Statement of Purpose (1)

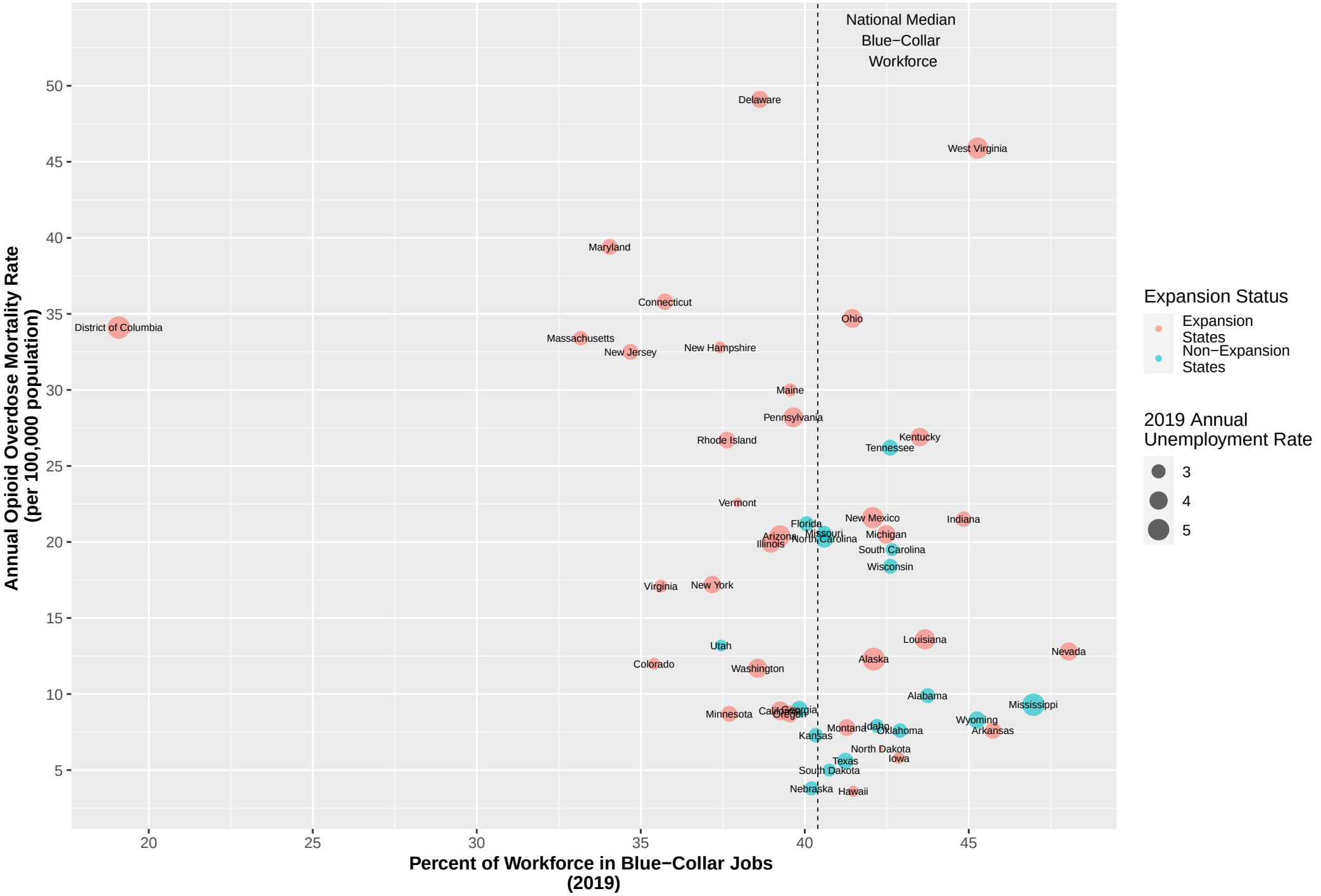
The purpose of this visualization is to explore the relationship between income (expressed in median household income for a state) and opioid overdose mortality (expressed in rate per 100,000 population) and how this relationship might differ for states that have chosen to expand Medicaid under the ACA versus those who have not by the year 2019. This visualization will likely reinforce the point that scientific literature on Medicaid expansion and opioid overdose mortality varies quite drastically from some authors finding causal links to others finding no relationship. Especially because this visualization is presenting one year, rather than a measurement of rates over time, it might prompt viewers to ask more questions about what they think the relationship between expanding access to health coverage via Medicaid expansion and opioid overdose deaths might be (if any).


