

# Medicaid Data Trends

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## Data Exploration

This simple demonstration will explore the impact of the increase in Medicaid eligibility as a percentage of the federal poverty line.

I will be exploring trends in four separate data sets. First, I will look at the number of emergency room visits per thousand Americans, pear year, as measured by the Kaiser Family Foundation:

```
## [1] "Emergency Room Visits Per Thousand Americans"
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    372.0   400.5   415.5   415.4   437.0   445.0
```

Second, I will explore the percentage of Americans who report foregoing medical care due to cost per year with data from the State Health Data Compare Assistance Center :

```
## [1] "Percentage of Americans Reporting Foregoing Medical Care Due to Cost"
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.09881 0.13262 0.13523 0.13790 0.14630 0.16928
```

Third, I will examine the net assets and debts of Americans in the lowest 20th percentile of income earners per year using data from the Federal Reserve's Consumer Finances Survey:

```
## [1] "Assets and Debts of Lowest 20% of American Earners"
```

```
##      Assets      Debt
##  Min.   :12.61  Min.   : 7.654
## 1st Qu.:15.88  1st Qu.: 9.670
## Median :17.67  Median :10.739
## Mean   :21.49  Mean   :10.341
## 3rd Qu.:26.15  3rd Qu.:11.395
## Max.   :36.11  Max.   :11.860
```

Finally, I will explore the reported health statuses of Americans per year using data from the Center for Disease Control. This data reports the percentage of Americans claiming "fair" or "poor" health by year.

This dataset separates health statuses by demographics, including gender:

```
## [1] "Health Status by Gender"
```

```
##           Male           Female
## Min.      :8.700   Min.      : 9.100
## 1st Qu.:8.800   1st Qu.: 9.275
## Median :9.000   Median : 9.600
## Mean      :8.979   Mean      : 9.600
## 3rd Qu.:9.100   3rd Qu.: 9.875
## Max.      :9.400   Max.      :10.100
```

Race:

```
## [1] "Health Status by Race"
```

```
##           White           Black           Hispanic
## Min.      :8.20    Min.      :13.40    Min.      :12.00
## 1st Qu.:8.35    1st Qu.:13.60    1st Qu.:12.47
## Median :8.65    Median :14.25    Median :12.90
## Mean      :8.60    Mean      :14.17    Mean      :12.81
## 3rd Qu.:8.80    3rd Qu.:14.55    3rd Qu.:13.18
## Max.      :9.00    Max.      :15.00    Max.      :13.30
```

