

Geographic analysis of PCSI diseases:

Using maps to identify NYC neighborhoods
with high rates of co-occurring HIV, TB, STDs
and viral hepatitis

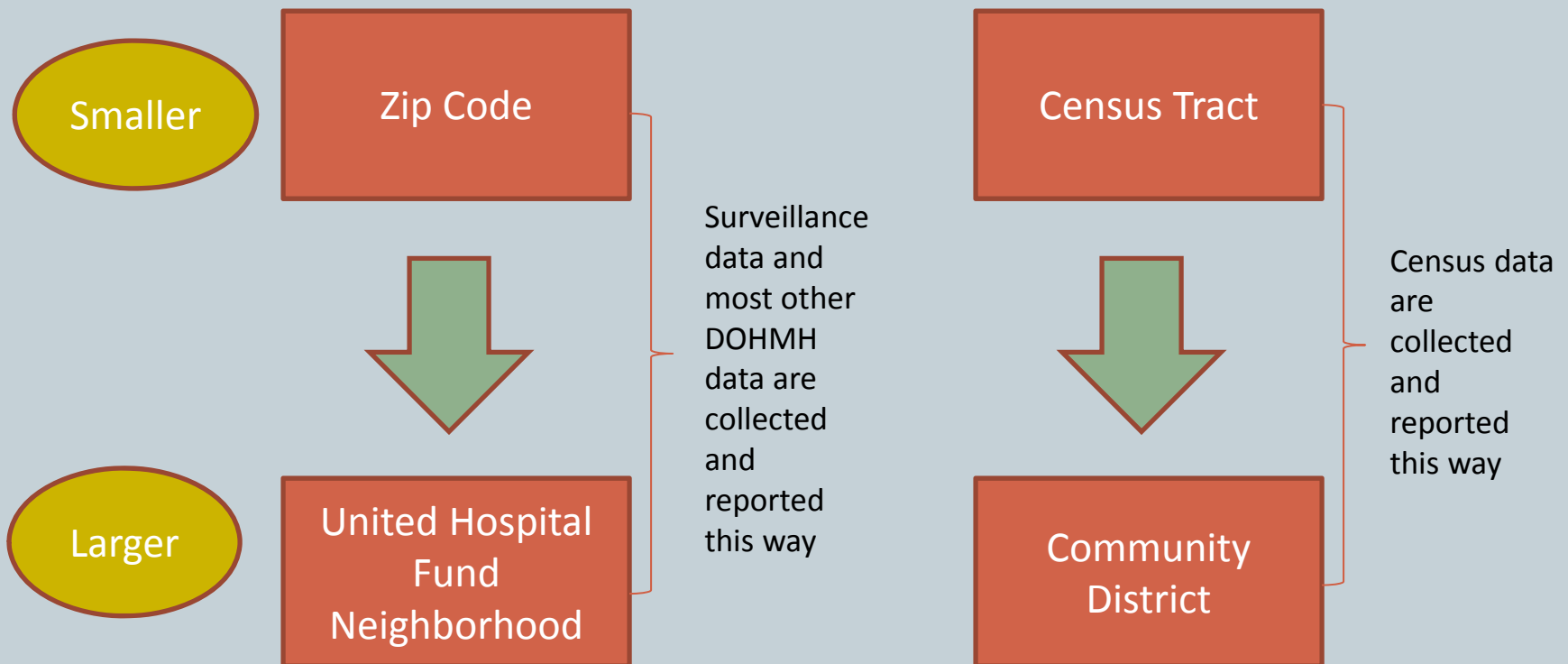


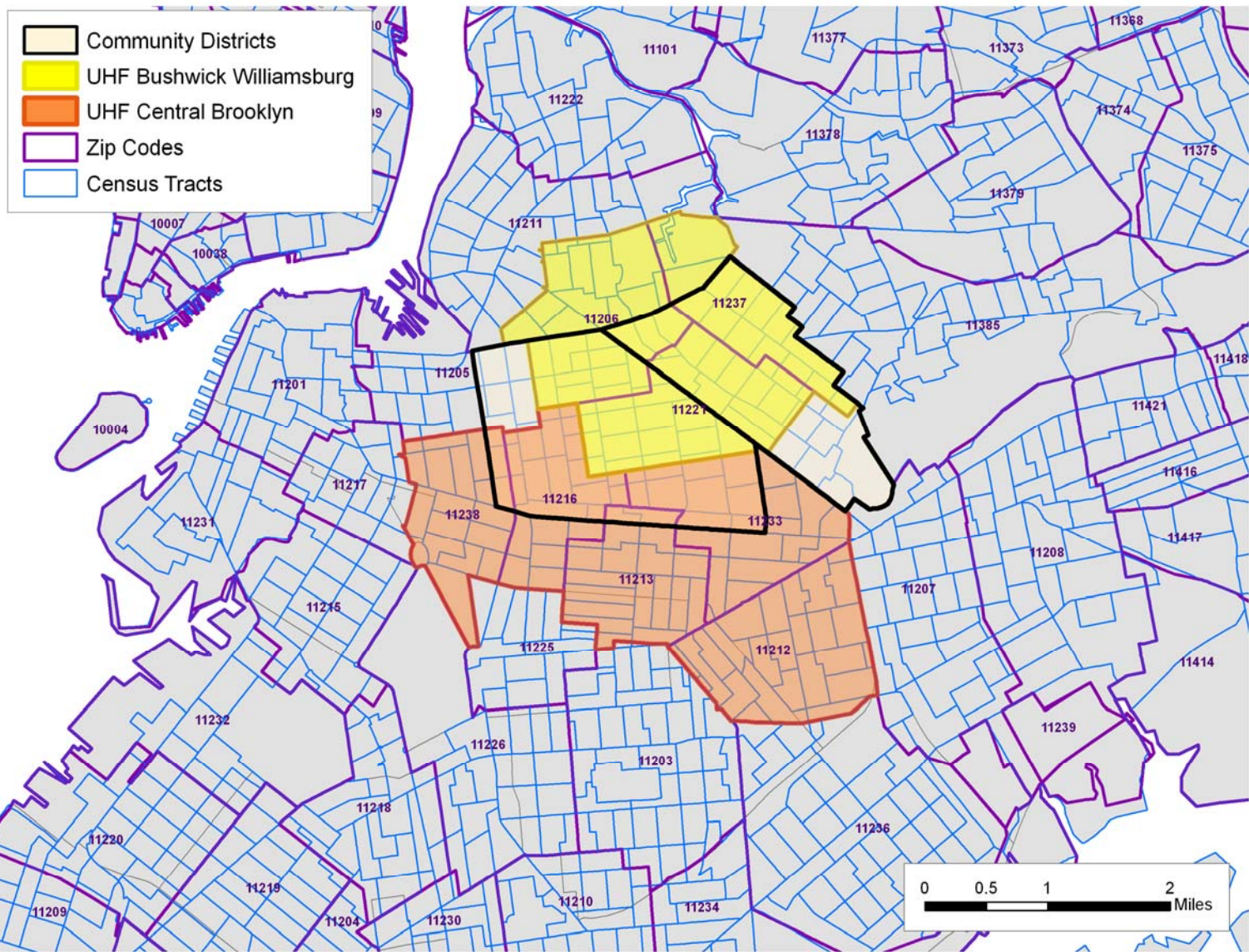
Why map disease data?

- Maps are a way to easily:
 - Observe geographic patterns
 - Communicate data effectively to a wide range of audiences
- Both co-occurrence and co-infection provide information about disease ‘hotspots’ and provide information to target service integration activities
 - Co-occurrence = >1 disease in the same population
 - Co-infection = >1 disease in the same individual

Units of Geographic Analysis

- The unit of analysis depends on the data, the audience and question of interest

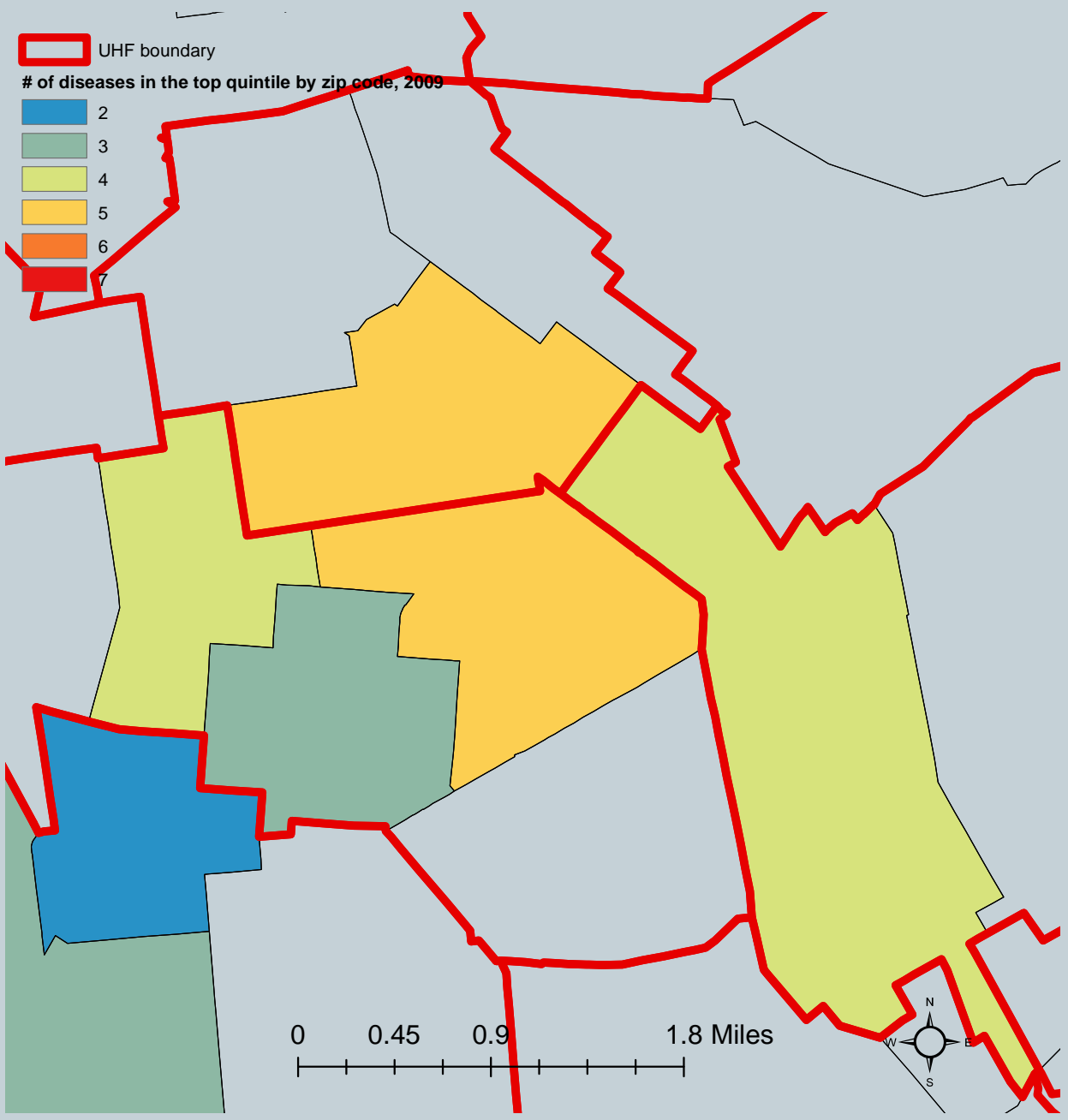




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Why Zip Codes?

- Most DOHMH data are presented by United Hospital Fund (UHF) neighborhood
 - Group of several zip codes
 - Named neighborhoods are easy for the public to recognize
 - Zip codes are smaller, more accurate representation
 - UHF can obscure a health issue that impacts some zip codes and not others

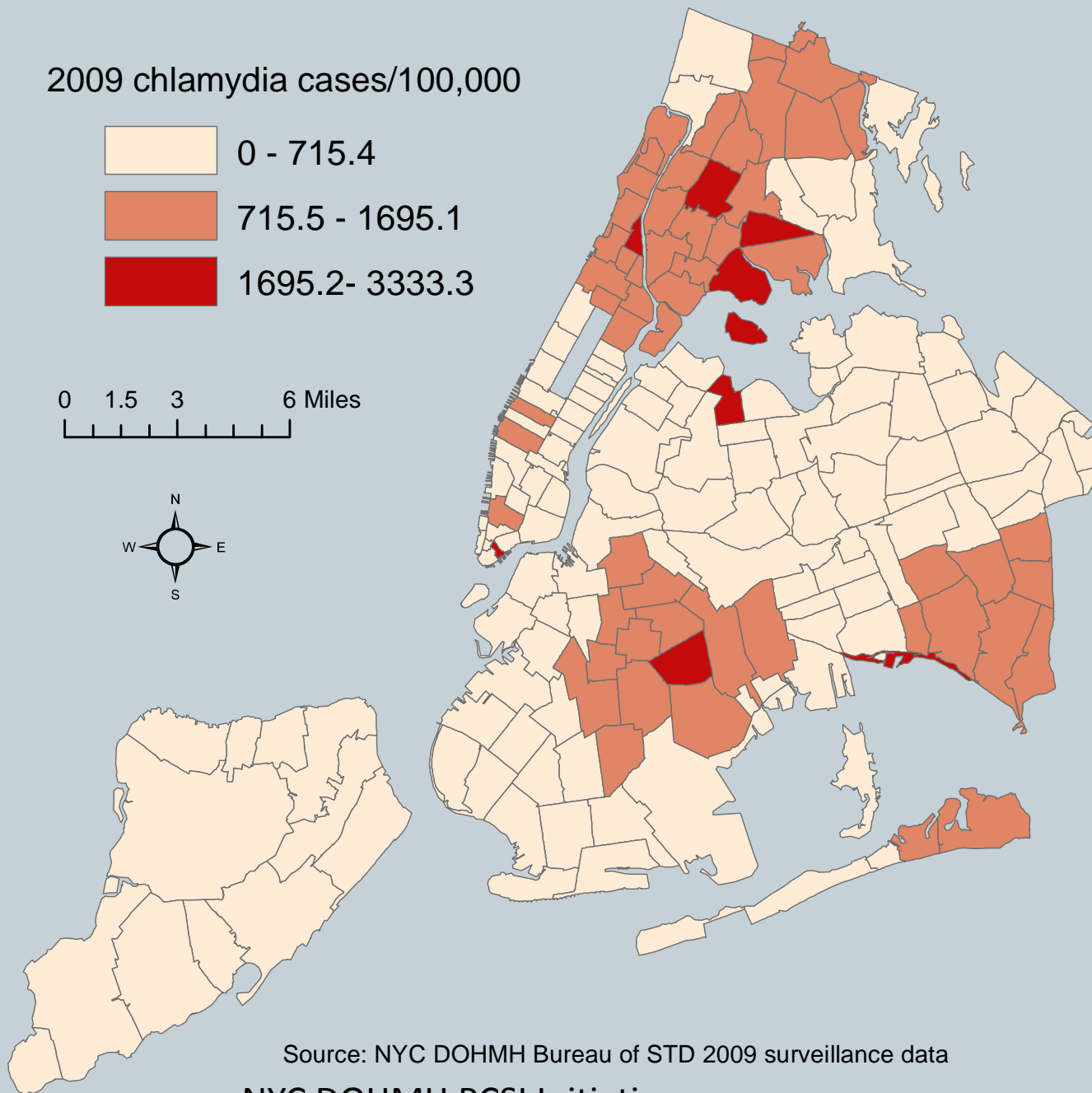
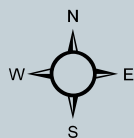
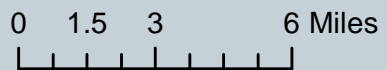
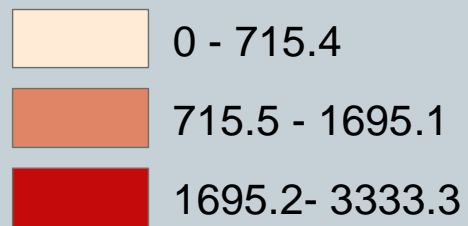


