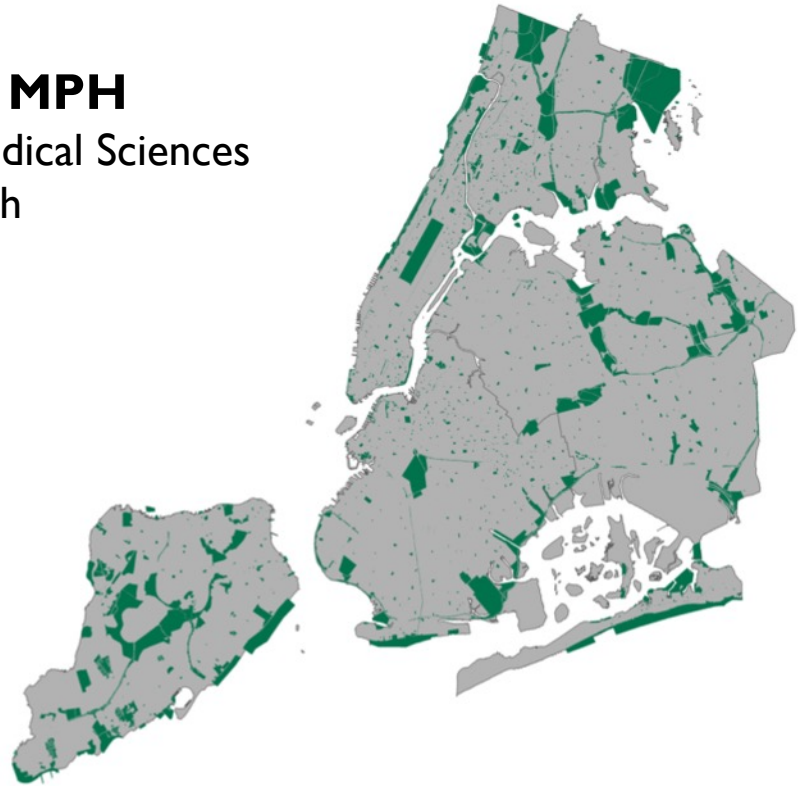
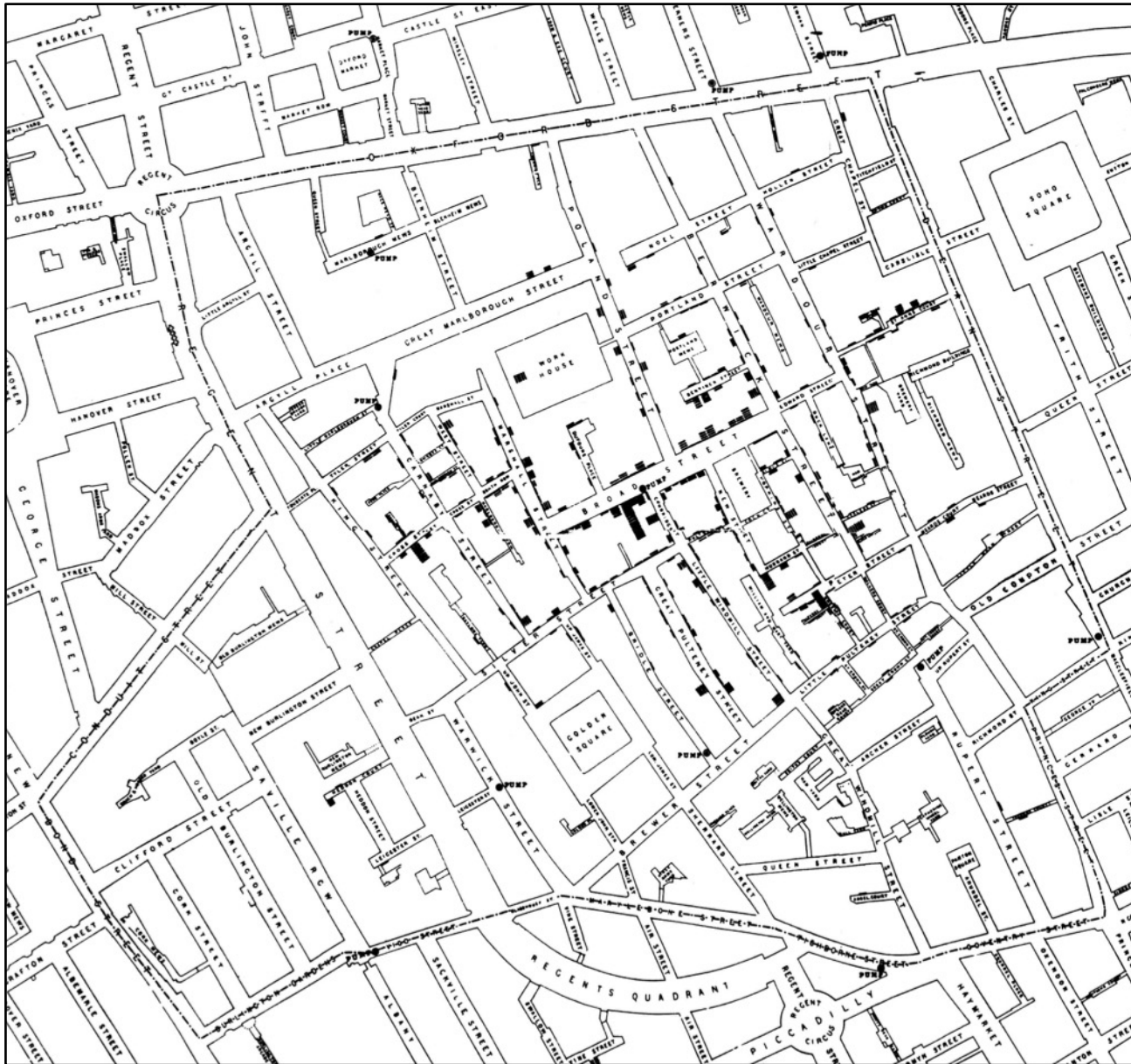


Community Mapping and Utilizing Geographic Data

Daniel P. Giovenco, PhD, MPH

Assistant Professor of Sociomedical Sciences
Mailman School of Public Health
Columbia University