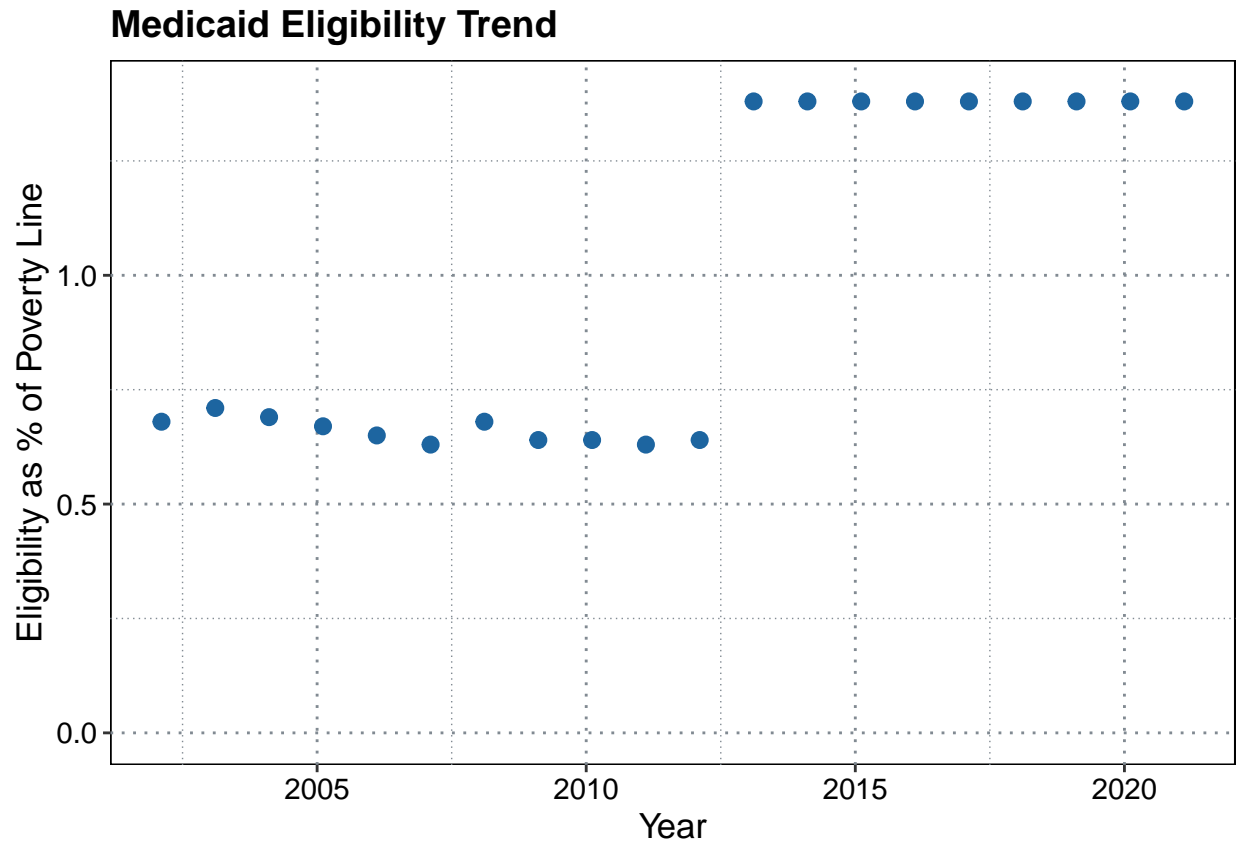
And income level. These variables report health statuses for Americans based on their income as a percentage of the federal poverty line (e.g., the variable “100to199pct” is the reported health status of individuals earning between 100% and 199% of the poverty line).

```
## [1] "Health Status by Income Level"
```

```
## Under100pct  Btwn100and199pct Btwn200and399pct  Over400pct
## Min.      :19.80   Min.      :14.20   Min.      :7.900   Min.      :3.900
## 1st Qu.:20.68   1st Qu.:14.40   1st Qu.:8.225   1st Qu.:4.025
## Median :21.10   Median :14.90   Median :8.400   Median :4.250
## Mean      :21.08   Mean      :14.77   Mean      :8.421   Mean      :4.250
## 3rd Qu.:21.57   3rd Qu.:15.00   3rd Qu.:8.675   3rd Qu.:4.375
## Max.      :21.80   Max.      :15.40   Max.      :9.000   Max.      :4.700
```

