The Effect of the ACA on Dental Insurance Take-up and Utilization

SUMR 2019 Scholars: Saskhia Dieudonné and Nitika Gupta
Mentor: Salama Freed

Study Objectives

We aim to:

1. Evaluate the effect of the ACA on dental insurance rates
2. Quantify the changes in utilization/ frequency of dental visits, dental insurance, and unmet needs due to cost in non elderly low-income adults

Motivation

Half of low income non- elderly individuals suffer from ongoing tooth decay that remains untreated (Surgeon General, 2000)

Low income adults are 40% less likely to have a dental visit in the last 12 months in comparison to higher income (Kaiser family foundation, 2013)

Maintaining proper oral health can reduce the need for preventable costly acute care.

The Affordable Care Act

The Affordable Care Act provided more affordable health insurance coverage through three main policies.

- Allow dependents to remain on parents insurance until age 26
- Medicaid expansion
- Health Insurance Exchanges (Marketplaces)

Options for Dental Care

Before the ACA	After the ACA
Employer Sponsored Insurance	Employer Sponsored Insurance (including dependents up to age 26)
Medicaid (some states w/varying coverage)	Medicaid (all expansion states w/varying coverage)
Standalone Plans (purchased directly)	Standalone Plans (purchased directly)
	Health Insurance Marketplace (standalone or packaged w/Marketplace plans)

Hypotheses

With the ACA, we hypothesize that:

1. The amount of non-elderly low income individuals with dental insurance will increase
2. There will be no changes in utilization of dental visits
3. Unsure if there will still be unmet needs as it depends if higher cost procedures are necessary

Methodologies

To address the objectives of our study we used several different methodologies:

1. Literature review

1. NHIS and MEPS data collection

1. Stata regression analysis

Previous Literature

Our study focuses on the change in general dental coverage from 2009-2019

- Blackwell et al showed the change in dental coverage per region from 2014-2017
- Nasseh & Vujicic demonstrated an increase in dental insurance for working age adults from 2000-2014
- Shane and Ayygari exhibited the increase in dental insurance coverage amongst 19-25 year olds vs. 27-30 year olds based on income

Data Collection

- National Health Interview Survey (NHIS)

- Medical Expenditure Panel Survey (MEPS)

Regression Plan

$$y = mx + b$$

$$0 = \ Before\ the\ ACA = B_{2000-2013} = average(y_{2000} - y_{2013})$$

$$1 = \ After\ the\ ACA = B_{2014-2018} = average(y_{2014} - y_{2018})$$

$$\rightarrow$$

$$\Delta fraction\ covered = (avg\ fraction)_{ACA=1} - \ (avg\ fraction)_{ACA=0}$$