Income and Opioid Overdose Deaths
by Medicaid Expansion Status in 2019
Opioid Overdose Mortality Rate
(per 100,000 population)
50
45
40
35
30
25
20
15
10
5
50000
60000
70000
80000
90000
Median Household Income
Expansion Status
Expansion States (35)
Non−Expansion State (16)
Data Source: CDC Wonder Database | American Community Survey table DP03

B. The purpose of this visualization is for readers to explore how opioid overdose mortality (expressed in rate per 100,000 population) differs in states with relatively higher versus lower proportions of people working blue-collar jobs and how this relationship differs in Medicaid expansion states versus non-expansion states. Because I have recently finished my subgroup analysis, I want the visualization to support the section of my thesis that discusses the slightly different relationship between Medicaid expansion and opioid overdose deaths in states with lower proportions of blue-collar workers versus higher proportions of blue-collar workers.

Blue−Collar Workforce and Opioid Overdose Mortality by Medicaid Expansion Status in 2019

In the U.S., Medicaid expansion may be more closely related to opioid overdose deaths in states with lower proportions of blue−collar workers.

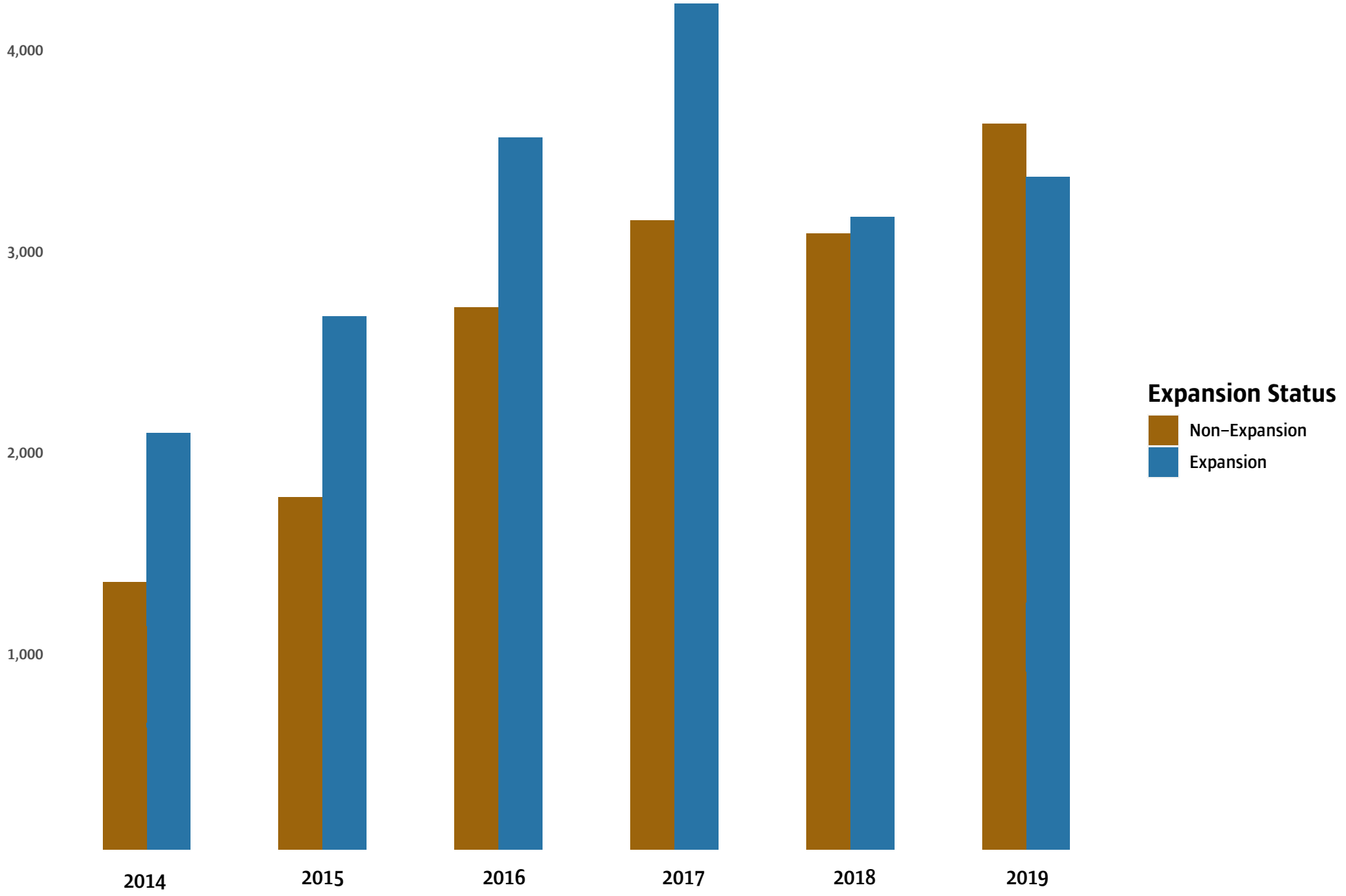


Data Source: CDC Wonder Database | American Community Survey Table DP03

A. **Visualization 1 Statement of Purpose:** The purpose of this visualization is to emphasize the trends in the number of opioid overdose deaths in states that have expanded Medicaid versus states that have not. Given the opioid crisis in the U.S., an overall rising trend should not come as a surprise, but viewers should explore the variation year to year between expansion and non-expansion states.

Opioid Deaths in Non-Expansion States Surpasses those in Expansion States in 2019

Opioid overdose deaths rose steadily from 2014 to 2019, but were higher in non-expansion states for the first time since the passage of the ACA