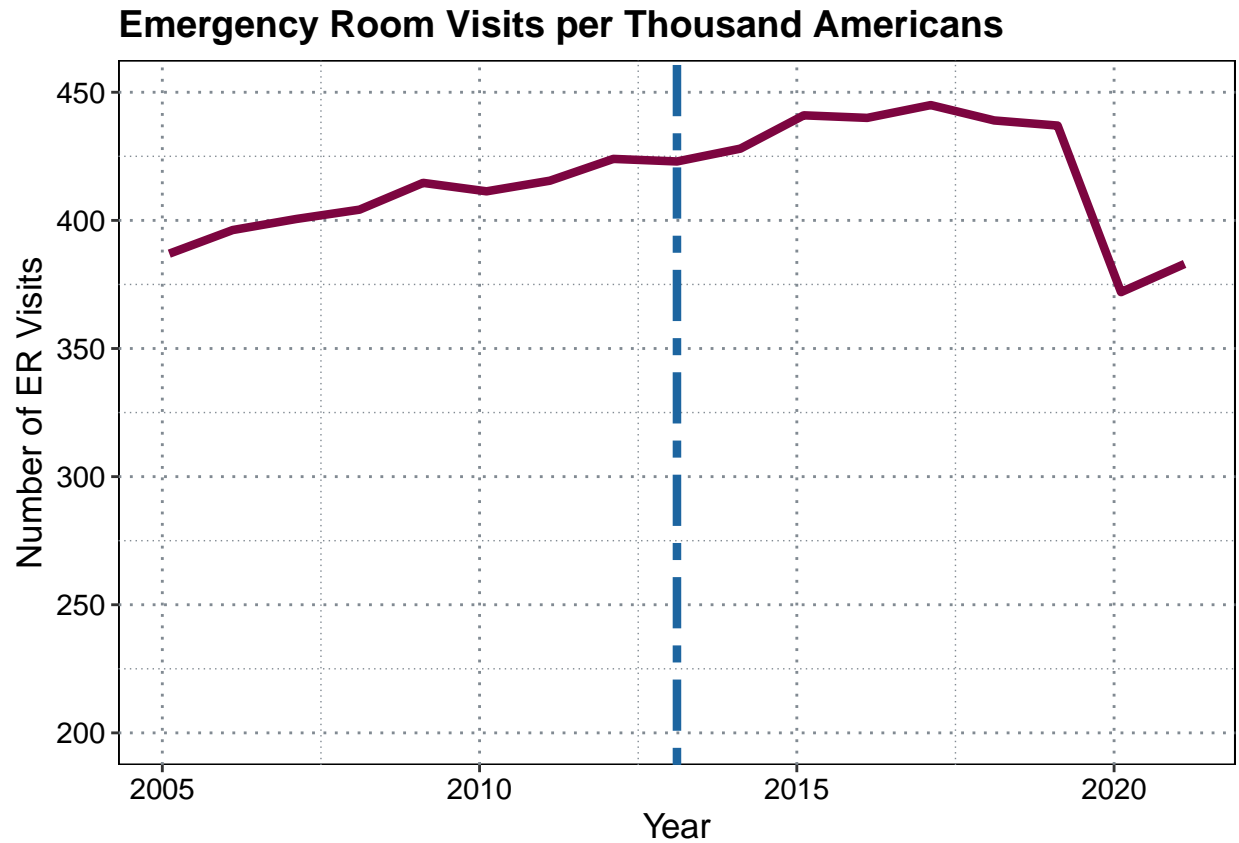
## Data Trends

This trend shows the average percentage of the poverty line to qualify for Medicaid coverage (this data was retrieved from the Kaiser Family Foundation). In 2013, the eligibility leaps up to 138% due to the implementation of the Affordable Care Act.



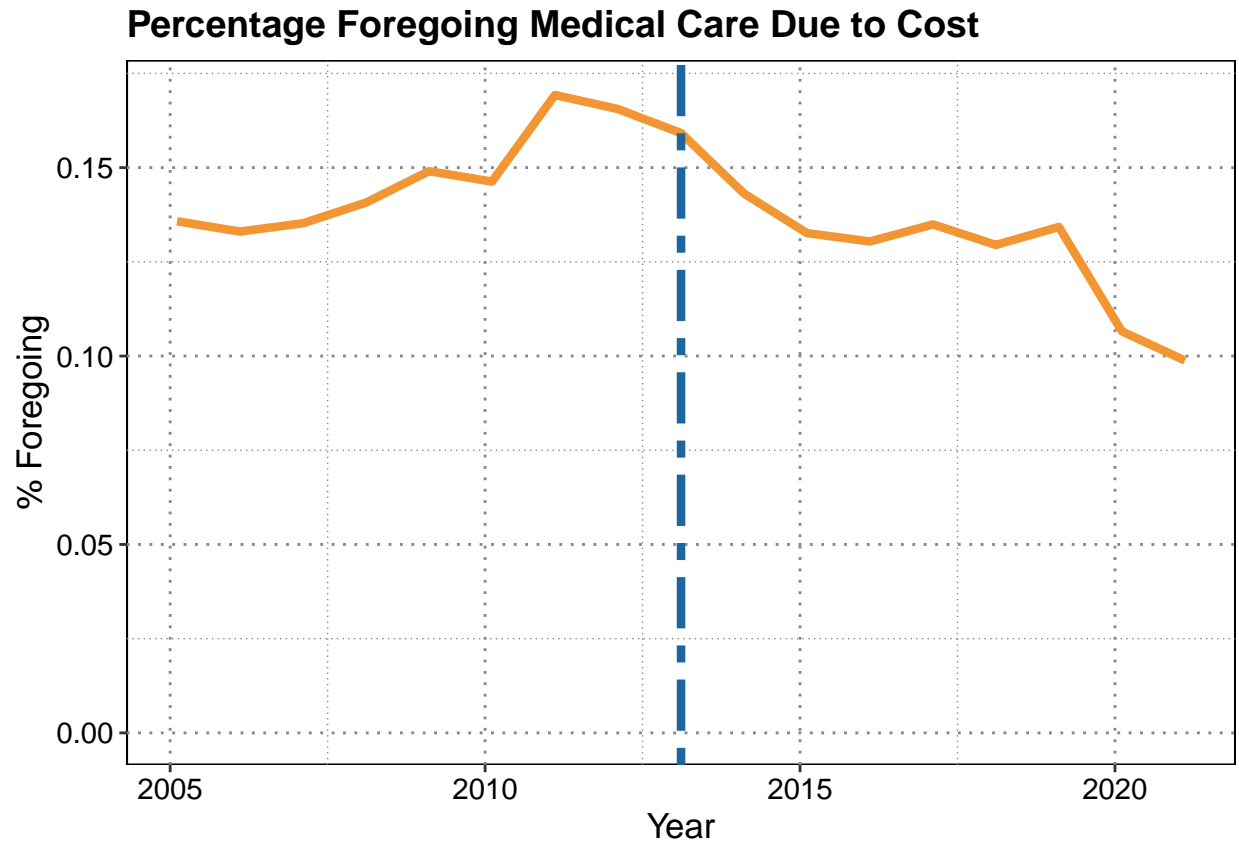
The following data trends will attempt to identify trends that may have been driven by this leap upwards to 138%, with the blue dashed line signifying the implementation of the increased eligibility limit.

