Health Insurance

131 Undergraduate Public Economics
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MOTIVATION

U.S. health care system has significant issues:

(a) US health care is very expensive (17% of GDP relative to 9% on average in other OECD countries)

(b) growing too fast

(c) significant fraction of population is uninsured

There are enormous disparities in medical outcomes across demographic groups in the US

Before Obamacare, the United States was the only major industrialized nation that did not provide universal access to health care for its citizens

Recent Obamacare law has reduced the fraction number of uninsured from 50m (in 2013) to 30m (in 2018+)
Health spending was 9% of GDP on average in the OECD, ranging from 4.3% in Turkey to 17.2% in the United States.

**Note:** Expenditure excludes investments, unless otherwise stated.
1. Australian expenditure estimates exclude all expenditure for residential aged care facilities in welfare (social) services.
2. Includes investments.

**Source:** Health at a Glance 2017.
Over the 15-y period, midlife all-cause mortality fell by more than fourfold for this group, from 13.7 to 58.0, and mortality from chronic liver diseases and cirrhosis. All three increased year-on-year between 1999 and 2013. Those with college education less than a BA saw death rates fall by 57 per 100,000, whereas those with a BA or more (32%) had an increase of 134 per 100,000. The mortality rate from poisonings rose more than fourfold for this group, from 13.7 to 58.0, and mortality from suicide and poisonings, and an overall increase in mortality from alcohol- and drug-induced causes for white non-Hispanics; by 2013, poisoning mortality was 8.4 per 100,000 higher for whites. Death from cirrhosis and chronic liver diseases fell for blacks and rose for whites. After 2006, death rates from diabetes have risen in all age groups.

Fig. 1. All-cause mortality, ages 45–54 for US White non-Hispanics (USW), US Hispanics (USH), and six comparison countries: France (FRA), Germany (GER), the United Kingdom (UK), Canada (CAN), Australia (AUS), and Sweden (SWE).
UNIVERSAL HEALTH INSURANCE

All OECD countries (except the US) provide universal health care insurance funded by taxation:

Individuals who get sick can have health care paid for by the government

Government either directly controls doctors/hospitals (like National Health Service in the UK) or government reimburses private health care providers (like in France)

Government controls costs and limits health-care over-consumption through:

1) Regulation (govt picks allowed treatments based on cost effectiveness, bargains for prices, rations care)

2) Patient co-payments (patients share part of the cost)
US HEALTH INSURANCE

US has a mix of public and private insurance: As of 2017

1) Government provided insurance [35% of population]
   (a) Medicare for the elderly (65+) = 14% of pop
   (b) Medicaid for the poor = 21% of pop
   (c) Other (mostly veterans benefits) = 2% of pop

2) Privately provided insurance [55% of population]
   (a) Employer provided health insurance = 49%
   (b) Individual purchases (mostly Obamacare exchanges) = 7%

3) Uninsured [9% of pop.] (15-16% before Obamacare)
WHY EMPLOYERS PROVIDE PRIVATE INSURANCE

1) Risk pooling: The goal of all insurers is to create large insurance pools with a predictable distribution of medical risk.

2) Tax incentive: Employer provided health insurance is a non-taxable form of compensation for employees (not subject to payroll taxes or individual income tax)

⇒ Fiscally advantageous to get insurance through employer (non-taxable) than to purchase it directly as an individual (with after-tax income)

Note: Now with Obamacare, individual purchase is subsidized based on family income (see below)
NONGROUP INSURANCE

**Nongroup direct insurance market**: The market through which individuals or families buy insurance directly rather than through a group, such as the workplace.

The nongroup insurance market was not a well-functioning market before Obamacare

Those in the worst health (pre-existing conditions) were often unable to obtain coverage (or could only obtain it at an incredibly high price)

Even without pre-existing conditions, there was *adverse selection*

Obamacare exchanges is changing drastically the nongroup market by forbidding pricing/discrimination based on preexisting conditions and mandating health insurance (but the fine for non-coverage repealed in 2019+)}
MEDICARE

Started in 1965 as a universal health insurance system for the elderly and nonelderly on disability insurance.

