Healthy Community Planning NJ (HCP-NJ)

TECHNICAL DOCUMENTATION

August 15, 2023

Introduction

The New Jersey Departments of Health (NJDOH) and Environmental Protection (NJDEP) created Healthy Community Planning (HCP-NJ), https://www.nj.gov/health/hcpnj/, to provide municipal-level health and environmental data in order to assist local community planning activities, provide links to relevant resources, and promote safe and healthy environments. HCP-NJ provides individual municipal-level summaries, reports, and maps along with county and state-level comparisons that offer insight into a municipality's health and environmental data.

This technical documentation details the processes, data sources, and steps used to develop HCP-NJ reports and maps, and primarily focuses on the creation of indicator data found in HCP-NJ.

While this document details the methods used for data acquisition, processing, and analysis, users are encouraged to explore the HCP-NJ website for additional resources including the Glossary, FAQs, and information on Data Limitations.

Table of Contents

Indicator Name: Population

Population is defined as the number of people living in a municipality, county, or the state. The total population at the county and state levels is also shown in the summary report.

1. Obtained the variable for total population (B01001_001E) found in census table B01001.
2. Applied that variable to the Census Bureau API URL as follows:
   https://api.census.gov/data/2020/acs/acs5?get=NAME,GEO_ID,
   VARIABLE&for=county%20subdivision:*&in=state:34&in=county:* .
   Note: Substituted actual variable name for capitalized generic
   variable names provided. This convention is used throughout this
   document.
3. Linked to municipal shapefiles, produced by NJDEP, through the CENSUS2010 field
   (previously Census FIPS Code).

Indicator Name: Poverty

The poverty indicator represents the percentage of people in a municipality, county, or the state living two times below the federal poverty level.

1. Obtained the variable for total population for poverty (C17002_001E) from Census table C17002 and population below two times the poverty level (C17002_008E) from Census table C17002.
2. Applied those variables into the Census Bureau's API URL as follows
   https://api.census.gov/data/2020/acs/acs5?get=NAME,VARIABLES&for=county%20subdivision:
   &in=state:34&in=county:.
3. Determined the population that is below two times the federal poverty level by subtracting the population above two times the federal poverty level from total population.
4. Divided the population below two times the federal poverty level by total population to get a percentage of individuals living in poverty.
5. Linked to municipal shapefiles, produced by New Jersey's State Office of Geographic Information Systems (NJOGIS), through the CENSUS2010 field.

Indicator Name: Minority

Minority is defined as the percentage of individuals in a municipality, county, and state who identify as other than non-Hispanic white.

1. Obtained the variables for total population (B01001_001E) from Census table B01001 and non-Hispanic white population (B03002_003E) from Census table B03002.
2. Applied those variables to the Census Bureau's API URL as follows:
   https://api.census.gov/data/2020/acs/acs5?get=NAME,VARIABLES&for=county%20subdivision:
   &in=state:34&in=county:.
3. Subtracted non-Hispanic white population from total population to determine the minority population.
4. Divided the calculated minority population by the total population to determine the minority percentage.
5. Linked to municipal shapefiles, produced by NJOGIS, through the CENSUS2010 field.

Indicator Name: Health Insurance

The health insurance indicator is defined as the percentage of the total population that does not have health insurance.

1. Obtained the variable for the total non-institutionalized population (B27001_001E) from Census table B27001 and the uninsured population stratified by age group and sex: B27001_002E, B27001_005E, B27001_008E, B27001_011E, B27001_014E, B27001_017E, B27001_020E, B27001_023E, B27001_026E, B27001_029E, B27001_030E, B27001_033E, B27001_036E, B27001_039E, B27001_042E, B27001_045E, B27001_048E, B27001_051E, B27001_054E, B27001_057E.
2. Applied those variables to the Census Bureau's API URL as follows: https://api.census.gov/data/2020/acs/acs5?get=NAME,VARIABLES&for=county%20subdivision: *&in=state:34&in=county:*.
3. Determined the total number of uninsured individuals by adding each of the stratified uninsured groups together.
4. Divided the uninsured population by the total non-institutionalized population to get percentage of the population without health insurance.
5. Linked to municipal shapefiles, produced by NJOGIS, through the CENSUS2010 field.

