

Examining how the ACA impacted state uninsured rates and infant mortality

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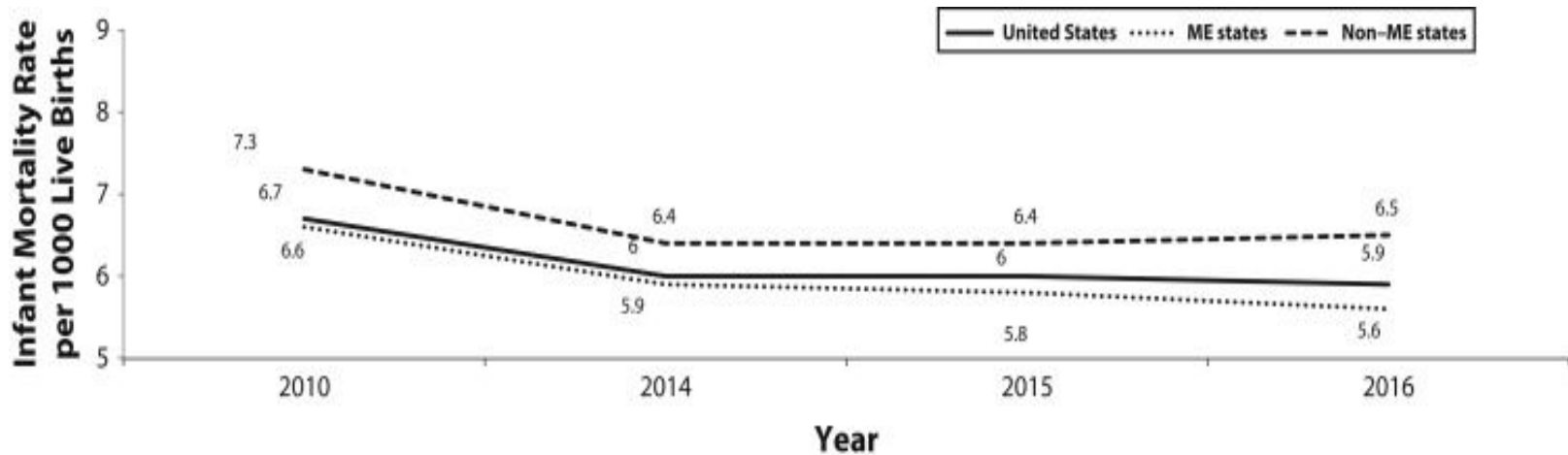
Project Abstract

Infant mortality is defined as the death of an infant before their first birthday. It is used as a broad population indicator of the community's health status, socioeconomic levels and accessibility to medical services ([AMCHP](#)). The Affordable Care Act (ACA) was enacted in 2010 in an effort to make affordable health insurance available to more people, thereby reduce uninsured rate and improve patient outcomes. In our project, we will collect datasets of state infant mortality and uninsurance rate pre/post to ACA to assess the differences between each U.S. state.



NHI Article

- Infant mortality rate declined in both Medicaid expansion and non-Medicaid expansion states 2010-2016
- Decline in Medicaid expansion states was more than 50% greater than in non-Medicaid expansion states
- Decline in mean state infant mortality rates by Medicaid expansion were greatest in African American infants



Where our data is from



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

[A-Z Index](#)



CDC WONDER

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Linked Birth / Infant Death Records, 2007-2018 Request

Request Form

Results

Map

Chart

About

[Linked Birth / Infant Death Records](#)

[Dataset Documentation](#)

[Other Data Access](#)

[Data Use Restrictions](#)

[How to Use WONDER](#)

Save

Reset

Make all desired selections and then click any **Send** button one time to send your request.

1. Organize table layout:

Send

[Help](#)

Group Results By:

And By:

And By:

And By:

And By:

Measures (Default measures always checked and included.)

☒ Deaths

☒ Births

☒ Death Rate

Title

Note:

Group Results By 15 Leading Causes to see the top 15 rankable causes selected from the 130 Cause List. [More information.](#)

[+ Additional Rate Options](#)

[Help](#)

2. Select maternal residence:

Send

[Help](#)

Click a button to choose locations by State, Region or HHS Region.

[States](#) ☒

[Census Regions](#) ☐

[HHS Regions](#) ☐

SQL or Mongo?

