

DESIGN IDEATION USING FDS

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Synopsis

Overall, this activity helped us solidify the focus of our visualization project. We identified several core visualizations we wanted to include on a final dashboard: A United States Map visualization including indicators by state, an aggregated time series visualization showing the average indicator behavior over time, and a visualization concerned with the state-wide budgets for the ACA. We discussed that the United States Map would be a general center of our visualization, complemented by the other two visualizations. The key metrics to be presented on the US Map are: coverage by state, premiums by state, minority population coverage, and political affiliation, among others. The data visualization will benefit from cross-filtration across visuals as well as date filtering.

The Five Design Sheets activity was helpful in bringing these final ideations together. Additionally, meeting before class allowed us to navigate the activity more clearly and effectively. In this meeting, we were able to freely discuss ideas, possibilities, data sets, etc. Then, upon moving to the Five Design Sheets, we saw these ideas come together in a much more effective way. This process will help us move forward to the next step of the project process with much more clarity and direction.

Brainstorming: Analyzing the Effectiveness of the ACA

By: Emma Carlson

Relationships:

- Income Population over time + ACA enrollment over time
- Paid Premiums over time + associated ACA coverage (\$)
- States Opting In to Medicaid Expansion + Avg. Income by State
- States Opting In to Medicaid Expansion + Avg. Premium by State



Key Metrics:

- Income by State, Year, Demographic → CENSUS
- Insurance Coverage Type → CENSUS
- Premiums Paid
- Medicaid Enrollment
- # Uninsured

Data Filter/Clean

Census Data [2010-2020]

- ↳ Clean / Normalize Format

↳ Union all Years

↳ Final Clean

Insurance Data [2010-2020]

- ↳ Find matching format / vars

Income Data [2010-2020]

- ↳ Same needs as Census Data

Geographic

ACA & OBAMACARE

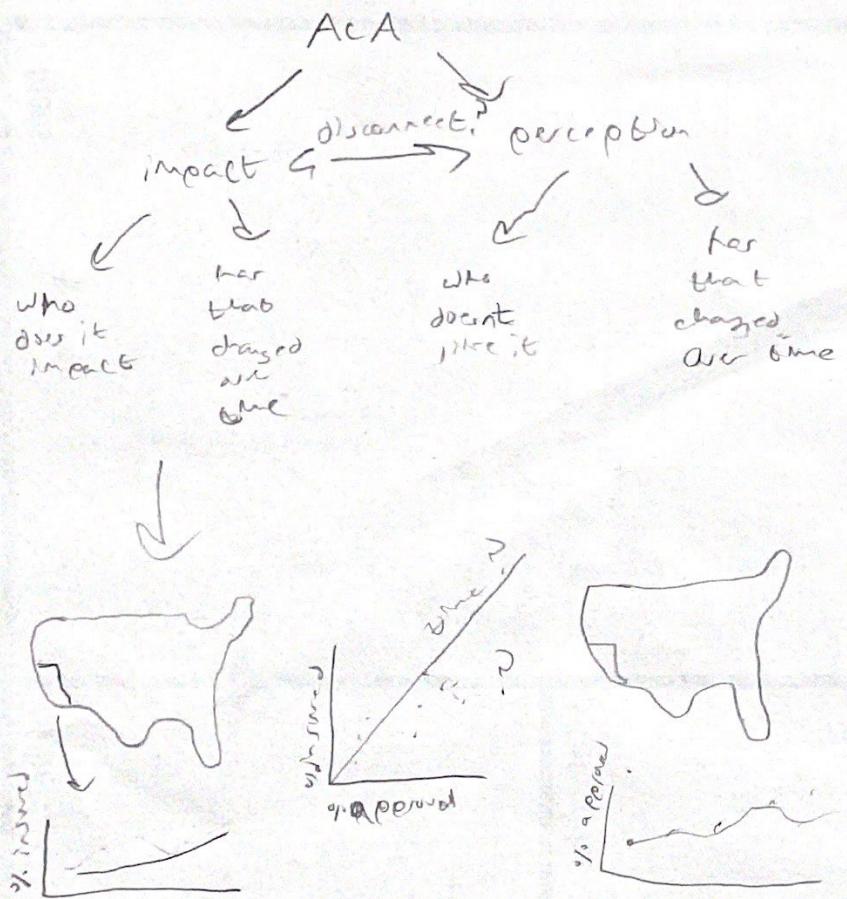
- Premiums → #/% increase
- % Insured → % or #
- ACA/Medicaid Enrollment → %/#
- Opt In → Y/N

GOALS: Some Questions to think on....