Federal program that provides health insurance to all people over age 65 or disabled

Every citizen who has worked for 10 years (or their spouse) is eligible

Financed with an uncapped payroll tax totaling 2.9% (along with general revenue)

Physician reimbursement fairly generous (but not as high as private insurance)
MEDICAID

Provides health care for the poor (means-tested benefit)

Financed from general revenues by both Fed and State

Targets welfare recipients, low income kids and elderly (for non-Medicare costs such as long-term care)

70% of recipients are mothers/kids but 66% of expenditure goes to long-term care for elderly/disabled.

Doctor reimbursement low ⇒ some docs refuse Medicaid

Big variation across states in Medicaid generosity (costs are shared between state/feds)

Program eligibility criteria have been expanded over time (higher incomes allowed): Obamacare substantially expands Medicaid to reduce the fraction uninsured [but not all states do it]
16.3

The Medicare Program

The largest public health insurance program in the United States is Medicare.

<table>
<thead>
<tr>
<th>TABLE 16-2</th>
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</thead>
<tbody>
<tr>
<td><strong>Medicaid and Medicare</strong></td>
</tr>
<tr>
<td><strong>Medicaid</strong></td>
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<tr>
<td>Eligibles</td>
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<tr>
<td>Premiums</td>
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<td></td>
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<tr>
<td>Deductibles/copayments</td>
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<td></td>
</tr>
<tr>
<td>Services excluded</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Provider reimbursement</td>
</tr>
</tbody>
</table>

Medicaid provides health insurance for low-income individuals, covering a wide range of health services at little cost to those individuals. Medicare provides health insurance for those age 65 and over, covering many, though not all, health services at some cost to those individuals.
OBAMACARE (Affordable Care Act, ACA)

Three tier system starts in 2014

1) Bans pre-existing conditions exclusion, health-based pricing.

2) Mandate: forces individuals (and large employers with 50+ employees starting in 2015/6) to buy health insurance [else they pay a tax]. Individual tax gone in 2019+

3) Free/subsidized insurance for low-income families: (a) Medicaid expansion up to 138% of poverty line paid by Feds at 90% and (b) subsidized health insurance purchases in Obamacare exchanges up to 400% of poverty line [graph]

Funded with surtax on rich, insurance and health providers, mandate tax on employers and individuals (gone in 2019+)

Starts trying to control costs [indeed costs increases have slowed down in recent years]
Health subsidy after Obamacare in Medicaid Expansion States

- Medicaid
- Obamacare exchanges
- No subsidy
- Health subsidy after Obamacare in Medicaid Expansion States
- Family income
- Poverty line
LEGAL CHALLENGES TO OBAMACARE

1) Is the mandate constitutional? [July 2012]

Ruling: yes, but Feds cannot force States to expand Medicaid
⇒ Many states (including TX, FL) decided to opt-out of the
Medicaid expansion [even though Fed govt pays 90%]

Consequence: There is a coverage gap in many States be-
cause people below 100% of poverty cannot access subsidized
Obamacare exchanges [States seem to be moving slowly to
accept Medicaid expansion through referenda (web) ]

2) Can the Feds set up exchanges if states don’t do it them-
selves? [Ruling: yes, July 2015]

3) There are still pending court challenges to Obamacare
(Trump administration won’t defend Obamacare in court)
NOTES: Current status for each state is based on KFF tracking and analysis of state activity. Expansion is adopted but not yet implemented in ID, NE, and UT.

See link below for additional state-specific notes.


Health subsidy after Obamacare in Medicaid Expansion States

Poverty line

Family income

Medicaid

Obamacare exchanges

No subsidy
Health subsidy after Obamacare in non-expansion States

- Medicaid
- Obamacare exchanges
- No subsidy
- Health subsidy after Obamacare in non-expansion States
- Family income
- Poverty line
- Gap
THE UNINSURED

Fraction of individuals uninsured should fall by 50% with Obamacare [from 15% of population in 2013 down to 9% in 2017, 10-11% in 2019?].