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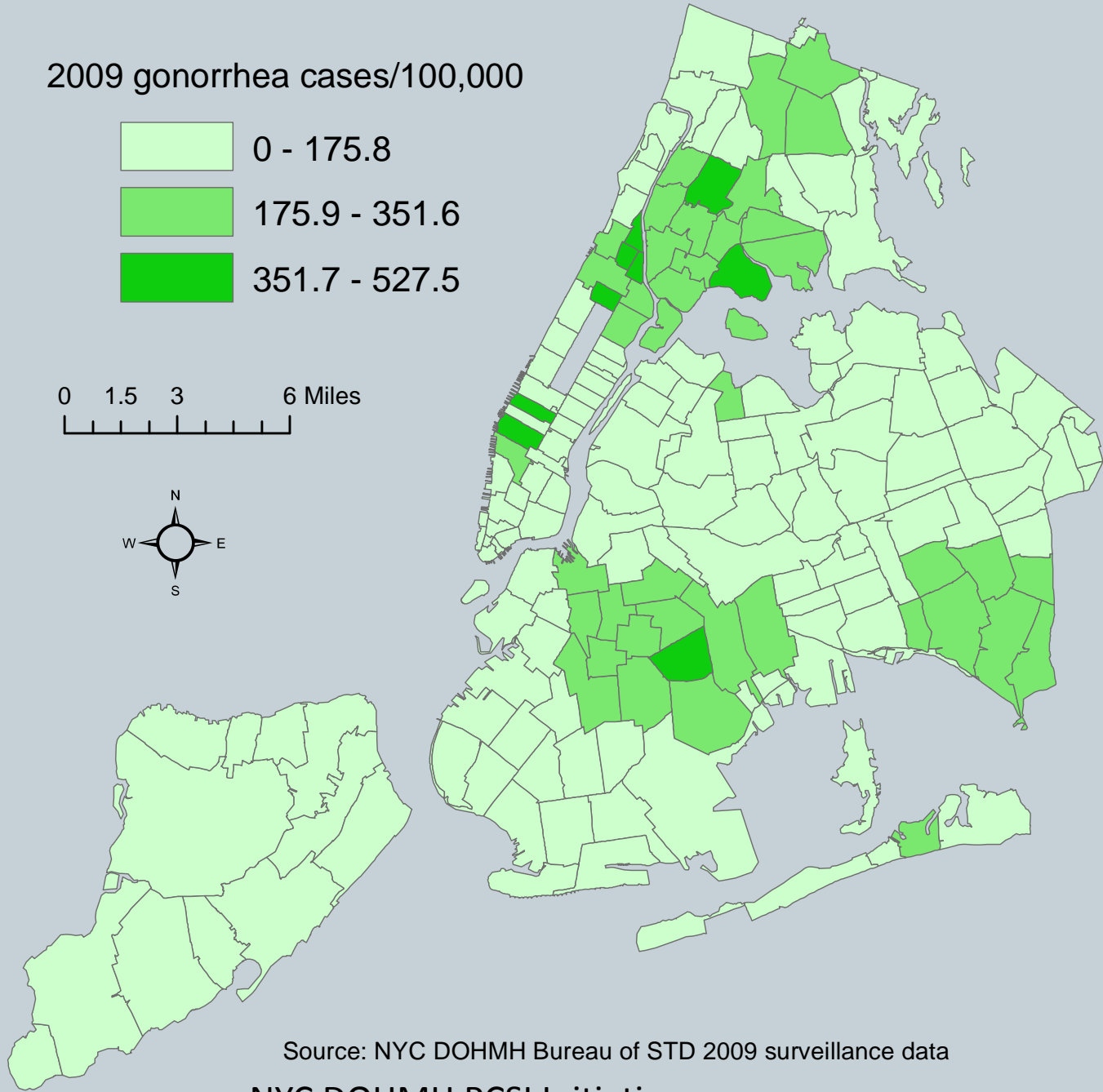
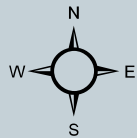
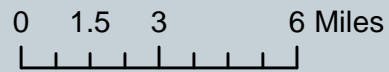
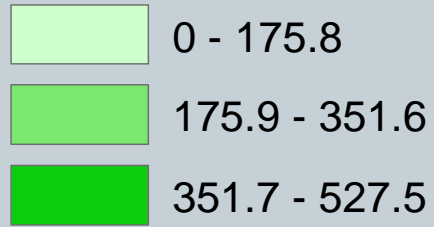
Types of Maps Created

- **Single disease** maps for 7 diseases
 - More information about a specific disease: i.e. where high rates of THAT disease greatest
 - More difficult to see the relationship to other diseases
- **Quintile map** – all 7 disease in one map
 - Easier to see where there is overlap in high morbidity
 - Easier to observe patterns in disease combinations
- All maps show 2009 rates/100,000 of newly reported cases

2009 chlamydia cases/100,000



2009 gonorrhea cases/100,000

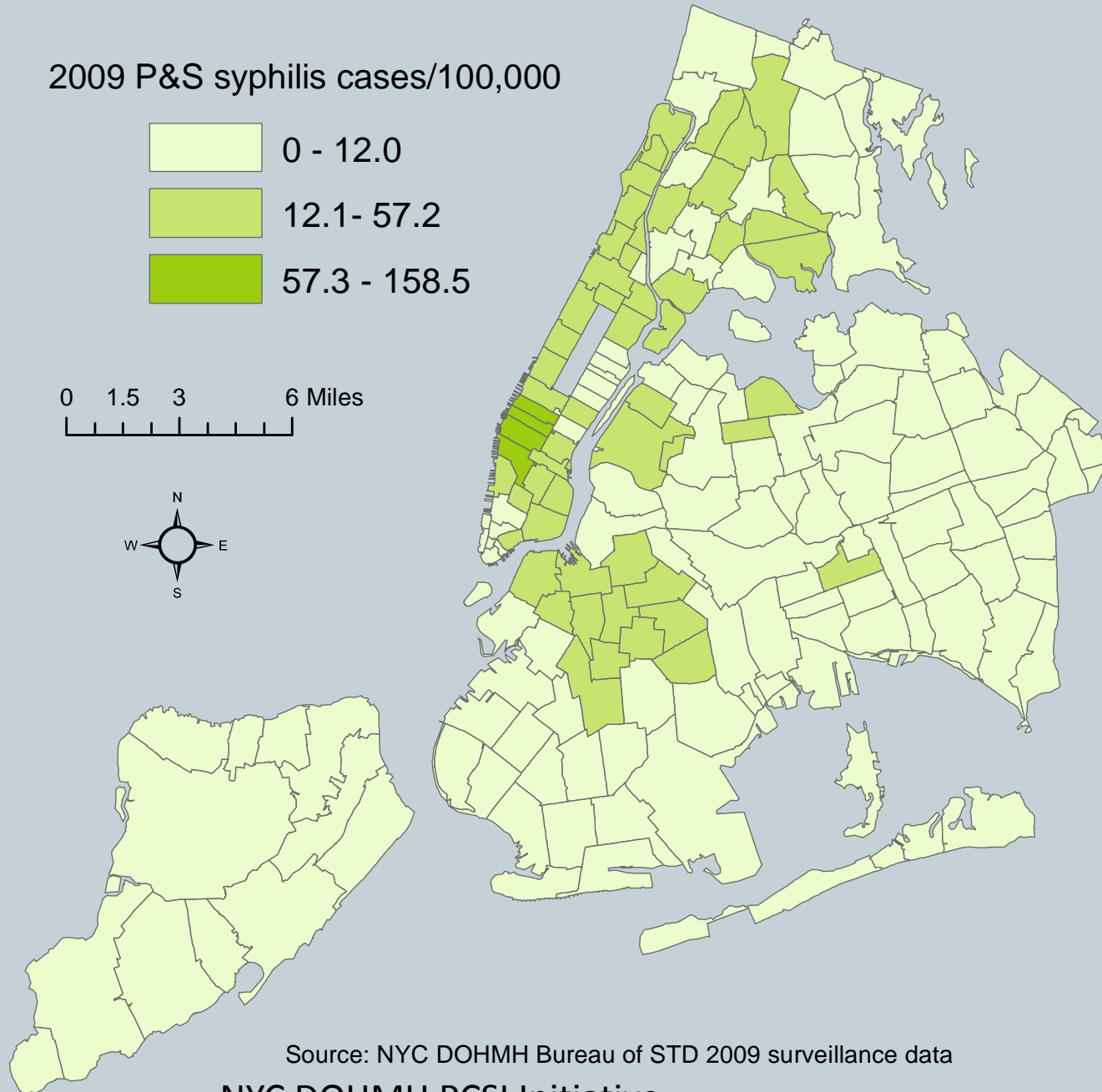
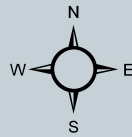
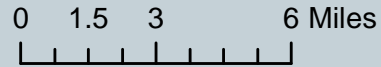
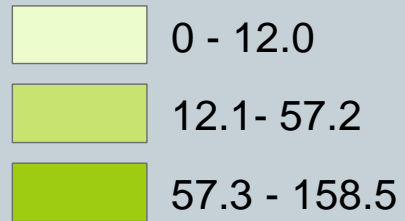


Source: NYC DOHMH Bureau of STD 2009 surveillance data

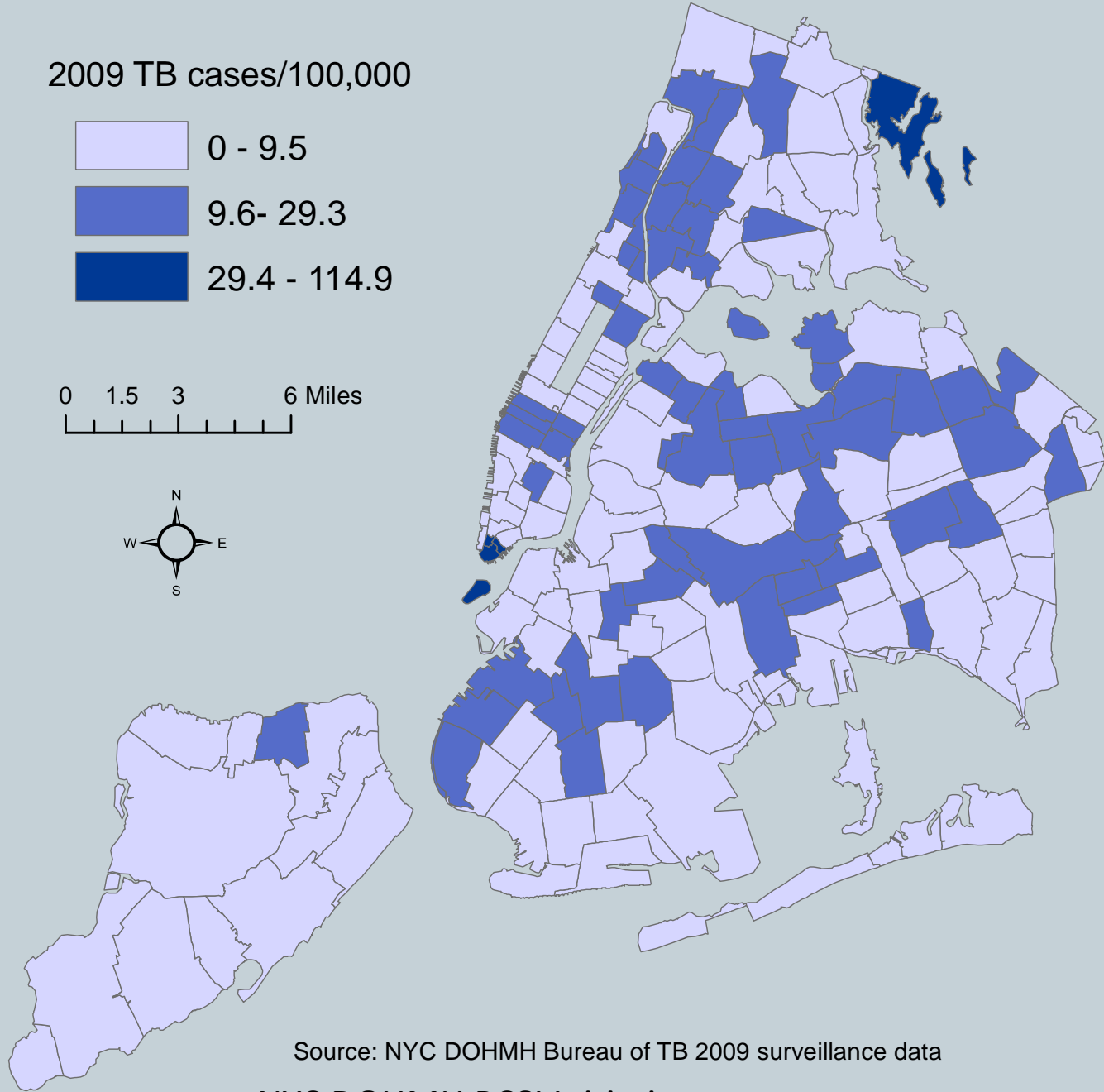
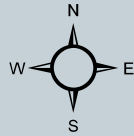
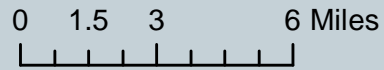
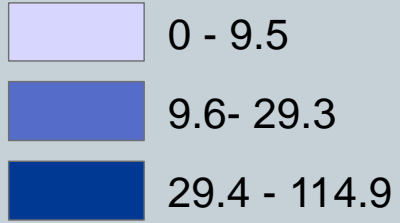
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2009 P&S syphilis cases/100,000