First, let's look at trend in hospital visits:



The Affordable Care Act appears to have no impact on the number of Americans visiting emergency rooms. There is a noticeable decline in 2020 which is almost certainly due to the Covid-19 public health emergency rather than a delayed response to changes in Medicaid eligibility.

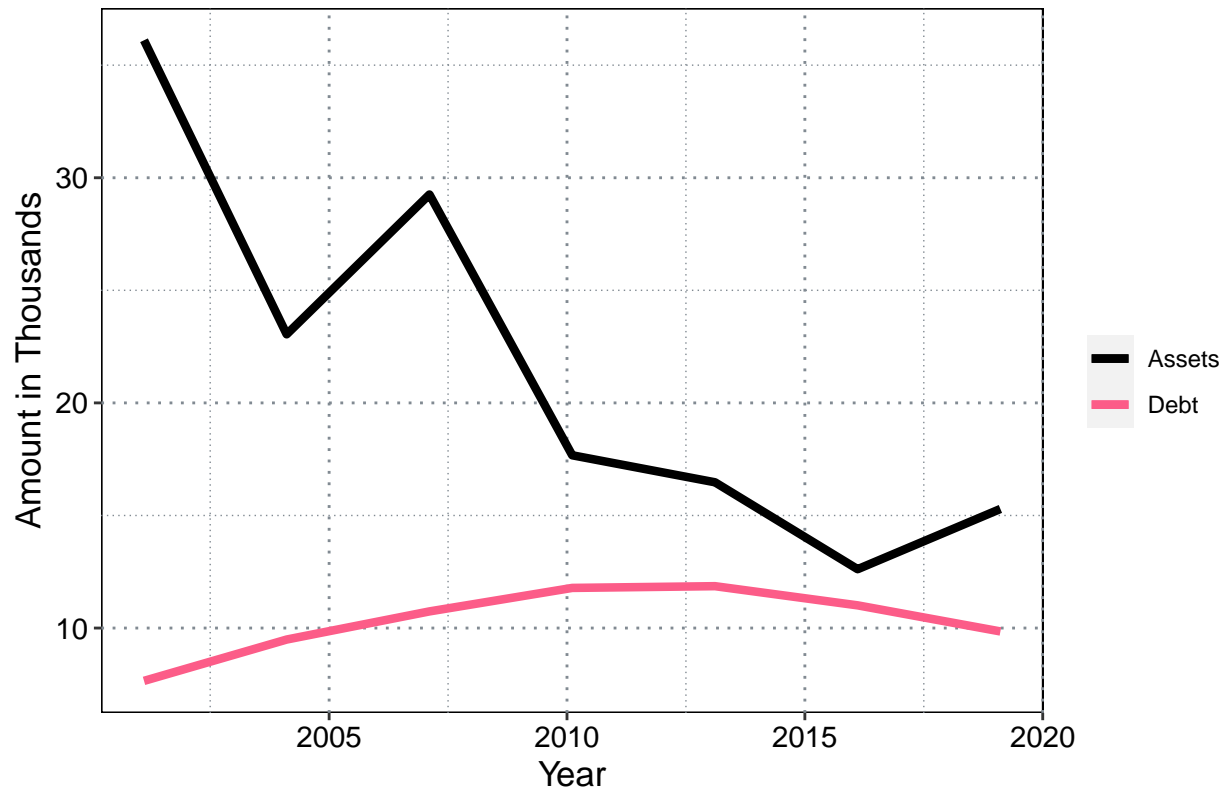
Next let's explore Americans foregoing medical care:



Unlike emergency room visits, the percentage of Americans foregoing care due to cost burdens seems to have been impacted by the Affordable Care Act. The percentage has seen a steady decline since 2013, with only 10% reporting foregoing care in 2021.