$$where\ ACA = 0 \rightarrow \ B_0 + B_{2contols(2000-2013)} + \ E_t$$

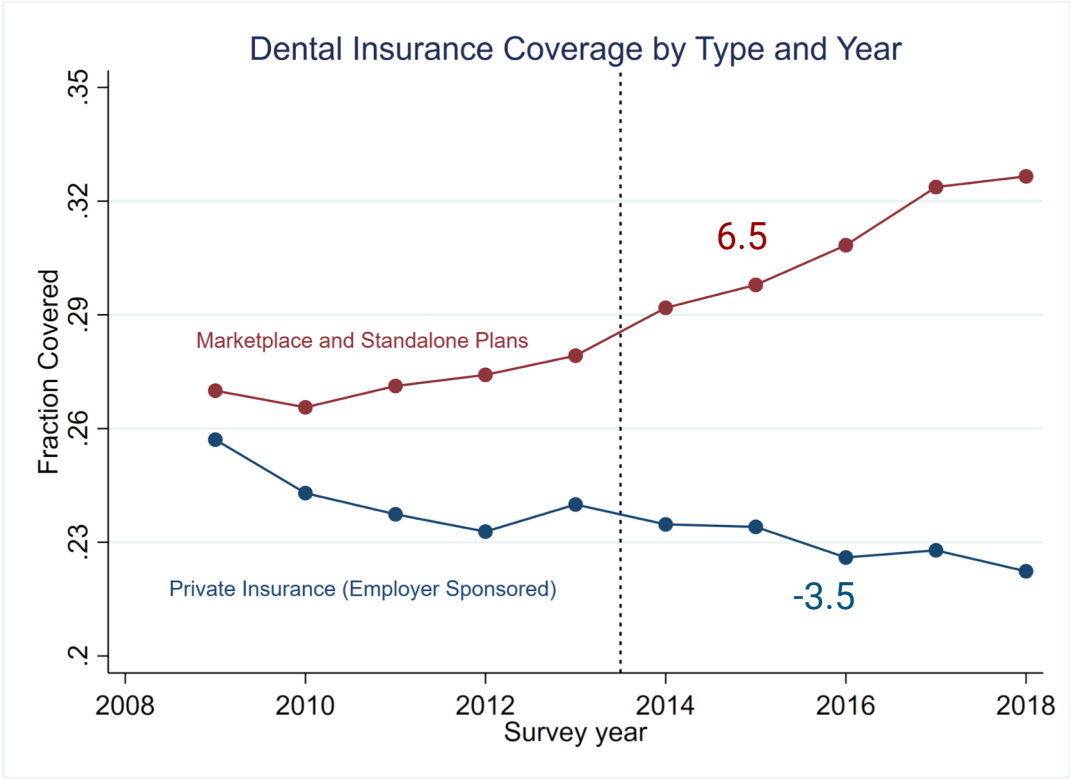
$$where\ ACA = 1 \rightarrow \ B_0 + B_{2contols(2014-2018)} + \ (B_1 * ACA)$$

$$\therefore \quad \Delta fraction\ covered = \ B_1$$

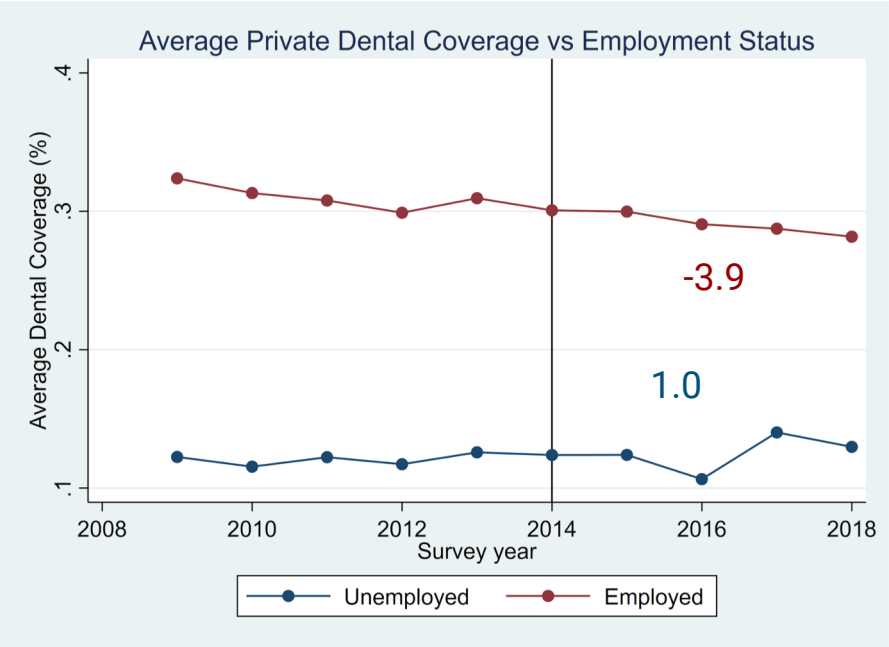
Controlled for: Age, sex, education level, employment status, race, region, marital status

