

US Healthcare and the party line

Background

On December 4, 2009, the Senate Democrats passed with a simple majority, HR 3590, the Patient Protection and Affordable Care Act (ACA), 61-39. Republicans opposed the bill. On March 21, 2010, the 111th Congress House of Representatives passed the bill (219 -212). The bill had 34 Democrats who opposed the bill. Fast forward, on May 4, 2017, the 115th Congress voted to repeal and replace the ACA. The Republican party created their healthcare insurance bill, HR 1628, The American Health Care Act (AHCA). The bill passed in the House along party lines (217-213) but with 20 Republicans joining the Democrats and 1 not voting. The Senate bill vote was to partially repeal the ACA. It failed in the Senate (51-49) so the ACA was saved.

Health Insurance is universal in many countries, but not in the United States. It has been a critical talking point for many years. The purpose of the ACA was to provide affordable health insurance to those whose income fell between a certain % of the federal poverty line and expand the Medicaid program based on income that fell at a certain % of the federal poverty line. States have the option to opt-in, but not all have expanded their Medicaid program. Is Health Insurance a right or a privilege? Should the government provide health insurance for all its citizens? We have heard countries around the world who provide such a benefit to their citizens. Democrats view health insurance as a right for all Americans, while Republicans (those who want to repeal ACA) see it as an overreach, not something that the government should do, as well as make deep cuts to Medicaid. The deep cuts to Medicaid is another talking point that has come time and time again much longer than the ACA issue.

There is broad consensus that an estimated 20 million to 22 million individuals have obtained healthcare insurance since 2010 primarily through the expansion of Medicaid, coverage through parents' policies for young adults until age 26 years, and the healthcare exchanges. But that leaves more than 25 million US residents without health insurance. Is the United States a just and fair society if so many individuals lack health care coverage? The United States guarantees all citizens an education, access to fire and police services, a national postal service, protection by the military, a national park system, and many other federal- and state-funded services. But the country has not yet committed to ensuring that all of its citizens have health care coverage.

(Howard Bauchner, MD, Health Care in the United States: A Right or a Privilege, JAMA. 2017;317(1):29. doi:10.1001/jama.2016.1968)

Goal

Because of the enactment of the ACA, it has increased the number of people who have health insurance. Such a large increase could show that this was needed. If there was no public insurance how many people would this affect? The ACA is not without its issues, and supporters agree that the program can be improved to lower costs. Opponents on the other hand would like to get rid of it completely and have said they have an alternative plan but have not provided any documentation to the effect.

The goal of this project is not a discussion in support of ACA or the Medicaid expansion program, but to provide a background on health insurance in the United States and whether having health insurance is supported along party lines. If health insurance changes which part of the country will this impact? The audience for this project is anyone interested in the debate over health insurance, is it a right, or is it an overreach?

Research questions I want to answer:

Since the ACA was enacted, there has been a push to expand Medicaid and Medicare (Public Health Insurance) by the Democrats and repeal and replace by the Republicans. Currently, 40 out of the 52 states have expanded the program. Some questions that I would like to answer:

- How has healthcare coverage changed from 2012 to now? Do we see an increase or decrease in those who are uninsured and insured?
- Is there a correlation between party affiliation and the percentage of the uninsured population?
- Are states represented by Democrats have a higher % of insured when compared to Republicans?
- Do states represented by Republicans have a higher % of uninsured when compared to Democrats?

- Which states do we see a large % of uninsured? Which states do we see a small % of insured?
- Overall, what % is red and what % is blue that is insured and uninsured?
- Is there a pattern with party-affiliated represented states?
- Who is impacted if ACA and Medicaid and Medicare expansion is cut?

Visualization Method

Which visualization methods you selected and why? What specific objectives do you plan to achieve with each visualization method used in the project?

The visualization method that I chose to display my data is through the ESRI Dashboard. The Dashboard tool can be a single or multi-element display. This is my attempt of a coordinated map view by linking a map to a pie chart. Though the other elements in the dashboard are not linked they summarize or reflect what is in the data. The Dashboard allows various elements to be added to a display, from a map, pie chart, graph, table, text, gauge, etc. It also allows an interactive feature of pop-ups, hover, zoom and flash. It provides the map viewer the ability to analyze the data based on various elements.

The map feature is a nominal map that categorizes the 48 contiguous states by political party affiliation. The map is displayed in the center of the dashboard to draw the map viewer immediately because of the color hues of red and blue. These two colors should alert the reader that this will be something comparing the two main political parties in the United States. The map is overlaid with a circle representing the proportional symbol attribute of the percent of the Uninsured population (2022). The symbols are scaled proportionally to the magnitude of the data using an equal interval classification to make the map easier to read and understand the legend. The legend is placed directly to the left of the map so that the viewer will be able to understand the symbology displayed on the map. Overlaying the proportional symbol layer over the red and blue background allows the user to visually see what areas are denser than others.