- What coverage increase or decrease is present, like to Premium +/-?
- What was the outcome of states not opting in to Medicaid expansion? comparison to opt ins?
- What groups/income brackets/ages/race or ethnicities etc. are still uncovered despite this? What groups are better covered?
- Where are the coverage changes most evident? Are the changes still present w/out Medicaid opt in?
- How does eligibility affect coverage?

Possible Considerations

- How do we consider changing income or poverty levels?
- What is our "sample"? Are we concerned w/ all Americans or only eligible ones?
- How do we determine eligibility? or How is it determined already?
- Do we care about a states political party or whether or not they supported? Probably not
- What are our biases and how do we avoid reading them into the data?
- Is census data reliable? What populations might not be included?



other considerations we can apply

age

race → have the plot break it down by race over time

location

markets

the

also maybe

see if there is a high overlap of the approved in a state

in accordance with its demography

- if you build one you might need more

- or maybe it's not positioned →

- how bout spending over time vs approval
- what
- sum up to states how to quantify effectiveness in policies
- quality of care vs money spent
- health metrics over time
-

What is the story we're trying to tell?

Has to be a time series

Present needs more broke down by race

America America

F5

Y

H

Adjusted

Premium
for infant

Money is
average

State is per
covered

2000

Adjusted
Rate

% of house
Budget

2020

Highlighted were
ACA is passed

Can click to expand
for more information
ie, mean / median / mode / quartiles

gives 2 state time series

of the premiums

→ average by race?

Red / Blue minimum for support FV,
Dem / Rep → stronger color and support

Requires separate database probably

Filters? OR separate displays?

Normal Average (last)

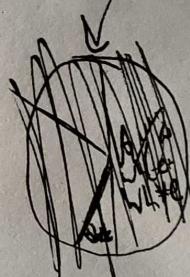
or some other aggregation Red vs Blue
(states), Multiple, Normal Ave
Coverage by race in one
Race Next

Tied to same bar

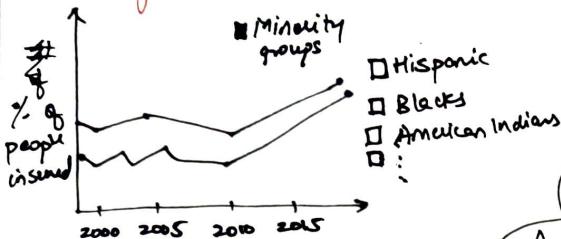
Breakdown by family earnings

Percent of ~~Family~~ Household

Budget ~~breakdown~~ might be
better statistic



People benefitting from ACA.

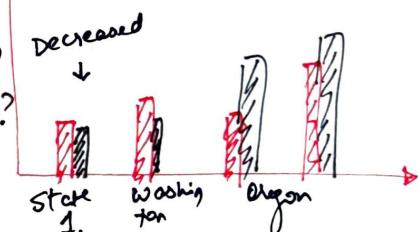


AFFORDABILITY

CARE ACT.

Premiums

Before ACA
Growth after ACA



Did premiums increase or decrease?

COLORS TO BE USED

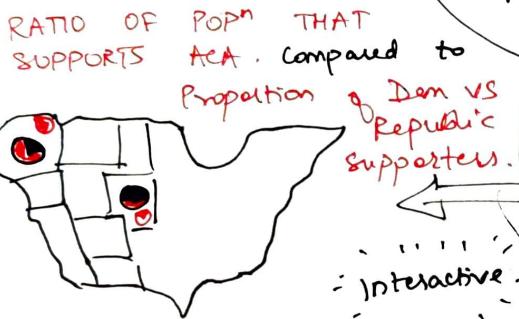
Blue / Red — is political
Use other colours.