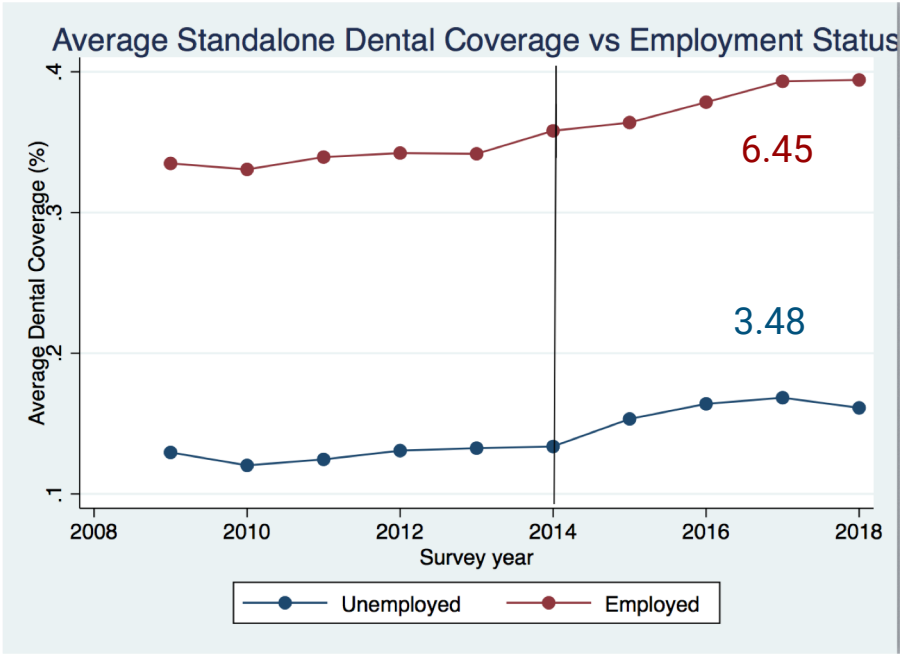
Findings

- The fraction of individuals covered by private insurance declines after 2014
- Contrarily the fraction of those covered by marketplace/ standalone insurance steadily increases (especially after 2014)