ACA_states.acadata

Documents

Aggregations

Explain Plan

Indexes

FILTER

ADD DATA



VIEW



```
_id: ObjectId("5f635250c285eb3438339ae4")
State: "Alabama"
Deaths_2010: "524"
Births_2010: "60050"
Death_Per_1000_2010: "8"
Deaths_2015: "496"
Births_2015: "59657"
Death_Per_1000_2015: "8"
ABB: "AL"
Latitude: "32"
Longitude: "-86"
Uninsured_Rate_2010: "14"
Uninsured_Rate_2015: "10"
Uninsured_Rate_Change_2010-2015: "-4"
```

```
_id: ObjectId("5f635250c285eb3438339ae5")
State: "Alaska"
Deaths_2010: "41"
Births_2010: "11471"
Death_Per_1000_2010: "3"
Deaths_2015: "78"
Births_2015: "11282"
Death_Per_1000_2015: "6"
ABB: "AK"
Latitude: "63"
Longitude: "-154"
Uninsured_Rate_2010: "19"
Uninsured_Rate_2015: "14"
Uninsured_Rate_Change_2010-2015: "-5"
```

ACA_states.acadatacharts

Documents

Aggregations

Explain Plan

FILTER

ADD DATA



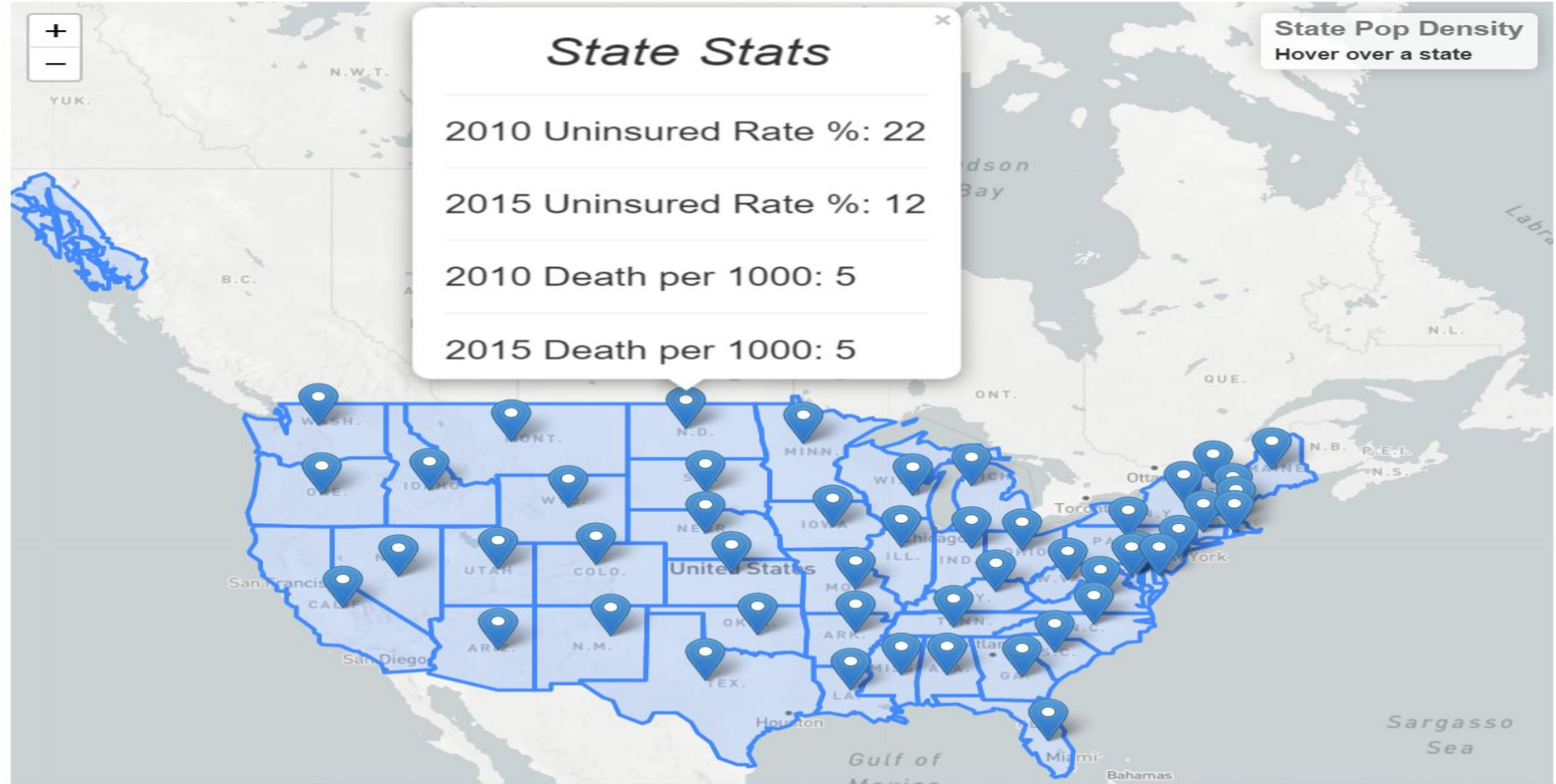
VIEW



```
_id: ObjectId("5f64174bc9a6631c8c0697b7")
> State: Array
> Deaths_2010: Array
> Births_2010: Array
> Death_Per_1000_2010: Array
> Deaths_2015: Array
> Births_2015: Array
> Death_Per_1000_2015: Array
> ABB: Array
> Latitude: Array
> Longitude: Array
> Uninsured_Rate_2010: Array
> Uninsured_Rate_2015: Array
> Uninsured_Rate_Change_2010-2015: Array
```

Interactive State Map - Uninsured & Death per 1000 Stats: 2010 vs 2015

Figure 1.