Indicator Name: Air Cancer Risk

1. Obtained New Jersey's 2017 state summary file from AirToxScreen's State Summary File dropdown menu.
2. Applied Corresponding Unit Risk Factor (URF) NJ's Toxicity Values for Inhalation Exposure to each applicable pollutant's estimated ambient concentration, excluding Diesel PM, to estimate each individual pollutant's potential cancer risk in risk per million. If there was not a corresponding URF, that pollutant only has non-carcinogenic impacts, and was excluded from this analysis.
3. Summed potential cancer risk for each census tract. Averaged the sum potential cancer risks within each municipality and created a final spatial join between the averaged sum of potential cancer risk results and the municipality file.

Indicator Name: Air Non-Cancer Risk

1. Obtained New Jersey's 2017 state summary file from AirToxScreen's State Summary File dropdown menu.
2. Applied the corresponding Reference Concentration (RfC) from NJ's Toxicity Values for Inhalation Exposure to each applicable pollutant's estimated ambient concentration to estimate each individual pollutant's potential noncancer HQ. If there was not a corresponding RfC, that pollutant only has carcinogenic impacts and was excluded from this analysis.
3. Summed potential non-cancer risk for each census tract. Averaged the sum potential cancer risks within each municipality and created a final spatial join between the averaged sum of potential cancer risk results and the municipality file.

Indicator Name: Air Quality Index (AQI)

1. Obtained daily Ozone (44201) and PM$_{2.5}$ FRM/FEM Mass (88101) monitoring results for all New Jersey air monitoring sites as well as nearby monitors in Connecticut, Delaware, Pennsylvania, and New York from EPA's Daily Summary Data Site for the years 2018 to 2020 . Daily Ozone (44201) and PM$_{2.5}$ FRM/FEM Mass (88101) were listed under the categories "Criteria Gases" and "Particulates," respectively.

2. Created separate GIS files from the monitoring sites' latitude and longitude data for each applicable year.

3. Applied ArcGIS' Inverse Distance Weighting (IDW) interpolation tool to each year's monitoring results to estimate daily grid level concentrations of ozone in parts per million (ppm). The IDW interpolation tool determines cell values using a linearly weighted combination of a set of sample points. The weight is a function of inverse distance. The surface being interpolated is the locationally dependent variable (i.e., the monitor locations). The following specific parameters were used:
   a. Grid cell size of 0.05 degrees
   b. Power: of 5
   c. Search Radius: Variable 10

4. Summarized the daily results for each grid to determine the number of days the estimated concentration was above the Air Quality Index (AQI) level of 100 (which equals 0.070 ppm for ozone averaged over 8-hours), and then averaged those summarized results to create one, 3-year value for each grid.

5. Applied Zonal Statistics as a Table function in ArcMap Spatial Analyst using the created raster surface as well as a shapefile of NJ's municipalities (with the zone field being MUN_CODE) to determine the spatially weighted average AQI for each NJ municipality.

6. Created final GIS data layer by using a spatial join between the three-year average grid results and the municipality shapefile.

Indicator Name: Community Drinking Water

The Community Drinking Water indicator represents the largest number of drinking water violations for any one water purveyor within the municipality within a three-year interval (2019 to 2021). A purveyor is a water supplier that serves water year-round to the same population (at least 25 people at their primary residences or at least 15 residences that are primary residences). The contaminants that purveyors test for can be found here. The types of violations are as follows: maximum contaminant levels (MCL); treatment techniques (TT); and action levels (AL).

1. Created a drinking water purveyor polygon file using an attribute join to link the Public Drinking Water data to the Public Drinking Water Purveyor GIS file using purveyor ID number.

2. Applied the Intersect geoprocessing tool to determine the intersection between the Municipality file and the drinking water purveyor polygon file such that only the common features are represented in the output.

3. Applied the Dissolve geoprocessing tool to the output from step two above to select the drinking water area with the maximum area in the each block group.

4. Used an attribute join to link the violation records to the maximum area data.

Indicator Name: Private Wells

The Private Wells indicator represents the percentage of wells in a municipality that are above the primary standard for any of the following contaminants: arsenic, E. coliform, gross alpha, mercury, nitrates, and volatile organic compounds (VOCs). To protect the privacy of homeowners, data for any municipality with fewer than 10 wells tested were suppressed and has a note indicating that fewer than 10 wells were tested. The indicator includes records from 2002 to 2018 from NJDEP's Private Well Testing Act (PWTA) Database. The most current version of the PWTA municipal summary can be found here.