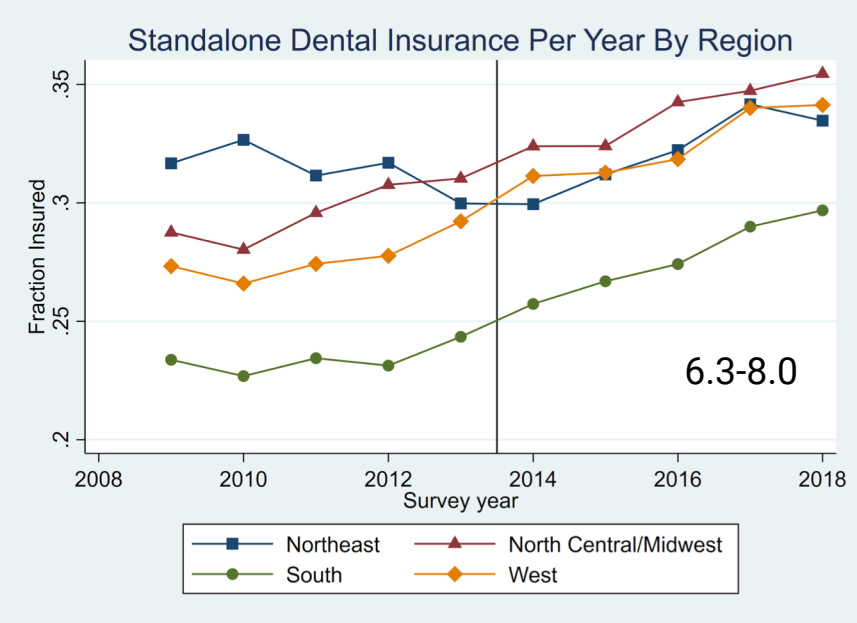
Findings

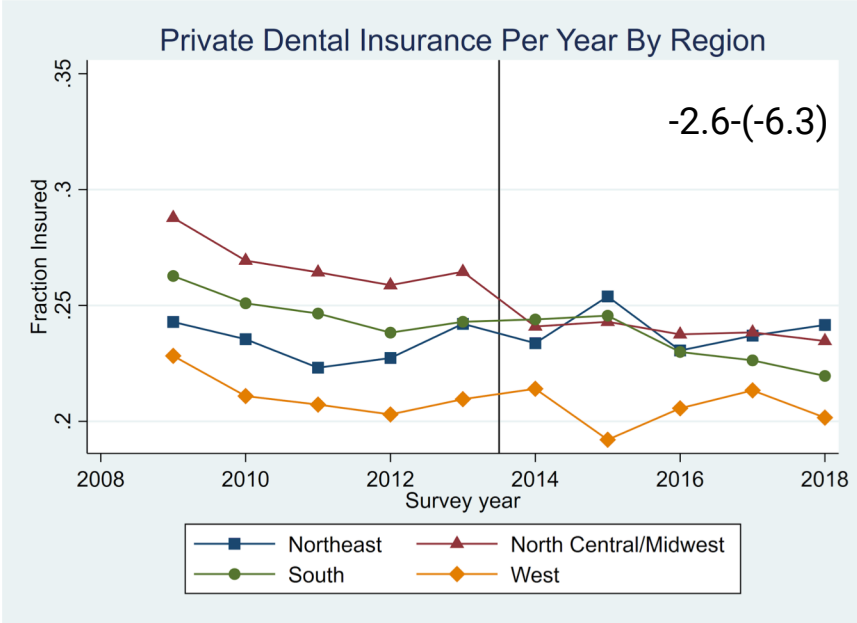




Increase in standalone plans and decrease in private dental insurance plans among both the employed and unemployed.