There are a series of pie charts based on the percentage of uninsured and insured in a given year. I chose 2012, 2017 and 2022. Ideally, I wanted to add 2010 healthcare data coverage, but this was not available, so I took the earliest data available, 2012. I then added 2017 because this was the time that Congress voted to repeal and replace the Affordable Care Act (2017), and the last was 2022, to compare the status of healthcare coverage to a more recent time (latest year available). Having the 3 pie charts along the left side of the dashboard will provide over time if insurance coverage is decreasing or increasing in the US.

On the right side of the dashboard are two other pie charts. The top pie chart is an interactive pie chart. When the user selects a state in the dropdown menu above the pie chart. It will automatically zoom to that state in the map and the pie chart will show the amount of uninsured and insured for that state. When the map viewer hovers over any of the pie charts it will provide the count and percentage of the uninsured and insured population. The pie chart underneath the interactive pie chart shows the count and percentage (hover to see %) of the uninsured population based on the 2017 repeal and replace vote that was defeated in the Senate.

The last element on the right side of the dashboard is a table of the 48 contiguous states sorted by the % uninsured population from high to low. This will rank the states based on the highest % level of the uninsured in a state to the lowest.

At the bottom center of the dashboard, just below the map is a text box element that provides a short contextual background of the data and dashboard. The next and last section of the dashboard is a table providing the 2017 vote count to repeal and replace the ACA. The cell counts are filled in with the same colors on the map to tie everything together.

Learning Outcomes

Discussions of your learning outcomes, the limitations of visualizations and data, lessons learned and future work.

When I initially gathered the data I thought I would be able to add insured data broken down by percent public and private in the years covered. I found that it would be comparing apples to oranges. What was collected in the earlier years was not available in the later years. It would also make the dashboard more difficult to read. It was better to simplify the data based on the two main data values, uninsured vs insured within congressional districts. Census data is very complex when trying to compare over time. The field names/descriptions of each field could be confusing when using multiple tables based on multiple years. I learned to extract the fields based on the id, for example, S2701_C02_01E was the same field name in S703 and S704 so that it would be easy to compare (see table names and description under the metadata section). Unfortunately, not all years had the same fields, so I had to limit my scope.

When I sent out my survey, the dashboard was not completed. As I fleshed out what I could and could not do or display I began updating the dashboard along the way. I was able to make some changes that I felt aligned with some of the

comments to make it a better display (ex. better labeling). I added additional features after the review was completed that I hoped addressed some of the comments. Overall, the majority of the comments aligned with my conclusion of the data.

Once I was able to get through the data hurdles and simplify the data. I was able to analyze the data better. The map, which shows the proportional symbol and the nominal background map of the congressional districts in red and blue shows that the southern and southeast regions of the country have a high percentage of uninsured population, for example, Texas, Georgia, and Florida.

The pie charts on the left side show that the count and percentage of the uninsured population decreased from 2012 to 2017 and then again to 2022. The elements on the left, the congressional district pie chart, and the table show that the states represented by the Republicans have a higher percentage (54.5% to 46.5%) of uninsured than the Democratic-represented states. The table shows that the top 5 states that have Republican representatives have the highest percentage of uninsured. This does provide some correlation between states that have Republican representatives have a higher percentage of uninsured.

The final question is who is impacted if ACA, Medicaid and Medicare are replaced and repealed or even eliminated. The map already shows a large number of uninsured constituents in the southern states. So the question is between 2012 and 2022, there was an increase in those covered by health insurance by 38.9 million people. Who are those 38.9 million people? How many of the 38.9 million people are under the ACA?

Future work may be to add another tab that provides a map of the insured population breakdown by Private and Public health insurance and also find a way to incorporate the percentage of population who fall under the guidelines of the Affordable Care Act. In addition, possibly add a map that shows which states opted-in to the Medicaid and Medicare expansion program. The more data I found, the more complex things got, and deciding how to display the data so that it was logical for a map viewer to understand.

Metadata

Spatial Data

- [S2701 Poverty Status in the past 12 months \(in 2022 inflation-adjusted dollars\)](#)
- [S2703 Private Health Insurance Coverage by Type and Selected Characteristics](#)
- [S2704 Public Health Insurance Coverage by Type and Selected Characteristics](#)
- [Cartographic Boundary Files \(census.gov\) \(2022\)](#)
- [Urban and Rural Areas Boundary](#)

Table

- [US Presidential Election Results by County\(csv\)](#)

Software

ArcGIS Pro – used to view, clean, and join data.

Spatial and temporal extent

The geographic coverage of this project is the 48 contiguous states of the United States, county, and 115th Congressional District. The attribute data is based on the US Census American Community Survey (ACS) 5-year estimate for 2012, 2017 & 2022.

Resolution

Mapping at the County Level. Mapping at a smaller boundary would make the map difficult to view. Counties - 1:5,000,000 (national)