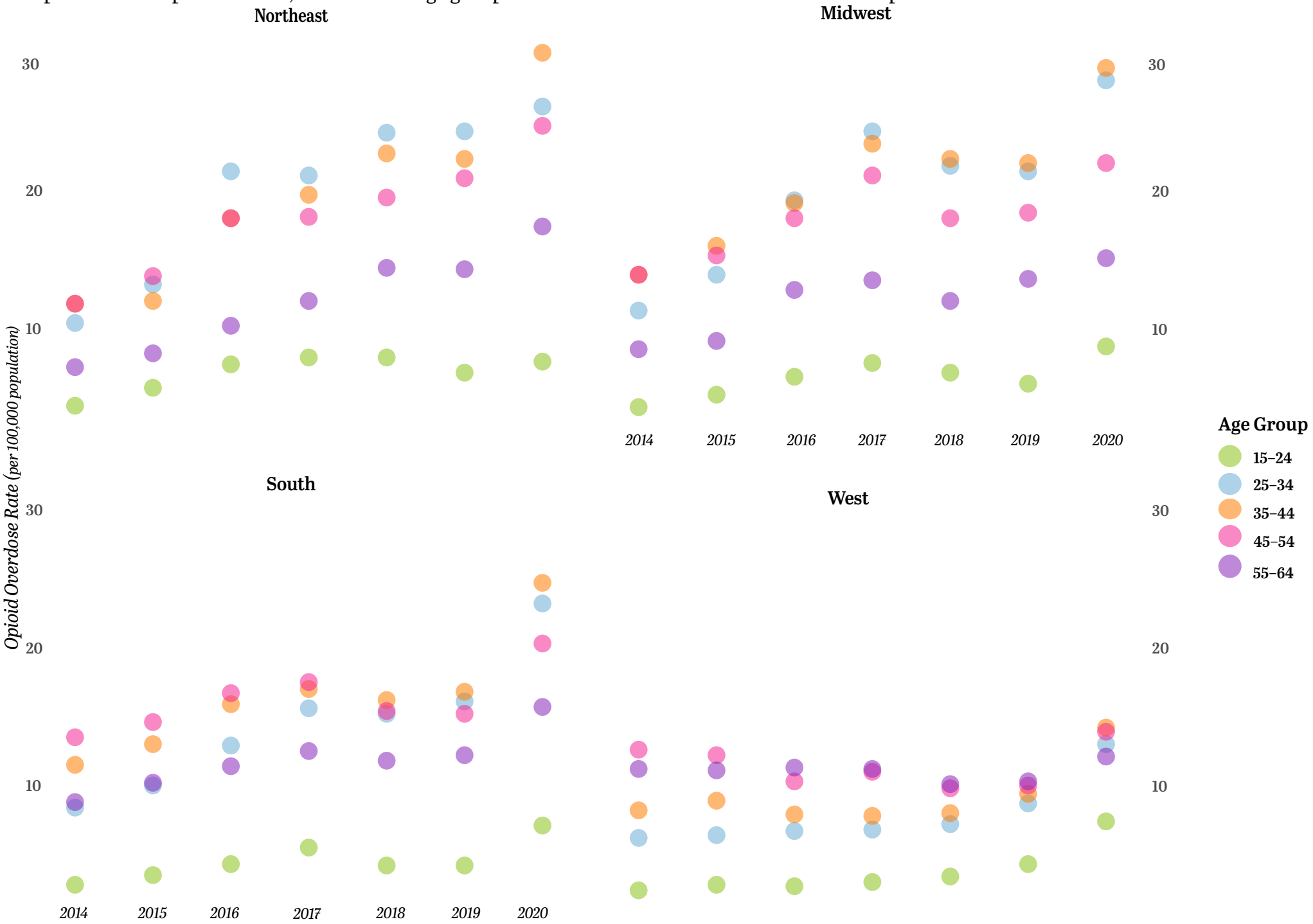


Data: CDC Wonder | Kaiser Family Foundation

B. Visualization 2 Statement of Purpose: The purpose of this visualization is for viewers to explore how the opioid crisis affects women of different age groups who live in different regions of the U.S. Viewers should notice trends within age groups as well as within regions.

Regional Opioid Overdose Rates for Women in the U.S. by Age Group, 2014 - 2020

Despite a recent uptick in 2020, women in all age groups fare better in the West when it comes to opioid overdose.