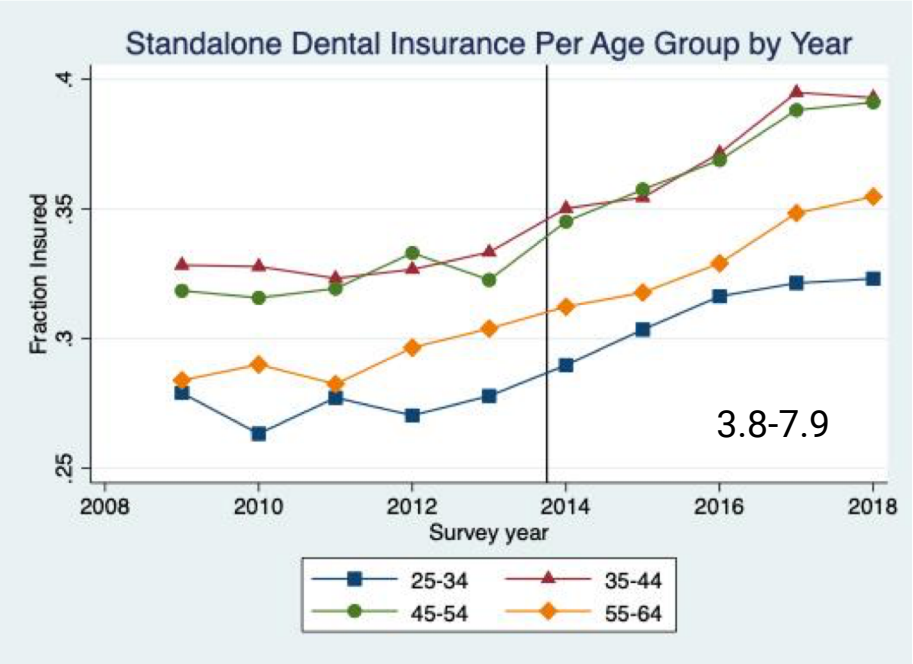
Findings

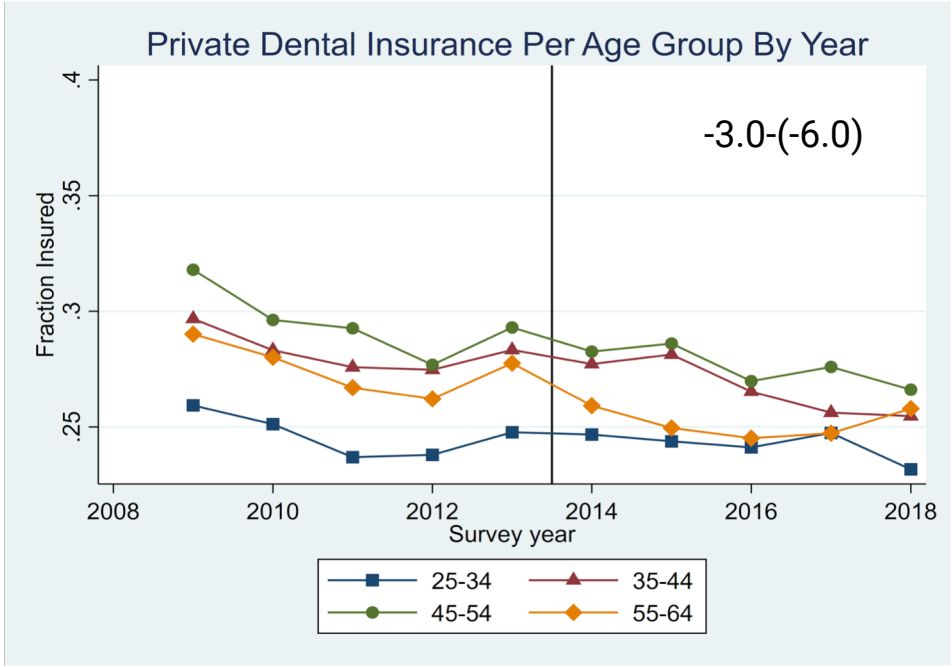




Increase in standalone plans and decrease in private dental insurance plans.