1. Calculated the number of private wells tested for each municipality.
2. Determined the total number of wells tested that had a primary standard exceedance.
3. Divided the total number of wells tested with a primary standard exceedance by the total number of wells tested.

Indicator Name: Groundwater and Soil

The groundwater and soil indicator identifies the percentage of area within a municipality that has former groundwater and/or soil pollution areas with restricted uses of water and/or land because they do not meet current standards.

1. Applied the merge tool on the Classification Exception Areas (CEA), Currently Known Extent of Groundwater Contamination (CKE) areas, and Deed Notice areas.
2. Determined the total acreage of each New Jersey municipality.
3. Intersected with New Jersey municipalities to identify the areas of overlap for groundwater or soil with restricted use.
4. Calculated the area of overlap to determine the acreage of restricted groundwater and soil in the municipality.
5. Divided the area of restricted use by total area of each municipality.

Indicator Name: Surface Water

The surface water indicator represents the percent of designated surface water uses that are considered impaired for a municipality as determined by the 2016 Integrated Report. Designated uses are grouped into several categories for analysis include the following: Aquatic Life – General; Aquatic Life – Trout; Fish Consumption; Public Water Supply; Recreation; and Shellfish. Assessed designated uses are evaluated during the reporting cycle. Impaired designated uses are when the use was deemed in non-support of the designated use.

1. Determined the total number of designated uses, assessed designated uses, and impaired designated uses for each municipality.
2. Calculated the percentage of impaired designated uses by dividing the number of impaired designated uses by the total number of assessed designated uses.
3. Designated use categories that did not apply (i.e., the water source was not used for that function) or had insufficient data for the municipality were removed from calculations. The higher the percentage, the worse the overall water quality. The results are a short-term snapshot of water quality conditions. The last five years of data were used to determine if waterbodies supported their designated uses.

Indicator Name: Flooding

The flooding indicator represents a projection of urban areas within future flood hazard areas. The future coastal flood hazard areas represent a five-foot sea level rise (less than a 17% chance of occurring in 2100 with moderate emissions) in the 1% (100-year flood) Federal Emergency Management Agency (FEMA) Flood Hazard Area (FHA). For riverine areas, the indicator utilizes the 0.2% (500-year flood) FEMA FHA. The indicator reports the total percentage of urban areas that is impacted by these future flood hazard areas in each municipality.

1. Obtained the Flooding (Urban Land Cover) Layer. This is a unique GIS file that determines the acres of urban land flooded in each block group by combining aspects of three other GIS data sources (NJ Land Use 2015 (Urban type) Source Data, Tidal Climate Adjusted Flood Elevation, and FEMA 0.2% (500 Year) Flood Hazard Areas Source Data) as follows:
   a. Combined two FEMA flooding data layers to determine a Future Coastal and Inland Flooding Potential layer.
   b. Intersected the Future Coastal and Inland Flooding Potential layer with urban land 2019 NJ census block group data to create the Urban Flooding Layer.
2. Identified urban land use in each municipality by applying Intersect tools the 2015 Land Use/Land Cover layer containing NJ municipalities.
3. Utilized the dissolve tool on the output intersection to determine total urban land use acres for each NJ municipality.
4. Dissolved the Flood (urban land cover) layer to find urban areas that are flooding.
5. Intersected the dissolved Flood (urban land cover) layer with New Jersey municipalities layer to find the total area of urban land flooded for each municipality.
6. Joined the results from steps three and five to calculate the percentage of urban flooding by dividing the flooded urban area by the total urban area in the municipality.

Indicator Name: Combined Sewer Overflow (CSO)

The CSO indicator represents the total number of CSOs within a municipality. Combined Sewer Systems (CSS) are used to simultaneously treat stormwater and wastewater at the same location. These systems can "overflow," allowing the discharge of untreated sewage. CSOs are only found in 21 municipalities, and there are ongoing efforts to reduce this number. CSOs are no longer constructed in New Jersey.

