Does Medicaid Save Lives?

09/13/2021

Broader Question

- Is the demand for health care and services downward sloping for older individuals?
- How does Medicare affect health care usage and health stock?

Some previous findings

- Oregon Medicaid study, Rand health insurance experiment
- Correlational findings are hampered by unobserved differences between insured and uninsured, young versus old individuals

- The approach of this study is to implement a RD design
- *The severity of illness moves smoothly at age 65, but what changes is the eligibility determined by age 65. This creates a discontinuous jump in access to Medicare.*

Medicare eligibility

- 65 or older, American citizen, worked at least 10 years in covered employment
- Medicare part A: Free
- Medicare part B: available for a modest premium

Potential channels through which Medicare might improve health

1. Those not previously insured receive insurance through Medicare
2. Those previously insured may have additional benefits after receiving Medicare.

RD approach

$$y_i = f(a_i, \alpha) + \beta Post65_i + \epsilon_i$$

- y_i is health related outcome for patient i
- $f(.)$ is a continuous function at age 65
- $Post65_i$ is an indicator whether the patient as passed his or her 65th birthday
- Assumption is that assignment to either side of the discontinuity threshold is as good as random
- If looking at health outcomes, this poses a threat because people who wait to get admitted until they are 65 and once they receive Medicaid are selected group
- other concerns: age 65 as the retirement age

Selection problem

- Due to the *waiting game* people who are just over the eligibility threshold (age 65) may have different stock of health compared to people who are just below 65
- For instance, if a 64 year old waits until 65 to go to the doctor, his illness may have already progressed
  - This would mean that this 65 year old is on average more likely to have lower stock of health compared to a 64 year old

A way to alleviate the selection problem: focus on subset who are admitted to ER

- to solve the slection problem focus on people that require immediate hospitalization; so cannot self-select
- This is mainly data-oriented

Data

- California hospitals; patients discharged between January 1 1992 and December 31, 2002
- patients need to be admitted to get into the sample
- discharged data include demographic variables (race, sex, zip code of residence), medical information, whether the admission was planned or unplanned
- link the discharge file with mortality file

Data – A way to alleviate the selection problem

- *critical step is to select a subset of patient whose hospital admissions is independent of insurance status*
- use admission diagnoistic codes (ICD-9) that have similar admission rates through the ED on weekends and weekdays
  - Hospital admissions are typically much lower on weekends than weekdays, in part because of staffing constraints.
  - On average, admissions over the weekends are likely to be more serious that weekdays
  - Dobkin (2003) shows that mortality rates for patients admitted on the weekend for diagnoses with a constant daily admission rate are the same as those for patients admitted during the week.

Data – A way to alleviate the selection problem

- *For example, if admission for a given diagnosis code were equally likely on a weekend and on a weekday, then weekend admissions should constitute 2/7 = 0.29 of total admissions for that diagnosis.*
- These admissions are **nondeferrable** and their admission is not determined by their insurance status
- **Arguably, these patients will be admitted to the hospital before and after their 65^{th} birthday, with or without Medicare**
- *Limit the sample to nondeferrable admissions*

Results–Insurance

- Figure I (page 21), Table III (page 30)