Findings

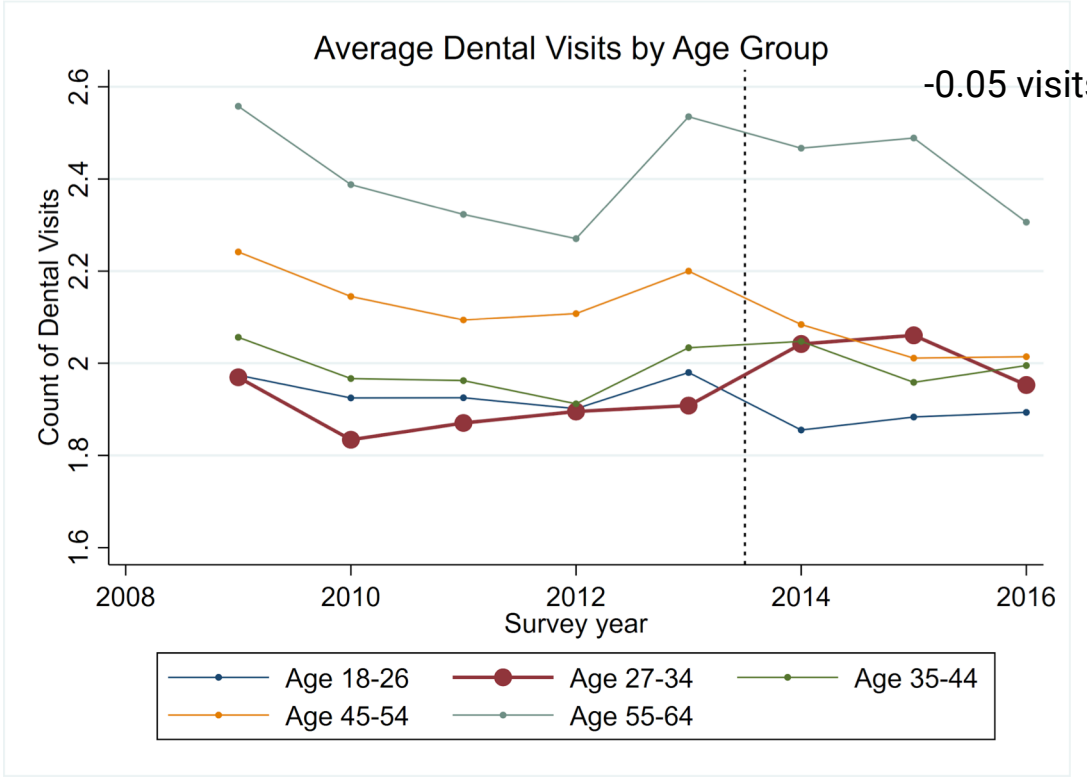




Increase in standalone plans and decrease in private dental insurance plans.

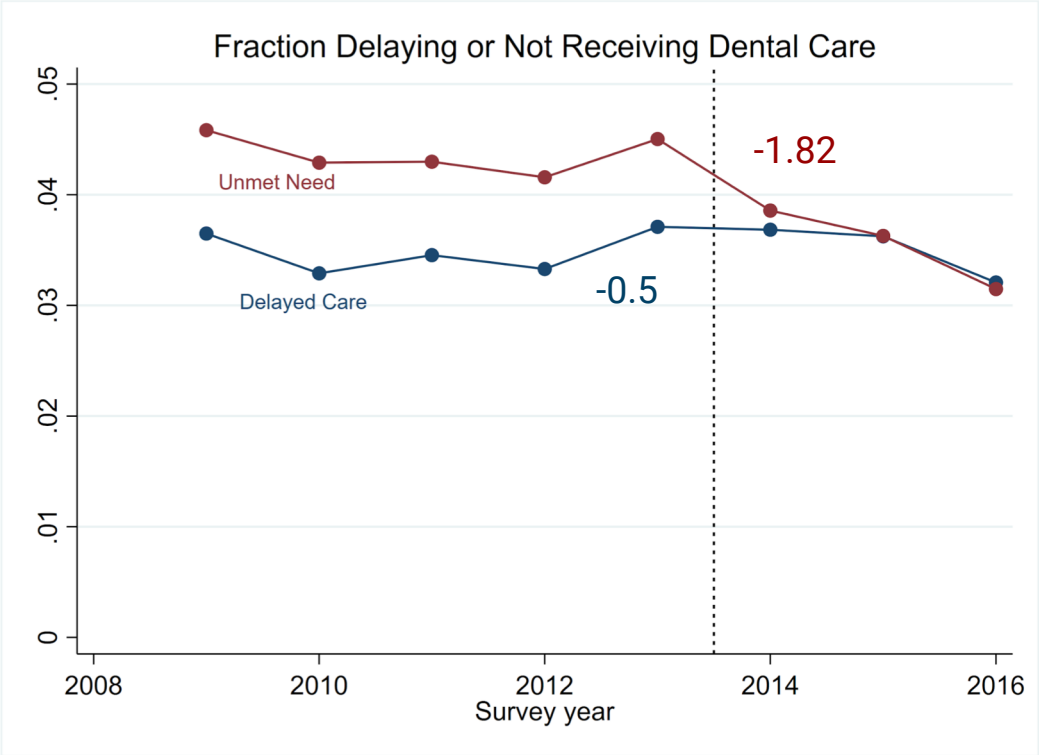
Findings

- This is of individuals who went to the dentist
- We see the greatest increase in 27-34 year olds after the ACA expansion of 2014



