

The Spillover Effects of Public Prescription Drug Insurance Expansion: Evidence from OHIP+

Zichun Zhao

Department of Economics

Introduction

- Canada is the only OECD country with a system of universal healthcare without universal pharmaceutical coverage.
- Reduced utilization of primary care services:
 - Declining health status
 - Higher demand for emergency department services or hospitalization

Research Question

- Expand public drug insurance program may have effects on healthcare utilization:
 - The spillover effects of expanding public prescription drug insurance on healthcare utilization among the beneficiaries
 - The crowding out effects of public prescription drug insurance expansion on healthcare utilization outcomes for other patients

Spillover pathways

- Expanding access to pharmacare may have spillover effects:
 - Spillover to other types of care for the beneficiaries:
 - Demand for primary care
 - The new policy influences physician behaviours
 - Emergency department
 - Hospitalization
 - Waiting time to services
 - Mortality
 - Spillover to other populations (crowding out)
 - Changes in healthcare utilization for the beneficiaries affecting other patients

Ontario Health Insurance Plan Plus (OHIP+)

- Before 2018:
 - OHIP: Medically necessary healthcare services, visits to a family doctor, blood test, hospital care
 - Ontario Drug Benefit (ODB): Ontario residents who are 65 or older, recipients of social assistance, long-term care
 - Trillium Drug Program: According to income
- After January 2018:
 - OHIP+: Prescription drug coverage for children and youth under the age of 25
 - April 2019, restricted coverage to only individuals who do not have private drug insurance

Data: 2017 - 2019

- National Ambulatory Care Reporting System (NACRS)
 - ▶ **Emergency department**, day surgery and clinic submissions and treatments
- Discharge Abstract Database (DAD)
 - ▶ Hospital discharges, sign-in/outs and treatments from **Acute care facilities** and others
- Canadian Vital Statistics - Death database (CVSD)
 - ▶ Medical (cause of death) information

Dependent variables: NACRS

- ED visits rate
 - NACRS: Total number of ED visit
 - CIHI: Expected coverage rate
 - StatCan: Population
- Ambulatory Care Sensitive Conditions (ACSC) visits (ICD-10)
 - A set of medical conditions that can be effectively managed and treated through timely and appropriate outpatient care
- Non-ACSC ED visits

Dependent variables: DAD

- Hospitalization rate
- Ambulatory Care Sensitive Conditions cases:
- Non-ACSC cases

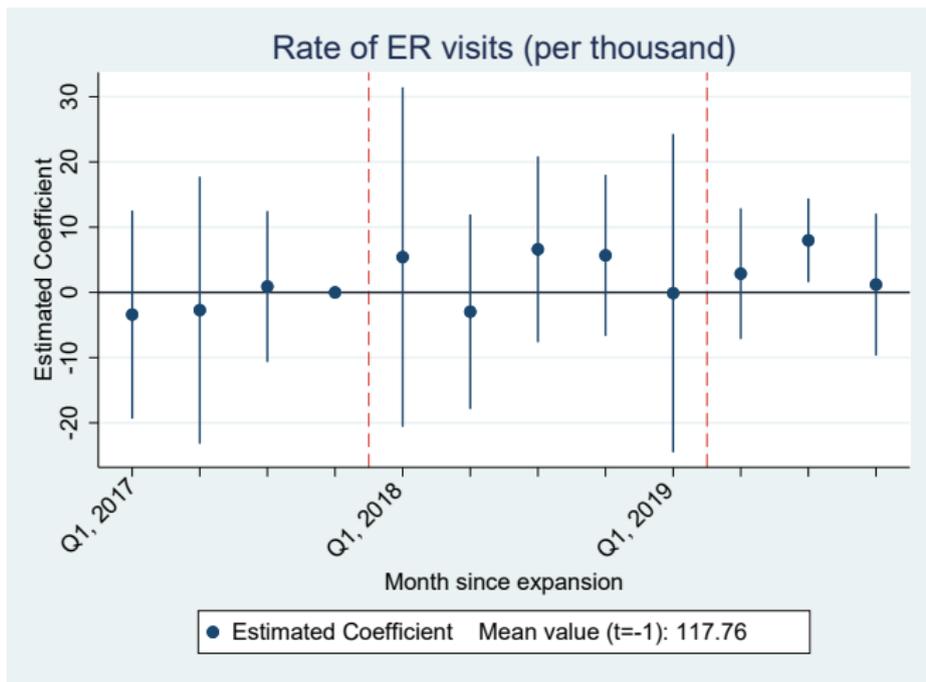
Difference-in-differences event-study model