Remaining uninsured:

1) Undocumented immigrants (no access to Medicaid or Obamacare subsidized exchanges) \( \approx 10m \)

2) Low income people who don’t qualify for Medicaid and Obamacare insurance subsidies in states that did not expand Medicaid [possible that more states will expand]

3) People who did not sign up for Obamacare exchange (used to pay the fine, no fine in 2019+), poor people who qualify for Medicaid but haven’t taken up benefits
Coverage Gains Vary by State

Uninsured by State, 2015

<table>
<thead>
<tr>
<th>State</th>
<th>% Uninsured 2013</th>
<th>% Uninsured 2015</th>
<th>Expanded Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>21.6</td>
<td>11.8</td>
<td>Yes</td>
</tr>
<tr>
<td>Colorado</td>
<td>17.0</td>
<td>10.3</td>
<td>Yes</td>
</tr>
<tr>
<td>Florida</td>
<td>22.1</td>
<td>15.7</td>
<td>No</td>
</tr>
<tr>
<td>Illinois</td>
<td>15.5</td>
<td>8.7</td>
<td>Yes</td>
</tr>
<tr>
<td>Kentucky</td>
<td>20.4</td>
<td>7.5</td>
<td>Yes</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>4.9</td>
<td>3.5</td>
<td>Yes</td>
</tr>
<tr>
<td>New York</td>
<td>12.6</td>
<td>8.6</td>
<td>Yes</td>
</tr>
<tr>
<td>Oregon</td>
<td>19.4</td>
<td>7.3</td>
<td>Yes</td>
</tr>
<tr>
<td>Texas</td>
<td>27.0</td>
<td>22.3</td>
<td>No</td>
</tr>
<tr>
<td>Virginia</td>
<td>13.3</td>
<td>12.6</td>
<td>No</td>
</tr>
</tbody>
</table>
Is Universal Health Care Desirable?

Health care is expensive (even in countries which control costs) ⇒ Poor cannot afford health care on their own and need help

People face difference health risks (pre-existing conditions) ⇒ Those facing high health risks face very high insurance costs in private market

Should the government insure people for health risks? Yes if health risks outside people’s control (age, genetics). Not necessarily if health risks due to choices (diet, exercise)

Virtually all OECD countries answer yes and provide universal health care

Not providing universal health care creates another big issue: adverse selection if private insurers cannot observe risks or cannot charge based on risks ⇒ Even those with low risks cannot get actuarially fair insurance

In all cases (private and public), health insurance needs to deal with moral hazard (over-provision, over-consumption)
Optimal Health Insurance: Consumer Side

As with other insurance, optimal generosity determined by the trade off between consumption-smoothing benefit and moral hazard cost.

Consumption when sick = $c_s < c_h =$ consumption when healthy

Insurance raises $c_s$ and lowers $c_h \Rightarrow$ higher expected utility if risk averse.

Moral hazard: overconsumption of healthcare because insured individual pays only a fraction of health care costs when he/she is sick. Fraction paid by individual is called the **co-payment**
Moral Hazard Costs of Health Insurance for Patients

Supply = social marginal cost
Demand = social marginal benefit
Private marginal cost

Deadweight loss

Price of visit

Number of visits to doctor’s office

0 10 20

0 $100

Q1 Q2
A B C

Supply = social marginal cost
Demand = social marginal benefit
Private marginal cost

Moral Hazard Costs of Health Insurance for Patients
How Elastic Is the Demand for Medical Care?
The RAND Health Insurance Experiment

The best evidence on the elasticity of demand for medical care comes from one of the most ambitious social experiments in U.S. history: the RAND Health Insurance Experiment (HIE) in late 1970s

$150m expenditure involving 6000 people tracked over 3 years

Random assignment of health plans with different co-payment parameters: Copayment rates from 0% to 95%.

All families given $1000 to participate, so no one was made worse off from the experiment.
Medical care demand is somewhat price sensitive: individuals who were in the free care plan used 46% more care than those paying 95% of their medical costs.

