Out-of-Pocket Spending by Surgical Patients Following Implementation of the Affordable Care Act

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Works-in-Progress

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Outline

- Background
- Specific Aims
- Study Design/Methods
- Next Steps
Medical expenses are a leading driver of bankruptcy and financial hardship in the US.\(^1,2\)

Surgery and trauma are particularly expensive and unpredictable sources of medical expenses for patients.\(^3,4,5\)

Over 70% of uninsured trauma patients are at risk of catastrophic health expenditures (CHEs)

Similar findings in uninsured emergency general surgery patients

Cross-sectional, pre-ACA, used hospital charges
Main provisions took effect January 2014

Medicaid expansion (≤138% FPL)
- 36 states + DC have adopted expansion
- 12.7 million newly eligible enrolled

Insurance marketplaces, a.k.a. exchanges
- All 50 states
- 10.3 million individuals have enrolled
- Improved transparency and comparability (metal tiers)
- Premium and cost-sharing subsidies (139-250% FPL)
- Premium subsidies only (251%-400% FPL)
A natural experiment for studying the effect of the ACA on catastrophic expenditures among surgery/trauma patients
Specific Aims
## Specific Aims

To describe the impact of the ACA on out-of-pocket spending among:

<table>
<thead>
<tr>
<th>Impact of ACA insurance marketplaces</th>
<th>Adults age 19-64 who underwent a surgical procedure</th>
<th>Adults age 19-64 who received care for trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of ACA Medicaid expansions</td>
<td>Specific Aim 1</td>
<td>Specific Aim 3</td>
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<tr>
<td></td>
<td>Specific Aim 2</td>
<td>Specific Aim 4</td>
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</tbody>
</table>

**Evaluate:**

1. Patients’ out-of-pocket health care expenditures
2. Patients’ likelihood of catastrophic health expenditure (CHE)
Definition of catastrophic expenditures

- Out-of-pocket (OOP) spending > 10% family income¹,²
- OOP spending + premiums > 19.5% family income³,⁴

Study Design: Difference-in-differences (DID)

Study Design: Evaluating Medicaid Expansion

Difference-in-differences (DID) study design

- Across state Medicaid expansion status
  - Medicaid expansion states
  - Medicaid non-expansion states

- Across time period
  - Pre-ACA implementation: 2010-2013
  - Post-ACA implementation: 2014-2016
Study Design: Evaluating Insurance Marketplaces

Difference-in-differences (DID) study design

- Across insurance marketplace eligibility
  - Subsidy-eligible
    - Premium + cost-sharing subsidies: 139-250% FPL
    - Premium subsidies only: 251-400% FPL
  - Subsidy-ineligible: >400% FPL

- Across time period
  - Pre-ACA implementation: 2010-2013
  - Post-ACA implementation: 2014-2016
Data Sources and Analysis

- 2010-2016 Medical Expenditure Panel Survey (MEPS)
- Converted to 2016 dollars using Consumer Price Index
- Accounted for complex survey design/weights
- Covariates: age, sex, race/ethnicity, marital status, educational attainment, born outside US, census region, employment, family income, family size
- Analysis conducted using Stata 14
Next Steps
Next Steps/Issues

- Sensitivity analysis: restrict to expenditures in 90 days following surgery
- Applying for access to restricted MEPS data
  - State identifiers – Medicaid expansion vs nonexpansion states
  - Full ICD codes – stratify surgery patients by procedure
  - Link to NHIS variables – health status
- Issues
  - Selection bias – are changes in spending driven by healthier people electing to have surgery after the ACA, rather than changes in generosity of insurance coverage?
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