1. Obtained New Jersey's CSO GIS file.
2. Calculated the number of CSOs within each municipality by applying the Dissolve tool on the "MUNICIPALITY" field.
3. Linked to municipal shapefiles, produced by NJOGIS, through the CENSUS2010 field.

Indicator Name: Brownfield Development Areas (BDAs)

The BDA indicator represents the total number of BDAs in the municipality.

1. Obtained the New Jersey's BDA GIS file.
2. Calculated the number of BDAs within each municipality by dissolving the "MUNICIPALITY" field.
3. Linked to municipal shapefiles, produced by NJOGIS, through the CENSUS2010 field.

Indicator Name: Known Contaminated Sites List (KCSL)

The KCSL indicator represents the number of contaminated sites per square mile in each municipality. These sites were weighted to consider environmental concerns using three categories. Sites in the Immediate Environmental Concern (IEC) GIS layer with a receptor status of in-progress and those sites on the National Priorities List (NPL) were given the highest stressor score (3). Licensed Site Remediation Professional (LSRP) program cases with 10 or fewer contaminated Areas of Concern, and Pending sites, were given the lowest weighted stressor score (1). All other sites were given a weighted stressor score of 2. Unregulated Heating Oil underground storage tank (UHOT) sites and sites with a restricted or limited restricted Remedial Action Outcome (RAO) were not included in the stressor evaluation and are assigned a stressor score of 0. Remediated sites were also assigned a stressor score of 0.

1. Obtained NJ's Known Contaminated Sites List (KCSL) GIS file data. This publicly available dataset includes an attribute field (labeled CATEGORY) with the weighted ranking for each site as outlined above.
2. Applied ArcGIS' Kernel Density function using the weighted list as input with the following parameters:
   a. Search radius of one mile, which is consistent with the distance requirements in the NJDEP Hazardous Waste rules.
   b. Use field CATEGORY as population to weigh sites.
   c. Select a grid size of 100 meters (328.04 ft.).
   This is the calculated raster density file.
3. Applied Zonal Statistics as a Table function in ArcMap Spatial Analyst using the created raster surface to determine the spatially-weighted average number of sites for each NJ municipality as the indicator for proximity to each site.

Indicator Name: Scrap Metal Facilities

1. Obtained Scrap Metal Facilities in New Jersey GIS file.
2. Applied ArcGIS' Kernel Density function using the scrap metal facility GIS file as the input with the following parameters:
   a. Search radius of 1 mile.
   b. Use field CATEGORY as population to weigh sites.
   c. Select a grid size of 100 meters (328.04 ft.).
   This is the calculated raster density file.
3. Applied Zonal Statistics as a Table function in ArcMap Spatial Analyst using the created raster surface to determine the spatially-weighted average number of sites for each NJ municipality as the indicator for proximity to each site.

Indicator Name: Age of Housing

The age of housing indicator is a surrogate for potential lead exposure from lead-based paint in housing. Interior and exterior surfaces were frequently painted using lead-based paint in houses build prior to 1950.

1. Obtained the variables for total housing units (B25034_001) from Census table B25034, housing units built between 1940 to 1949 (B25034_010) from Census table B25034 and housing units built in 1939 or earlier (B25034_011) from Census table B25034.
2. Applied those variables to the Census Bureau's API URL as follows: https://api.census.gov/data/2020/acs/acs5?get=NAME,VARIABLES&for=county%20subdivision: *&in=state:34&in=county:*.
3. Determined the total number of houses built before 1950 by adding together the total number of houses built between 1940 to 1949 and houses built 1939 or earlier.
4. Divided the total number of houses built before 1950 by the total number of houses built to determine the percentage of pre-1950 housing.
5. Linked to municipal shapefiles, produced by NJOGIS, through the CENSUS2010 field.

Indicator Name: Radon

1. Values derived from the NJDEP-2015 Radon Tier Assignment Report were utilized to report the percentages of homes tested per municipality as well as the percentages of homes tested ≥ 4 picocuries per liter (pCi/L) per municipality.
2. The percentage of homes tested represents the number of houses tested for radon per municipality by the overall total number of houses per municipality (houses per municipality derives "total housing units" value from the 2017 American Community Survey (ACS) 5-Year Estimation Data Profile).
3. The percentages of homes tested ≥ 4 pCi/L value reported here, originates from the "Percentage" row within the NJDEP – 2015 Radon Tier Assignment Report but can also be calculated by dividing the number of homes ≥ 4 pCi/L (Number ≥ 4 pCi/L row in the 2015 NJDEP Radon Tier Assignment Report) by the number of houses tested per municipality ("Sample Size" row in the NJDEP-2015 Radon Tier Assignment Report).