Overall, 10% rise in the price of medical care to individuals ⇒ use 2% less care (elasticity = .2). Medical utilization not very sensitive to price but distortion still large due to very low co-payment rates in most insurance programs.

Those who used more health care due to the lower price did not, on average, see a significant improvement in their health.

For those who are chronically ill and don’t have sufficient income to easily cover co-payments, there was some deterioration in health.
Consumption-Smoothing Benefits

Consumption-smoothing benefits bigger for large shocks
Some events, like a check-up, are minor and predictable
Others, like a heart attack, are expensive and unpredictable.
Insurance is much more valuable for expensive, unpredictable events
Small shocks lead to small fluctuations in marginal utility

Also less moral hazard for large, unpredictable shocks

⇒ Optimal policy: large deductibles and very generous coverage for “catastrophes”

But Obamacare exchanges experience shows that people dislike plans with high deductibles (such as $3K/year) in part bc they don’t have much control on health expenses

Brot-Goldberg et al. (2017) show that high deductible plan leads to large and likely inefficient cuts in health care utilization
Application: Medicare Prescription Drug Benefit

Starting in 2006, Medicare “Part D” covers drug expenses.

In return for a monthly premium, this program pays for:
- 0% of the drug costs up to $250
- 75% of the costs for the next $2,250
- 0% of the costs for the next $3,600 ("donut hole")
- 95% of the costs above $5,100

Middle bracket with 75% refund: exactly opposite of optimal design!

Rationale: political. Help the most people in this way (but do not maximize expected welfare).

Obamacare eliminated the “donut hole”

Einav, Finkelstein, Schrimpf (2013) show that individuals bunch at kink where 75% subsidy stops ⇒ Moral hazard response
The figure displays the distribution of total annual prescription drug spending in 2008 for our baseline sample. Each bar represents the set of people that spent up to $100 above the value that is on the x-axis, so that the first bar represents individuals who spent less than $100 during the year, the second bar represents $100-200 spending, and so on. For visual clarity, we omit from the graph the 3% of the sample whose spending exceeds $6,500. The kink location (in 2008) is at $2,510. N = 1,251,969.

Source: Einav, Finkelstein, Schrimpf (2013)
Estimating Health Benefits

Another approach of evaluating benefits of a health insurance program: look directly at health outcomes instead of consumption-smoothing benefit

How to implement this?

Simply comparing those enrolled in Medicaid to those not enrolled will suffer from bias.

Factors such as income and health status will bias the results.

Series of studies by Currie and Gruber: use Medicaid expansions and diff-in-diff strategy to evaluate value of programs
### 16.2 EVIDENCE: Using State Medicaid Expansions to Estimate Program Effects

<table>
<thead>
<tr>
<th>Year</th>
<th>Missouri Eligibility</th>
<th>Michigan Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>2000</td>
<td>76%</td>
<td>34%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Age 13</th>
<th>Age 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>18%</td>
<td>48%</td>
</tr>
<tr>
<td>2000</td>
<td>59%</td>
<td>56%</td>
</tr>
</tbody>
</table>
Effect of Medicaid Expansions on Health

Currie and Gruber find that these reductions in the number of uninsured had positive effects on health outcomes in pregnancies:

1) Utilization of health services increased: Early prenatal care visits rose by more than 50%

2) Health care outcomes improved: Infant mortality declined by 8.5% due to the expansions in Medicaid for pregnant women.