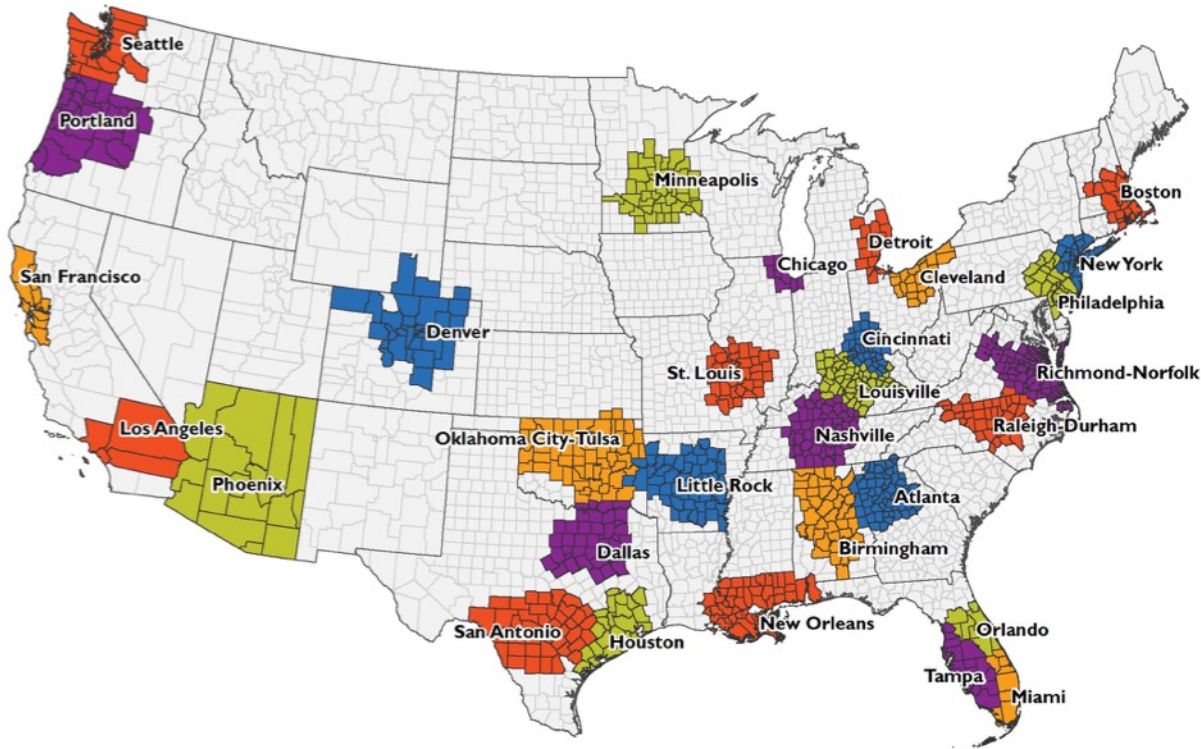


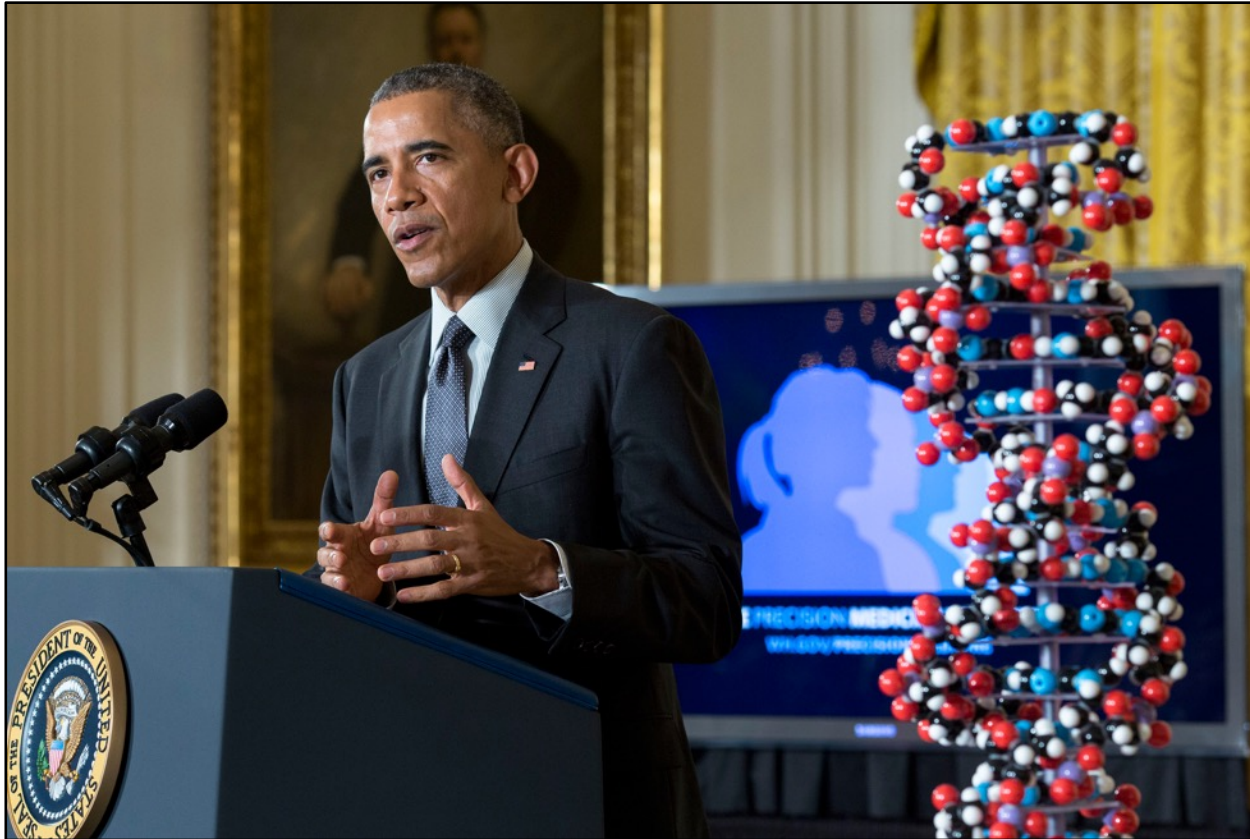


Tobacco Retailers near Schools



Tobacco sales data by Nielsen market region





Obamawhitehouse.archives.gov

“Precision medicine gives us one of the greatest opportunities for new medical breakthroughs that we have ever seen. Doctors have always recognized that **every patient is unique.**”