2009 TB cases/100,000

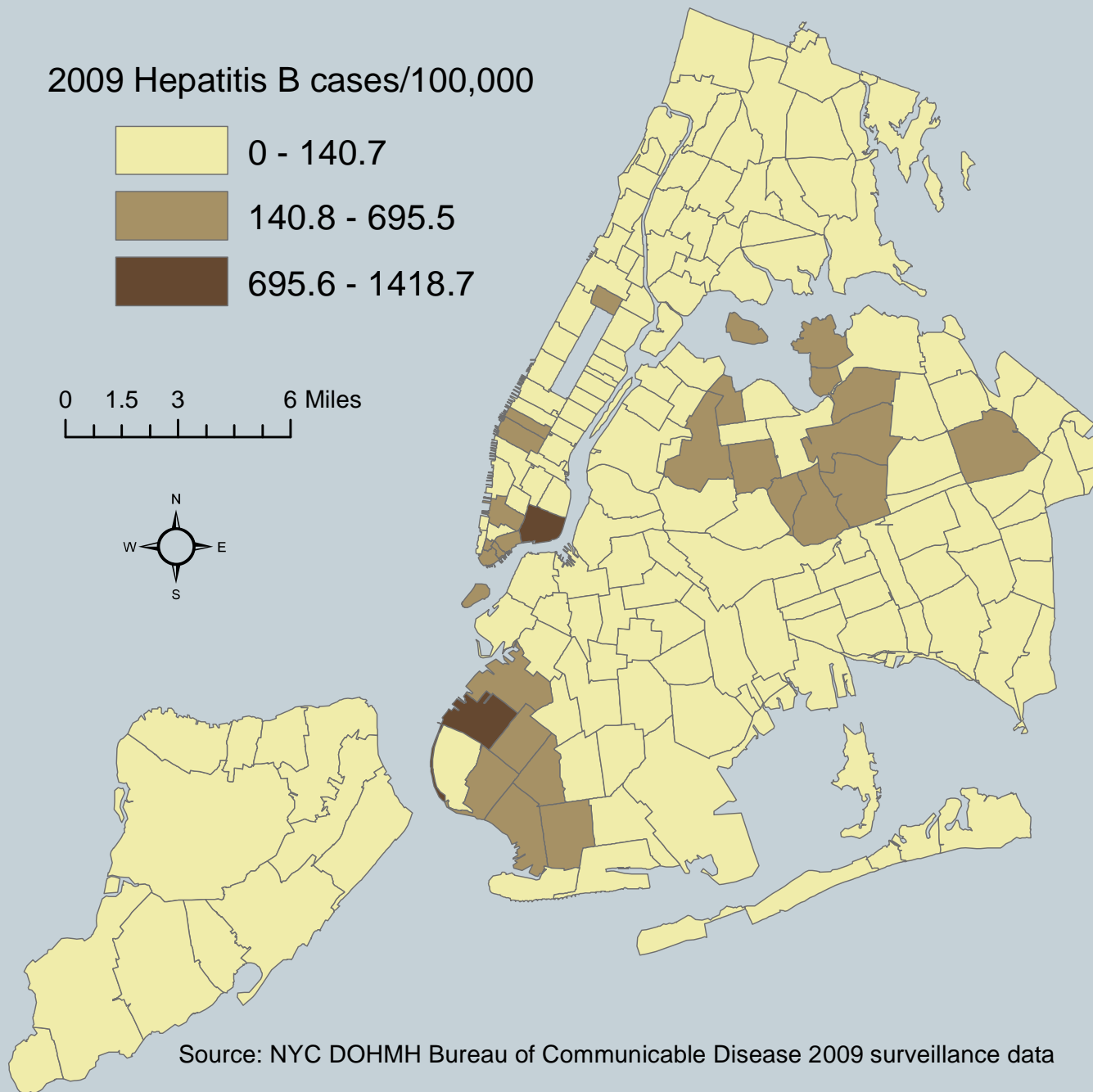
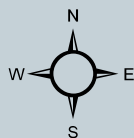
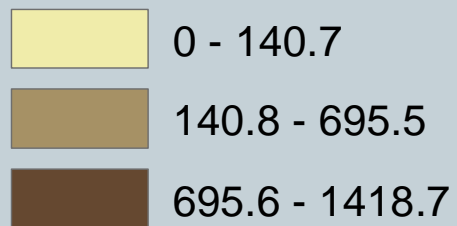


Source: NYC DOHMH Bureau of TB 2009 surveillance data

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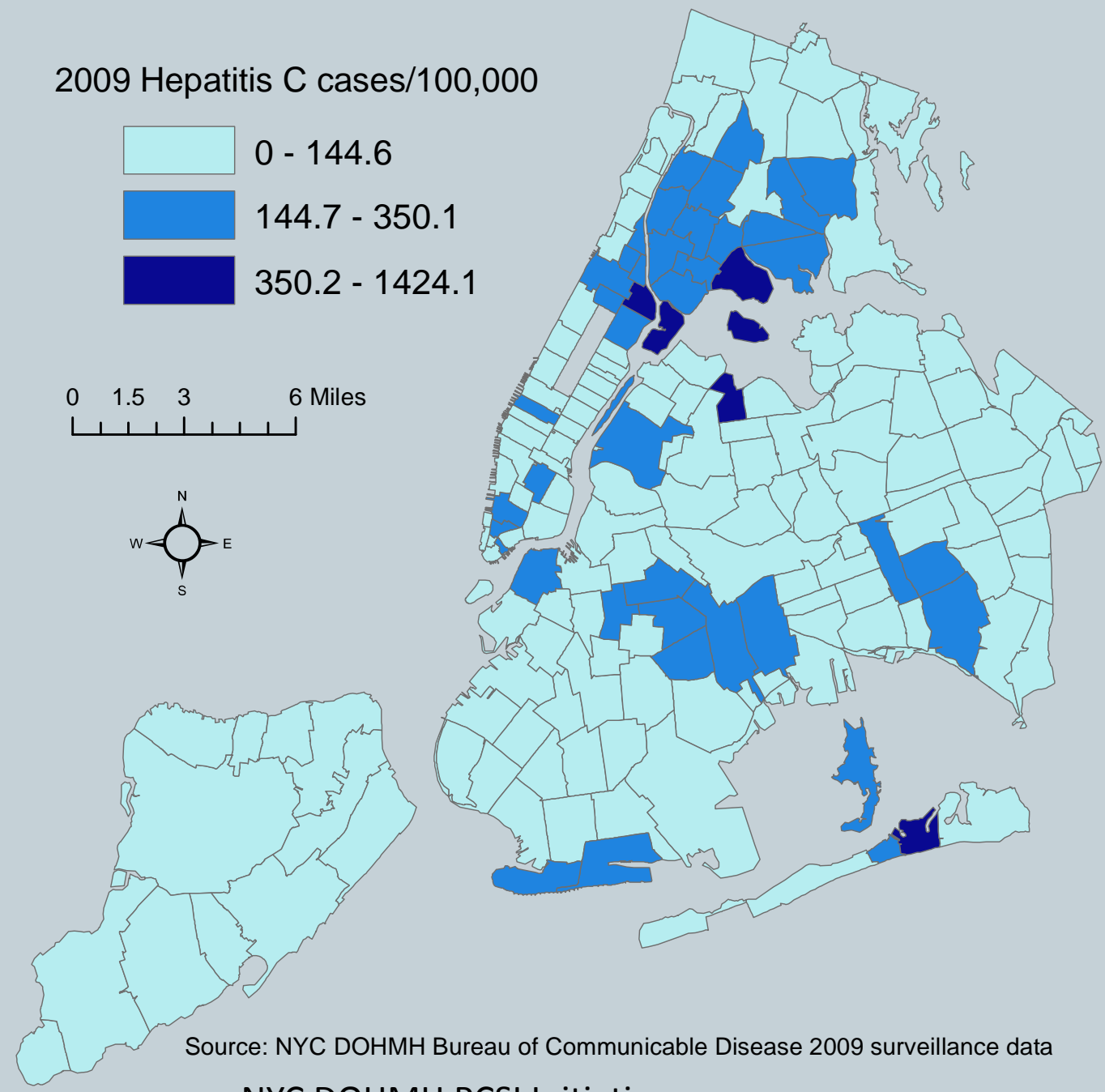
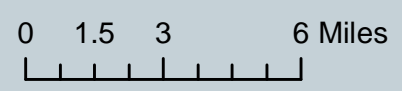
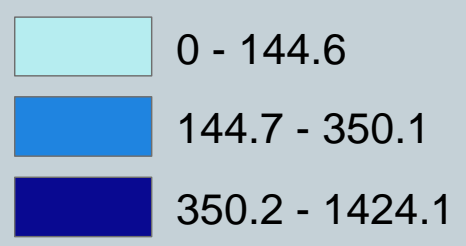


2009 Hepatitis B cases/100,000



Source: NYC DOHMH Bureau of Communicable Disease 2009 surveillance data

2009 Hepatitis C cases/100,000

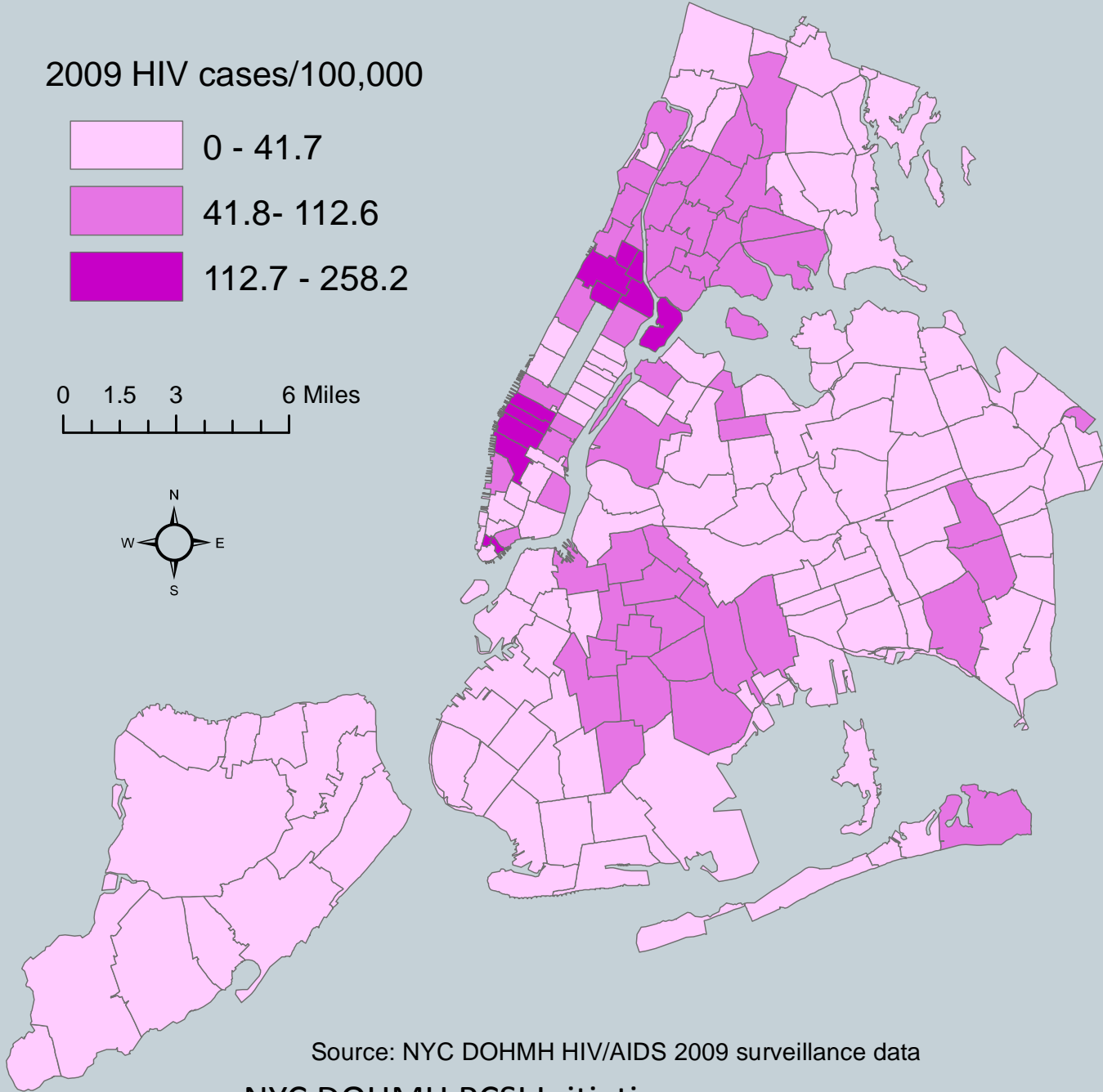
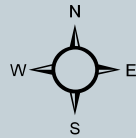
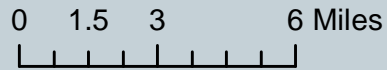
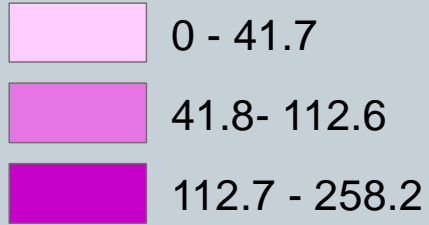