⇒ Highly cost-effective policy.
## Costs Per Life Saved of Various Regulations

<table>
<thead>
<tr>
<th>Regulation concerning ...</th>
<th>Year</th>
<th>Agency</th>
<th>Cost per life saved ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childproof lighters</td>
<td>1993</td>
<td>CPSC</td>
<td>$0.1</td>
</tr>
<tr>
<td>Food labeling</td>
<td>1993</td>
<td>FDA</td>
<td>0.4</td>
</tr>
<tr>
<td>Reflective devices for heavy trucks</td>
<td>1999</td>
<td>NHTSA</td>
<td>0.9</td>
</tr>
<tr>
<td>Medicaid pregnancy expansions</td>
<td>1996</td>
<td>Currie &amp; Gruber</td>
<td>1.0</td>
</tr>
<tr>
<td>Children’s sleepware flammability</td>
<td>1973</td>
<td>CPSC</td>
<td>2.2</td>
</tr>
<tr>
<td>Rear/up/should seatbelts in cars</td>
<td>1989</td>
<td>NHTSA</td>
<td>4.4</td>
</tr>
<tr>
<td>Asbestos</td>
<td>1972</td>
<td>OSHA</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Value of statistical life</strong></td>
<td></td>
<td></td>
<td><strong>7.0</strong></td>
</tr>
<tr>
<td>Benezene</td>
<td>1987</td>
<td>OSHA</td>
<td>22</td>
</tr>
<tr>
<td>Asbestos ban</td>
<td>1989</td>
<td>EPA</td>
<td>78</td>
</tr>
<tr>
<td>Cattle feed</td>
<td>1979</td>
<td>FDA</td>
<td>170</td>
</tr>
<tr>
<td>Solid waste disposal facilities</td>
<td>1991</td>
<td>EPA</td>
<td>100,000</td>
</tr>
</tbody>
</table>

Source: Chetty Undergraduate Slide
Oregon Medicaid Health Insurance Experiment

• In 2008, Oregon had a limited Medicaid budget ⇒ used lottery to select individuals on waitlist to be given a chance to apply for Medicaid insurance coverage

• 30,000 “lottery winners” (treatment group) out of 90,000 participants (lottery losers are control group)

Not all winners received coverage. Some non-winners later received insurance on their own.

But it is still the case that winning the lottery increases probability of having health insurance by 29 percentage points

• Finkelstein et al. (2012) use lottery as instrument to estimate causal effect of insurance coverage itself

Two way to report the results:

ITT (intention to treat): just compare winners and losers

LATE (local average treatment effect): Inflate estimates by 1/[difference in fraction insured between winners and losers]=1/.29=3.5
Oregon Medicaid Health Insurance Experiment

- Data sources: admin data from hospitals, credit reporting data, and survey responses regarding utilization, health, and financial outcomes

- Key results: winning the Medicaid lottery leads to:

  1) higher health care utilization (including primary and preventive care as well as hospitalizations)

  2) lower out-of-pocket medical expenditures and medical debt (including fewer bills sent to collection agencies for unpaid debt)

  3) better self-reported physical and mental health
<table>
<thead>
<tr>
<th></th>
<th>Extensive Margin (Any)</th>
<th>Total Utilization (Number)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control Mean</td>
<td>ITT</td>
</tr>
<tr>
<td>Prescription drugs currently</td>
<td>0.637  (0.481)</td>
<td>0.025 (0.0083)</td>
</tr>
<tr>
<td>Outpatient visits last six months</td>
<td>0.574 (0.494)</td>
<td>0.062 (0.0074)</td>
</tr>
<tr>
<td>ER visits last six months</td>
<td>0.261 (0.439)</td>
<td>0.0065 (0.0067)</td>
</tr>
<tr>
<td>Inpatient Hospital admissions last six months</td>
<td>0.072 (0.259)</td>
<td>0.0022 (0.0040)</td>
</tr>
<tr>
<td><strong>Standardized treatment effect</strong></td>
<td>0.050 (0.011)</td>
<td>0.173 (0.036)</td>
</tr>
<tr>
<td><strong>Annual spending</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control Mean</td>
<td>ITT</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>--------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Any out of pocket medical expenses, last six months</td>
<td>0.555</td>
<td>-0.058</td>
</tr>
<tr>
<td></td>
<td>(0.497)</td>
<td>(0.0077)</td>
</tr>
<tr>
<td>Owe money for medical expenses currently</td>
<td>0.597</td>
<td>-0.052</td>
</tr>
<tr>
<td></td>
<td>(0.491)</td>
<td>(0.0076)</td>
</tr>
<tr>
<td>Borrowed money or skipped other bills to pay medical bills, last six months</td>
<td>0.364</td>
<td>-0.045</td>
</tr>
<tr>
<td></td>
<td>(0.481)</td>
<td>(0.0073)</td>
</tr>
<tr>
<td>Refused treatment be of medical debt, last six months</td>
<td>0.081</td>
<td>-0.011</td>
</tr>
<tr>
<td></td>
<td>(0.273)</td>
<td>(0.0041)</td>
</tr>
<tr>
<td>Standardized treatment effect</td>
<td>-0.089</td>
<td>-0.305</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.035)</td>
</tr>
</tbody>
</table>