THE PRECISION MEDICINE INITIATIVE

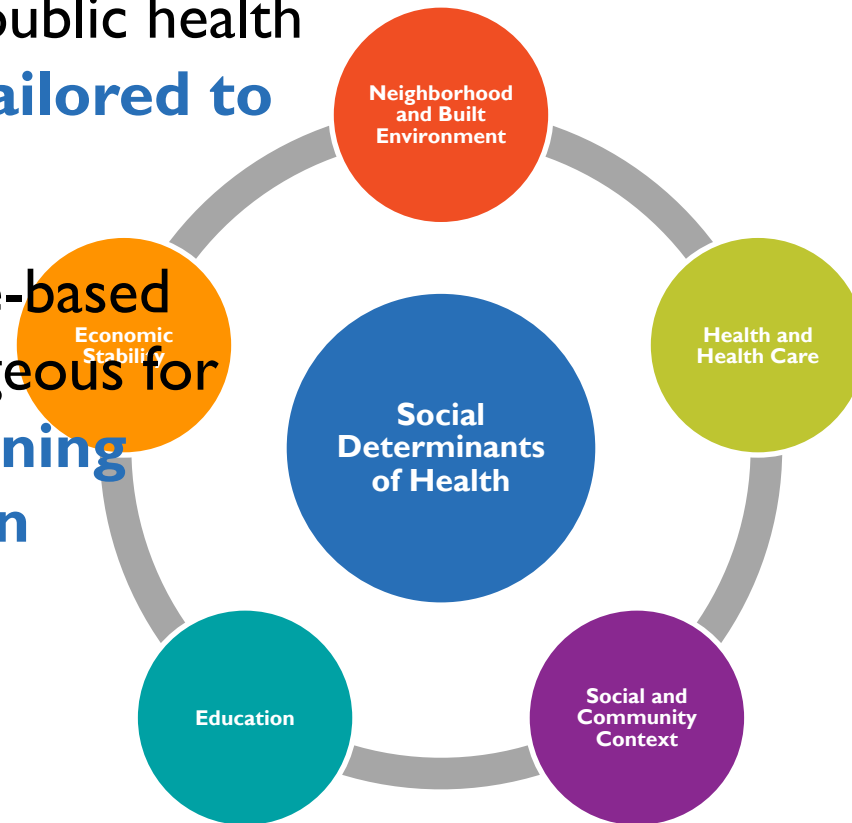
Medical treatments have historically been designed for the “average patient”



Communities are unique and strongly related to health behaviors and outcomes

Most effective public health programs are **tailored to communities**

Gathering place-based data is advantageous for **program planning and evaluation**



Enhancing interventions through local data collection

- Benefits of using geographic data
- Field data collection tools and resources
- Accessing existing geographic data
- Limitations/challenges using local data

Benefits of using geographic data

- Assists in decision-making when used as a needs assessment tool
 - Resource allocation
 - Targeted intervention strategies

500 Cities Project: Local Data for Better Health

Home Interactive Map Compare Cities

CDC > Division of Population Health > 500 Cities

Interactive Map



Model-based estimates for diagnosed diabetes among adults aged >=18 years - 2014

Start with a location, then choose a measure.