Source: NYC DOHMH Bureau of Communicable Disease 2009 surveillance data

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2009 HIV cases/100,000



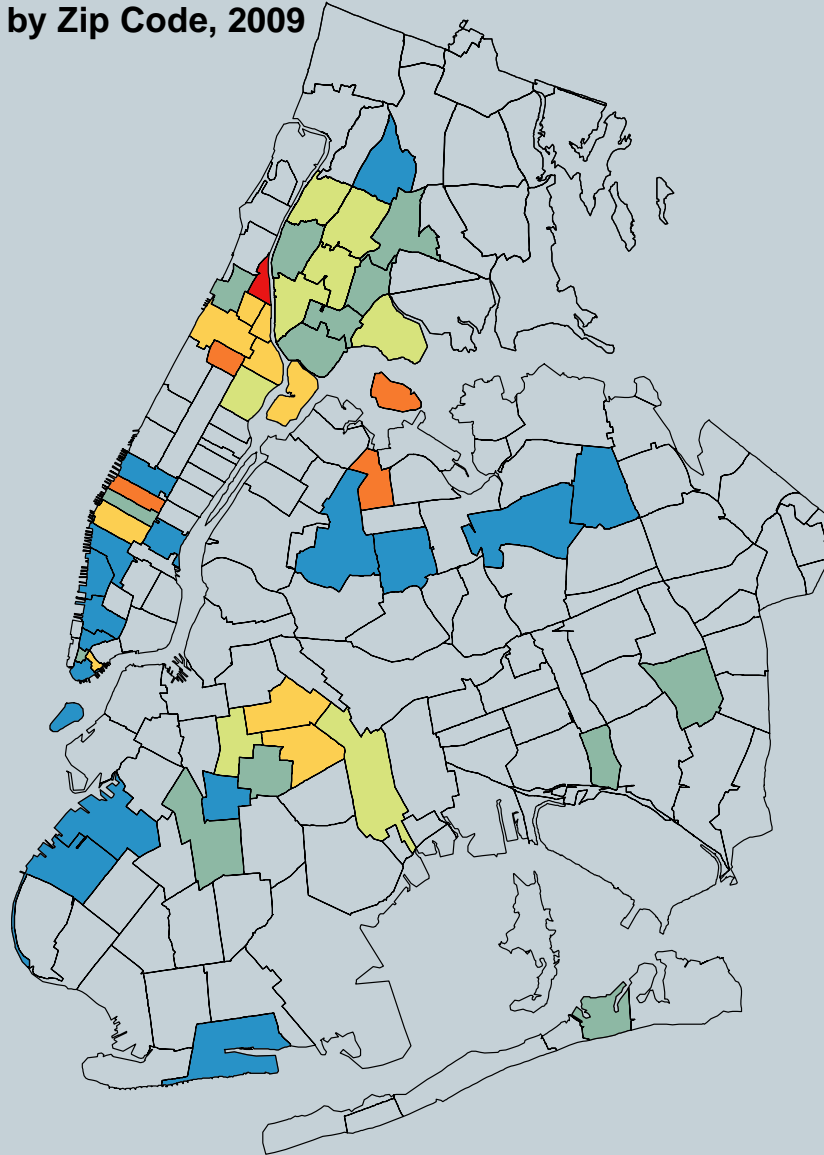
Source: NYC DOHMH HIV/AIDS 2009 surveillance data
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Methodology:

Quintile Map of PCSI Diseases

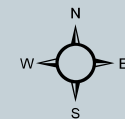
- 2009 surveillance data – rates/100,000 for 7 PCSI diseases
- Ranked highest to lowest rate by zip code
- Top quintile (20%) for each disease identified
- Zip codes in the top quintile for >1 disease identified
- Map created of zip codes with >1 disease (2-7)
- Maps created of specific disease combinations

of Diseases in the Top Quintile by Zip Code, 2009



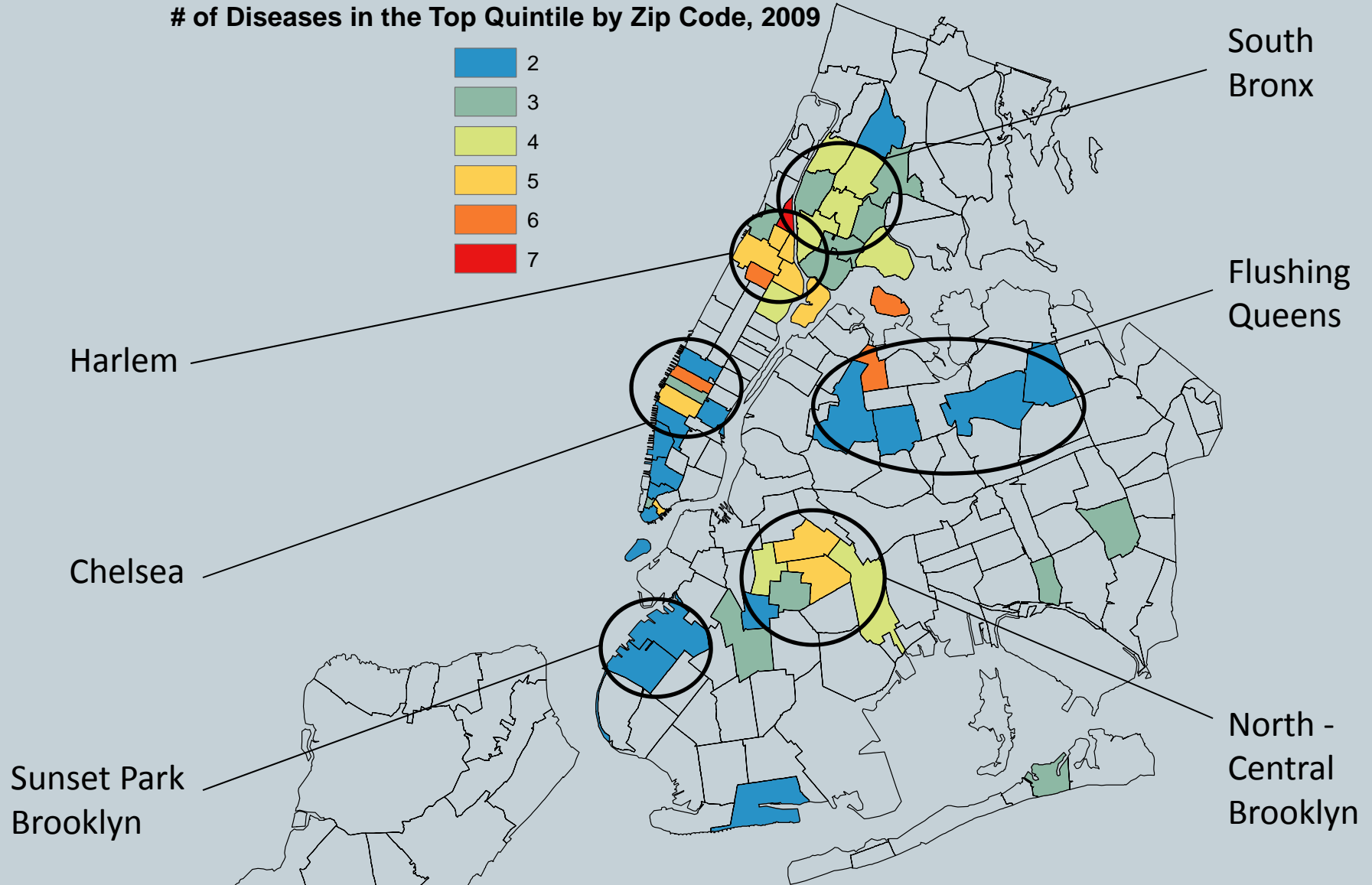
0 2.5 5 10 Miles

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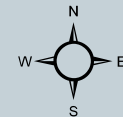
Source: 2009 NYC DOHMH surveillance data

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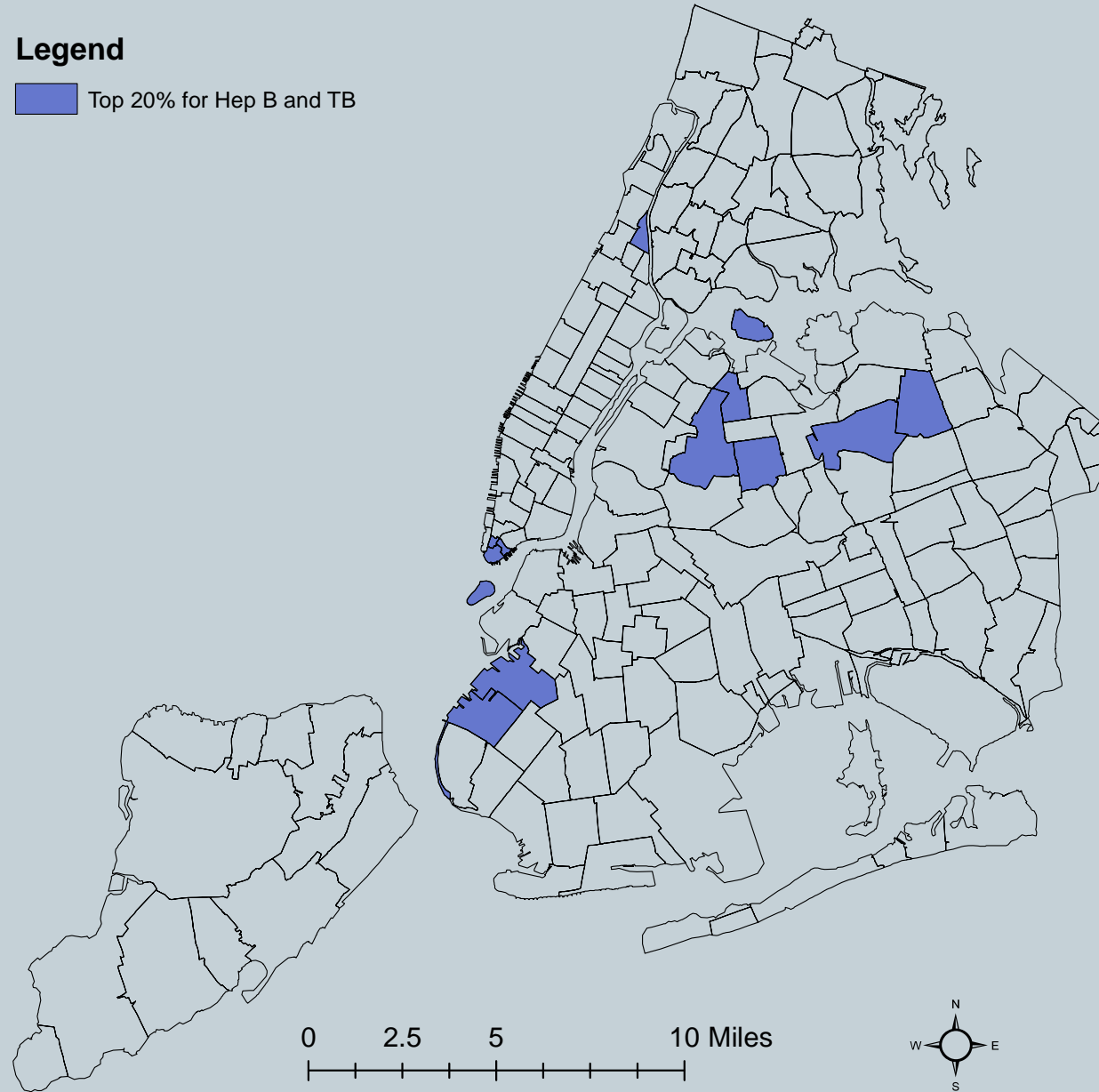


Source: 2009 NYC DOHMH surveillance data

NYC Zip Codes with Hepatitis B and TB in the Top Quintile

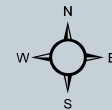
Legend

 Top 20% for Hep B and TB




0 2.5 5 10 Miles

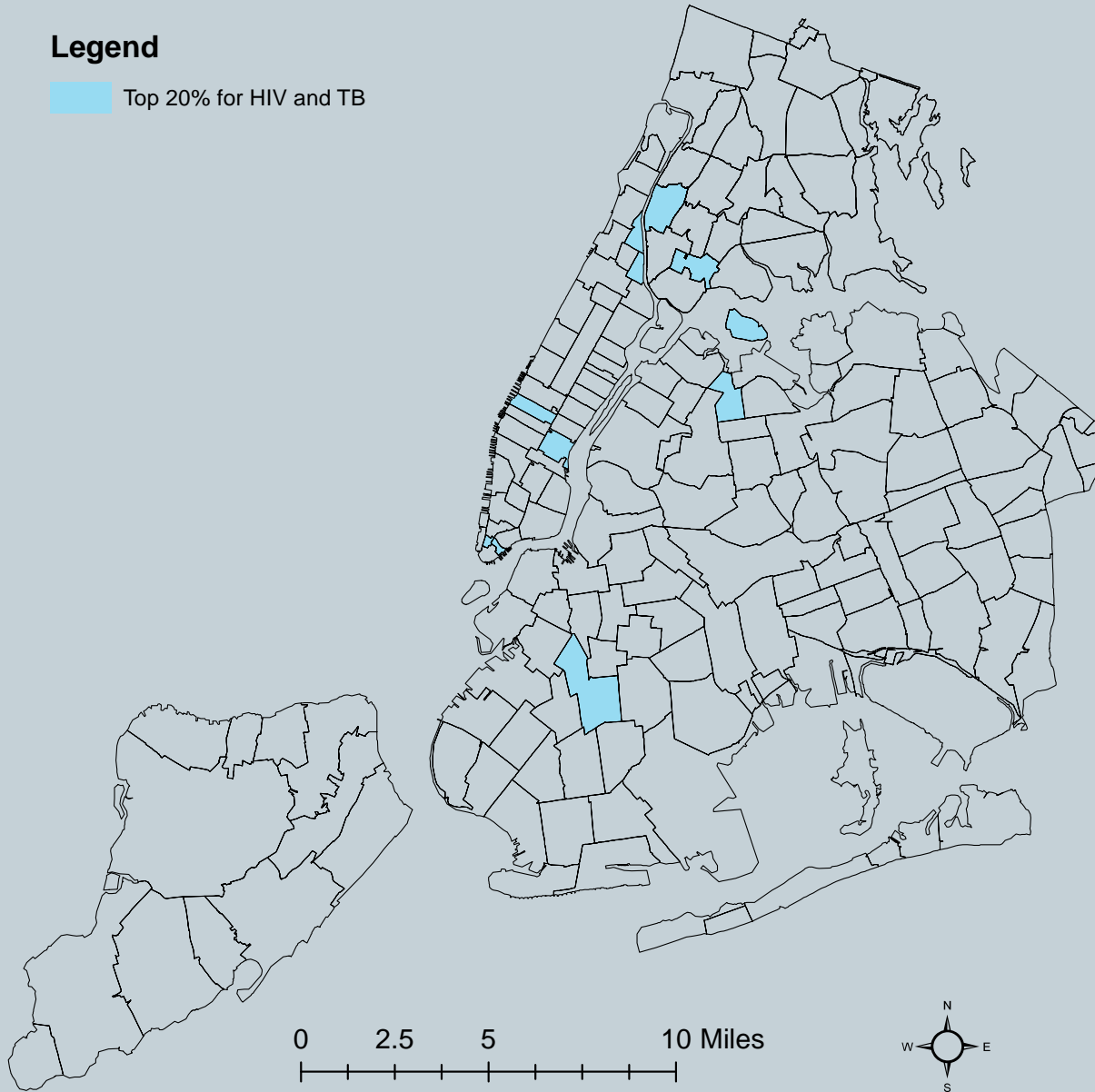
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NYC Zip Codes with HIV and TB in the Top Quintile