TABLEAU or R w SHINY package

- Analyze using R / Python
- Create a Dashboard using Tableau

Hospital bill for a minor sprain

Hospital stay
100
50
1000
5000
100,000

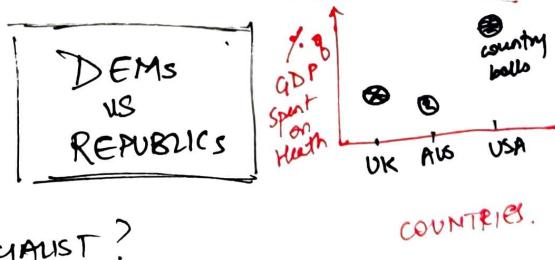


% of Population insured being represented by Colour saturation.



Does providing insurance to all change the country?
CAPITALIST → SOCIALIST?

DEMOS VS REPUBLICS



1. Ideas

- Maps and Geographic based visualization
 - coverage
 - demographics
 - political affiliation
 - premiums
- Pie Charts for Support for/against
- Aggregate data for filtering purposes (time series)
 - demographic
 - premiums
- Time Series representation for
 - coverage
 - premiums
 - demographics-related data
- Breakdowns by State w/
an averaged metric by year
- Normalized comparisons by state
- Take into account changes
 - inflation
 - premium by % income
 - coverage % income

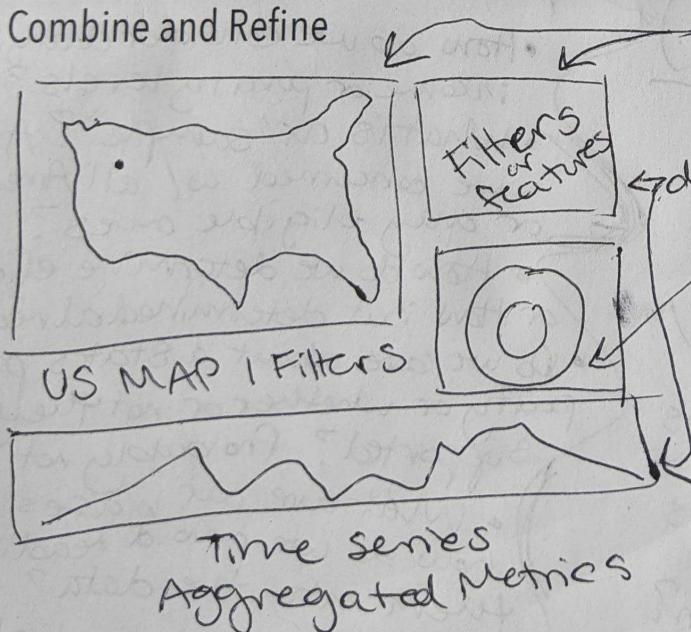
2. Filter

- % GDP spent on health
Split by quintiles
(still relevant, but not included)
- What was previously covered by public insurance
- # of individuals eligible before and after
- State-level support data
- Directly determining whether Act is a political issue

3. Categorize

- ① Interactive US map
 - coverage
 - communities benefitting
 - premiums (positive/negatives)
- ② Aggregated Time Series
 - calculates state-level data to a year-level metric
- ③ State Public Healthcare funding spending,
Federal Healthcare funding