Next we'll look at assets and debts of the poorest Americans:

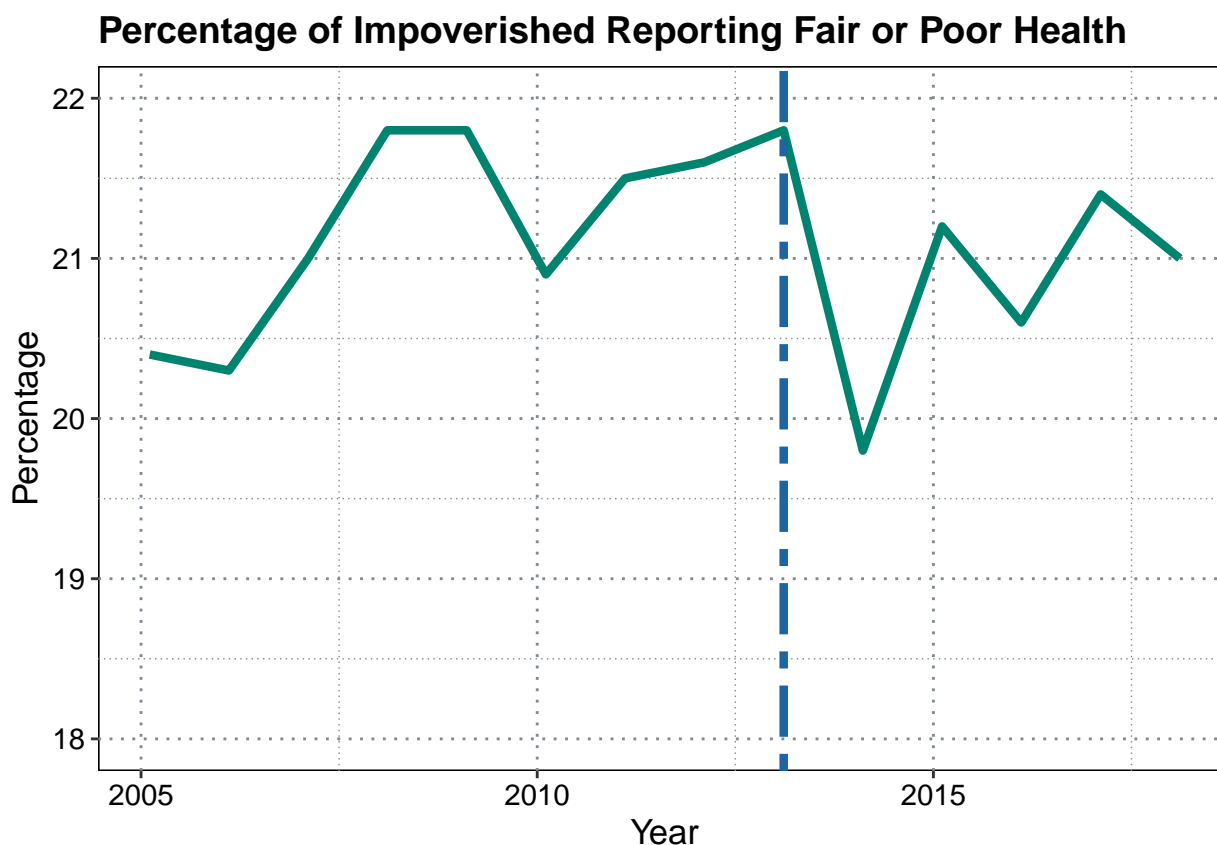
## Debts and Assets of Lowest 20% of American Earners



We would expect Medicaid expansion to have an impact on the personal finances of the poorest Americans given (1) the increased financial security and reduced risk of medical bankruptcy for those with health insurance as opposed to the uninsured, and (2) the presences of state-imposed asset ceilings restricting Medicaid eligibility regardless of one's income.

Unfortunately, this dataset only contains two data points after 2013 per metric, per year, which does not give us a particularly thorough understanding of the post-ACA trend. However, we can see that after 2013, the trend of declining assets and increasing debt appears to have been disrupted.

Next, we'll explore the health status of those living under the federal poverty line:



There does not appear to be a cohesive narrative in this data. The pattern is jagged, with the Medicaid expansion not appearing to have an observable impact on the percentage of the impoverished reporting subpar health. While there is a decline between 2013 and 2014, this is not a compelling trend. The decline can be potentially be explained by low-income Americans reporting improved health with the expectation that they will attain health insurance, only to be left uninsured due to *National Federation of Independent Business v. Sebelius* limiting the expansion of state Medicaid programs or a lack of education or outreach regarding eligibility and enrollment.

The same appears to be true for all income levels:

We can see a clear stratification between reported health status and income level, with higher incomes corresponding with improved health and less variation. However, no income strata appears to have seen a significant change after the imlementation of the Affordable Care Act.