Location Type

- City data by State
- Census tract data by City

State

Maryland

City

Baltimore

Category

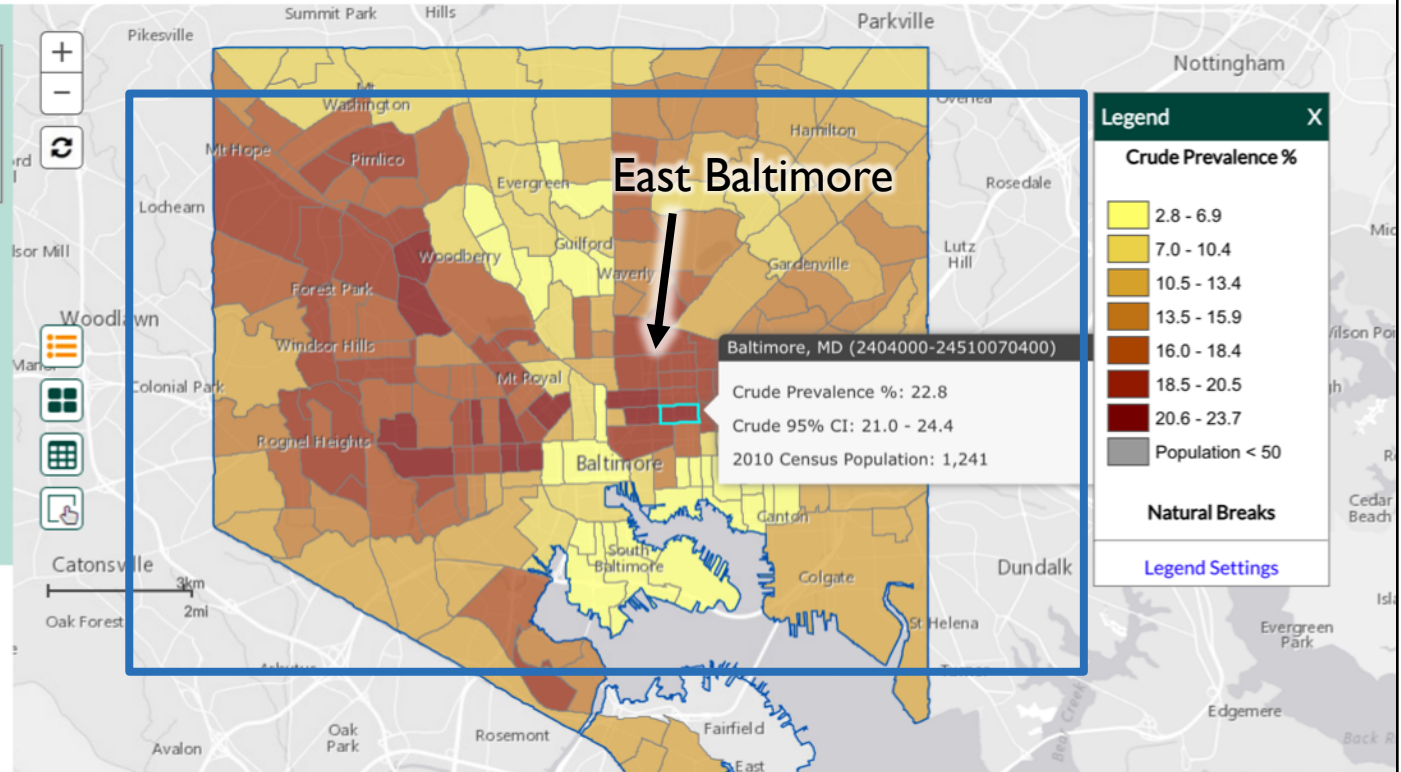
Health Outcomes

Measure

Diabetes

[Measure definitions](#)

GO



Benefits of using geographic data

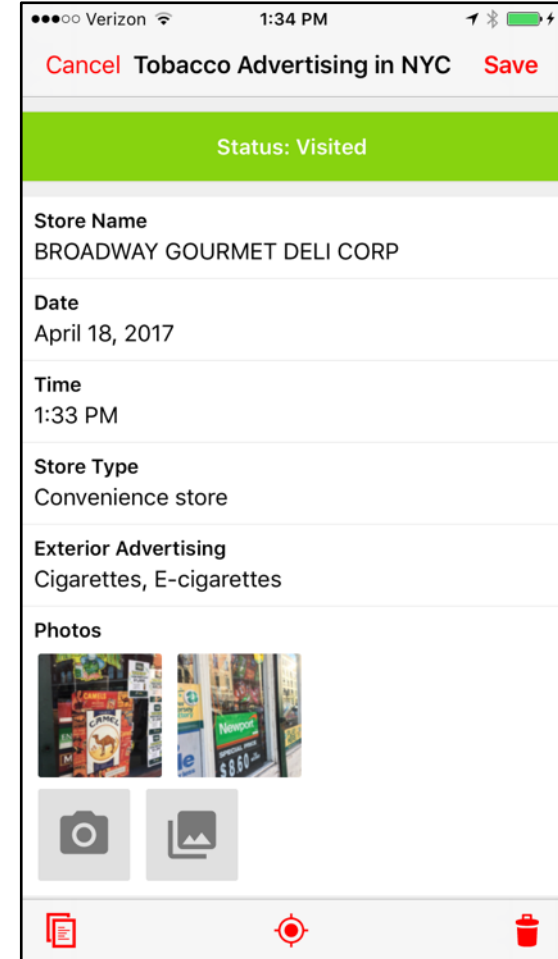
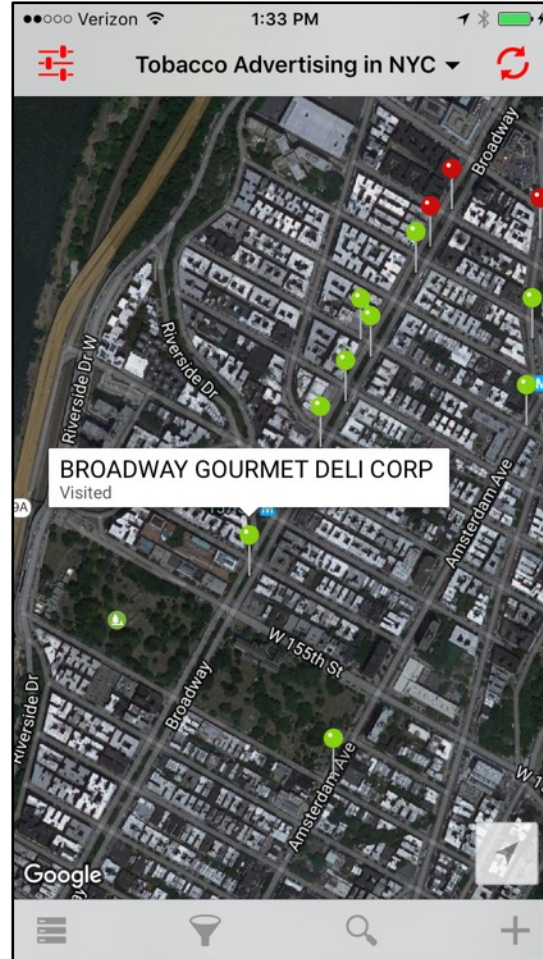
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 - Resource allocation
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- Maps are persuasive and easily understood by stakeholders and community members