4. Combine and Refine

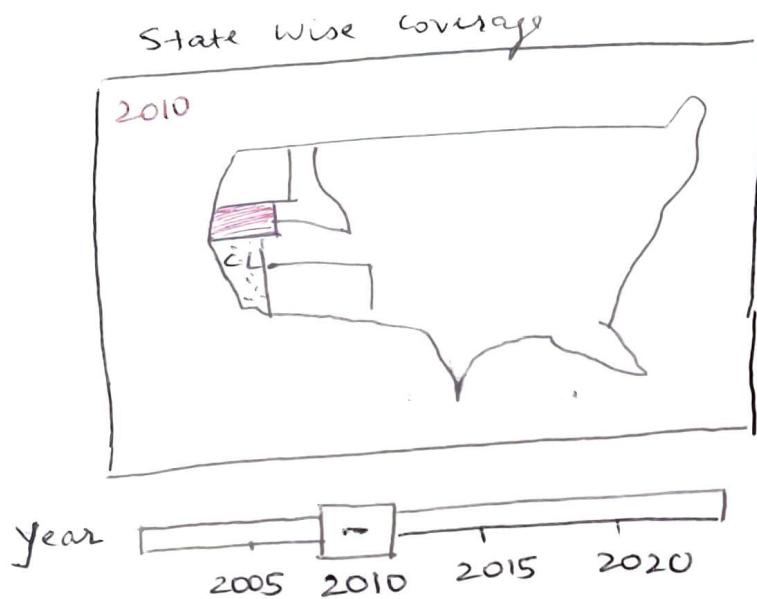


- coverage
 - premiums
 - demographics
- update filters / sliding bar
- Healthcare funding
Statewise budgeting

5. Question

How effective is the Affordable Care Act in regards to coverage, premiums, and its ability to serve minority communities?

Layout



Select feature

- Percentage of population insured
- Percentage of minority communities being covered under ACA.

Title: Affordable Care Act
Author: Emma, Eli, Nate, Reyya
Date: 11 / 4 / 2021
Sheet: 3
Task: ACA implementation & coverage.

Operations

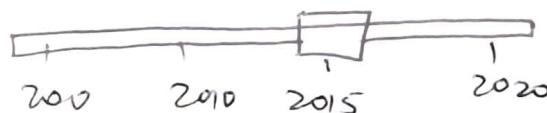
- Select feature to display the Population covered using color saturation, or Percentage of minorities benefiting from Act.
- Select a Year to be displayed

Focus

CALIFORNIA



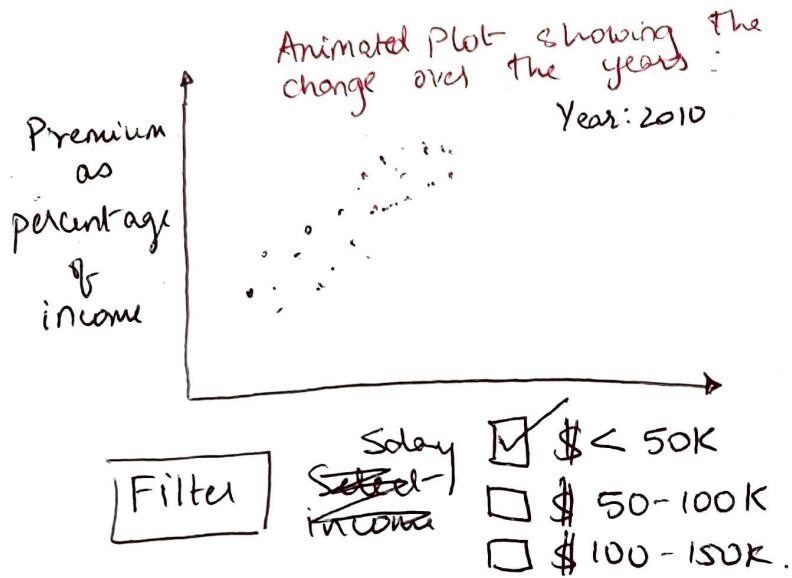
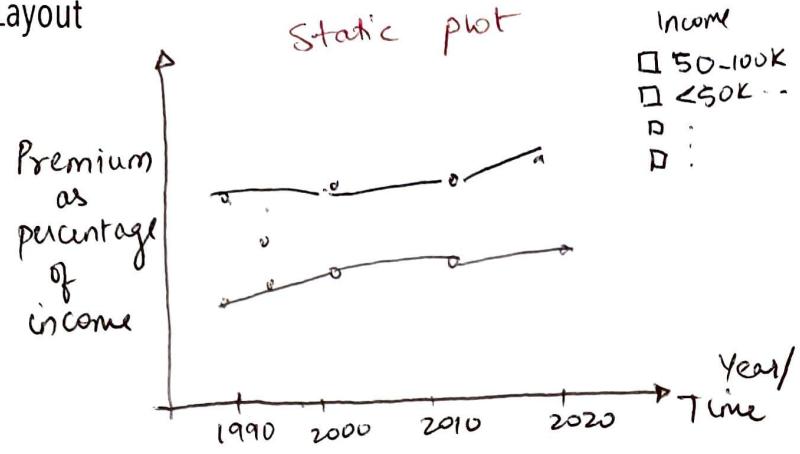
- XY% covered by ACA.
- P% support Dems ~ support Reps