Results–Insurance

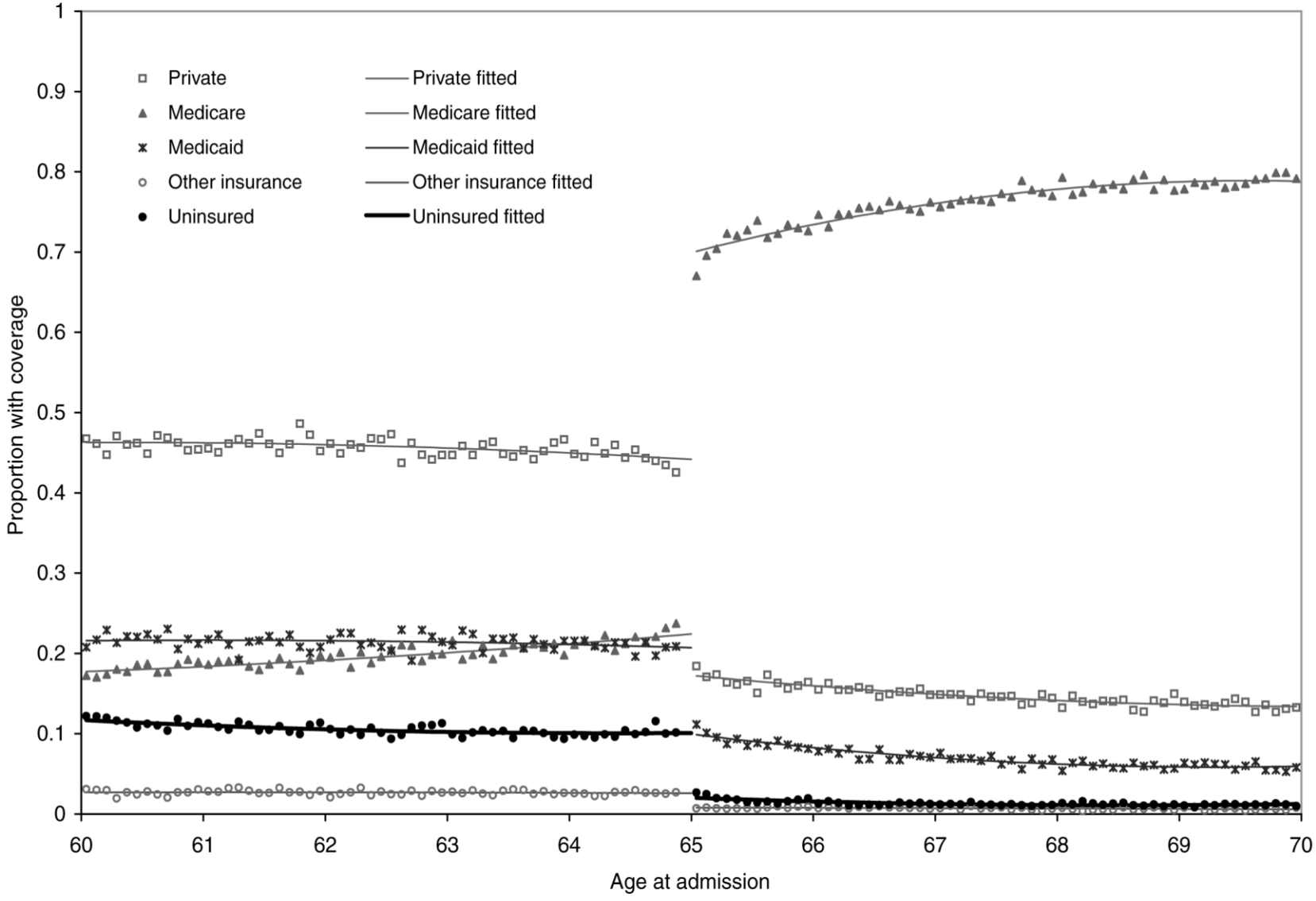

Figure 1: Primary Insurance Coverage of Admitted Patients

Results–Intensity

- Figure V (page 25), Table IV (page 31)
- analysis by procedures for: chronic bronchitis with acute exacerbation and acute myocardial infraction (AMI)
  - relative large increase in AMI admissions