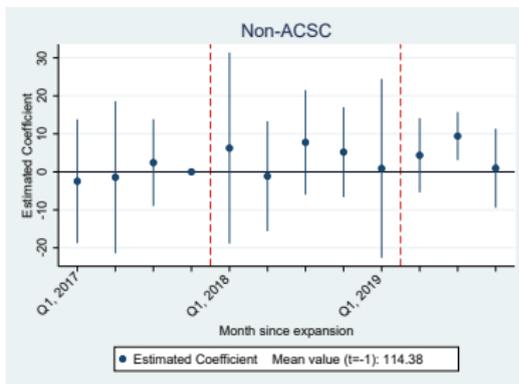
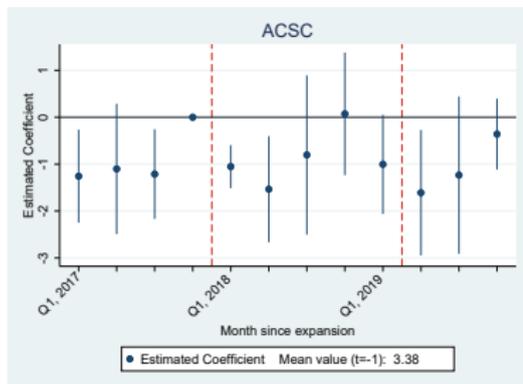
Age group: 0-24, 25-65 and 65+

$$Y_{p,t} = \sum_{j=-4, j \neq -1}^8 \beta_j ON_p \mathbb{1}\{t = j\} \\ + \alpha_p + \alpha_t + \gamma X_{p,t} + e_{p,t}$$

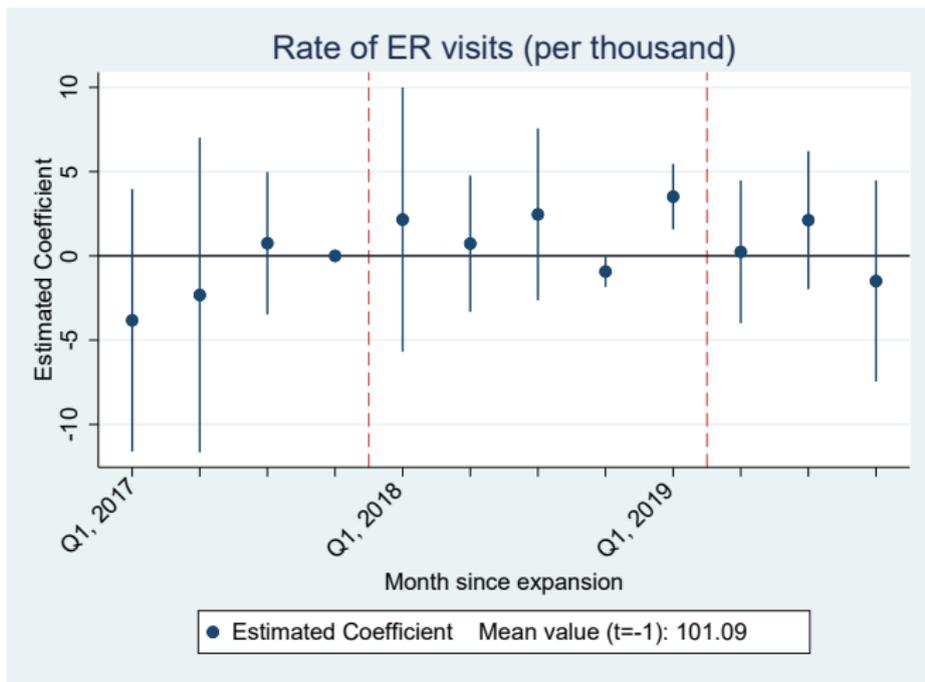
- ON_p equal to 1 for Ontario, 0 otherwise
- $\mathbb{1}\{t = j\}$ equal to 1 if the observation time relative to the introduction of OHIP+ is j , 0 otherwise
- α_p and α_t are province and time fixed effects
- $X_{p,t}$ represents patients' age, sex and unemployment rate
- Regressions are weighted based on the population of the relevant age group at the provincial level
- Standard errors are clustered at the province level

