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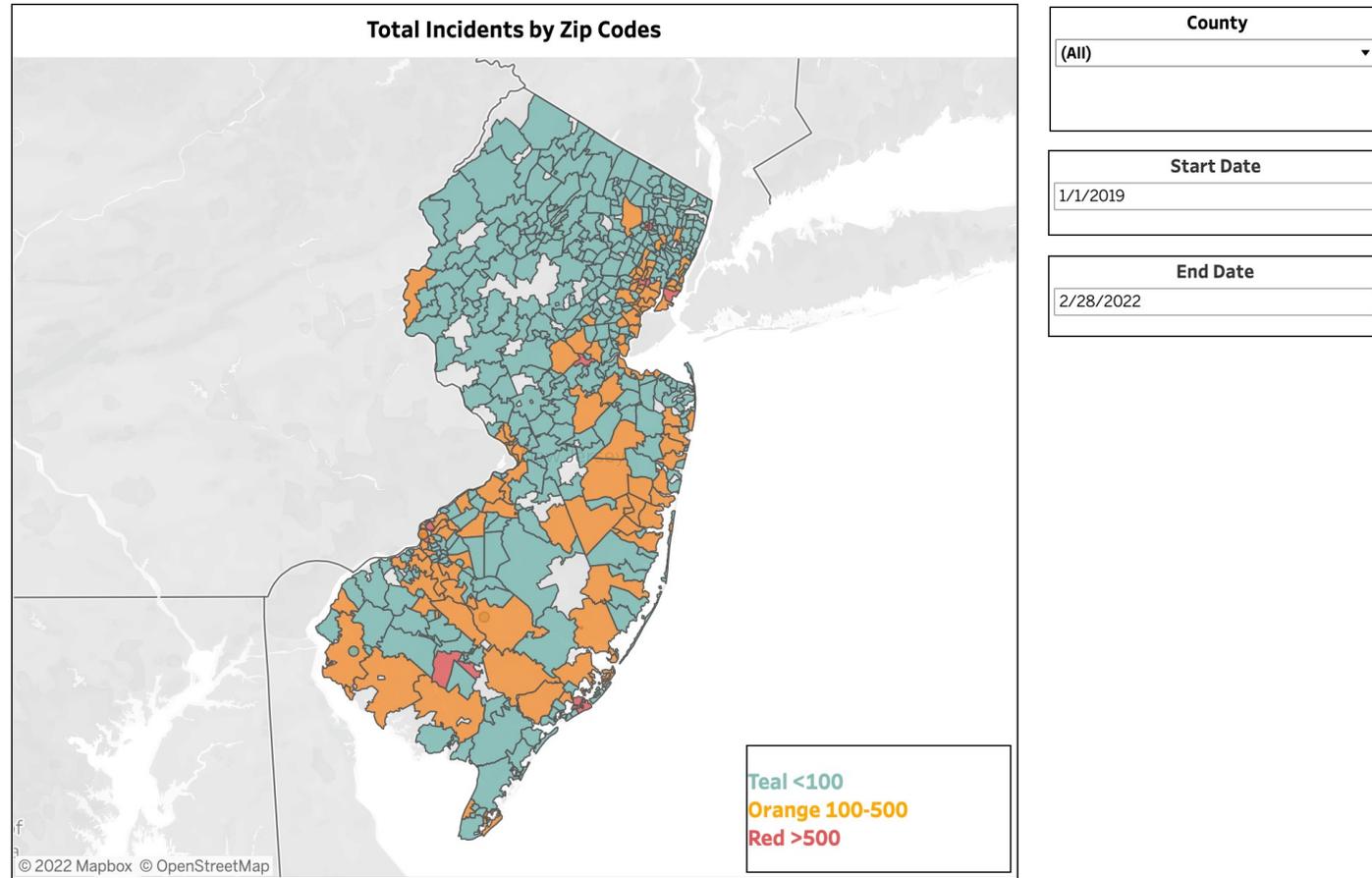
PREDICTING THE VULNERABILITY OF  
NEW JERSEY COMMUNITIES TO  
OPIATE OVERDOSES USING  
**PEOPLE, PLACES & THINGS:**  
A SPATIAL RISK MODELING APPROACH

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# Mapping The Opiate Crisis in New Jersey

Naloxone (Narcan®) Incidents (2019 - 2022)



Note: Zip codes with less than 5 incidents were suppressed  
Zip codes in grey either have no data or have incidents less than 5

Figure adapted from [https://www.state.nj.us/health/populationhealth/opioid/opioid\\_naloxone.shtml](https://www.state.nj.us/health/populationhealth/opioid/opioid_naloxone.shtml)

