Medicaid's Effect on Mortality: New Evidence from the 2010 Census

Public registration Updates

Metadata

Study Information

Hypotheses

We hypothesize that gaining access to Medicaid through ACA expansions and state waivers reduced the mortality of low-income adults.

Design Plan

Study type

Observational Study - Data is collected from study subjects that are not randomly assigned to a treatment. This includes surveys, "natural experiments," and regression discontinuity designs.

Blinding

No blinding is involved in this study.

Is there any additional blinding in this study?

N/A

Study design

Our base sample will consist of adults from the Census (ages 19 to 59 in 2010) in families with 2009 income below 138% of the federal poverty guidelines who have been assigned a linkage key (PIK). We target the definitions of families, income, and poverty used to determine Medicaid eligibility. We group individuals into families using relationship indicators in the Census and calculate income using linked tax data. We will estimate the effect of expansions of Medicaid to low-income adults with incomes below 138% of the poverty line on annual Medicaid enrollment using a linear probability model with state and duration fixed effects (April 2010-September 2019) and annual mortality hazard, again including state and duration fixed effects (April 2010-April 2022). We will include controls for age, gender, race, and Hispanic ethnicity. We will cluster standard errors at the state level.

In addition to estimating mortality for the entire sample, we will consider the effect of the Medicaid expansions on mortality for subgroups defined by the following characteristics:

- Marital status in the Census
- Parental status in the Census
- Employment status in 2009 tax records
- Disability status in 2009 tax records
- 2009 income relative to the federal poverty line according to tax records (0%, 0-50%, 50-100%, 100-138%)
- Foreign-born status according to the Census Numident
- Race (black, white, other), Hispanic ethnicity, and gender in the Census
- Age in 2010 (19-29, 30-39, 40-49, 50-59) according to the Census Numident

We will also estimate three modified versions of our main model to facilitate comparability with prior work. First, we will estimate the

mortality. Third, we will estimate the effect of coverage on annual mortality hazard in the first four post-expansion years for adults ages 50-59 in 2010.

No files selected

Randomization

N/A

Sampling Plan

Existing Data

Registration prior to analysis of the data

Explanation of existing data

At the time of pre-registration, we have constructed families in the Census using relationship to household head and have linked 2009 IRS data (1040s, W-2s, 1099-Rs) using protected identification keys (PIKs) to the Census dataset. We have also calculated family income, targeting the definitions of income, poverty, and families used in determining Medicaid eligibility. We have not estimated the relationship between Medicaid expansion and mortality for any groups using these data.

Data collection procedures

We draw on the following restricted-use datasets available through the Census Bureau: 2010 Census; 2009 IRS 1040s, W-2s, and 1099-Rs; 2009 CMS Medicare data; 2005-2019 CMS Medicaid datasets; and the 2022 Census Numident. These datasets already exist in a secure Census computing environment and have been assigned anonymized linkage keys (PIKs).

No files selected

Sample size

We begin with the approximately 308 million individuals enumerated in the 2010 Census and keep those assigned a linkage key (about 90%) and residing in housing units. We will then further restrict the sample to adults 19 to 59 in 2010 with family income below 138% of the poverty line. We do not know the exact number of individuals in our final sample at this time.

Sample size rationale

We aim to keep as many adults as possible from the 2010 Census who are likely to have gained Medicaid eligibility under expansions to low-income adults.

Stopping rule

N/A

Variables

Manipulated variables

N/A - observational study

No files selected

Measured variables

Our key outcome of interest will be annual mortality hazard. We will also report this hazard scaled by the magnitude of the first-stage effect of expansion on mortality to obtain an estimate of the average effect of treatment on treated individuals.

No files selected

Indices

N/A

Statistical models

For our first-stage analysis, we will estimate the effect of expansions of Medicaid to low-income adults with incomes below 138% of the poverty line on annual Medicaid enrollment and mean months of Medicaid coverage in the year using a linear probability model with state and duration fixed effects (April 2010-September 2019). For our intent-to-treat analysis, we will estimate the effect of expansion on annual mortality hazard using a discrete-time mortality hazard model with a non-parametric baseline hazard and again include fixed effects (April 2010-April 2022). We will include controls for age, gender, race, and Hispanic ethnicity. We will cluster standard errors at the state level.

In addition to estimating mortality for the entire sample, we will consider expansion's effect on mortality for subgroups described in the preceding section labeled "Study Design."

No files selected

Transformations

N/A

Inference criteria

We will test hypotheses at the 5% significance level.

Data exclusion

We do not plan to exclude outliers or other observations from our data, aside from the above-described sample restrictions.

Missing data

We will keep only individuals assigned a linkage key (PIK) using the Census Bureau's Personal Identification Verification System (PVS). We will adjust for non-linkage using inverse probability weights from a model of linkage probability accounting for gender, age, race, Hispanic ethnicity, dwelling type, state of residence.

Exploratory analysis

We do not intend to conduct exploratory analyses at this time. We will clearly indicate in the paper any findings based on exploratory analyses not described in this pre-registration plan.

Other

Other

N/A