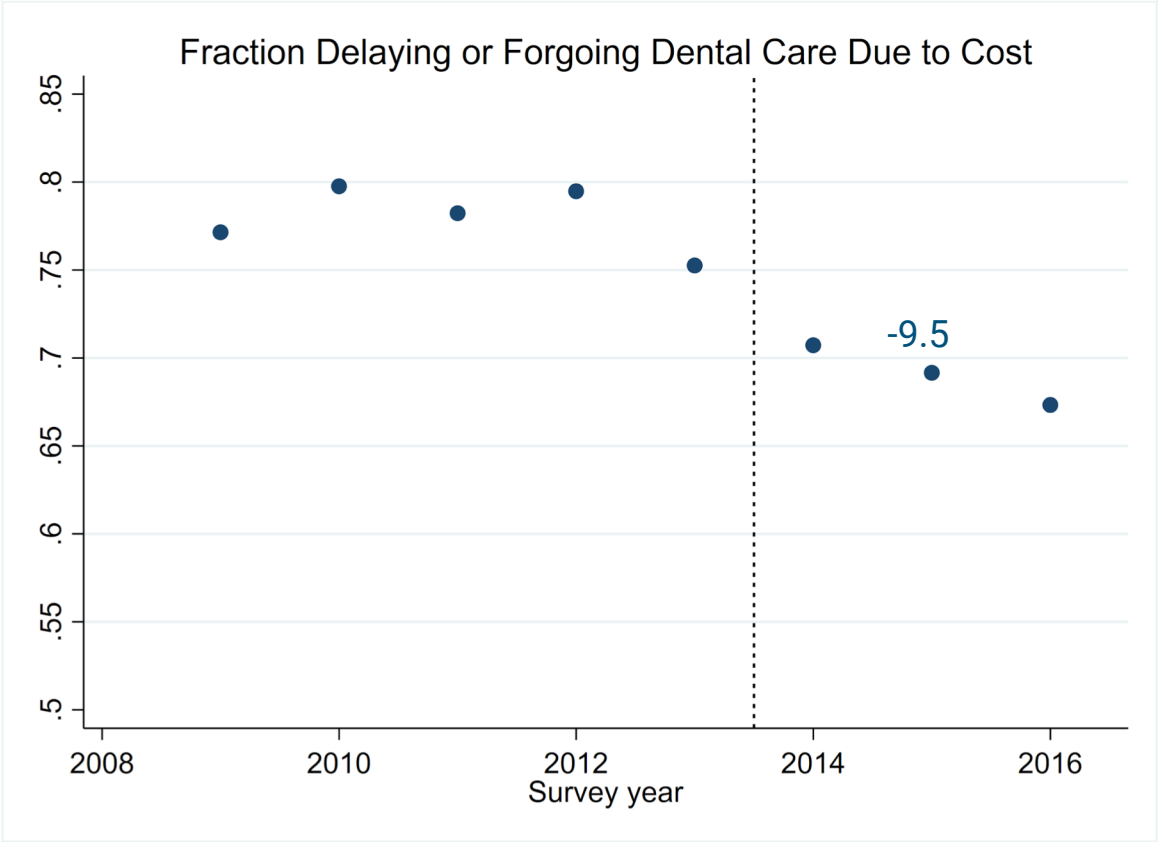
Findings

- There are still unmet needs in dental after 2014 but there is a significant decrease of about 1.82 percentage points
- There is a 0.5 percentage point decrease in the amount of delayed care among individuals



Findings

- There was a decrease in delaying or forgoing dental care due to cost



Role in Project

- Perform Literature Review
- Learn and gather NHIS and MEPS data through IPUMS.org
- Decide on a list of relevant variables in the NHIS and MEPS data
    - Based on the variables defined in literature by Shane and Ayyagari
- Draft hypotheses
- Create graphs on STATA
    - Use STATA to then run regressions

Lessons Learned

- How and where to obtain data
- How to generate a hypothesis and a research question
- How to analyze data using STATA
- How to run a regression

Thank you!

- We would like to take this time to thank:
  - Salama Freed
  - Joanne Levy
  - Safa Browne
  - Ashley Anumba
  - Leonard Davis Institute
  - University of Pennsylvania