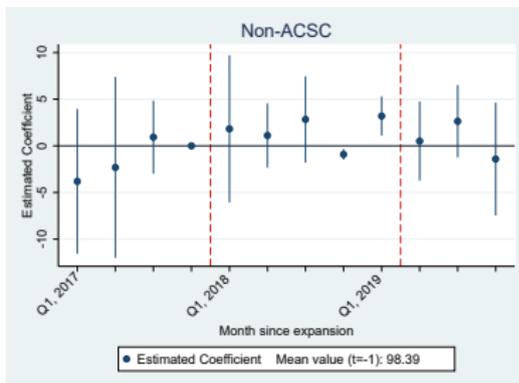
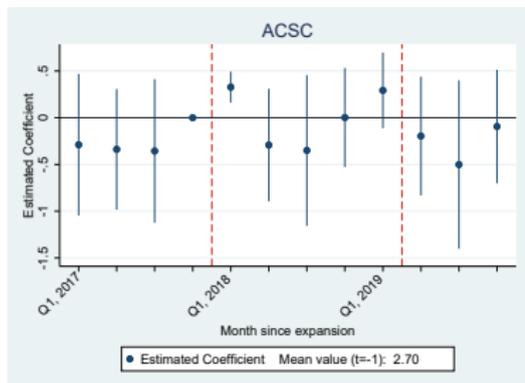
ED: 0-24



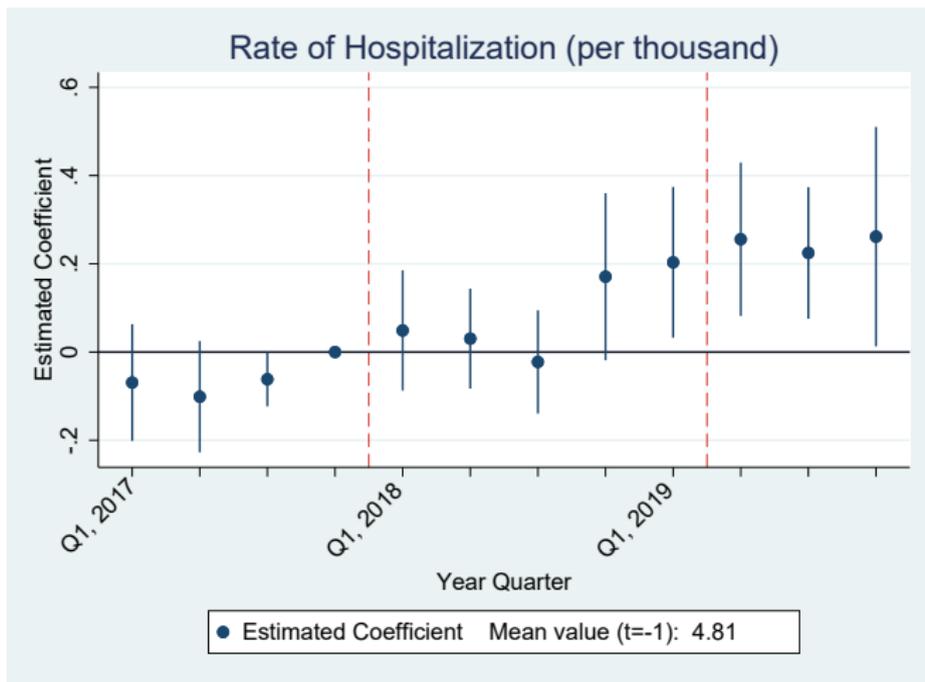


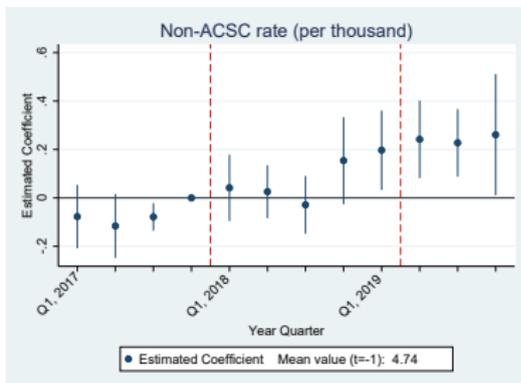
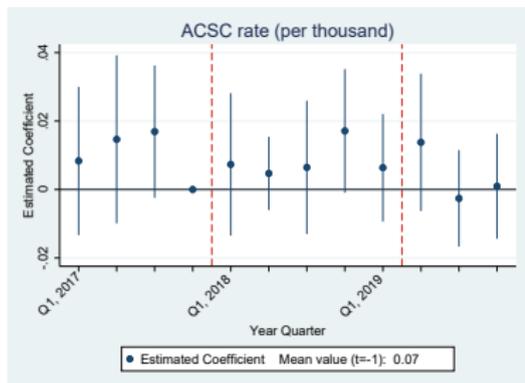
ED: 25-64