Source: Finkelstein et al. 2012
## Table IX: Health

<table>
<thead>
<tr>
<th></th>
<th>Control Mean</th>
<th>ITT</th>
<th>LATE</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
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</table>

### Panel A: Administrative data

<p>| | | | | |</p>
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<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Alive</td>
<td>0.992</td>
<td>0.00032</td>
<td>0.0013</td>
<td>[0.638]</td>
</tr>
<tr>
<td></td>
<td>(0.092)</td>
<td>(0.00068)</td>
<td>(0.0027)</td>
<td></td>
</tr>
</tbody>
</table>

### Panel B: Survey Data

<p>| | | | | |</p>
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<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Self reported health good / very good / excellent (not fair or poor)</td>
<td>0.548</td>
<td>0.039</td>
<td>0.133</td>
<td>[&lt;0.0001]</td>
</tr>
<tr>
<td></td>
<td>(0.498)</td>
<td>(0.0076)</td>
<td>(0.026)</td>
<td></td>
</tr>
<tr>
<td>Self reported health not poor (fair, good, very good, or excellent)</td>
<td>0.86</td>
<td>0.029</td>
<td>0.099</td>
<td>[&lt;0.0001]</td>
</tr>
<tr>
<td></td>
<td>(0.347)</td>
<td>(0.0051)</td>
<td>(0.018)</td>
<td></td>
</tr>
<tr>
<td>Health about the same or gotten better over last six months</td>
<td>0.714</td>
<td>0.033</td>
<td>0.113</td>
<td>[&lt;0.0001]</td>
</tr>
<tr>
<td></td>
<td>(0.452)</td>
<td>(0.0067)</td>
<td>(0.023)</td>
<td></td>
</tr>
<tr>
<td># of days physical health good, past 30 days*</td>
<td>21.862</td>
<td>0.381</td>
<td>1.317</td>
<td>[0.019]</td>
</tr>
<tr>
<td></td>
<td>(10.384)</td>
<td>(0.162)</td>
<td>(0.563)</td>
<td></td>
</tr>
<tr>
<td># days poor physical or mental health did not impair usual activity, past 30 days*</td>
<td>20.329</td>
<td>0.459</td>
<td>1.585</td>
<td>[0.009]</td>
</tr>
<tr>
<td></td>
<td>(10.939)</td>
<td>(0.175)</td>
<td>(0.606)</td>
<td></td>
</tr>
<tr>
<td># of days mental health good, past 30 days*</td>
<td>18.738</td>
<td>0.603</td>
<td>2.082</td>
<td>[0.001]</td>
</tr>
<tr>
<td></td>
<td>(11.445)</td>
<td>(0.184)</td>
<td>(0.64)</td>
<td></td>
</tr>
<tr>
<td>Did not screen positive for depression, last two weeks</td>
<td>0.671</td>
<td>0.023</td>
<td>0.078</td>
<td>[0.001]</td>
</tr>
<tr>
<td></td>
<td>(0.470)</td>
<td>(0.0071)</td>
<td>(0.025)</td>
<td></td>
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</tbody>
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*Standardized treatment effect*<br>