# Better Policies Create Better Data

## The OLD paper-based process

(redacted public record, released under OPRA)

**NJ Attorney General's Heroin & Opiates Task Force  
Naloxone Administration Reporting Form  
Ocean County**

Police Department: Manchester Twp. PD Case #: M18-17862

Date of Overdose: 08 /01 /2018 Time of Overdose: 12 :36 AM PM

Location where overdose occurred: (Street address, city, zip) Victim address: (Street address, city, county, state, zip)

Victim Full Name: [REDACTED] Victim DOB: [REDACTED] Victim Cell: [REDACTED]

Victim previously administered naloxone:  Yes  No  Unknown If yes, how many times?: 1

Victim Gender:  Male  Female  Unknown Victim Age: 33

Victim Race:  White  Black  Hispanic  Asian/Indian  American Indian  Pacific Islander

**Details of Naloxone Administration**

Administered by:  LE / Doses: 1  EMS / Doses: 1  Fire Dept. / Doses:  Other / Doses:

Did Naloxone work:  Yes  No  Unk Did the person live:  Yes  No  Unk Taken to Hospital:  Yes  No

If yes, how long did it take to work:  <1 min  1-3 min  3-5 min  >5 min  Don't Know

**Suspected Drugs Involved (check all that apply)**

Heroin  Any other opioid  Cocaine / Crack  Suboxone  Other (specify):  
 Alcohol  Benzos / Barbituates  Methadone  Don't Know

**Evidence Information**

Drug 1:  
Drug Form:  Powder  Pill  Liquid  Other: N/A Packaging Type:  Glassine  Other:  
Packaging Color:  White  Blue  Red  Pink  Yellow  Green  Black  Other:  
Stamp (Text/Color): N/A Describe Image: N/A

Drug 2:  
Drug Form:  Powder  Pill  Liquid  Other:  
Packaging Color:  White  Blue  Red  Pink  Yellow  Green  Black  Other:  
Stamp (Text/Color): N/A Describe Image: N/A

Pill Brand: N/A / Doctor's Name: N/A

Evidence Secured:  Drugs  Paraphernalia Treatment Resources Information Provided:  Yes  No

Notes / Comments:  
No CDS or paraphernalia recovered.

Ptl. T. Chant #411 #411 08/01/2018  
Officer's Name Badge Date of Report

Please email form to [DMI@gw.njsp.org](mailto:DMI@gw.njsp.org) AND [RBorrelli@co.ocean.nj.us](mailto:RBorrelli@co.ocean.nj.us)  
OR fax to NJROIC (609) 530-3650 AND (732) 506-5088.