Legend

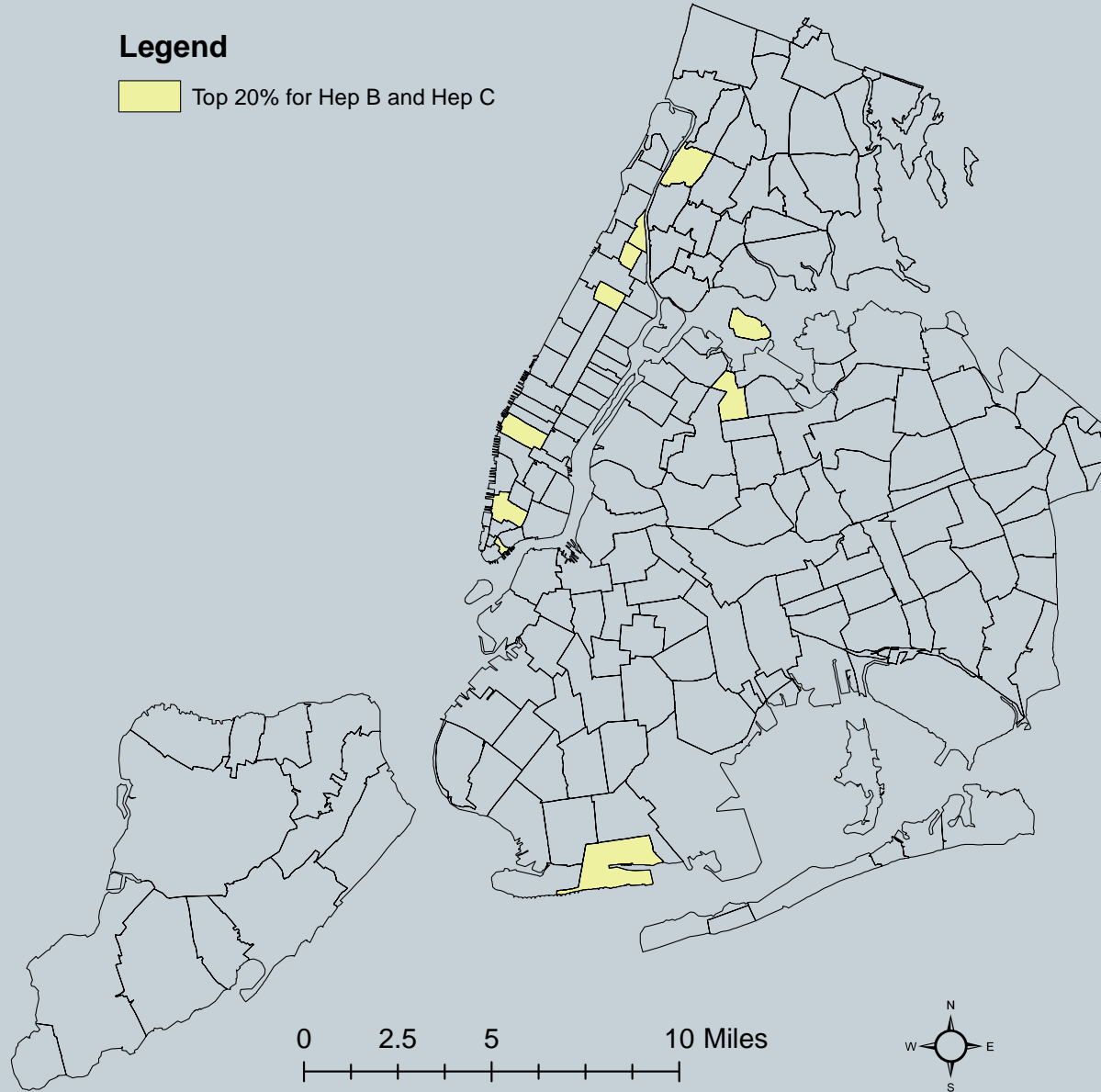
 Top 20% for HIV and TB



NYC Zip Codes with Hepatitis B and C in the Top Quintile

Legend

 Top 20% for Hep B and Hep C



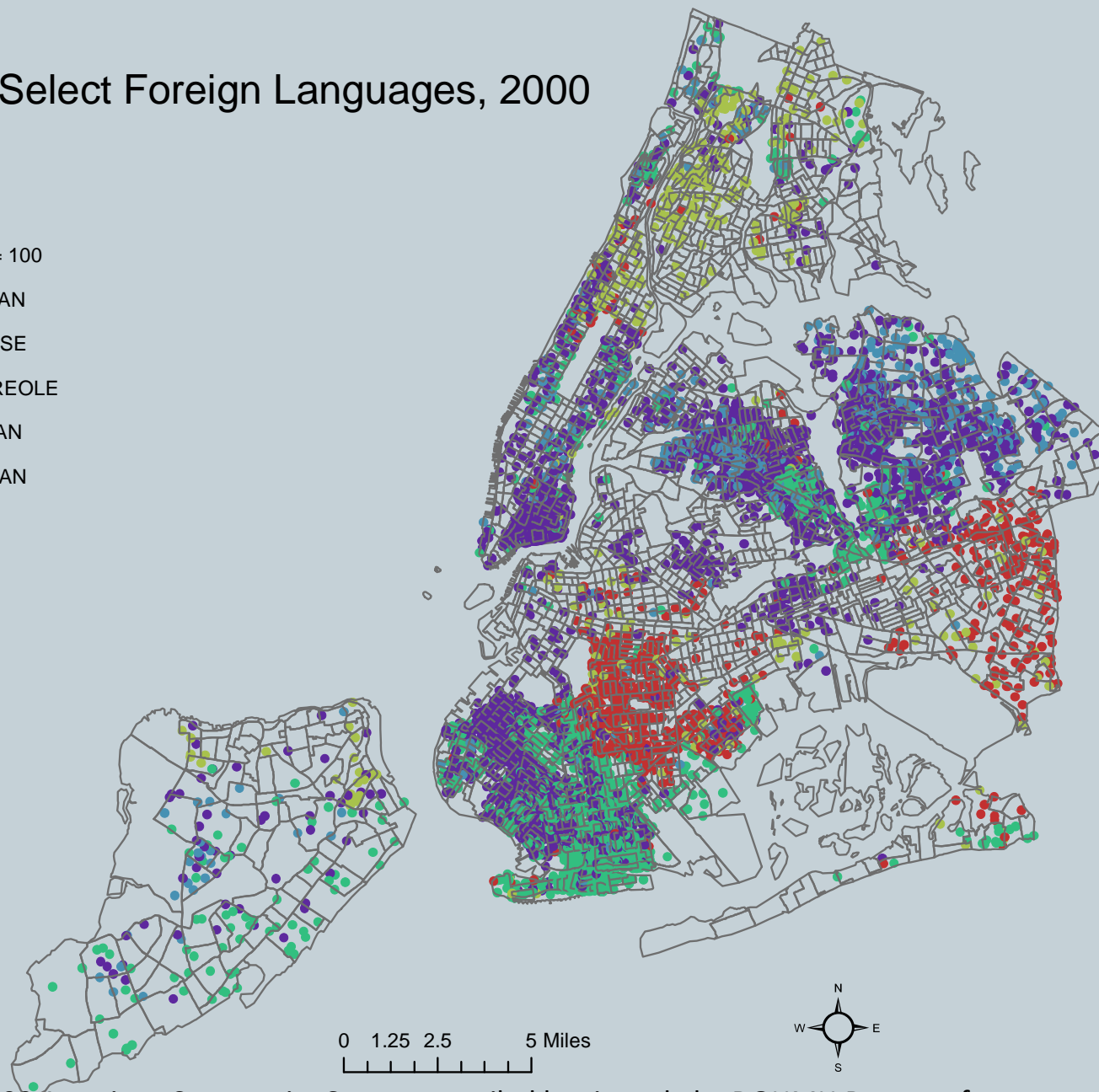
Speakers of Select Foreign Languages, 2000

Legend

Languages

1 Dot = 100


- AFRICAN
- CHINESE
- FR_CREOLE
- KOREAN
- RUSSIAN

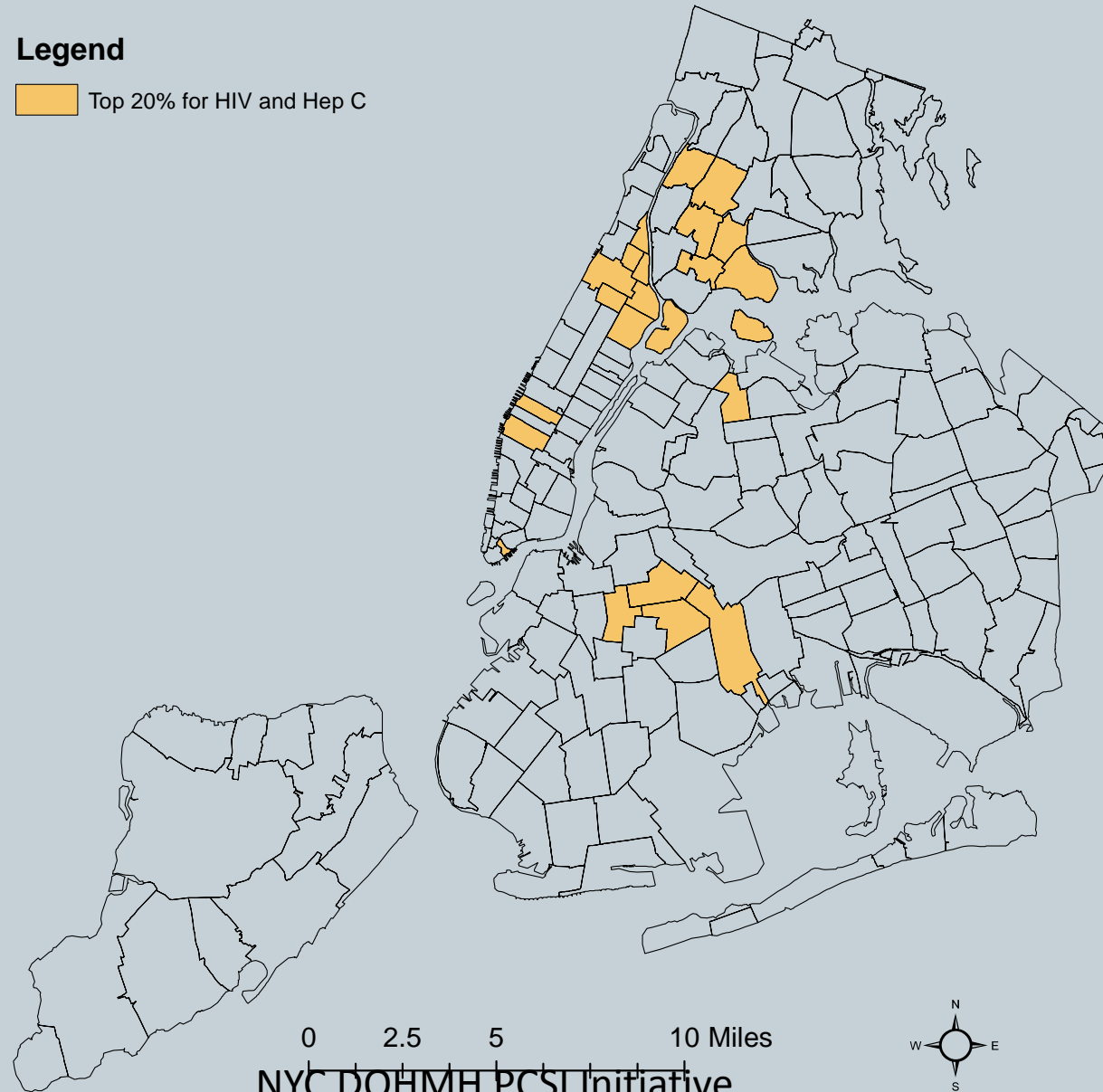


Source: 2000 American Community Survey compiled by zip code by DOHMH Bureau of Epidemiology Services
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NYC Zip Codes with Hepatitis C and HIV in the Top Quintile