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<tbody>
<tr>
<td></td>
<td>0.059</td>
<td>0.203</td>
<td>[&lt;0.0001]</td>
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<tr>
<td></td>
<td>(0.011)</td>
<td>(0.039)</td>
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Source: Finkelstein et al. 2012
<table>
<thead>
<tr>
<th></th>
<th>Control Mean (1)</th>
<th>ITT (2)</th>
<th>LATE (3)</th>
<th>p-values</th>
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<tbody>
<tr>
<td><strong>Panel A: Access to care</strong></td>
<td></td>
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<tr>
<td>Have usual place of clinic-based care</td>
<td>0.499 (0.500)</td>
<td>0.099 (0.0080)</td>
<td>0.339 (0.027)</td>
<td>[&lt;0.0001]</td>
</tr>
<tr>
<td>Have personal doctor</td>
<td>0.490 (0.500)</td>
<td>0.081 (0.0077)</td>
<td>0.280 (0.026)</td>
<td>[&lt;0.0001]</td>
</tr>
<tr>
<td>Got all needed medical care, last six months</td>
<td>0.684 (0.465)</td>
<td>0.069 (0.0063)</td>
<td>0.239 (0.022)</td>
<td>[&lt;0.0001]</td>
</tr>
<tr>
<td>Got all needed drugs, last six months</td>
<td>0.765 (0.424)</td>
<td>0.056 (0.0055)</td>
<td>0.195 (0.019)</td>
<td>[&lt;0.0001]</td>
</tr>
<tr>
<td>Didn't use ER for non-emergency, last six months</td>
<td>0.916 (0.278)</td>
<td>-0.0011 (0.0043)</td>
<td>-0.0037 (0.015)</td>
<td>0.804</td>
</tr>
</tbody>
</table>

*Standardized treatment effect*

0.128 (0.0084) 0.440 (0.029) [<0.0001]

Source: Finkelstein et al. 2012
Effect of Medicare on Health

Medicare becomes available when you turn 65 ⇒ Can do a regression discontinuity design to see what happens when you cross age 65 threshold. Two papers use this strategy:

Examines impacts across groups; with an interest in evaluating impacts on inequality in utilization

2) Card-Dobkin-Maestas “Does Medicare Save Lives?” QJE’09
Examines impacts on outcomes (mortality following hospital admission)

Basic idea is to draw graphs of outcomes based on age for various groups

The discontinuity at 65 captures short-term changes in health care utilization and mortality from shift from < 65 to > 65
First stage: sharp increase in coverage; more for disadvantaged (From NHIS; age measured in quarters) FIGURE 1

Hospital discharge data (CA, FL, NY 1992-2002), ages 60-70

Increase is driven by discretionary medical care, diagnostic heart treatments.

Nontrivial decrease in mortality.

Effects of Medicare on Health

1) Big increase in health insurance coverage, especially for disadvantaged groups

2) Big increase in health care utilization

3) Visible decrease in mortality after admission for conditions requiring Emergency Room (ER) immediate hospitalization (so that likelihood of going to hospital is the same before 65 and after 65)

⇒ Medicare health insurance does save lives
Medicaid and Medicare results contrast with those of RAND experiment, which found no impact on health outcomes?

How to reconcile the two results?

1) The studies examine different parts of the “medical effectiveness curve.”

2) Moving individuals from uninsured to having some insurance has an important positive effect on health

3) Adding to the generosity of current insurance, does not seem to cause significant changes on health

US health insurance system leaves many uninsured but provides overly generous care to the insured
The “Flat of the Curve”

![Graph showing the health effectiveness curve, with points A, B, and C, and the relationship between dollars of marginal health benefits and dollars of medical spending.](image-url)
Optimal Health Insurance: Provider Side

Preceding analysis of optimal insurance assumes patient makes entire healthcare decision:

This assumed a passive doctor, in the sense that doctor provides whatever treatment patient requested

Clearly reality is closer to the opposite!