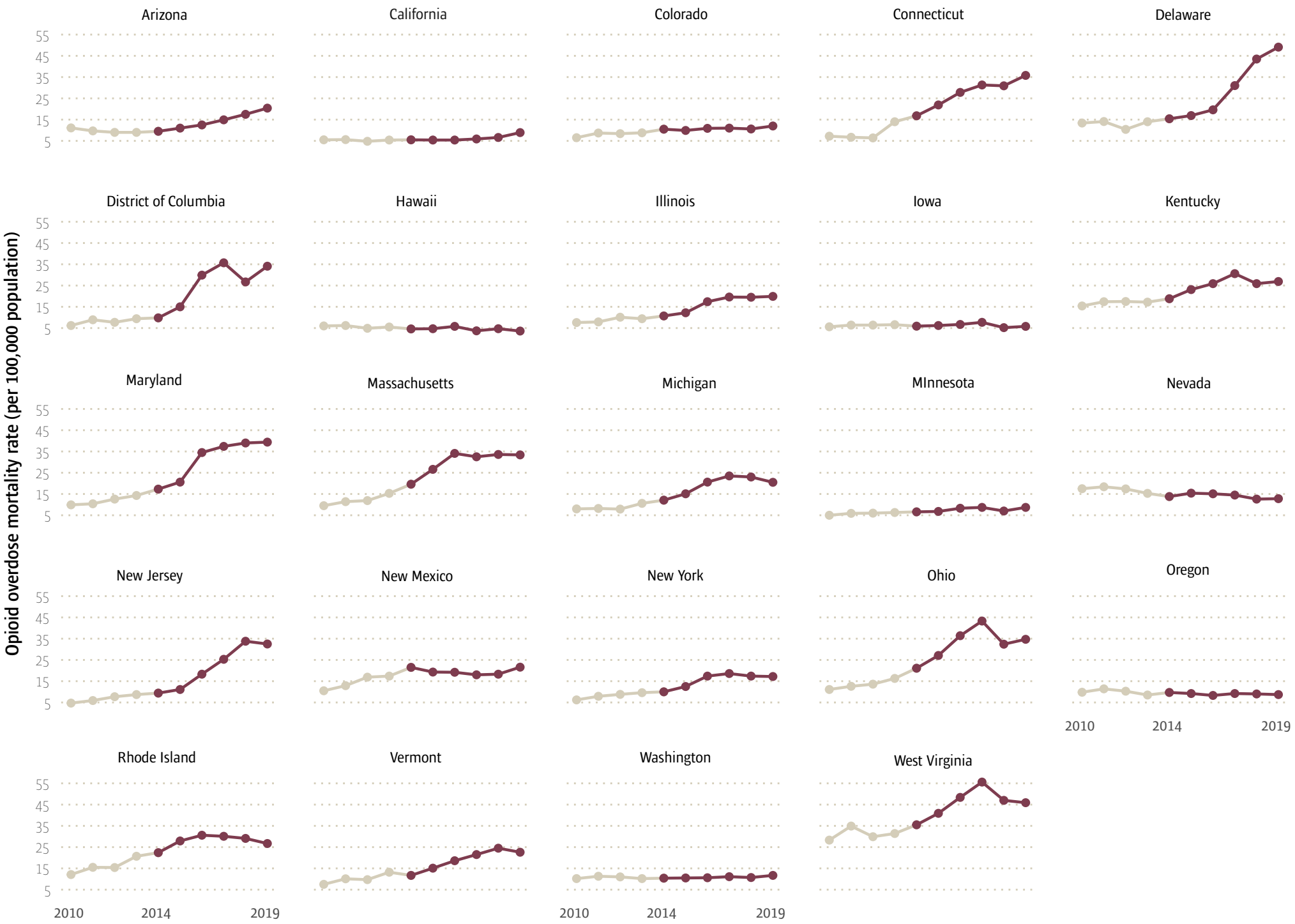


Data: CDC Wonder

Visualization 5 Statement of Purpose: The purpose of this visualization is to focus more on each individual "early expander" Medicaid expansion state (i.e. the first wave of states to expand Medicaid under the ACA in 2014). Viewers can get a sense of overall trends for this group of states as well as easily identify