Legend

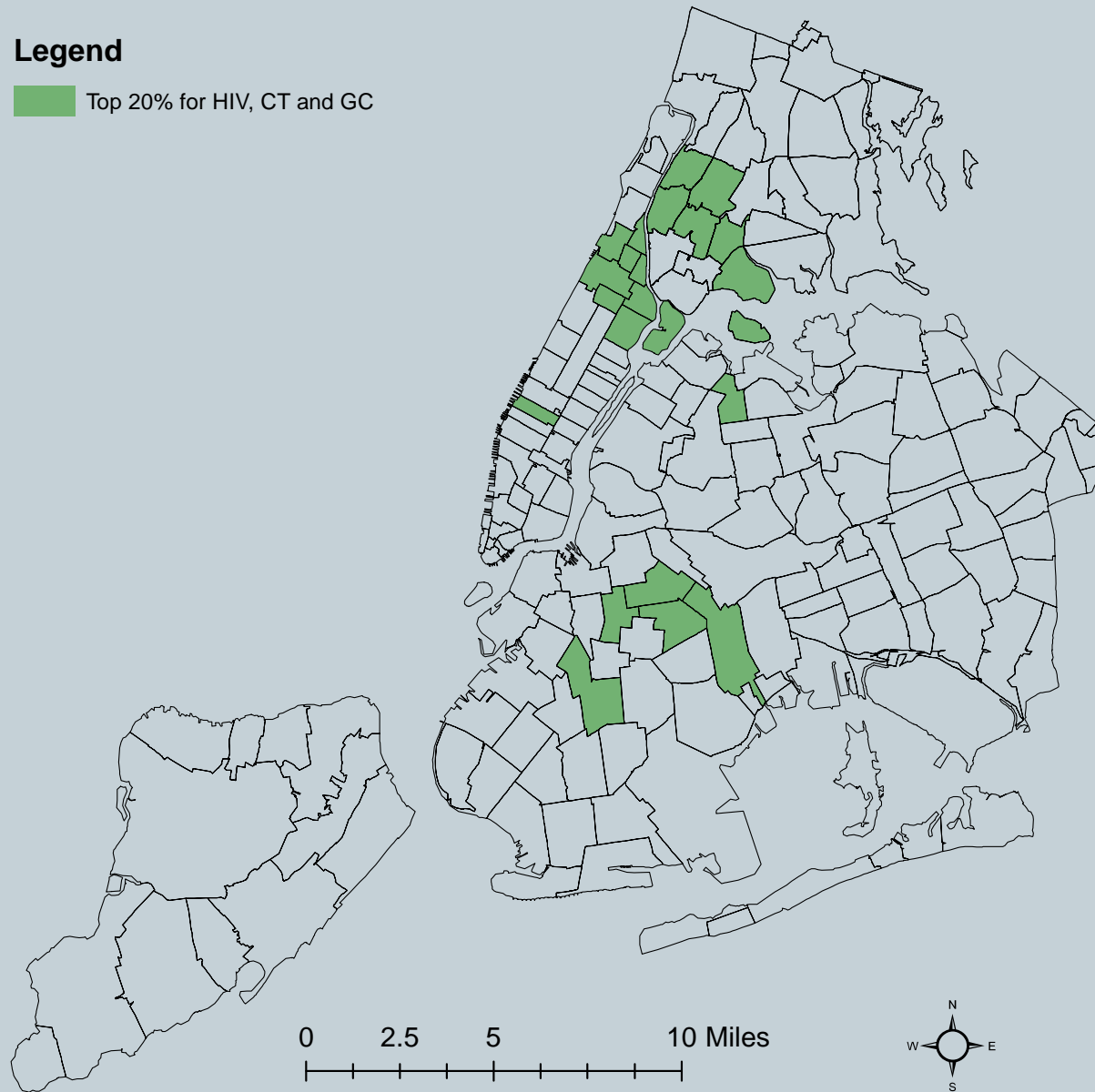
 Top 20% for HIV and Hep C



NYC Zip Codes with Chlamydia, Gonorrhea and HIV in the Top Quintile


Legend

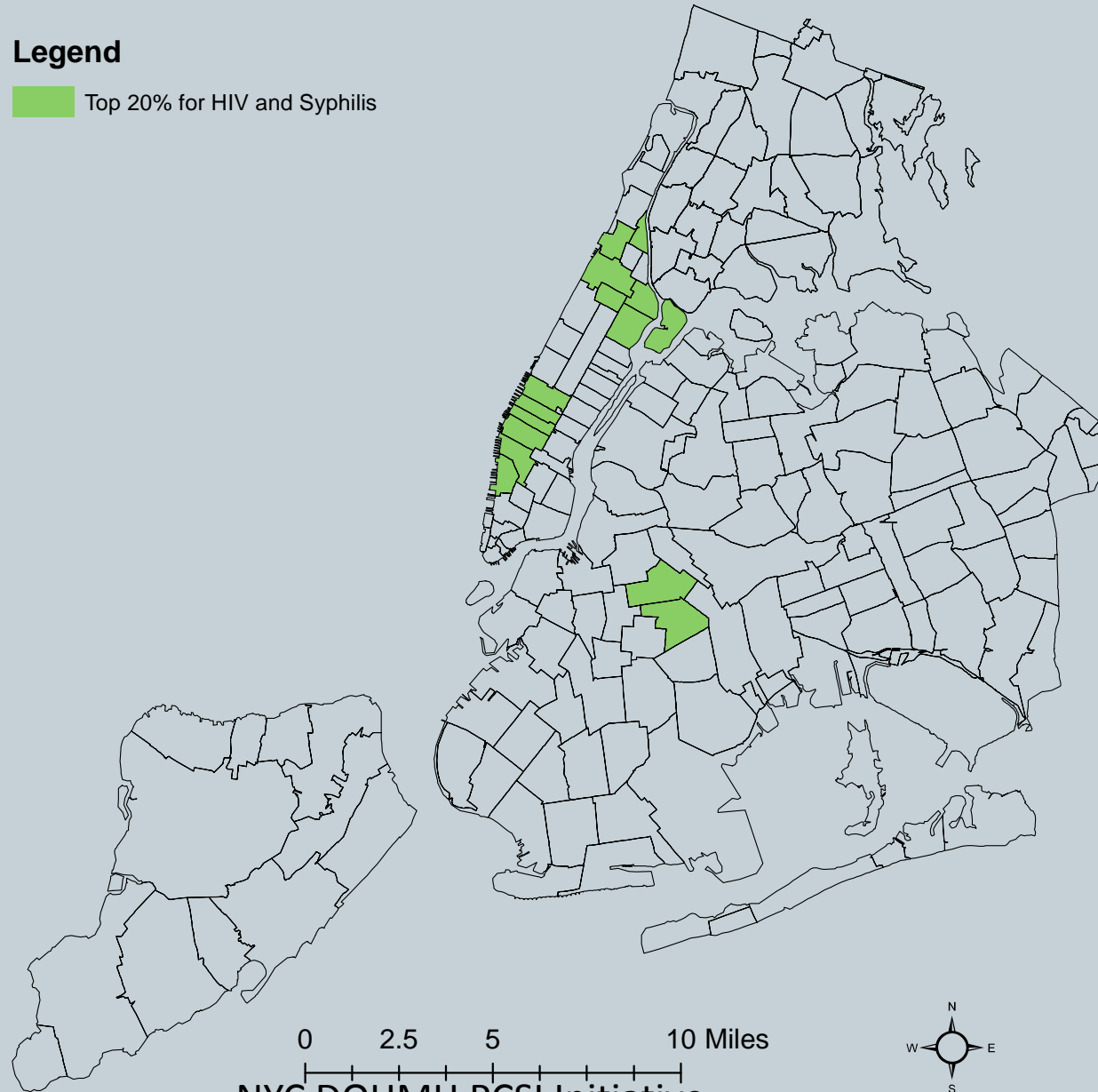
 Top 20% for HIV, CT and GC



NYC Zip Codes with P&S Syphilis and HIV in the Top Quintile

Legend

 Top 20% for HIV and Syphilis



0 2.5 5 10 Miles

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2005-09 Unintentional Drug Poisoning Death Rate by Neighborhood

Rate Range (Rate per 100,000 population)

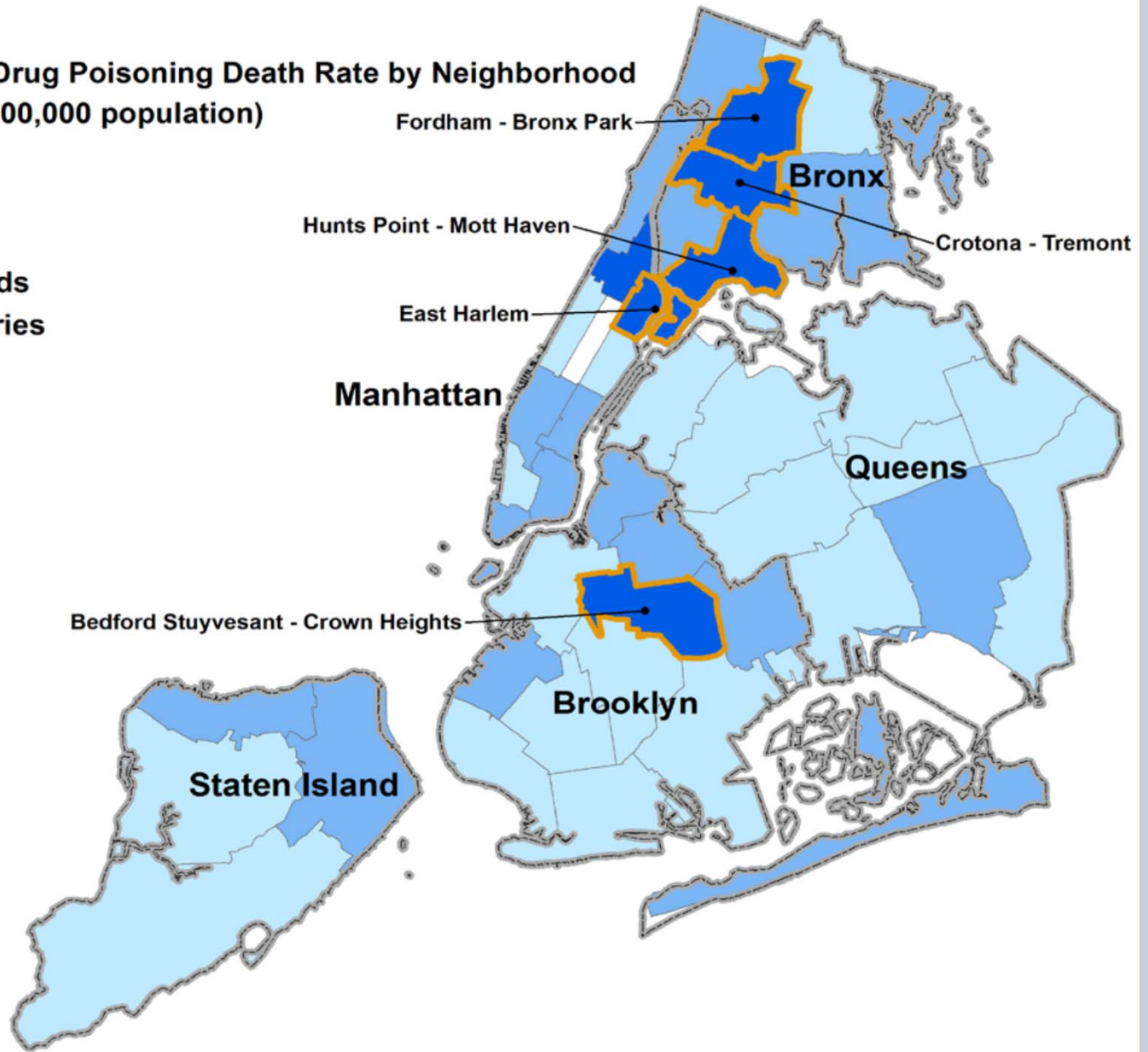
0.9 - 5.6

5.7 - 13.0

13.1 - 22.4

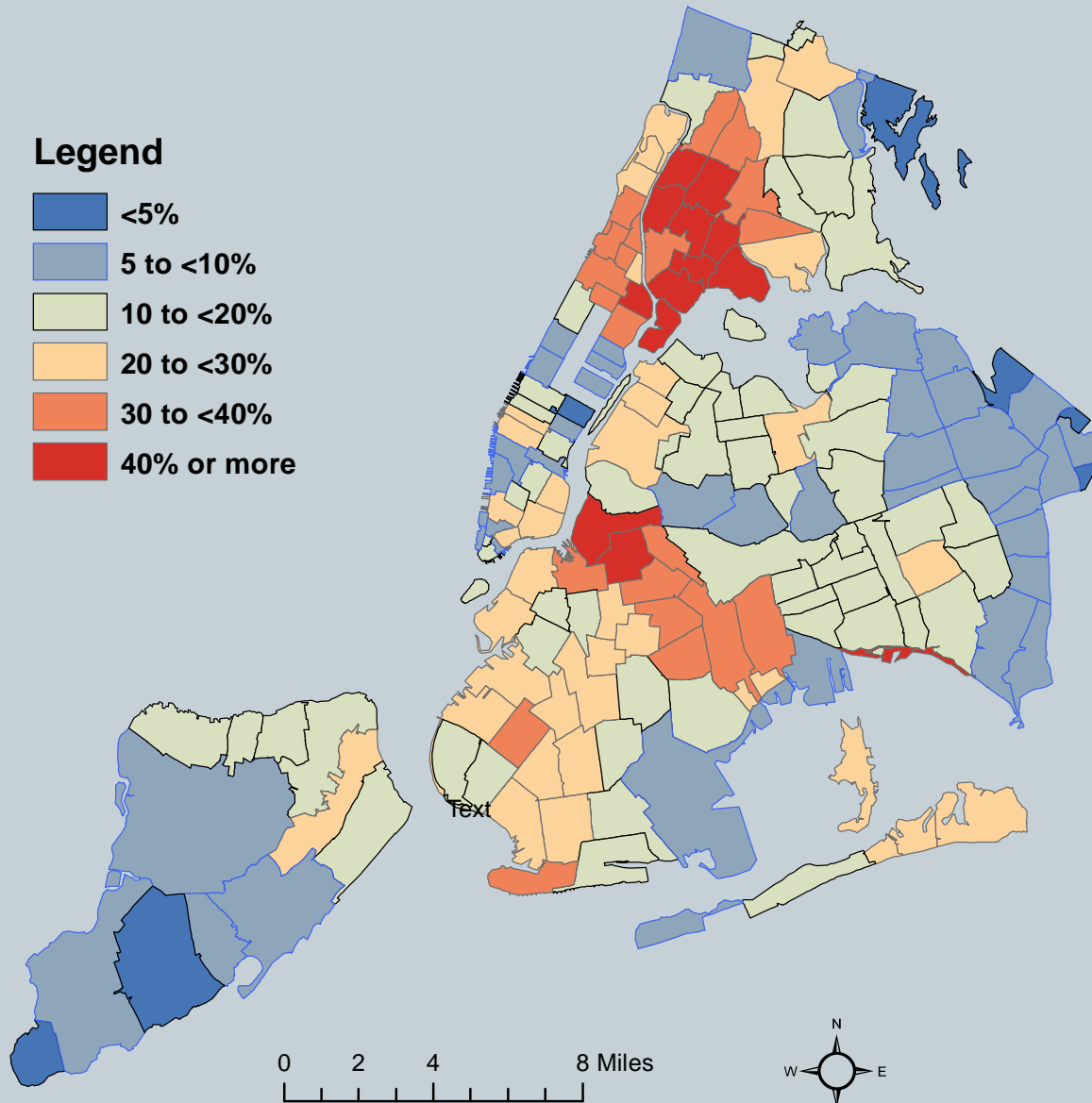
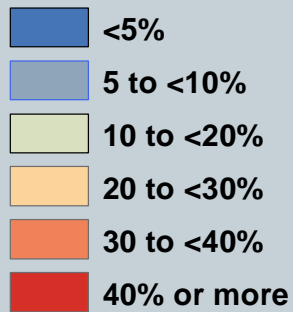
Top Neighborhoods

Borough Boundaries



Percentage of Residents below Federal Poverty, 2000

Legend








Source: 2000 American Community Survey compiled by zip code by DOHMH Bureau of Epidemiology Services