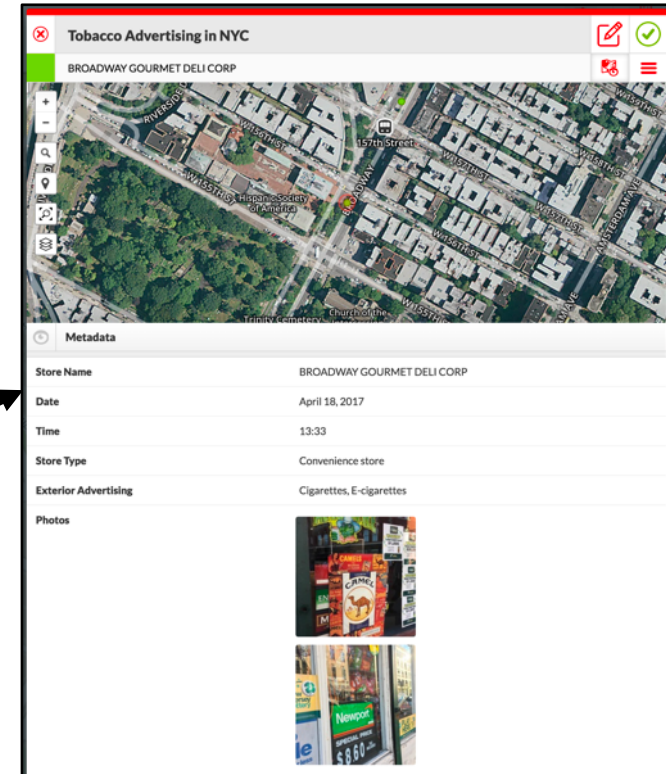
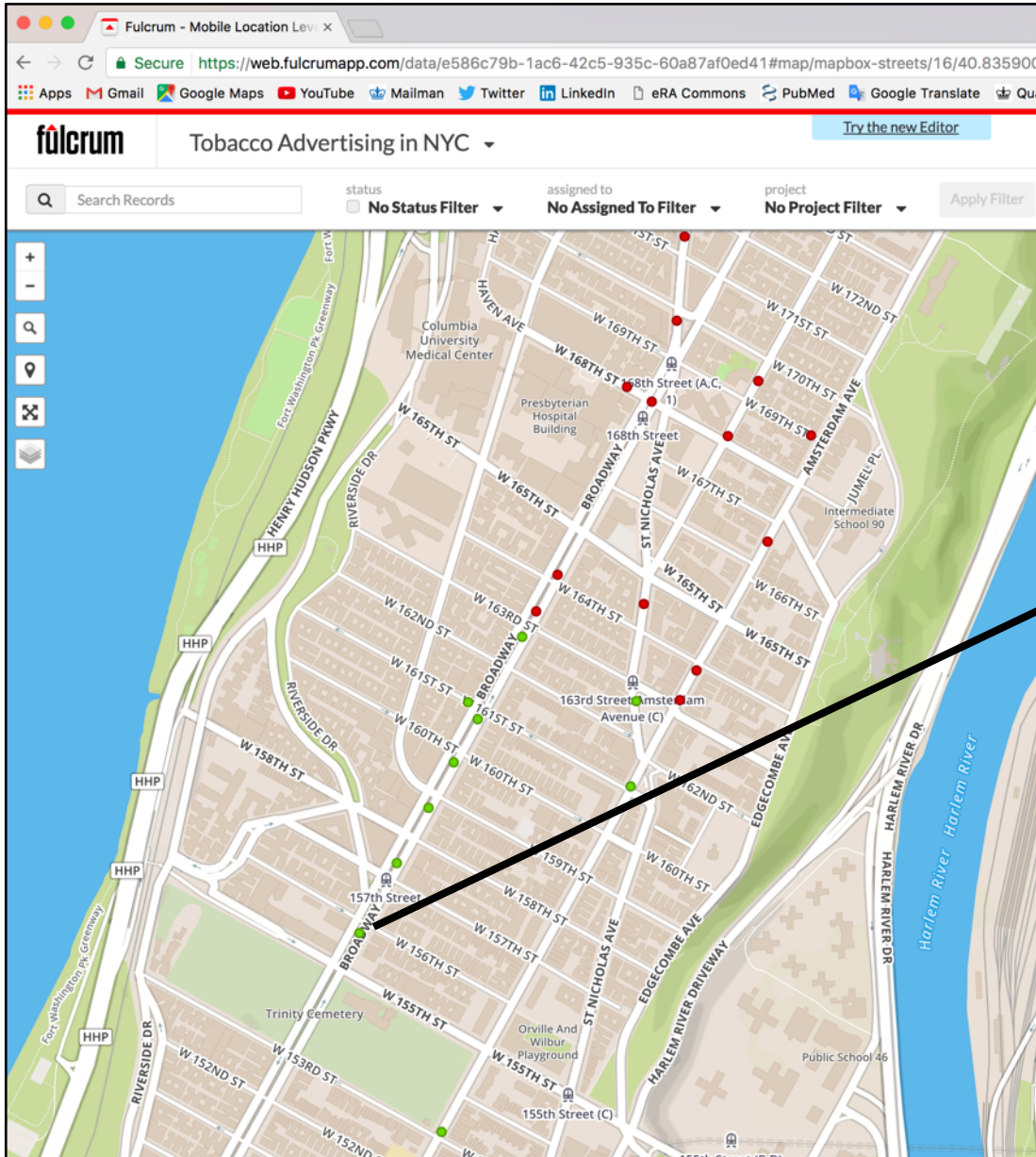


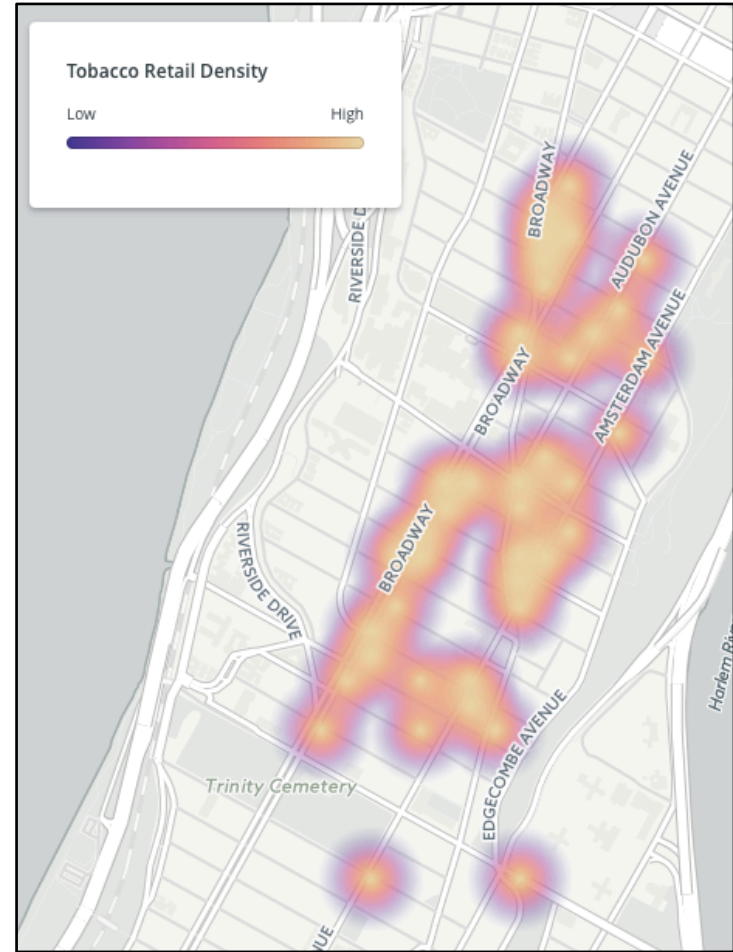
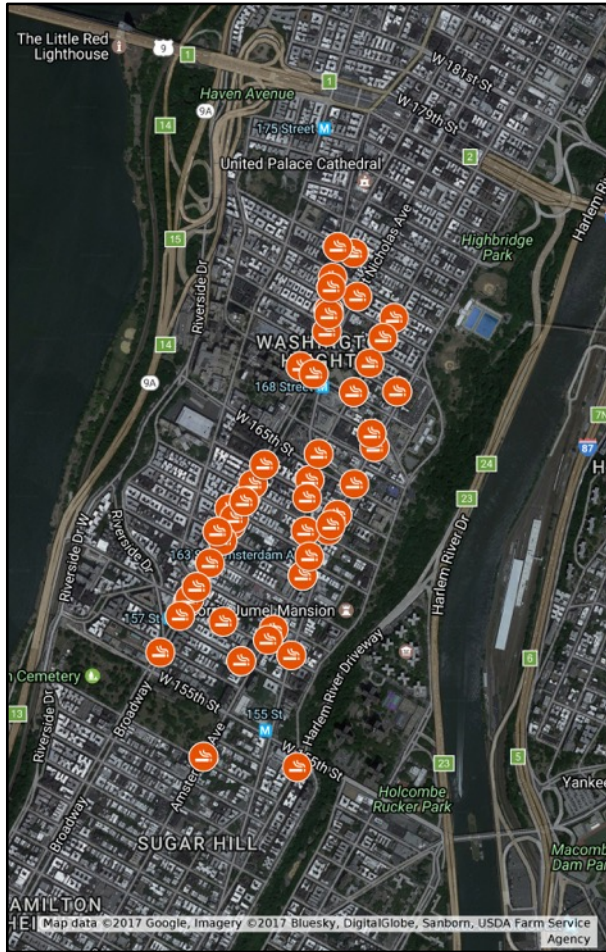
Benefits of using geographic data