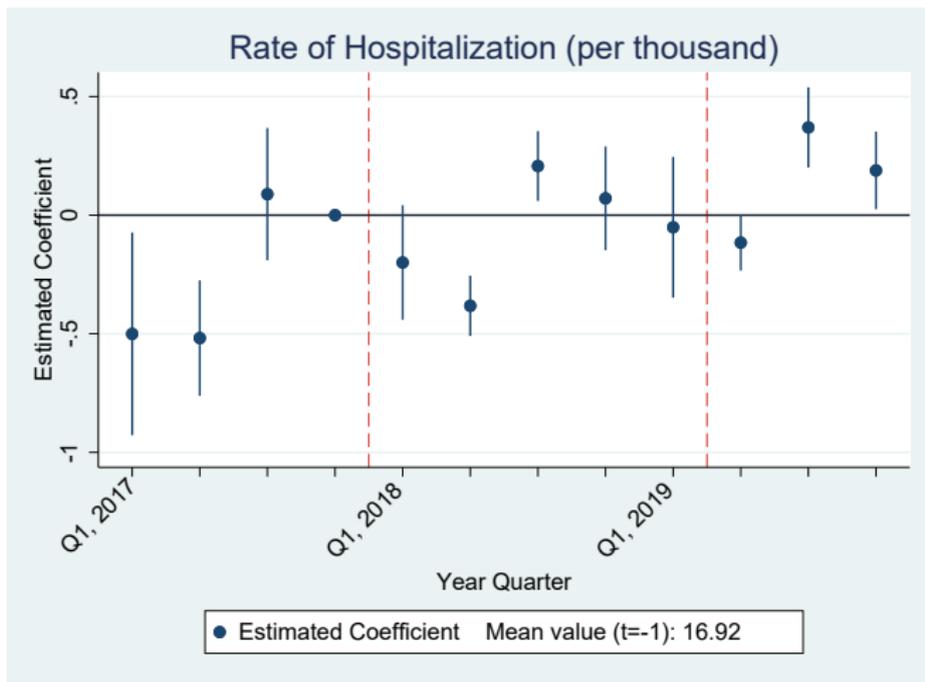


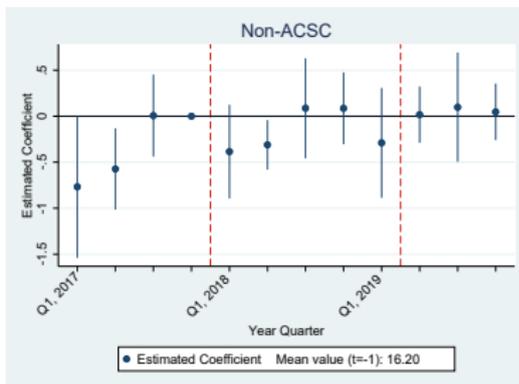
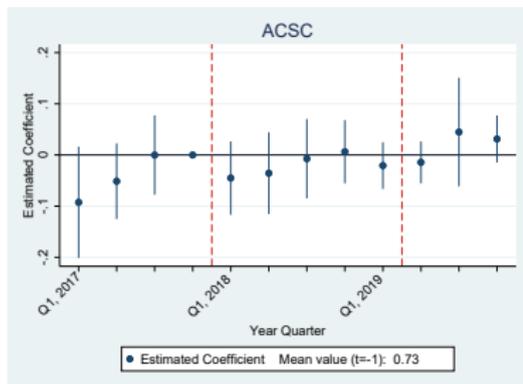
Hospital: 0-24





Hospital: 25-64





- OHIP+ has no significant effect on ED utilization across difference age groups
- The hospitalization rate for younger patients increases after one year of implementation, driven by Non-ACSC cases
- Providing drug insurance to young patients would have minimal impact on the health system in terms of emergency department (ED) and hospital usage.
- When implementing a new public drug insurance, it is important to consider the needs of both beneficiaries and non-beneficiaries.