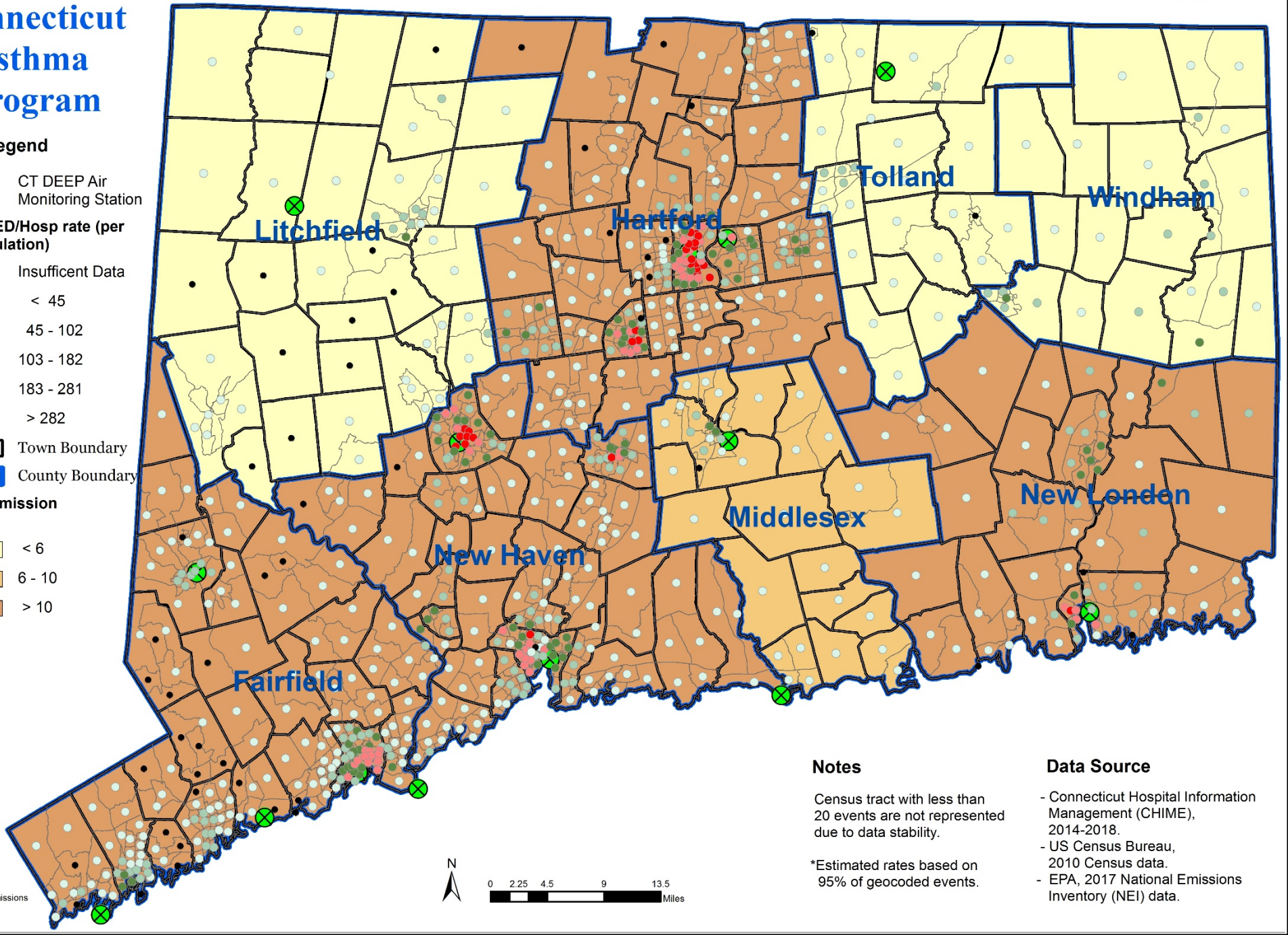
Combined Emergency Department and Hospitalization Rates* of Asthma as Primary Diagnosis, per Census Tract and County Nitrogen Oxides Emissions, Connecticut 2014-2018

DPH Keeping Connecticut Healthy

PHAB Advancing public health performance — Accredited Health Department — Public Health Accreditation Board

Connecticut Asthma Program



Legend

- CT DEEP Air Monitoring Station

Combined ED/Hosp rate (per 10,000 population)

- Insufficent Data
- < 45
- 45 - 102
- 103 - 182
- 183 - 281
- > 282
- Town Boundary
- County Boundary

2017 NOx Emission (%)

- < 6
- 6 - 10
- > 10

September 2020
edhosp_rate_emissions

Notes

Census tract with less than 20 events are not represented due to data stability.

*Estimated rates based on 95% of geocoded events.

Data Source

- Connecticut Hospital Information Management (CHIME), 2014-2018.
- US Census Bureau, 2010 Census data.
- EPA, 2017 National Emissions Inventory (NEI) data.

Map Description

This map presents the state of Connecticut's five-year combined emergency department and hospitalization rates of asthma as primary diagnosis at the census tract layer, overlaid with the county layer featuring a one-year pollution level as a percentage from the total for the specific pollutant, in this case, with Nitrogen Oxide (NOx) emissions. Census tracts with less than 15 events do not have a rate calculation due to data stability.

Major Findings

Background: The towns of Bridgeport, New Haven, Stamford, Hartford and Waterbury are the top five towns with high density population during 2014-2018. The overall statewide age-adjusted emergency department visit/hospitalization rate during 2014-2018 was 69.8 per 10,000 population.

Nitrogen oxides (NOx) refers to a group of gases composed of nitrogen and oxygen. The two most common hazardous NOx gases are nitric oxide and nitrogen dioxide. These gases are the bases to the formation of smog and acid rain. NOx gases are primarily emitted from vehicle exhaust, coal, oil, diesel and natural gas burning. NOx gas emissions is significant in large populated areas with high motor vehicle traffic. NOx exposure can cause health effects such as irritation of eyes, skin and respiratory system, including aggravation of lung conditions such as asthma. It can also cause coughing, chocking, nausea, headache, abdominal pain and breathing difficulty. More information on NOx pollution can be found on the EPA website.

Residents from Hartford, New Haven and Fairfield counties have used hospital emergency department services or have been hospitalized at a greater rate than other counties. Within Hartford County the towns of Harford, East Hartford and New Britain, in New Haven County the towns of Waterbury, Meriden and New Haven, in Fairfield County the city of Bridgeport and in New London County the city of New London have several census tracts showing three -fold or more of that of the state combined asthma rate.

The 2017 EPA's National Emissions inventory shows the counties of Fairfield, Harford, New Haven and New London as the areas producing greater than 10% of the total NOx emissions, followed by Middlesex County emitting between 6-10% and Litchfield, Tolland and Windham Counties emitting less than 6%.

All four of the counties with greater than 10% of NOx emissions include census tracts with the highest combined asthma rate.

Produced by the Connecticut Department of Public in collaboration with the Connecticut Department of Energy and Environmental Protection.