- Assists in decision-making when used as a needs assessment tool
 - Resource allocation
 - Targeted intervention strategies
- Maps are persuasive and easily understood by stakeholders and community members
- Applications and software for data collection and map-making now more affordable and easy-to-use

Field data collection tools and resources

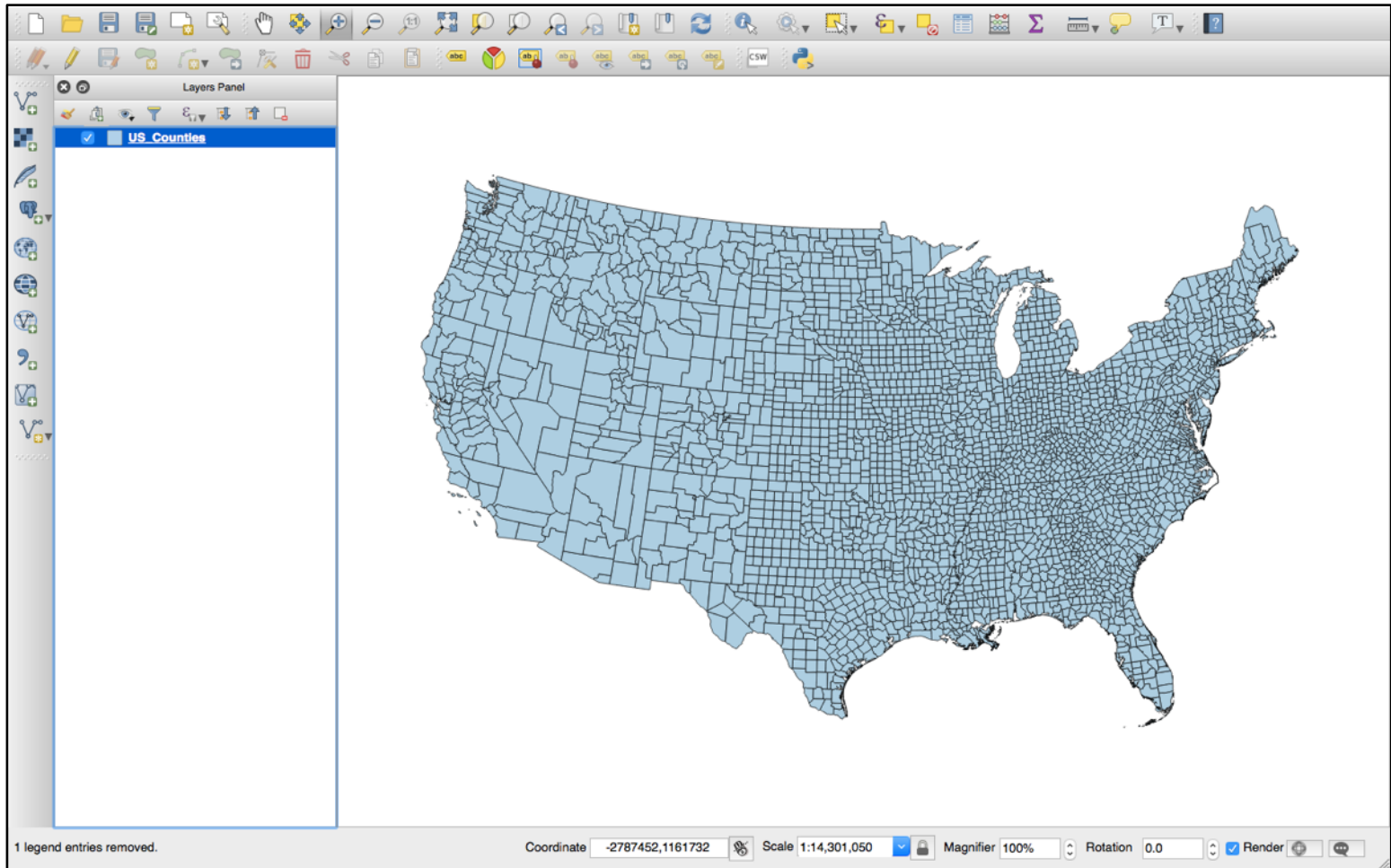




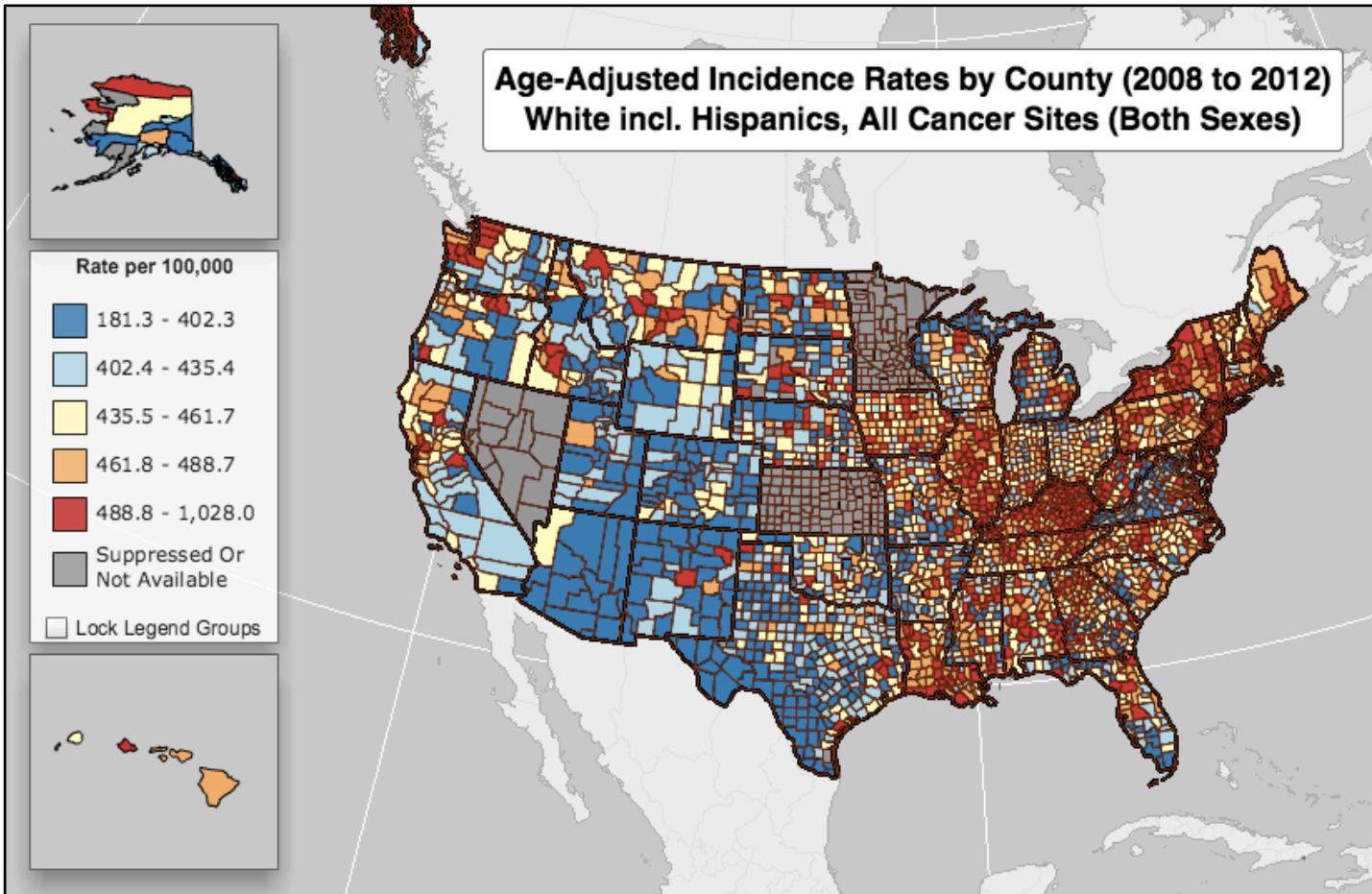




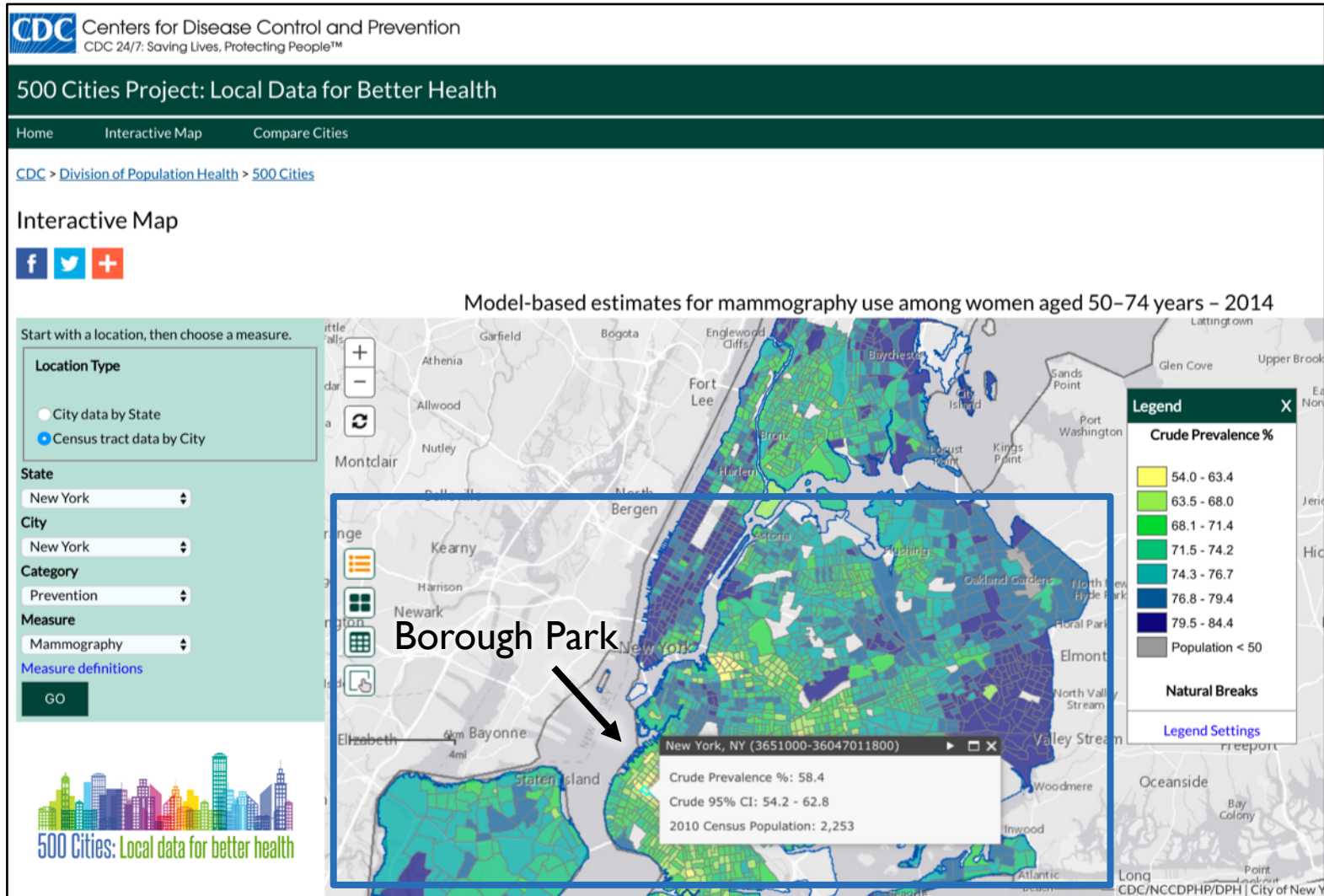
QGIS

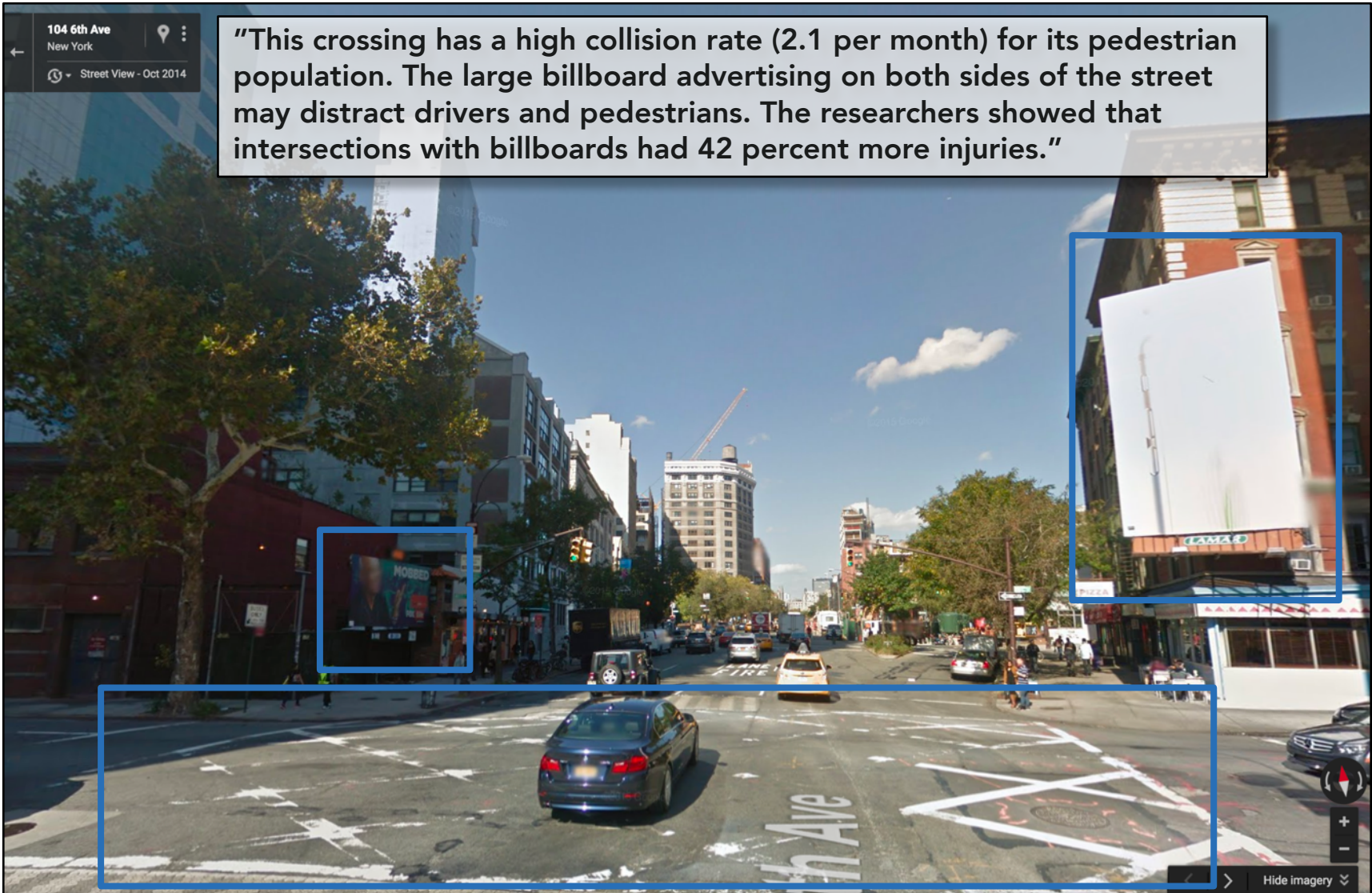


Accessing existing geographic data



Accessing existing geographic data





"This crossing has a high collision rate (2.1 per month) for its pedestrian population. The large billboard advertising on both sides of the street may distract drivers and pedestrians. The researchers showed that intersections with billboards had 42 percent more injuries."

Limitations/challenges using local data

- Field data collection can be cumbersome
- Environments dynamic and constantly changing
- Mapping/analysis requires basic knowledge of geographic information systems
- Access to existing geographic datasets limited
 - Privacy concerns
 - Smaller areas produce unstable estimates

Summary

- “Place” impacts health behaviors and outcomes
- Documenting community features and local health data can enhance the effectiveness of interventions
 - Assessing needs
 - Program planning & evaluation
- Geographic data is increasingly accessible and should be incorporated in all sectors of public health
 - Research
 - Practice
 - Policy-making

Thank you!