Revised: 2/20/2017

## NEW structured data

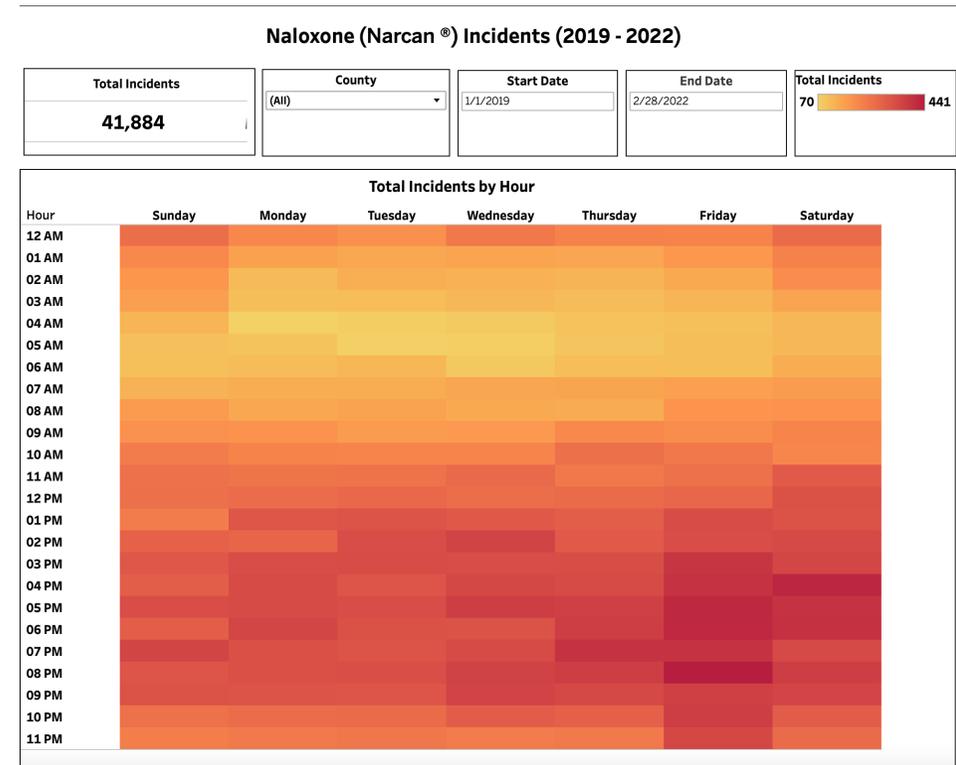
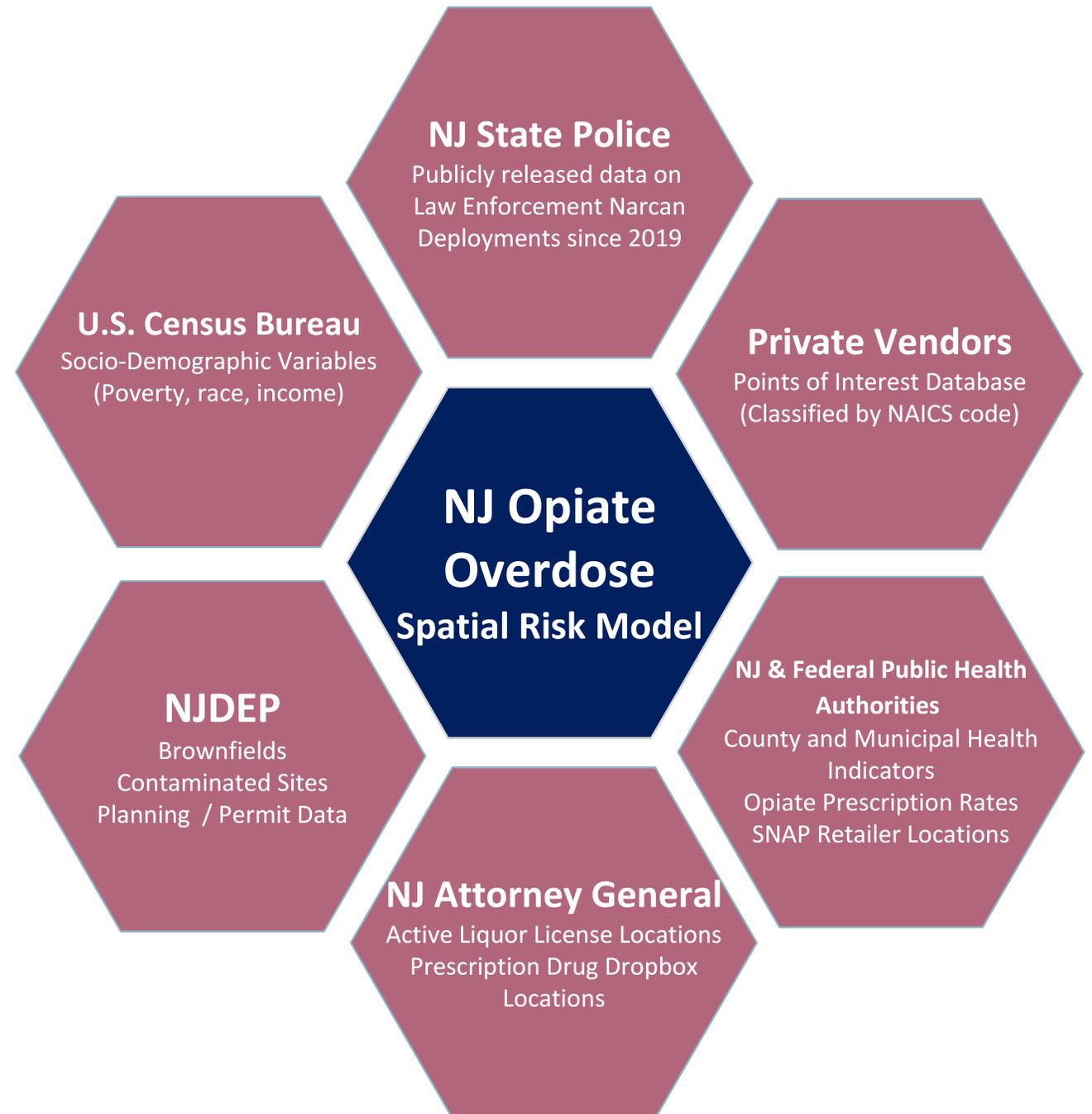
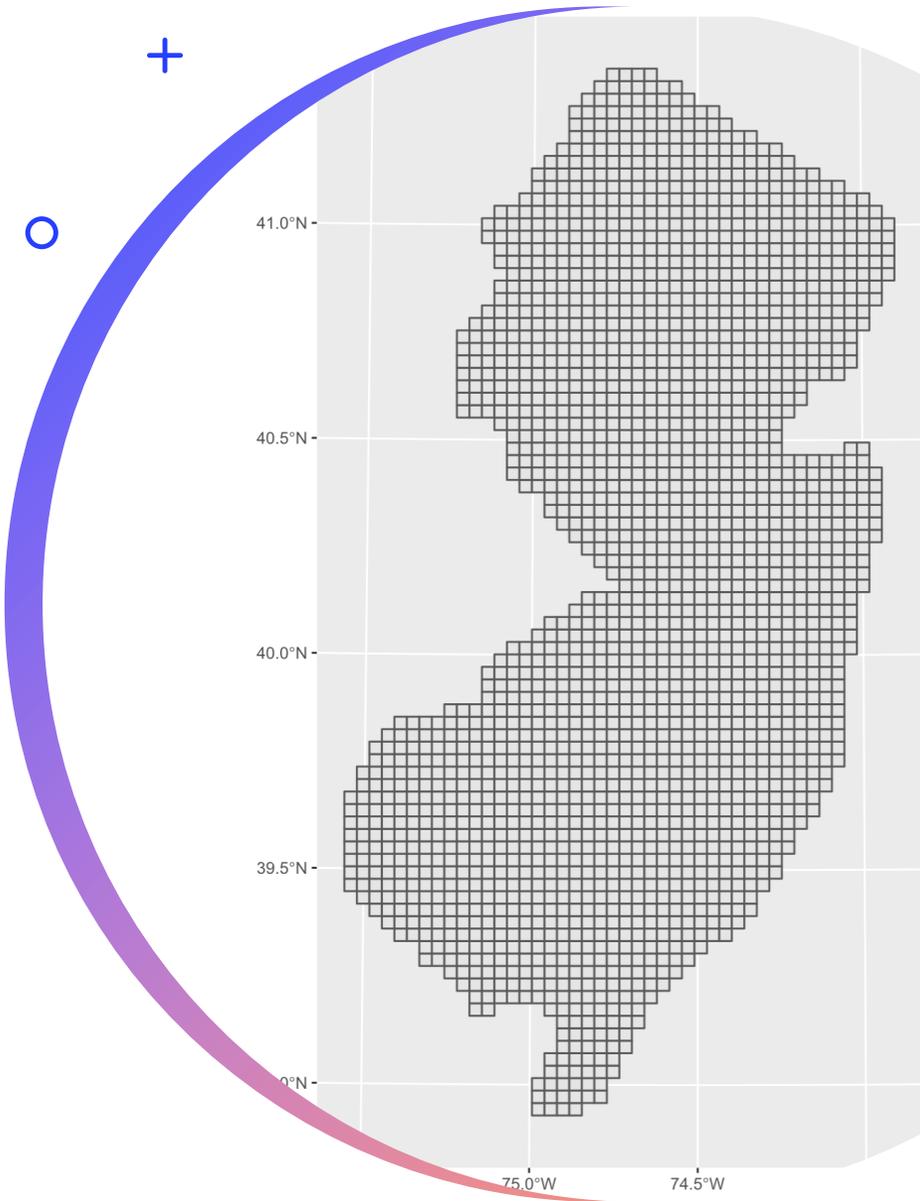


Figure adapted from [https://www.state.nj.us/health/populationhealth/opioid/opioid\\_naloxone.shtml](https://www.state.nj.us/health/populationhealth/opioid/opioid_naloxone.shtml)

# The Planned Data Infrastructure

- Blends together state agency, federal and private-sector data
- Data is spatially joined to each cell in the fishnet and counted.
- Additional feature engineering / cleaning is then performed
- The count of each class of POI / feature in the cell is used to model areas vulnerable to opiate overdoses by predicting the count of law enforcement Naloxone deployments in an area.





# People, Places & Things

- Spatial risk modeling examines the relationship between built environment, Census socio-demographics to model an outcome of interest
- Commonly seen in so-called “predictive policing algorithms
- Limitations include quality / bias of data collection process
- Only accounts for confirmed law enforcement deployments, doesn't differentiate between fatal / nonfatal overdoses or anything not covered by the AG data reporting directive.



# What's Next

- Full integration of data for 2019 – 2021
- Development of final model, feature engineering and parameters
- Release of data with results on an interactive dashboard
- Release of reports detailing findings

# Acknowledgements



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