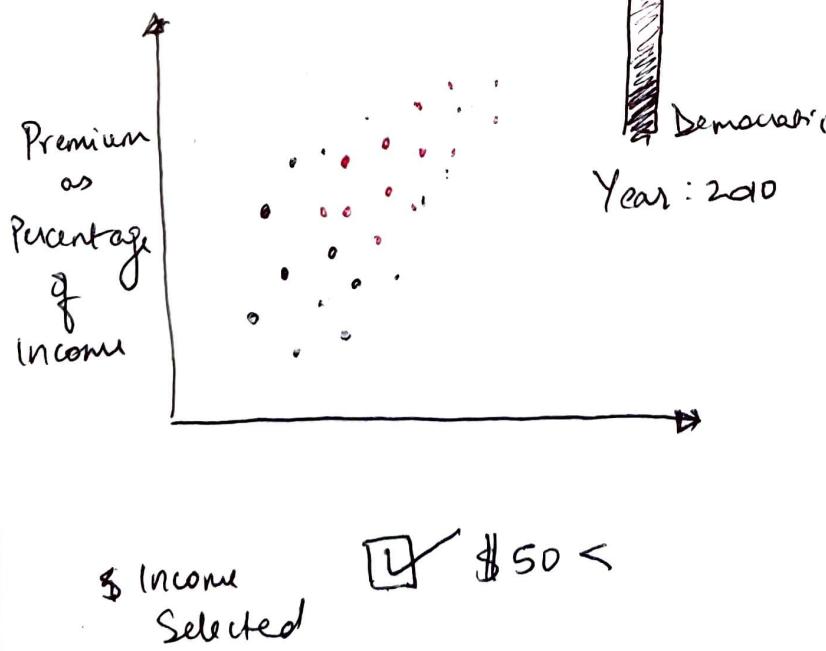
Detail

- Simple to understand & representative of all states.
- Can further be improved by adding a split to show unimproved coverage for each minority group

Layout



Focus



Title: Affordable Care Act-
Author:
Date: 11/4/21
Sheet: 4
Task: Effect of ACA on Premiums