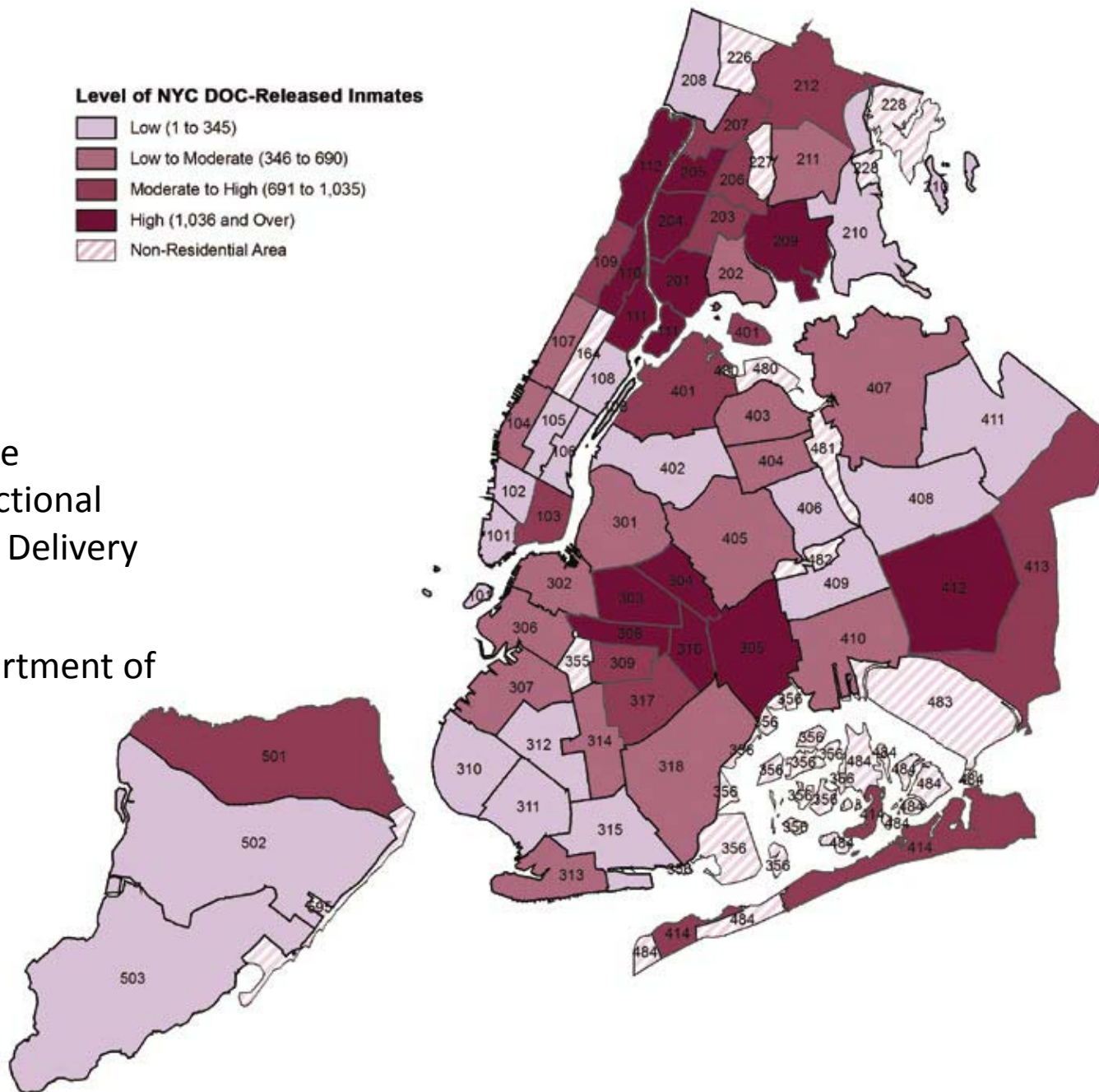
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Source: Mapping the Innovation in Correctional Health Care Service Delivery in NYC 2008

Data from the Department of Corrections, 2005

Level of NYC DOC-Released Inmates

-  Low (1 to 345)
-  Low to Moderate (346 to 690)
-  Moderate to High (691 to 1,035)
-  High (1,036 and Over)
-  Non-Residential Area

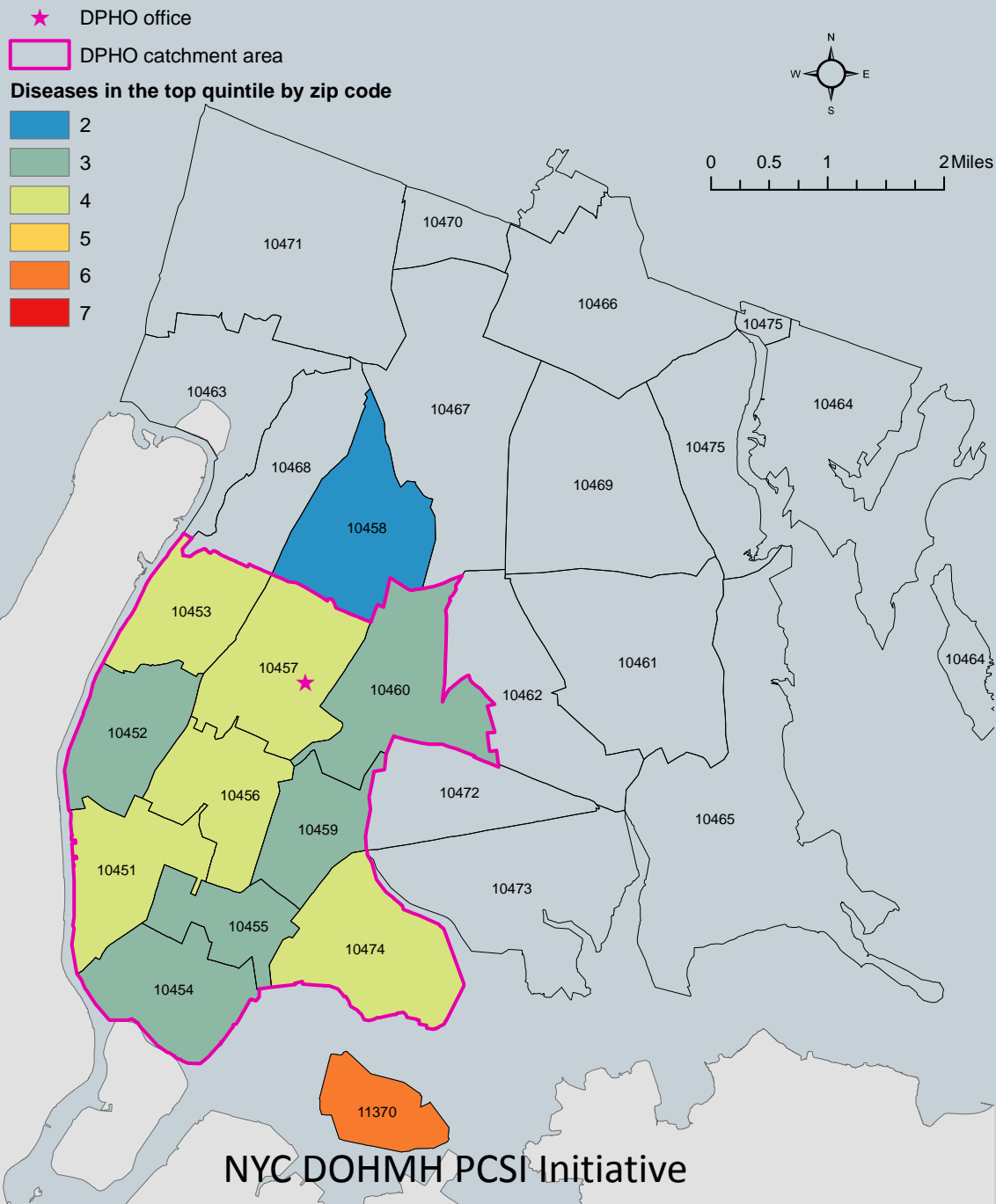


Using Maps to Target Services

Thousands of service providers in NYC

1. Which are the areas of greatest morbidity?
2. Are those in the right areas providing integrated services?
3. Do people that live in high-morbidity neighborhoods get services where they live?

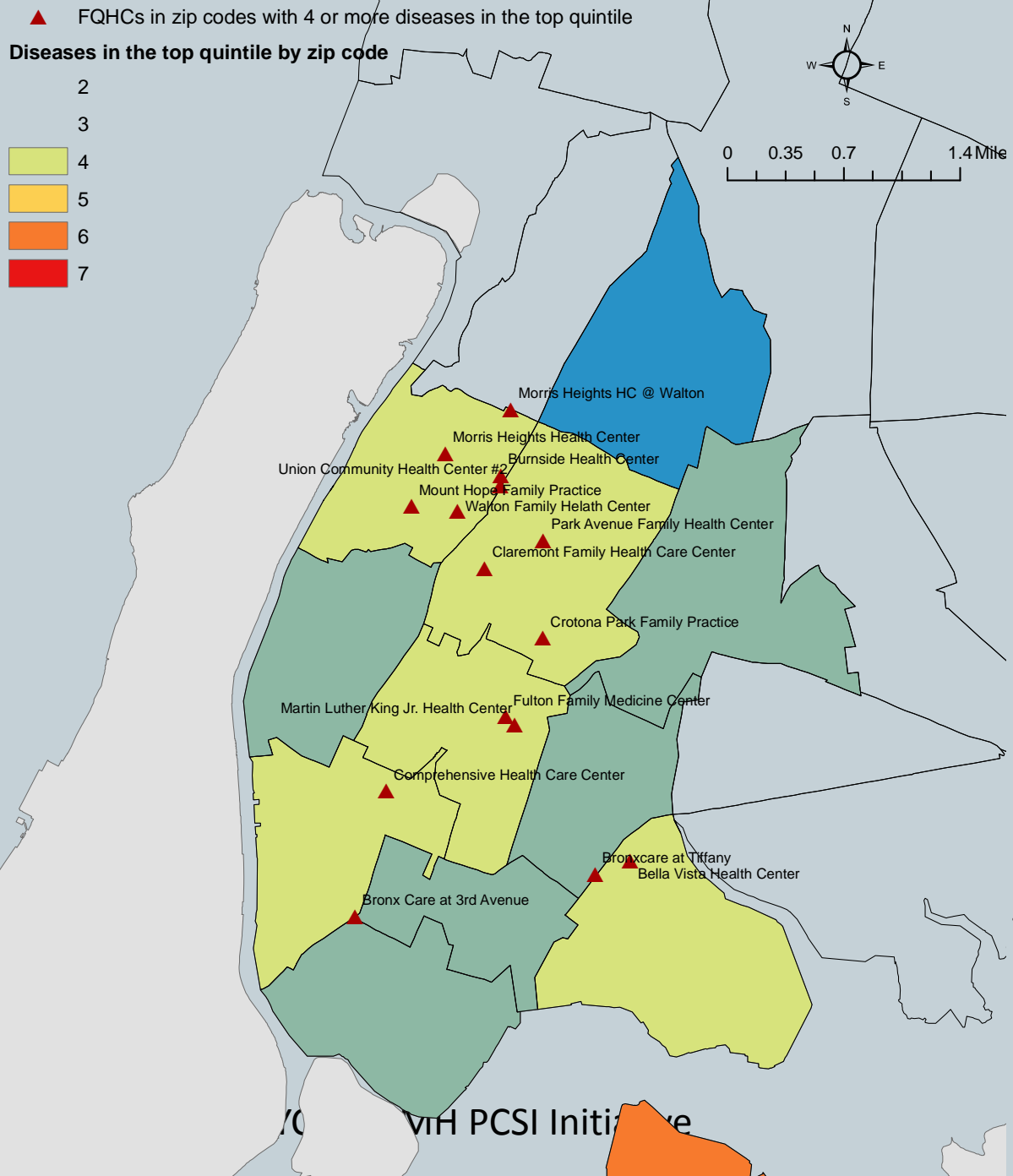
The
Bronx:
Zip codes
with >1
disease in
the top
quintile and
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Health
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2009 DOHMH
Surveillance Data:
Bureaus of STD,
TB, HIV and
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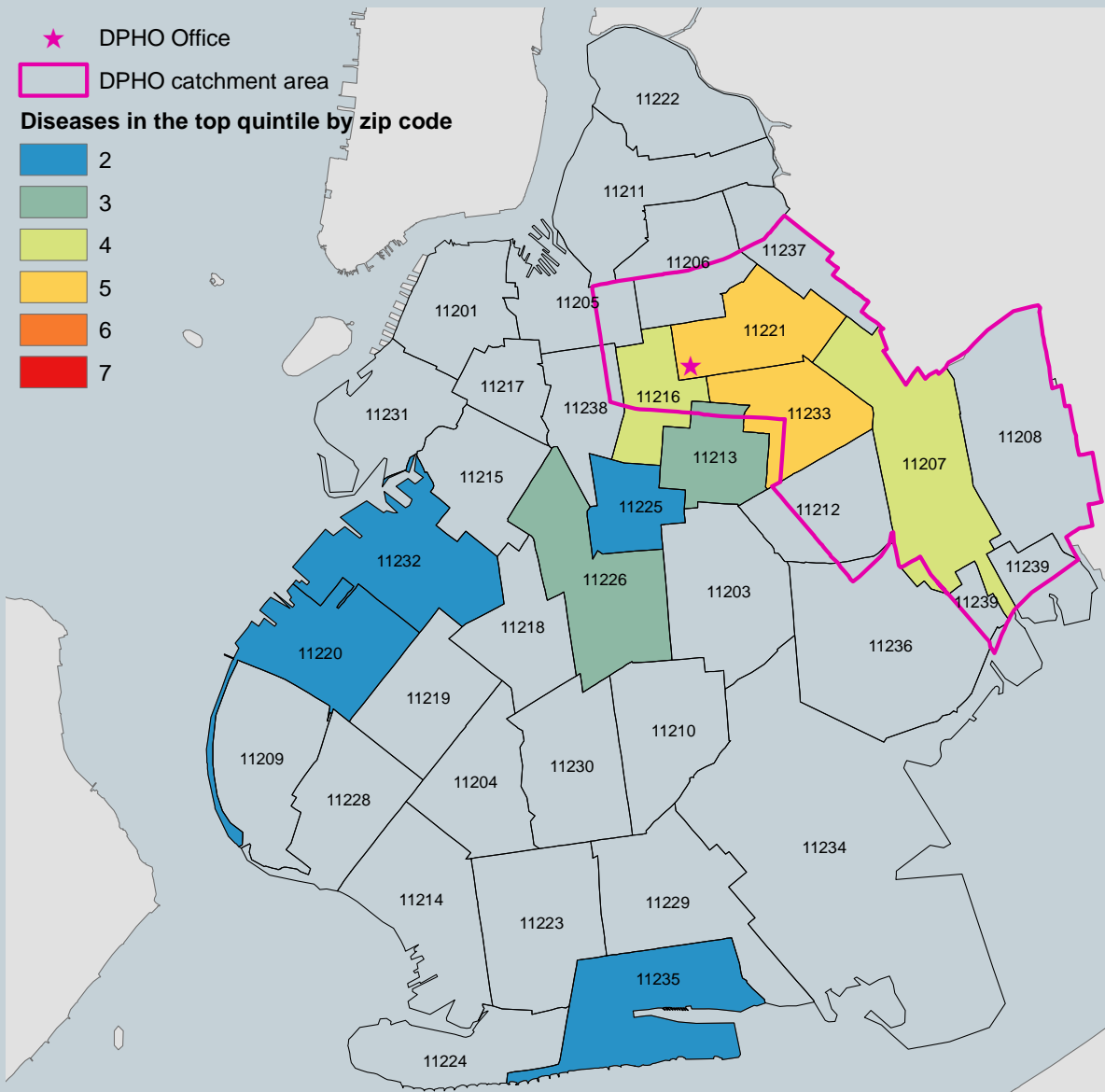
The Bronx:
Zip codes with >1 disease in the top quintile and Federally Qualified Health Centers in zip codes with 4 or more diseases in the top quintile



