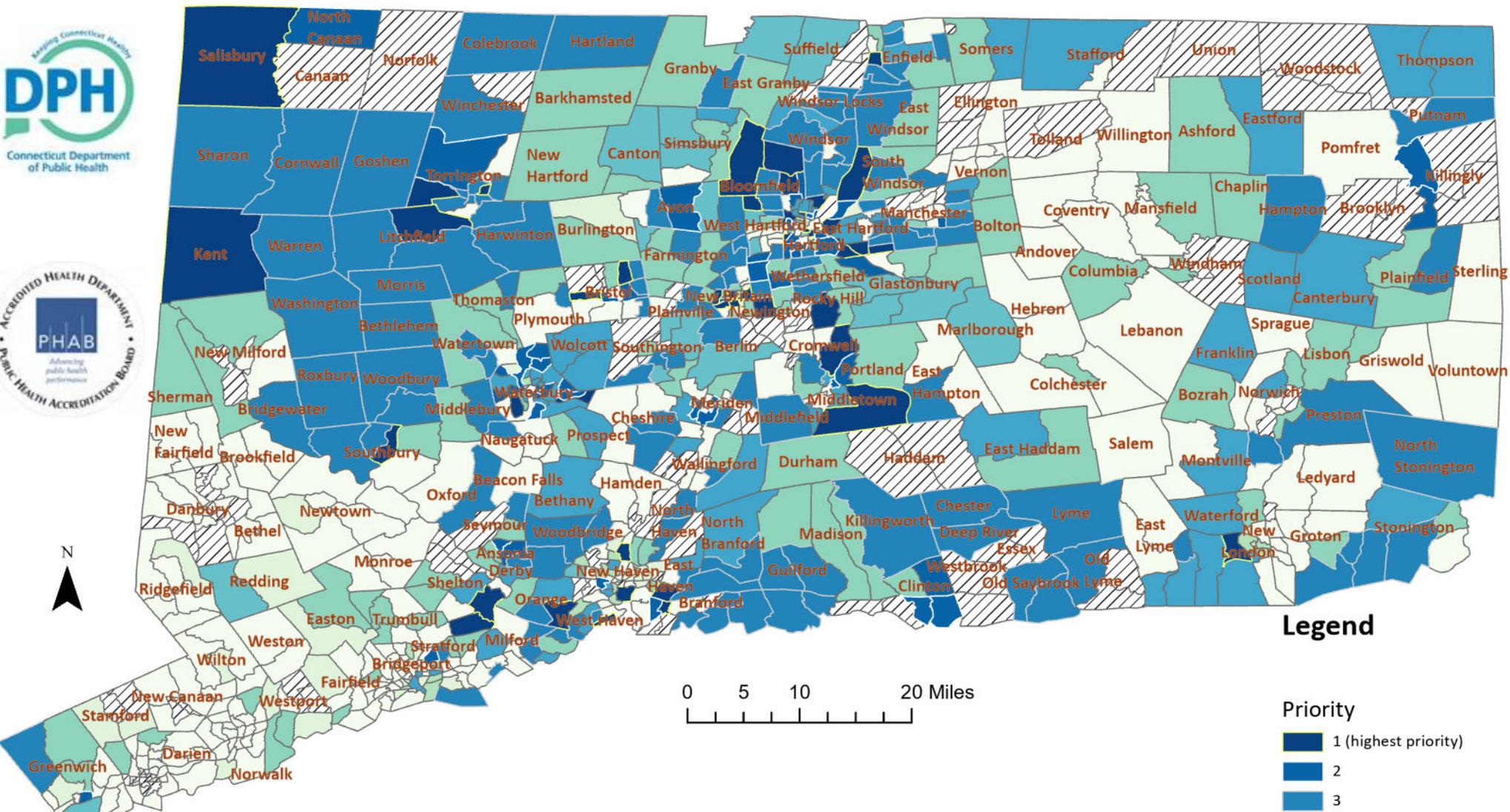
This map will be used by the Connecticut DPH to select health care organizations to recruit for the early cohorts of the National Cardiovascular Health Program-supported learning collaboratives. This map suggests prioritizing the recruitment of FQHCs in the census tracts with the highest prevalence of both high blood pressure and high cholesterol and SVI scores above 0.50. Initial efforts should also include identifying other types of health care organizations located in targeted Connecticut census tracts without FQHCs. Organizations from other census tracts will be considered on a case-by-case basis.

How to Cite this Map

Stephanie Poulin, Connecticut Department of Health; Map 2. Connecticut census tracts to target for cardiovascular health learning collaboratives, displaying 2-mile radius of federally qualified health centers (FQHCs), and highlighting Hartford, New Britain, and New Haven; available from www.ct.gov/dph/heartstrokedata.

Map 3. Connecticut census tracts ranked by recruiting priority for CDC National Cardiovascular Health Program-funded activities

The census tracts with the highest prevalence of high blood pressure and high cholesterol and Social Vulnerability Index are ranked as highest priority.