Indicator Name: Open Space

The open space indicator shows the residential population living greater than ¼ mile from open space in that municipality divided by the acres of open space in the municipality. Population within ¼ mile of open space outside of municipal boundaries do not live greater than a ¼ mile away from open space. The level of protection from development that purchased open space receives varies. Land that receives Green Acres funding or is listed in the Department's Recreation and Open Space Inventory (ROSI) receives a higher level of protection than other purchased land such as parks, conservation areas, preserves, historic sites, recreational fields, beaches, etc.

1. Obtained New Jersey's Open Space polygon GIS files.
2. Used the ArcMap Buffer tool to add ¼-mile buffers to the residential land use areas for each municipality.
3. Applied the Dissolve geoprocessing tool to the output coverage in step two to aggregate features based on number of acres of open space within ¼ mile of the block group.
4. Determined the total population that is greater than ¼ mile away from open space. The population identified will be outside the ¼-mile buffers generated in step two.
   a. The underlying population value was determined by obtaining Census block level data and applying it to the residential areas of the 2015 land use/land cover datasets.
      i. Determined residential areas by selecting residential land use from the 2015 Land Use/Land Cover dataset.
      ii. Applied the Intersect geoprocessing tool to determine residential areas within each Census block. This output generated several areas of overlap between the residential land use and each block.
      iii. Calculated the total residential area within each Census block.
      iv. Divided the area of each overlap by the total area and multiply this ratio by the population within each Census block. The output is an estimate of the population for each residential land use area in the 2015 LU/LC dataset.
   b. Identified the population residing ¼ mile outside of the open space buffer zone using the result from step 4a.
      i. Utilized a ¼-mile buffer around the identified open space in step three.
      ii. Applied the erase tool to the residential area output from step 4a.
      iii. The population estimate was determined by using another area ratio (i.e., the area of the output from step 4a and the area identified in the output of step 4b, sub-step i.
      iv. Total all population estimates by municipality.
5. Used this information to calculate population density by dividing the population of the municipality that live greater than ¼ mile from open space by the total number of open space acres that are within ¼ mile of residential land use in a municipality.

Indicator Name: Traffic

The traffic indicator represents the percentage of a population that resides within 1,000 feet of major roadways. Major roadways are defined as roadways with a daily traffic volume exceeding 25,000 vehicles. Traffic volume is calculated by dividing total traffic by 365 to determine the annual average daily traffic (AADT).

1. Obtained NJ's 2018 Highway Performance Monitoring System (HPMS) GIS file data.
2. Applied a 1000-foot buffer to roads that have daily traffic greater than 25,000 vehicles (found in field AADT).
3. Determined the counts of population, schools, and childcares within these 1000-foot buffer zones using the ArcGIS Intersect and Dissolve tools.
   a. The underlying population value was determined by obtaining Census block-level data and applying it to the residential areas of the 2015 land use/land cover datasets.
      i. Determined residential areas by selecting residential land use from the 2015 Land Use/Land Cover dataset.
      ii. Applied the Intersect geoprocessing tool to determine residential areas within each Census block. This output generates several areas of overlap between the residential land use layer in the 2015 Land Use/Land Cover dataset and each Census block.
      iii. Calculated the total residential area within each Census block.
      iv. Divided area of each overlap by the total area and multiply this ratio by the population within each Census block. The output is an estimate of population for each residential land use area in the 2015 land use/land cover dataset.
   b. Identified the total population within the 1000-foot buffer.
      i. The output from step 3a was intersected with the output from step two to find areas of overlap between the residential land use and the 1000-foot buffer.
      ii. The population estimate was determined by using another area ratio (area of the output from step 3a and the area from the intersection in step 3b sub-step i).
      iii. Totaled all population estimates by municipality.
4. Calculated the percentage of population within these 1000-foot buffers by dividing the population living within the buffer zone by the total population for the municipality.