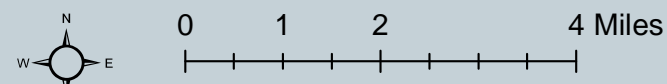
2009 DOHMH Surveillance Data: Bureaus of STD, TB, HIV and Communicable Disease; 2011 HRSA funded FQHCs

Brooklyn:

Zip codes with >1 disease in the top quintile and location and catchment of the DOHMH District Public Health Office



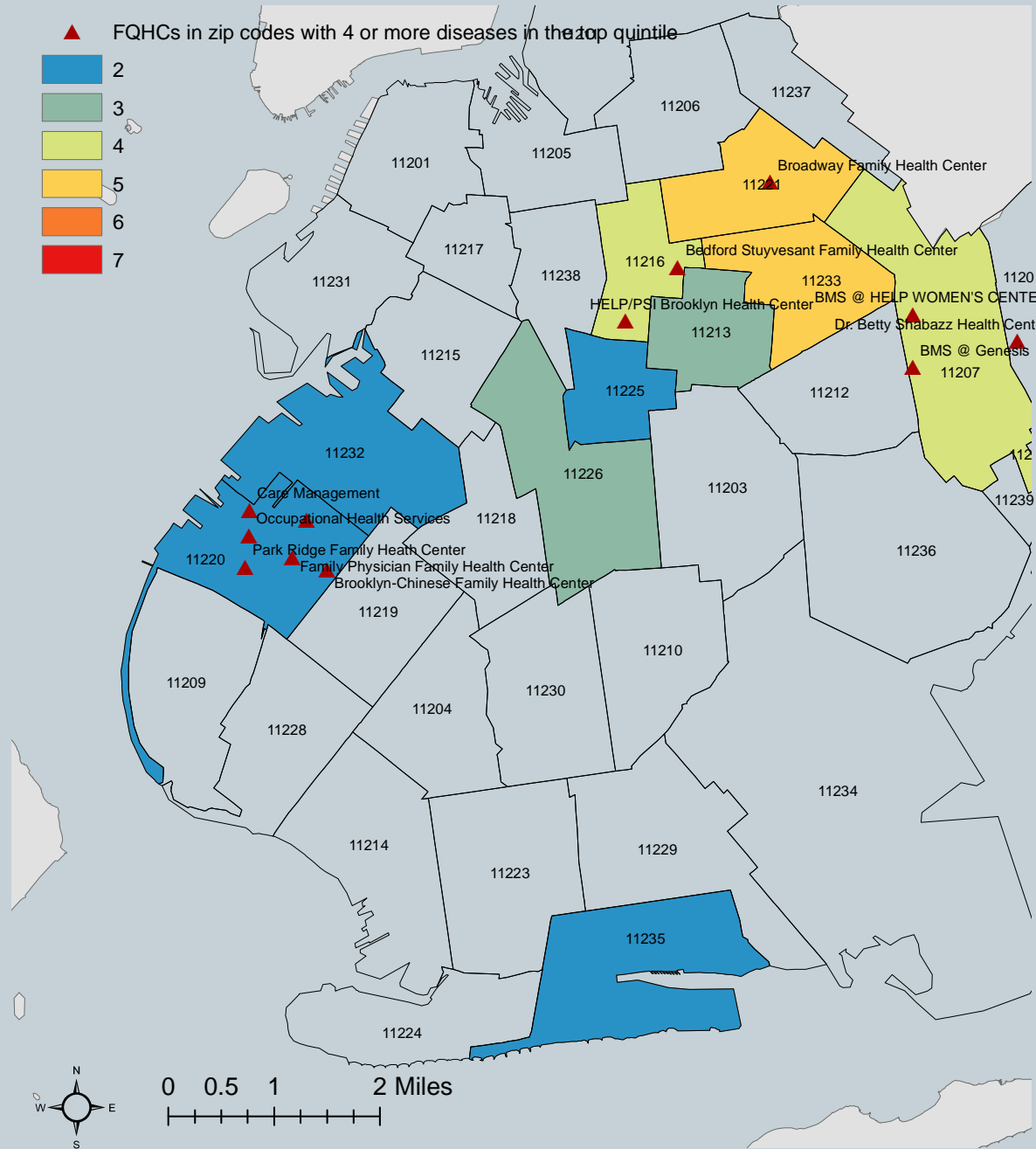
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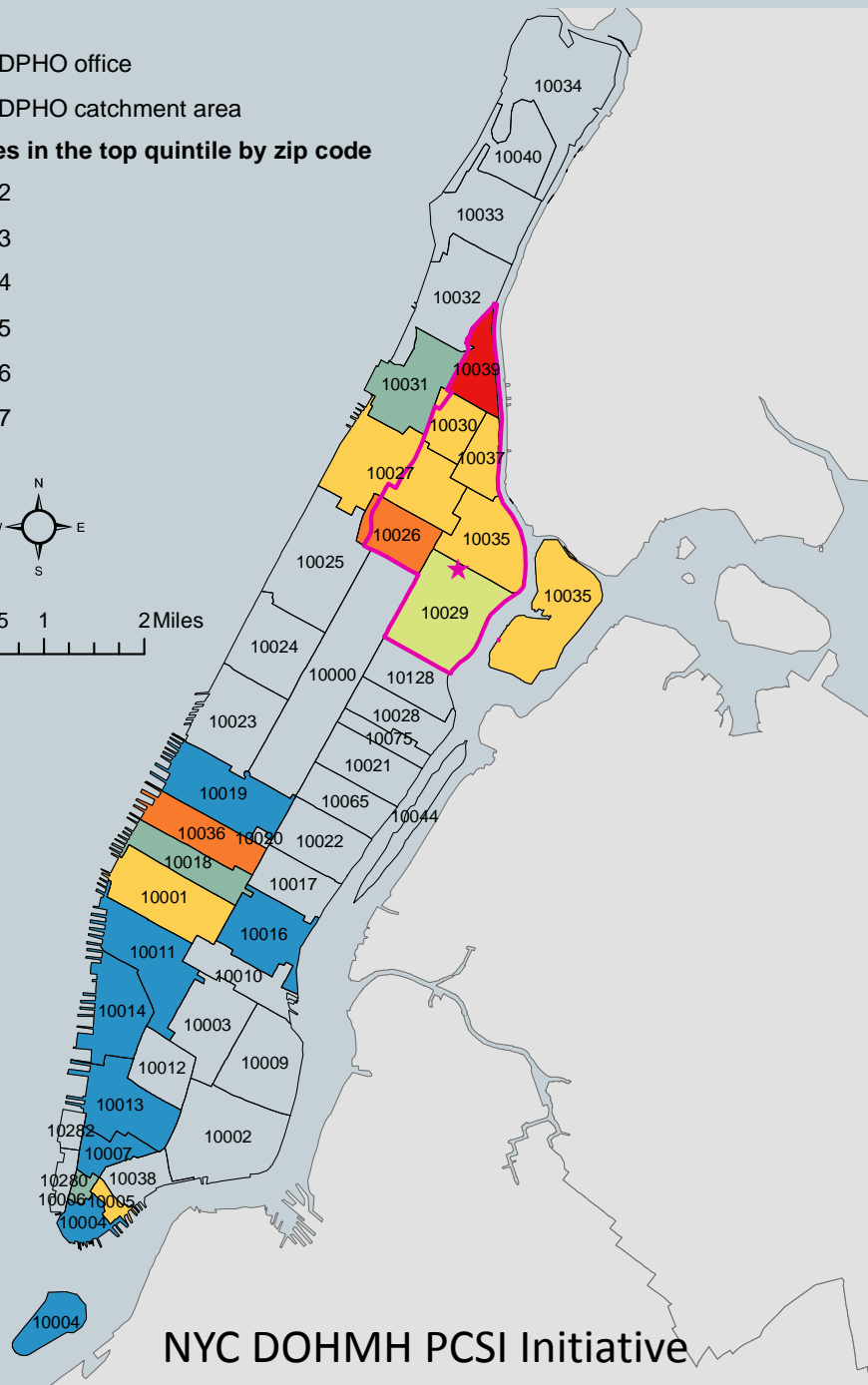
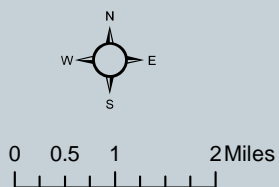
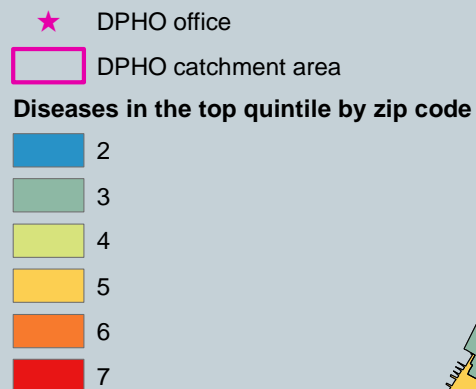
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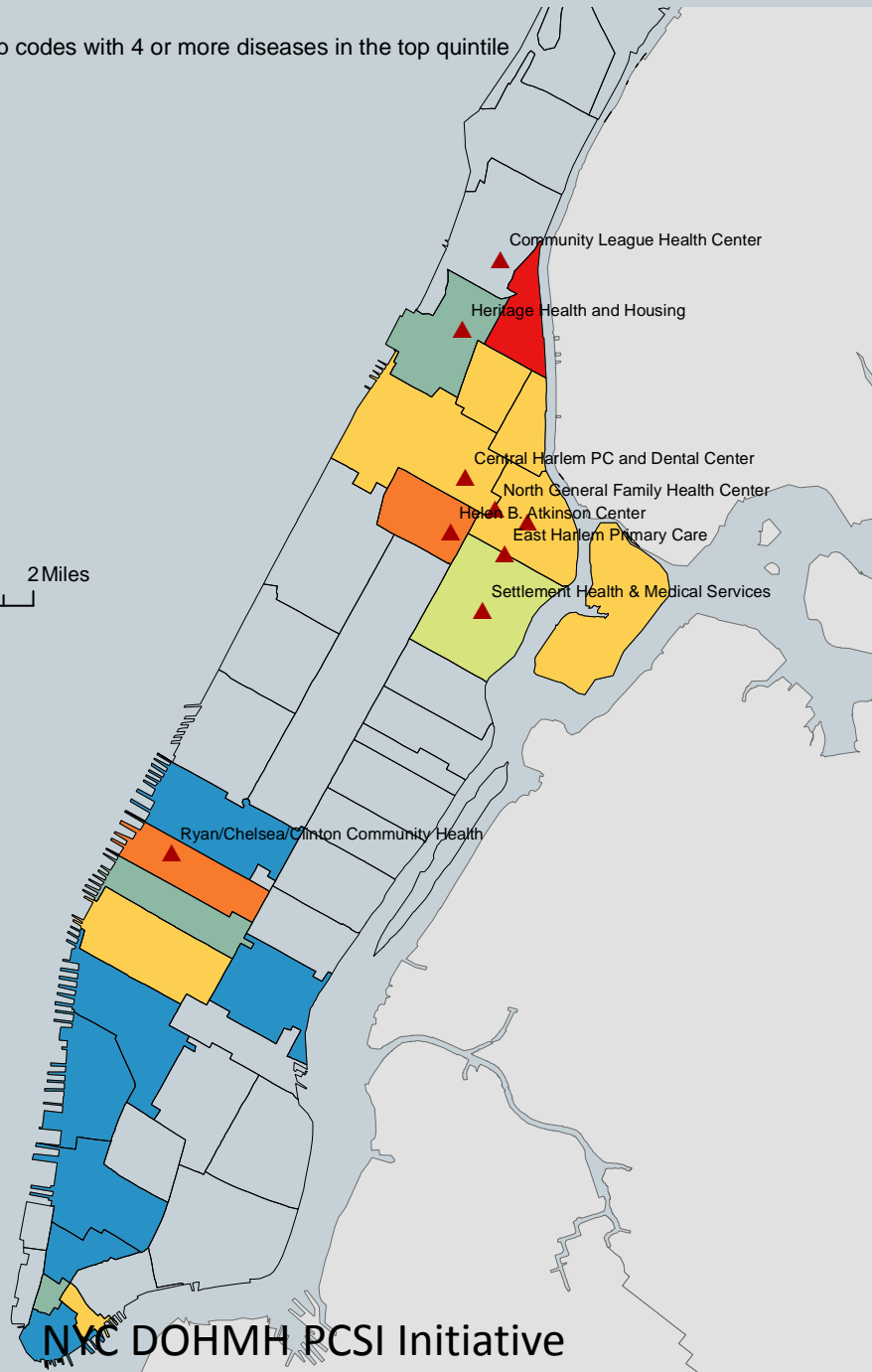
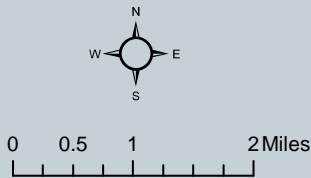
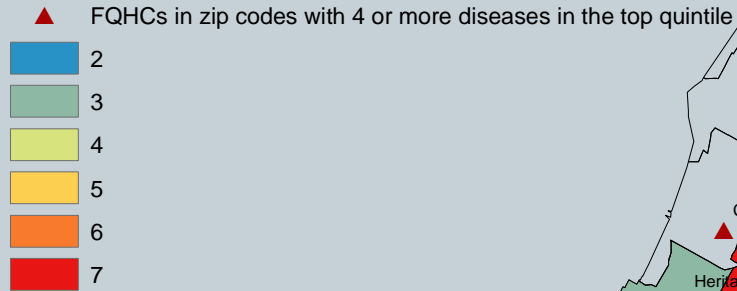
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For more information about PCSI at NYC DOHMH

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