Legend

- 1 (highest priority)
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (lowest priority)
- No data

Sources:
 CDC PLACES: Census Tract Data (GIS Friendly Format), 2023 release. High blood pressure and high cholesterol prevalence. <https://data.cdc.gov/browse?category=500+Cities+%26+Places>. Accessed on July 17, 2023.
 Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2020 Database Connecticut. https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. Accessed on July 17, 2023.
 HRSA Federally Qualified Health Centers and Look-Alikes, Connecticut as of July 27, 2023. Available at <https://data.hrsa.gov/data/reports/datagrid?gridName=FQHCs>
Author: Stephanie Poulin, MPH, Connecticut Department of Public Health, September 5, 2023.

Map 3. Connecticut census tracts ranked by recruiting priority for CDC National Cardiovascular Health Program-funded activities

Impact Statement

Map 3 displays the Connecticut census tracts ranked by recruiting priority for CDC National Cardiovascular Health Program-funded activities (CDC-RFA-DP-23-0004). The Connecticut Department of Public Health (DPH) plans to target the highest ranking census tracts first for potential partnerships and implementation of learning collaboratives.

Description

This map displays Connecticut census tracts ranked by recruiting priority for CDC National Cardiovascular Health Program-funded activities (CDC-RFA-DP-23-0004). The census tracts given the highest priority are displayed in dark blue. These census tracts have high blood pressure prevalence above 32.3% and high cholesterol prevalence above 33.7% among Connecticut adults ages 18 years and older for the year 2021 with medium-high to high Social Vulnerability Index scores. The prevalence data are from the Centers for Disease Control and Prevention (CDC) PLACES dataset for the year 2021. The Social Vulnerability Index is produced by the CDC and Analytics Agency for Toxic Substances and Disease Registry's (ATSDR) Social Vulnerability Index. The high priority census tracts are located in Bloomfield, Bristol, Cromwell, East Hartford, East Haven, Enfield, Hamden, Hartford, Kent, Litchfield, Middletown, New Britain, New Haven, Newington, Orange, Rocky Hill, Salisbury, Shelton, South Windsor, Southbury, Stratford, Torrington, Waterbury, Waterford, West Hartford, and West Haven. The census tracts in ranking groups two to five are in incrementally lighter shades of blue. The lower ranking census tracts are shaded green to yellow (lowest rank).

Methodology

Software Used

SAS Enterprise Guide 7.1 (64-bit) and ArcGIS Pro 3.1.2 were used.

Data Used

The data source for high blood pressure and high cholesterol prevalence is the 2023 release of CDC PLACES. This release includes 2021 Behavioral Risk Factor Surveillance System (BRFSS) prevalence estimates and Census 2010 population counts and geographic boundaries. More information is available at <https://www.cdc.gov/places/index.html>.

CDC/ATSDR SVI uses Census 2020 data to rank census tracts on 16 social factors, including poverty, lack of vehicle access, crowded housing, and racial and ethnic minority status. More information is available at <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>.

Information on FQHCs are available through the Health Resources and Services Administration (HRSA) at <https://data.hrsa.gov/data/reports/datagrid?gridName=FQHCs>. The data used in Map 3 were current as of July 27, 2023.

Methods Used

CDC PLACES and SVI datasets were merged in SAS by census tract. Using SAS, the quartiles for high blood prevalence, high cholesterol prevalence, and SVI were calculated. The lowest quartiles were given the value of “1” and the highest quartiles were given the value of “4”. Census tracts with high blood pressure and high cholesterol prevalence in the fourth quartile and SVI in the third and fourth quartiles were given the highest priority rating (rating = 1). A total of ten priority rating groups were created and based on decreasing quartiles of high blood pressure and high cholesterol prevalence and SVI. This dataset was joined to the Connecticut census tract shapefile in ArcGIS Pro. Graduated colors (yellow to dark blue) were used to illustrate the priority rankings with darker colors representing higher priority.

Major Findings

The census tracts with the greatest prevalence of both high blood pressure and high cholesterol and medium-high to high SVI scores (i.e., the census tracts categorized as highest priority) are located in Bloomfield, Bristol, Cromwell, East Hartford, East Haven, Enfield, Hamden, Hartford, Kent, Litchfield, Middletown, New Britain, New Haven, Newington, Orange, Rocky Hill, Salisbury, Shelton, South Windsor, Southbury, Stratford, Torrington, Waterbury, Waterford, West Hartford, and West Haven. Census tracts in ranking groups two, three, and four are located mainly in eastern, central, and western Connecticut. The southwestern portion of Connecticut has the fewest high priority census tracts.

How This Map Will Be Used

This map will be used by the Connecticut DPH to select health care organizations and other local partners to recruit for the early cohorts of the National Cardiovascular Health Program-supported learning collaboratives and activities. The organizations in census tracts categorized as highest priority will be recruited first. Recruitment in later years may expand to Connecticut census tracts with lower priority ranking. Organizations from census tracts with no data will be considered on a case-by-case basis.

How to Cite this Map

Stephanie Poulin, Connecticut Department of Health; Map 3. Connecticut census tracts ranked by recruiting priority for CDC National Cardiovascular Health Program-funded activities; available from www.ct.gov/dph/heartstrokedata.

Contact Information

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