Indicator Name: Low Birth Weight & Percentage of All Preterm Infants

1. The data used to determine the Percentage of Low Birthweight Infants (less than 2,500 grams) and the corresponding upper and lower 95% confidence intervals (counts by municipality and county) were downloaded from the New Jersey Department of Health's State Health Assessment Database Birth Query (NJSHAD) and grouped by the birth mother's municipality of residence.
2. State-level data were calculated by first summing municipal totals into county totals, and then summing county totals. Rates were compared to confidence intervals (Count ≤ 5) to develop suppression labels. In addition, municipalities without any births are assigned "Suppressed."
3. NJ SHAD was used to obtain the percentages of All Preterm Infants (<37 weeks) (https://www-doh.state.nj.us/doh-shad/query/selection/birth/BirthSelection.html). Data were grouped by the birth mother's municipality of residence.

Indicator Name: Childhood Blood Lead

1. The data used to determine the Percent of Children < 6 Years of age Tested and Percent of Children < 6 Years of age Tested with Blood Lead Levels above 5 µg/dL were obtained from Tables 3 (County-level) and 4 (Municipality) from the NJ Department of Health's Childhood Lead Exposure in New Jersey: Annual Report, State Fiscal Year 2019 (July 1, 2018 – June 30, 2019).
2. State % Elevated Blood Lead Level (EBLL) was calculated by dividing the total EBLL by the total number of children screened in New Jersey.
3. The upper and lower 95% confidence intervals were then calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates and used to determine the state and county comparison values.
4. Municipal counts and rates were not available except for large municipalities with total populations greater than 35,000 residents.

Indicator Name: Asthma (Emergency Department Visits)

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with health data can be found here, the primary steps and sources utilized to calculate age-adjusted Emergency Department (ED) visit rates due to asthma in this analysis are as follows:

1. Numerators: Counts of Emergency Department Visits due to Asthma (ICD-10-CM Code: N/A) by municipality for 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years) for 2016-2019 were obtained within the emergency department tab within the NJSHAD Hospitalization Query .
2. Denominator (age and sex) data were obtained from the U.S. Census American Community Survey ACS 5-year (2015-2019) estimate municipal and county Census files. This data were then used to calculate age-adjusted rates and confidence intervals following the methods in Curtin & Klein (1995) for each municipality, county, and the State.
3. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
4. Municipal emergency department rates for asthma were compared with the 95% upper and lower confidence intervals to develop comparisons to the state and county and labeled "Above," "Below," and "No Difference." Data were suppressed if count < 20 or rate > 75th percentile (75 PCT) + 1.5 interquartile range (IQR) and labeled as "Suppressed."

Indicator Name: Heart Attack (Inpatient Acute Myocardial Infarction)

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with health data can be found here, the primary steps and sources utilized to calculate age-adjusted Inpatient Rates for Heart Attacks (Acute Myocardial Infarction) in this analysis are as follows:

1. Numerators: Counts of heart attack (ICD-10-CM Code: I21-I22) by 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years) for 2016-2019 were obtained from the inpatient hospitalization tab within the NJSHAD Hospitalization Query.
2. Denominator (by age and sex) data were obtained from ACS 5-year (2015-2019) estimate municipal and county Census files. Age-adjusted rates and confidence intervals were calculated following the methods in Curtin & Klein (1995) and were calculated from the data for each municipality, county, and state.
3. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
5. Municipal inpatient hospitalization rates for heart attacks were compared with the 95% upper and lower confidence intervals to develop comparisons to the state and county and labeled "Above," "Below," and "No Difference." Data were suppressed if count < 20 or rate > 75th percentile (75 PCT) + 1.5 interquartile range (IQR) and labeled as "Suppressed."

Indicator Name: Heart Disease Deaths

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with health data can be found here, the primary steps and sources utilized to calculate age-adjusted rates for heart disease deaths in this analysis are as follows:

1. Numerators: Counts of deaths due to heart disease (ICD-10-CM Code: I00-I09, I11, I13, I20-I51 by municipality for 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years) for 2015-2019 were obtained within the NJSHAD Mortality Query Module with the age categories "Under 1 year" and "1-4 years" summed into a new group ("Under 5 Years").
2. Denominator (age and sex) data were obtained from the ACS 5-year (2015-2019) estimated municipal and county Census files. Age-adjusted rates and confidence intervals were calculated following the methods in Curtin & Klein (1995) and were calculated from the data for each municipality, county, and state.
3. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
4. Municipal death rates from heart disease were compared with the 95% upper and lower confidence intervals to develop comparison labels ("Above," "Below," and "No Difference." Data were suppressed if count < 20 and labeled as "Suppressed."