Incorporating supply side issues is critical in understanding health insurance

Question: choice of payment schemes for physician

Retrospective (fee-for-service) vs. prospective (diagnosis based fixed payments)
Optimal Health Insurance: Provider Side

Intuition: if patient doesn't choose level of care, healthcare may be inefficiently high

If physician is compensated for all costs ⇒ it is in his interest to do lots of procedures (e.g. too many C-section births)
Optimal Health Insurance: Provider Side Model

Payment for physician services is \( P = \alpha + \beta \cdot c \)

\( \alpha \) = fixed cost payment for a given diagnosis

\( \beta \) = payment for proportional costs \( c \) (tests, nurses)

Various methods of payment \((\alpha, \beta)\):

1. Fee-for-service \((\alpha = 0, \beta > 1)\): No fixed payment for practice, but insurance company pays full cost of all visits to doctor + a surcharge.

2. Diagnosis based payment \((\alpha > 0, \beta = 0)\): varying by type and \# of patients but not services rendered
Optimal Health Insurance: Provider Side

General trend has been toward higher $\alpha$, lower $\beta$

Private market has shifted from FFS to HMO (Health Maintenance Organizations) capitation schemes [where insurer pays a fixed amount per patient no matter what the health costs are].

Example, Kaiser receives a flat amount per person enrolled based on age/gender

Medicare/Medicaid shifted in 1980s to a prospective payment scheme.

Tradeoff: lower $\beta$ provides incentives for doctors to provide less services. But they may provide too little!

$\Rightarrow$ Lower costs, but complaints of lower quality of care
Evidence: Payment Schemes and Physician Behavior

1) In 1983, Medicare moved from retrospective reimbursement to prospective reimbursement.

2) **Prospective payment system (PPS)** is Medicare’s system for reimbursing hospitals based on nationally standardized payments for specific diagnoses.

All diagnoses for hospital admissions were grouped into Diagnosis Related Groups (DRGs).

Government reimbursed a fixed amount per DRG. More severe DRGs received higher reimbursement.
Evidence: Payment Schemes and Physician Behavior

Cutler (1993) finds that PPS led to:

1. A reduction in treatment intensity. For example, the average length of hospital stay for elderly patients fell by 1.3 days.

2. No adverse impact on patient outcomes despite the reduction in treatment intensity.

Evidence that doctors put some weight on profits

Suggests they are practicing “flat of the curve” medicine: too much treatment before.

3. Cost growth slowed dramatically in the five years after PPS but then accelerated again.
Biggest failure of US health care: Opioid Epidemic

Late 1990s, big pharma pushed opioid pain killers aggressively

Encouraged doctors to prescribe them (patients love them in the short-run but often get addicted)

⇒ Led to misuse and addicted then turned to heroin and fentanyl (80% of current addicts started with prescription opioids). US now has 1.5m opioid addicts.

70K people/year die from overdoses (5% death rate/year for addicts). 10 times more deaths than in EU relative to pop

⇒ US is slowly shifting from “addiction is a crime” to “addiction is a health care problem”

⇒ Overdose death rates vary tremendously from 6/million in Portugal, 60/million in UK or Sweden, up to 250/million in the US (web)

⇒ Portugal decriminalized drugs and deployed health care solution ⇒ drop in overdose deaths (more modest decrease in addiction rate)
Technology Growth and Health Care Growth

1) Health care technology contributes to rising life expectancy

2) Many new technologies have modest health effects and are very costly and yet are adopted because Medicare/Private insurance accept any health effective treatment
   ⇒ fuels the development of new technologies, especially testing which leads to growing costs and over-treatment

3) Countries which are the most successful at containing costs choose to use only the cost effective new treatments: reduces costs while having very little effect on health outcomes

4) US health care system spends too much on the insured (where marginal value of care is small) and spends too little on the uninsured (where marginal value of care is high)

Key US health policy challenges is to: (a) cover more of the uninsured, (b) reduce non-cost effective health spending
Health spending was 9% of GDP on average in the OECD, ranging from 4.3% in Turkey to 17.2% in the United States.

**Note:** Expenditure excludes investments, unless otherwise stated.

1. Australian expenditure estimates exclude all expenditure for residential aged care facilities in welfare (social) services.
2. Includes investments.

**Source:** Health at a Glance 2017.
REFERENCES


Case, Anne and Angus Deaton. “Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century”, PNAS 112(49), 2015. (web)