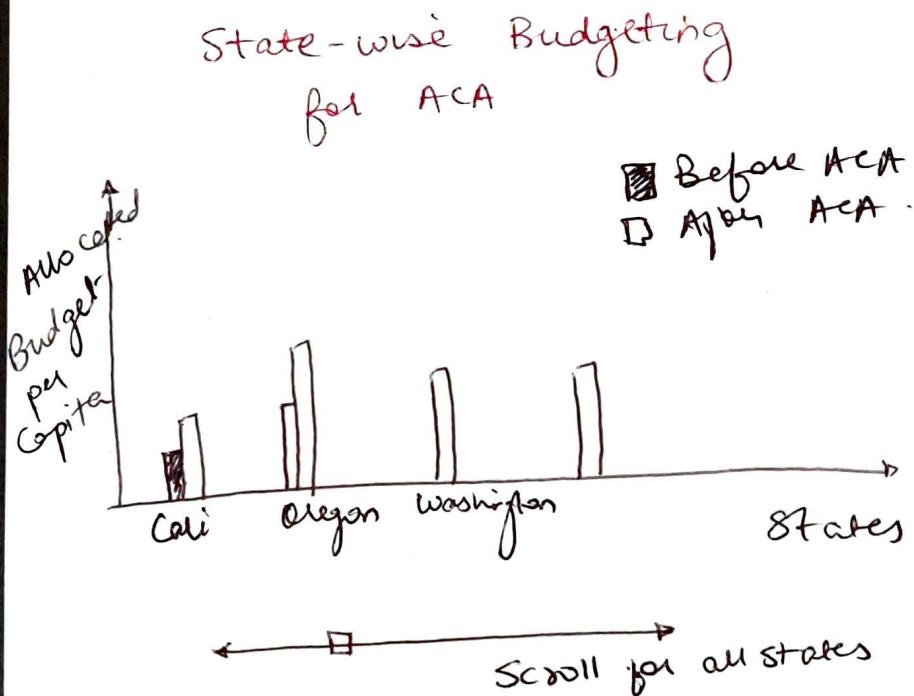
Operations

- 1] Static plot has no buttons
- 2] User can select the income category for the Animated plot. It will dynamically display the change in datapoints over the years.

Detail

- Displaying the perceived disadvantages of ACA, which are increased premiums
- Analyzing the correlation between elected political parties in states & the implementation of ACA.

Layout



Title: Affordable Care Act -
Author:
Date: 11/4/21
Sheet: 5
Task: State wise budget Allocation

Operations

- Static
- Visualization

Focus

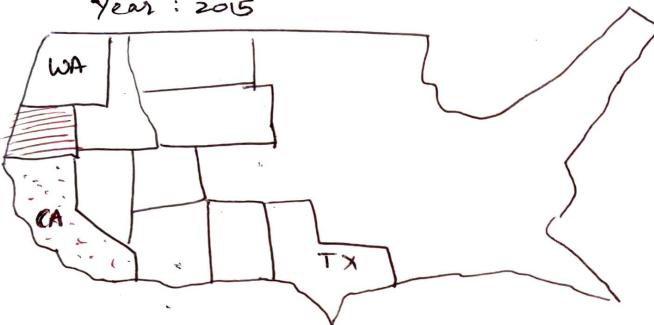
Detail

To observe how states budget have changed to accommodate for the ACA, & whether this change is inclusive of the state's population

ANALYSIS OF AFFORDABLE CARE ACT

STATE-WISE COVERAGE

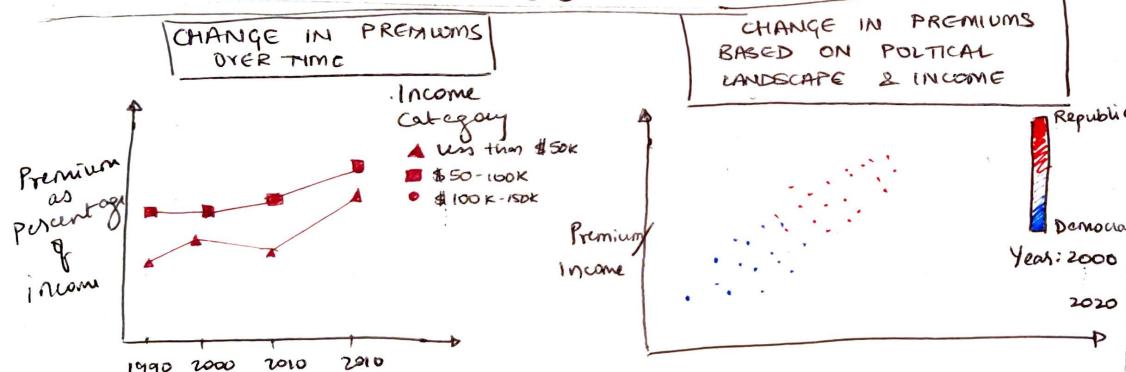
Year : 2015



Select Feature

- Percentage of population insured
- Percentage of minority communities insured

Year



Select Income Category

Less than \$50k

Between \$50-100k

Between \$100-150k

STATE BUDGET Allocation to ACA per Capita