Interactive Bar Charts: Uninsured Rate (%) and Infant Mortality: 2010 vs 2015

Figure 2.

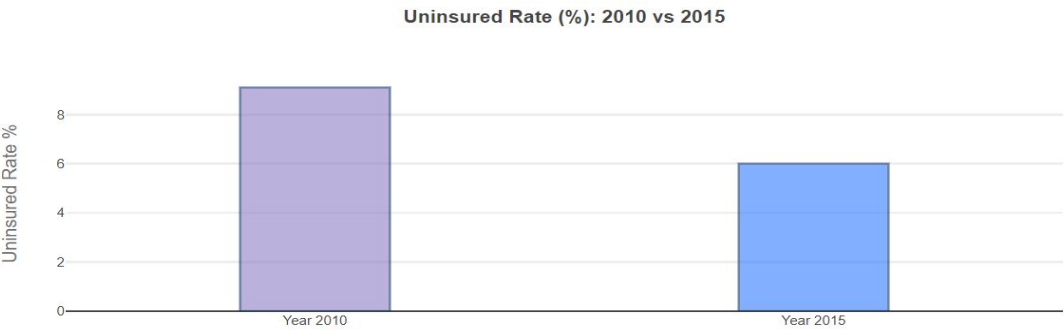
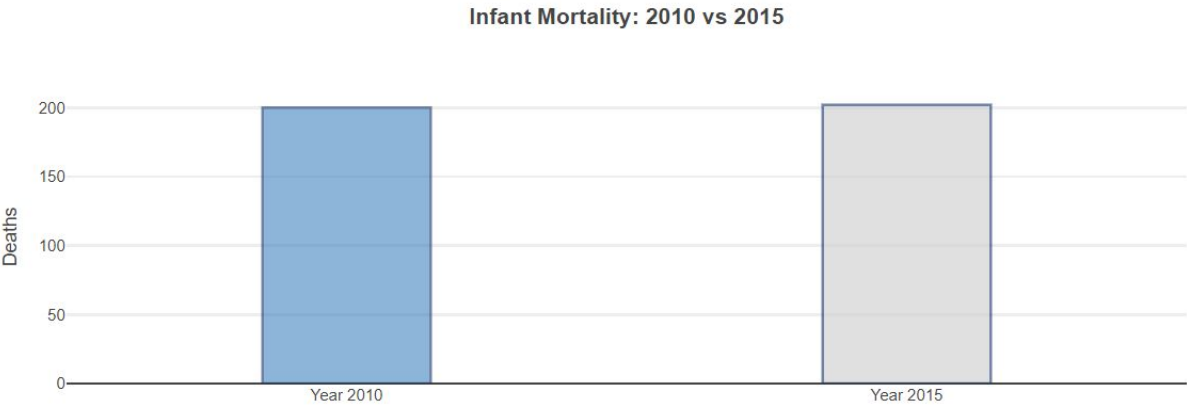


Figure 3.



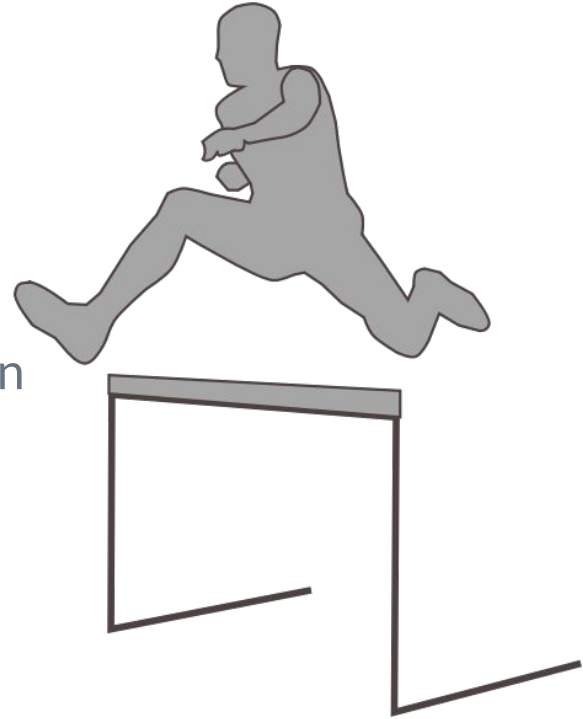
Analysis

- ▷ ACA has brought infant mortality rates down, however, it varies state by state
- ▷ Pondering Questions:
 - Differences in infant mortality disparities according to mother's education, ethnicity and age
 - Accessibility to ACA and awareness varies by state



Hurdles

- ▷ Brainstorming topic along with finding adequate data
- ▷ Limitations visualization types
- ▷ Cleaning the data
- ▷ Creating a comprehensive project within a limited timeframe
- ▷ Deciding between SQL/Mongo
- ▷ Heroku mix up



Final Thoughts

- ▷ The ACA was limited according to state Medicaid expansion
 - States with expansion had greater decline in infant mortality rates
- ▷ Limitations in data and time constraints