Indicator Name: Stroke (Inpatient Hospitalizations)

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with health data can be found here, the primary steps and sources utilized to calculate age-adjusted inpatient stroke rates in this analysis are as follows:

1. Numerators: Counts of inpatient hospitalizations due to stroke (ICD-10-CM Code: I60-I69) by municipality for 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years) for 2016-2019 were obtained from the inpatient hospitalization tab within the NJSHAD Hospitalization Query.
2. Denominator (by age and sex) data were obtained from ACS 5-year (2015-2019) estimate municipal and county Census files. Age adjusted rates and confidence intervals were calculated following the methods in Curtin & Klein (1995) and were calculated from the data for each municipality, county, and state.
3. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
4. Municipal inpatient hospitalization rates for strokes were compared with the 95% upper and lower confidence intervals to develop comparisons to the state and county and labeled "Above," "Below," and "No Difference." Data were suppressed if count < 20 or rate > 75th percentile (75 PCT) + 1.5 interquartile range (IQR) and labeled as "Suppressed."

Indicator Name: Chronic Obstructive Pulmonary Disease (Emergency Department Visits)

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with health data can be found here, the primary steps and sources utilized to calculate age-adjusted Emergency Department rates for chronic obstructive pulmonary disease (COPD) in this analysis are as follows:

1. Numerators: counts of Emergency Department (ED) visits due to chronic obstructive pulmonary disease (COPD, ICD-10-CM Code: J40-J44) by municipality for 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years) for 2016-2019 were obtained within the emergency department tab within the NJSHAD Hospitalization Query .
2. Denominator (by age and sex) data were obtained from ACS 5-year (2015-2019) estimated municipal and county Census files.
3. Age-adjusted rates and confidence intervals were calculated following the methods in Curtin & Klein (1995) and were calculated from the data for each municipality, county, and state. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
4. Municipal emergency department rates for COPD were compared with the 95% upper and lower confidence intervals to develop comparisons to the state and county and labeled "Above," "Below," and "No Difference." Data were suppressed if count < 20 or rate > 75th percentile (75 PCT) + 1.5 interquartile range (IQR) and labeled as "Suppressed."

Indicator Name: All Cancer Deaths

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with NJSHAD health data can be found here, the primary steps and sources utilized to calculate age-adjusted death rates for all cancer deaths in this analysis are as follows:

1. Numerators: Age-adjusted deaths due to cancer (ICD-10 Code: C00-C97) for 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years) for 2014-2019 were obtained within the NJSHAD mortality query module with the age categories "Under 1 year" and "1-4 years" summed into a new group ("Under 5 Years") .
2. Denominator (age and sex) data were obtained from ACS 5-year (2015-2019) estimated municipal and county Census files.
3. Age-adjusted rates and confidence intervals were calculated following the methods in Curtin & Klein (1995) and were calculated from the data for each municipality, county, and state.
4. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
5. Municipal death rates from cancer were compared with the 95% upper and lower confidence intervals to develop comparison labels ("Above," "Below," and "No Difference." Data were suppressed if count < 20 and labeled as "Suppressed."

Indicator Name: Lung Cancer Deaths

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with health data can be found here, the primary steps and sources utilized to calculate age-adjusted death rates for lung cancer deaths in this analysis are as follows:

1. Numerators: age-specific deaths due to lung cancer (ICD-10 Code: C33-C34) for 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years) for 2014-2019 were obtained within the NJSHAD mortality query module with the age categories "Under 1 year" and "1-4 years" summed into a new group ("Under 5 Years").
2. Denominator (by age and sex) data were obtained from Census files.
3. Age adjusted rates and confidence intervals were calculated following the methods in Curtin & Klein (1995) and were calculated from the data for each municipality, county, and state.
4. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
5. Municipal death rates from lung cancer were compared with the 95% upper and lower confidence intervals to develop comparison labels ("Above," "Below," and "No Difference.") Data were suppressed if count < 20 and labeled as "Suppressed."