exceptions that might get lost in a more aggregated visualization.

Opiod Overdose Rates Rise in Most States After Medicaid Expansion

Change in opioid overdose rate from 2010 to 2019 among the first group of states to expand Medicaid under the Affordable Care Act in 2014†



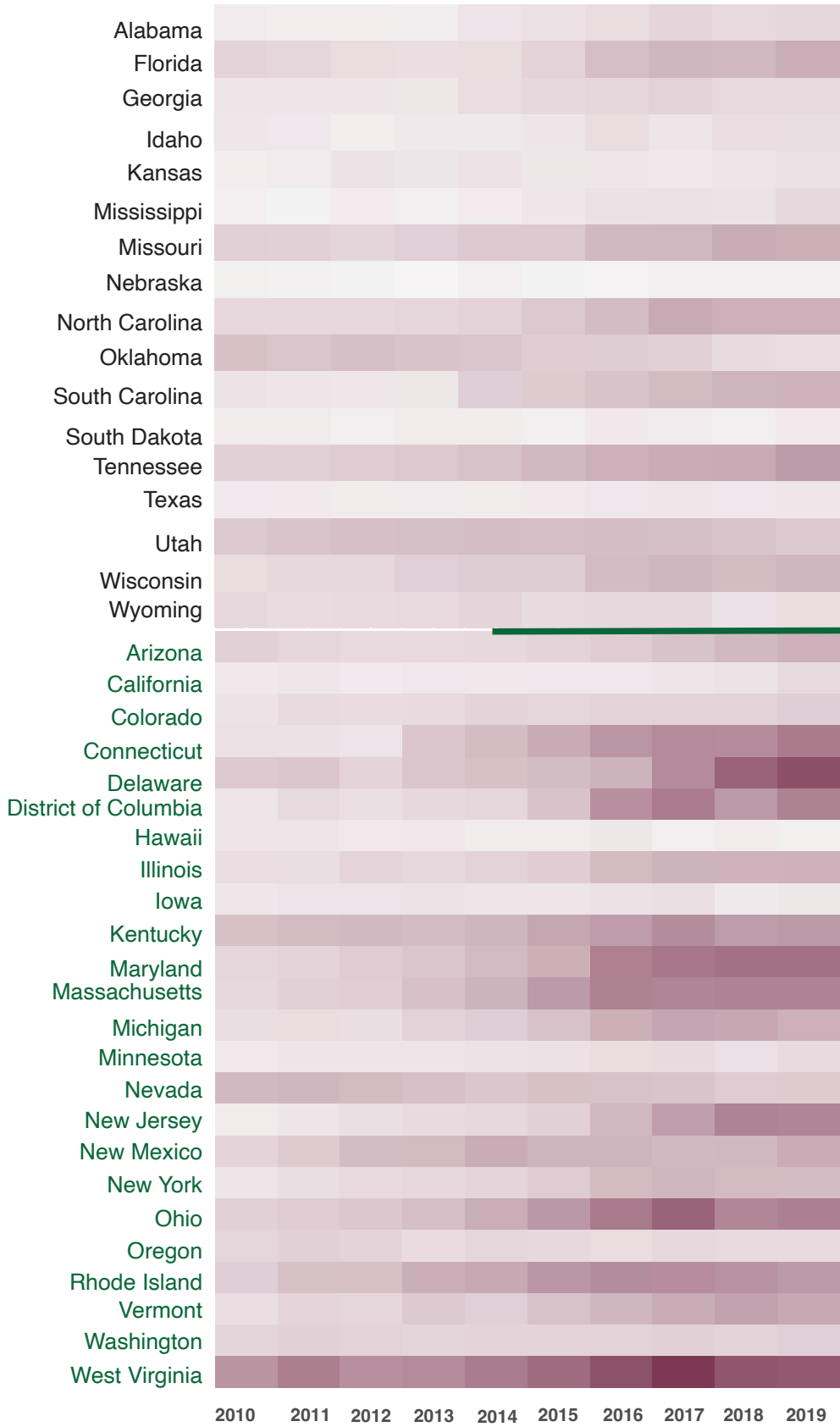
Data Source | Centers for Disease Control and Prevention