Results–Intensity

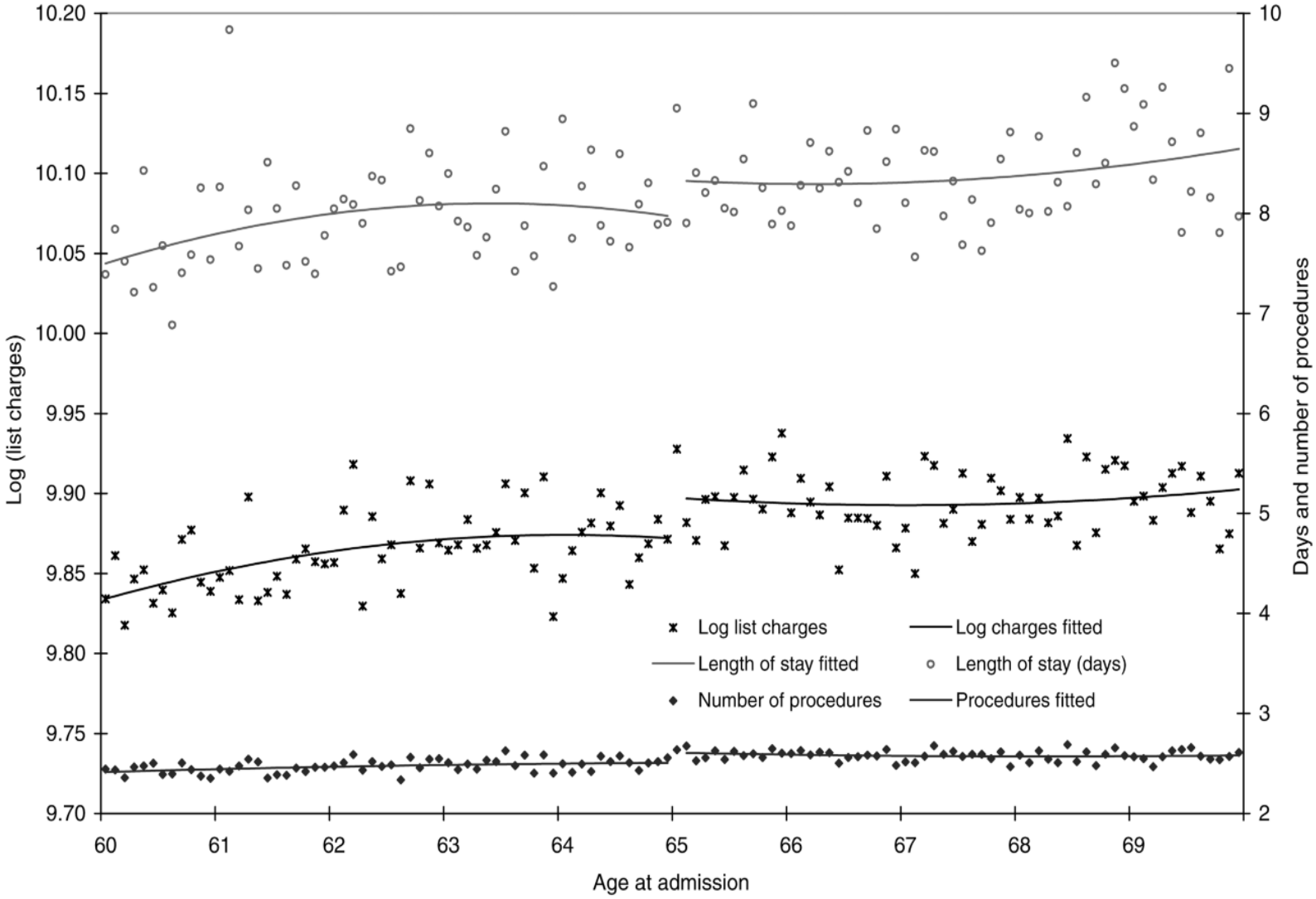

Figure 2: Three Measures of Inpatient Treatment Intensity

Results–Mortality

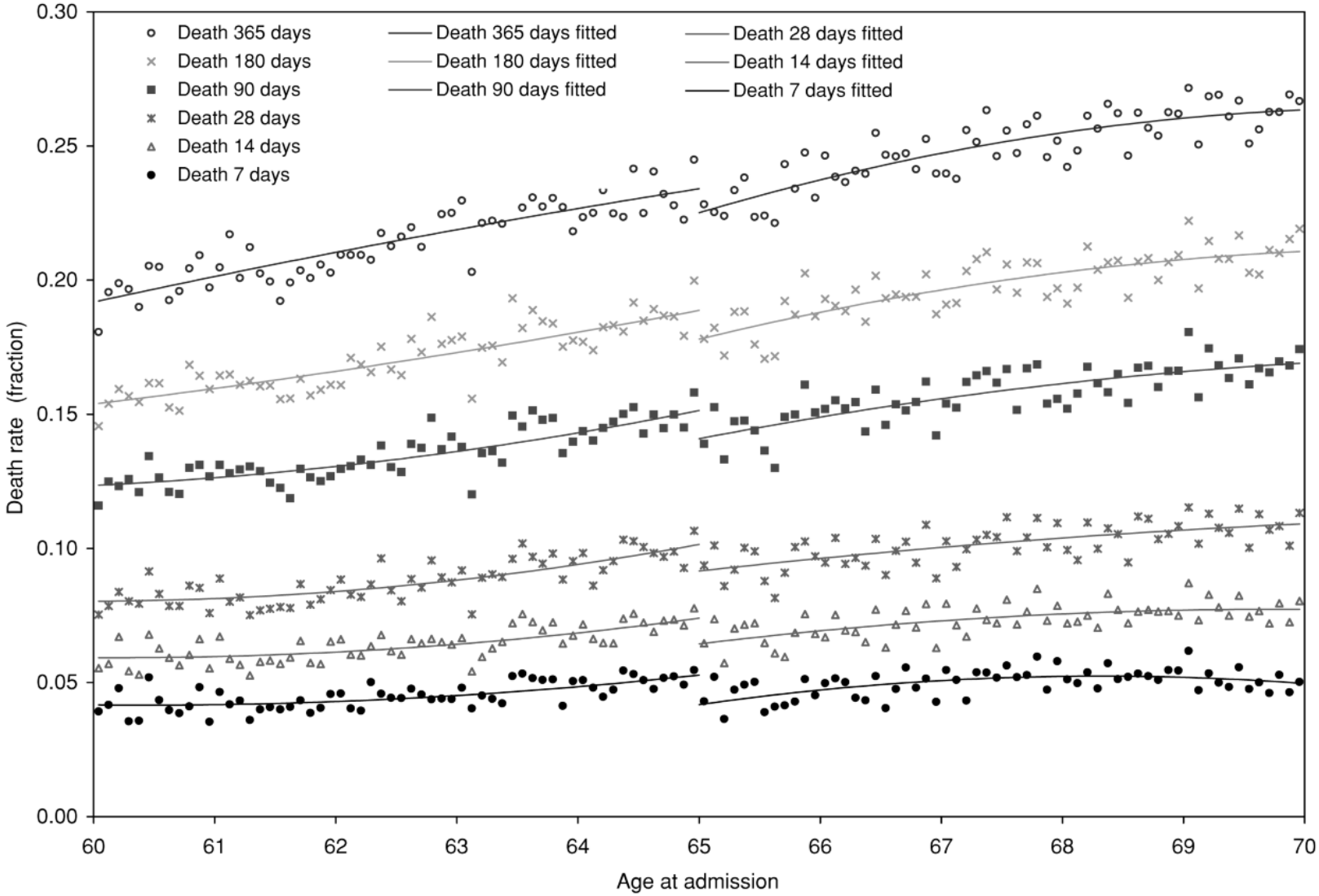

Figure 3: Patient mortality rates over different follow-up intervals

Results–Mortality results

- Estimates of the mortality effect of Medicare eligibility are relatively large: they represent a 14%–20% reduction in 7-day mortality, a 7%–9% reduction in 28-day mortality, and a 2%–4% reduction in 1-year mortality relative to death rates among 64-year-olds with similar conditions at admission.
- The emergence of the effect within 7 days of admission suggests that the extra services or changes in the quality of services provided to Medicare-eligible patients have an immediate life-saving impact.

Discussion

- Medicare increases treatment intensity for patients with non-deferrable conditions
- Reduces mortality
- Any limitations?