Indicator Name: Smoking

1. New Jersey data on prevalence of current smoking (model-based crude prevalence of current self-reported smoking among adults ≥18 years of age) were obtained from the CDC National Environmental Public Health Tracking Network Data Tracker for 2018 at the census tract level. Available data at the census tract level include model-based percent self-reported current smoking and 95% confidence intervals. The available data were derived from NJDOH BRFS telephone survey data collected in 2018.
2. Smoking rates were multiplied by total population for adults ≥18 years of age for each census tract to calculate the numerator. Following, each numerator was summed by municipality. Percent of smoking among adults ≥18 years of age for municipality was calculated by dividing the summed numerator by the sum of adults ≥ 18 years of age per municipality.
3. These data were then aggregated to the municipal level by linking overlapping GNIS codes for census tracts with their corresponding municipalities.
4. Percent smoking was compared with the 95% upper and lower confidence intervals to develop comparisons to the state and county and labeled "Above," "Below," and "No Difference." Data were suppressed if count < 20 or rate > 75th percentile (75 PCT) + 1.5 interquartile range (IQR) and labeled as "Suppressed."

Indicator Name: Obesity

1. New Jersey data on prevalence of current obesity (model-based crude prevalence of self-reported obesity among adults ≥18 years of age) were obtained from the CDC National Environmental Public Health Tracking Network Data Tracker for 2018 at the census tract level. Available data at the census tract level include model-based percent current obesity and 95% confidence intervals. The available data were derived from NJDOH BRFS telephone survey data collected in 2018.
2. Obesity rates for adults ≥18 years of age were multiplied by total population for adults ≥18 years of age for each census tract to calculate the numerator. Following, each numerator was summed by municipality. Percent prevalence of obesity among adults ≥18 years of age by municipality was calculated by dividing the summed numerator by the sum of adults ≥ 18 years of age per municipality.
3. These data were then aggregated to the municipal level by linking overlapping GNIS codes for census tracts with their corresponding municipalities.
4. Prevalence of obesity was compared with the 95% upper and lower confidence intervals to develop comparisons to the state and county and labeled "Above," "Below," and "No Difference." Data were suppressed if count < 20 or rate > 75th percentile (75 PCT) + 1.5 interquartile range (IQR) and labeled as "Suppressed."

Indicator Name: Heat Related Illness (Emergency Department Visits)

An age-adjusted rate is a measure that controls for the effects of age differences on health event rates. When comparing across geographic areas, some method of age-adjusting is typically used to control for the influence that different population age distributions might have on health event rates. While detailed instructions on how to calculate age-adjusted rates with health data can be found here, the primary steps and sources utilized to calculate age-adjusted Emergency Department Visit Rates for heat related illness in this analysis are as follows:

1. Numerators for the Age-adjusted Emergency Department (ED) Visits due to heat-related illness (counts by municipality for 10 age groups (Under 5, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+ years)) for 2016-2019 were obtained within the emergency department tab within the NJSHAD Hospitalization Query .
2. "Heat-related illness" refers to several diagnoses that can be found and retrieved through codes defined in the International Classification of Diseases (ICD). In this context, the following codes T67 (Heatstroke and Sunstroke), X30 (Exposure to excessive natural heat) and X32 (Exposure to sunlight) were used in the dataset query to retrieve all data defined as heat-related illness in this analysis.
3. Separately typed the codes (T67, X30, and X32) into "User-defined ICD-10-CM diagnosis codes - primary diagnosis" tab before submitting search query.
4. Denominator (by age and sex) data were obtained from ACS 5-year (2015-2019) estimated municipal and county Census files. Age-adjusted rates and confidence intervals were calculated following the methods in Curtin & Klein (1995) and were calculated from the data for each municipality, county, and state.
5. Upper and lower 95% confidence intervals were calculated using the standard error (1.96 x Standard Error) of the age-adjusted rates.
6. Municipal emergency department rates for heat-related illness were compared with the 95% upper and lower confidence intervals to develop comparisons to the state and county and labeled "Above," "Below," and "No Difference." Data were suppressed if count < 20 or rate > 75th percentile (75 PCT) + 1.5 interquartile range (IQR) and labeled as "Suppressed."