†North Dakota also expanded Medicaid in 2014 but was not included in this analysis due to missing overdose mortality data.

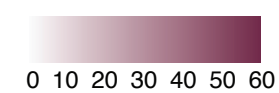
Visualization 1 Statement of Purpose: The purpose of this visualization is for viewers to explore the differences in opioid overdose trends between states that did not expand Medicaid from 2010-2019 and states that expanded Medicaid in the first wave of states to do so in 2014, or what I am calling “early expanders.” Both heatmaps begin at 2010, so viewers should pay attention to how the groups compare before expansion was an option and then after the early expanders did so.

Data Source | Centers for Disease Control and Prevention

Opioid Overdose Rates in Non-Expansion States vs. Early-Expansion States 2010 - 2019



This group of states was the first to begin expanding their Medicaid programs under the Affordable Care Act, beginning in 2014†



Opioid overdose rate per 100,000 population

†North Dakota also expanded their Medicaid program in 2014 but was not included included in this analysis due to missing overdose mortality data

Viz 1 Statement of Purpose: The purpose of this visualization is to highlight three aspects of opioid overdose data: First, the general trend of increasing opioid overdose deaths in general between 2014 and 2020—numbers skyrocket for both men and women in all age groups. Second, the divergence in those numbers for men and women as time goes on. And third, the specific age group of men seem to particularly affected by the opioid crisis.

Opioid Overdose Deaths Have Increased Dramatically, Particularly Among Men 25−44 Years Old

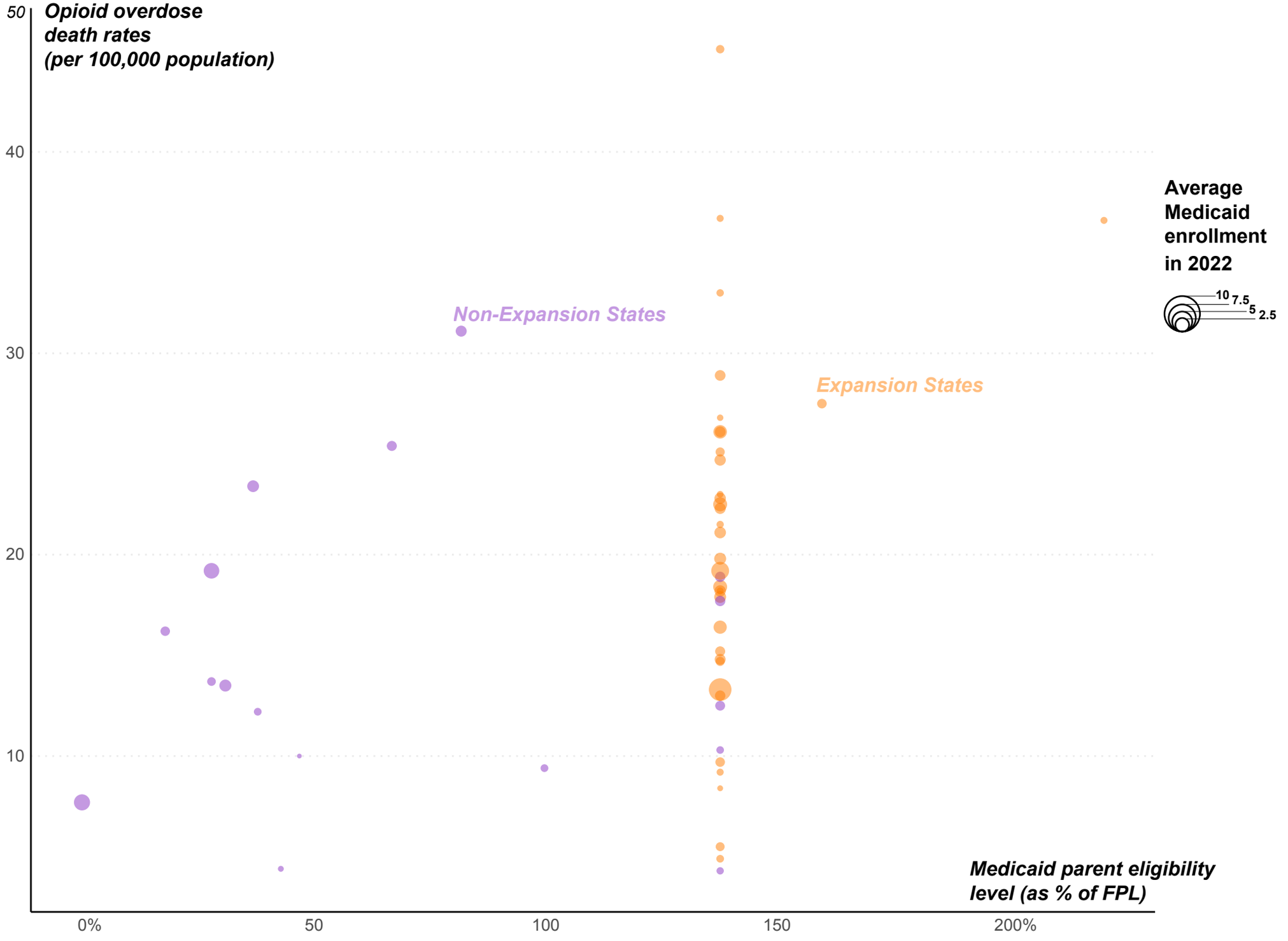
Opioid overdose deaths in the U.S. by gender and age group, 2014−2020

Data: Centers for Disease Control and Prevention WONDER Database

Visualization 2 Statement of Purpose: The purpose of this visualization is for viewers to explore the data and think about the relationship between a state's set Medicaid eligibility threshold, the average number of people who were enrolled in 2022, and that state's opioid overdose mortality rate. Additionally, what does the state's Medicaid expansion status tell the viewer about the state's general values regarding the Medicaid program? Does their average enrollment align with that?

Medicaid Eligibility Levels and Opioid Overdose Rates in U.S. Expansion and Non−Expansion States in 2022

Non−Expansion states had lower eligibility levels, but generally comparable overdose rates and average enrollment in 2022

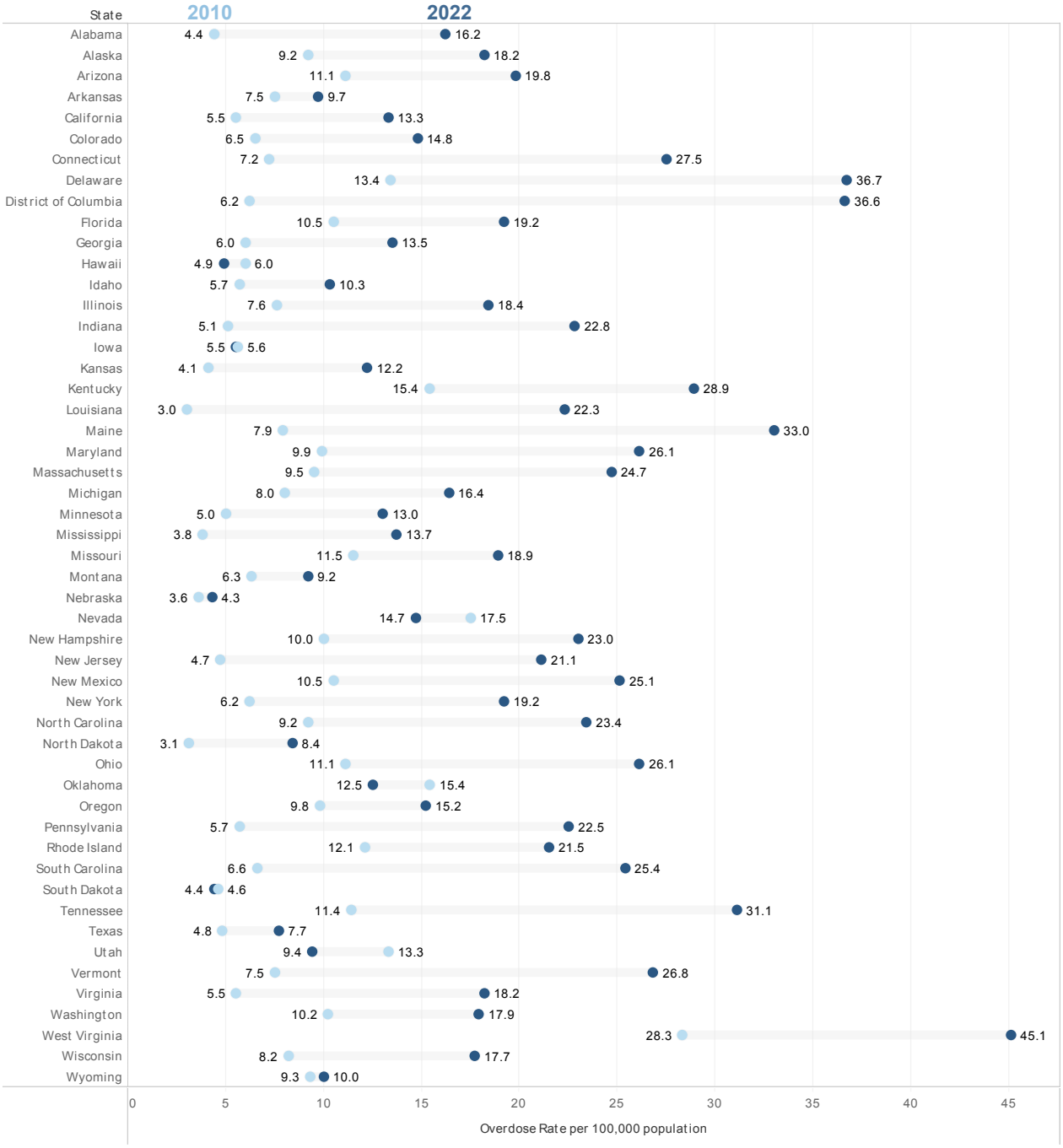


Data: Centers for Disease Control and Prevention | Kaiser Family Foundation | Centers for Medicare and Medicaid Services

Statement of purpose (viz 9): The purpose of this visualization is for viewers to note the dramatic increase in opioid overdose rates from 2010 to 2022. Overdose rates increased for almost all states, though there are three states that saw a decrease, so viewers should be able to note which states those are and that they don't fit with the overall national trend.

Opioid Overdose Rates Increase Dramatically Since 2010 in Most U.S. States

Opioid overdose mortality rates in all U.S. states in 2010 and 2022



Data Source: Centers for Disease Control and Prevention WONDER Database

Statement of purpose (for tableau map .twbx file): The purpose of this visualization is for viewers to explore the data on the map and in the tool tip. There is information related to Medicaid policy (eligibility levels and expansion status), the outcomes of those policies (average enrollment for 2022), and *potential* outcomes of those policies (opioid overdose mortality). Viewers should review the data and ask their own questions about what they think the data is saying.