What is health economics?

ECON 43565
Bill Evans
Fall 2020

Two major themes in this class

- What are the economic aspects of health issues?
- What can economists add to the discussion of:
  - The production of health?
  - The markets for health care?
  - The markets for insurance?
- Key results: policy has ignored behavior at their peril

These themes are easy to motivate

- Health care sector is one of the largest in the economy
  - $3.6 trillion in spending in 2018
  - $11,172/person
  - 17.9% of gross domestic product
  - 42% expenses covered by governments
- Costs are expected to continue to rise
  - Prices rising faster than other sectors
  - Aging population

Health Expenditures Spending as a % of GDP, 1980-2018

Consumer Price Index (1982=100), 1980-2019

What drives spending increases in medical care?

Despite the spending, some problems

- High uninsurance rates
- US tends to have poor outcomes compared to other countries

Employer sponsored Health Ins.

- How did we get into this system?
- Why do firms provide health insurance?
- Who likes the system?
- Why don’t we change?
## Uninsurance Rates, 2018

<table>
<thead>
<tr>
<th>By Education, 26-64</th>
<th>Ages 15-64</th>
<th>10.6%</th>
<th>By family income, all ages</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; HS</td>
<td>&lt; $25K</td>
<td>13.8%</td>
<td>≥ $25K, &lt; $50K</td>
<td>12.3%</td>
</tr>
<tr>
<td>HS grad</td>
<td>≥ $50K, &lt; $75K</td>
<td>10.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>≥ $75K, &lt; $100K</td>
<td>7.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>≥ $100K, &lt; $125K</td>
<td>5.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grad degree</td>
<td>≥ $125K, &lt; $150K</td>
<td>4.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>≥ $150K</td>
<td>3.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Figure 7. Uninsured Rate: 2008 to 2018**

- 2008: 16%
- 2009: 15%
- 2010: 14%
- 2011: 13%
- 2012: 12%
- 2013: 11%
- 2014: 10%
- 2015: 9%
- 2016: 8%
- 2017: 7%
- 2018: 6%

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**Figure 4. Uninsured Rate by Single Year of Age: 2013 to 2016**

- Age 18: 2013: 20%
- Age 19: 2014: 19%
- Age 20: 2015: 18%
- Age 21: 2016: 17%

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**Health Care Spending Per Capita, 2010**

- 87% more than Canada
- 150% more than UK
- 296% more than Slovak Rep
- 585% more than Chile
What is economics?

- Behavioral science
- Develop models that can
  - Predict/explain behavioral patterns
  - Can be falsified with data/experimentation
- Starting point – actors are purposeful
  - Firms seek to maximize profits
  - People want to maximize utility
- Important characteristics of economics is its predictive nature – given a change in constraints – how will actors respond?

What can economics add to the study of health?

- Theoretical – modeling the role of incentives
- Empirical – detecting whether distortions occur and measuring the responses to external events
What is the primary lesson of economics?

Economics is at its best when it demonstrates that incentives matter in seemingly uneconomic settings.

- Families
- Crime
- Governments
- Addictive substances
- Health care

Economics in health

Economists have been successful in demonstrating that incentives matter a great deal in the health sector.

- Has altered
  - The way people think about problems
  - The structure of the industry
  - Policy response to certain circumstances
- The problem: Most do not like what economists have to say

Example 1: Small Group Reform

- Most insurance is provided by employers
- Large firms are “self-insured”
- Smaller firms/self-employed must purchase insurance for their workers
- Small groups tend to have
  - Higher prices
  - Prices that are volatile
  - Therefore, smaller firms less likely to provide ins.
- Price also is a function of worker characteristics
Higher priced groups are women, older workers, minorities, chronic health problems
- Concern: prices for some groups too high
- Solution: Reform the small group market by eliminating pricing based on sex/race/age
- Goal: reduce prices and therefore enhance ability to pay for insurance
- Nearly all states have adopted some version of small group reform

What is the economist’s prediction (Rothschild and Stiglitz)
- Policy lowers prices for some by forcing others to pay more for insurance
- What is the natural response of the low priced insured’s (e.g., young people)?
- As the low risk exit the market, only higher risk people remain
- These laws increased costs, decreased availability
- How do you maintain the pooling equilibrium?

Example 2: Modeling the Progression of COVID-19
- Imperial College of London Model of COVID-19
- “Agent-based model” micro simulation
- First estimates for US
  - Kill 2.2 million
  - 81% of population infected
- Results due to high $R_0$, the number of other people infected by someone COVId+
- Why were these estimates so high?
Events in Early March

- March 4 – CA declares states of emergency
- March 6 – SXSW cancelled
- March 7 – NY declares a state of emergency
- March 11 – WHO declares a pandemic
- March 11 – Trump declares foreign travel ban
- March 11 – NBA suspends season
- March 11 – ND cancels in person classes
- March 12 – MLB suspends spring training
- March 12 – NHL suspends season
- March 12 – NCAA cancels M/W basketball tour.

Non-essential retail

Switch dates in time series

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<tr>
<th>Series</th>
<th>Day switch in March for national series</th>
<th>Switch dates for States</th>
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<tr>
<td>Foot traffic</td>
<td>13</td>
<td>32 states, 13-14</td>
</tr>
<tr>
<td>Noness. retail</td>
<td>14</td>
<td>44 states, 13-14</td>
</tr>
<tr>
<td>Essential retail</td>
<td>8</td>
<td>43 states, 7-13</td>
</tr>
<tr>
<td>Hotels</td>
<td>13</td>
<td>47 states, 7-14</td>
</tr>
<tr>
<td>Restaurants</td>
<td>12</td>
<td>All states, 8-14</td>
</tr>
<tr>
<td>Business serv.</td>
<td>13</td>
<td>48 states, 13-14</td>
</tr>
<tr>
<td>At home rate</td>
<td>10</td>
<td>All states, 10-14</td>
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% Population Covered

- Getting SOE 1st
- State of Emergency
- Public Schools
- Restaurants
- Entertainment
- Bars
- Stay at Home

Non-essential Retail

- Little change in traffic prior to SOE
- Massive decline after

Non-essential Retail

- Most of the decline occurs before SAH orders in place

Non-essential Retail

- Larger decline in traffic in counties with a SAH order
# Decomposition

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>% Reduction in outcome at 25-days explained by:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Δ or % Point</td>
</tr>
<tr>
<td>Foot traffic</td>
<td>25 Days after SOE</td>
</tr>
<tr>
<td>Noness. retail</td>
<td>-60.1%</td>
</tr>
<tr>
<td>Essential retail</td>
<td>-33.7%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>-69.6%</td>
</tr>
<tr>
<td>Hotel</td>
<td>-74.7%</td>
</tr>
<tr>
<td>Restaurant</td>
<td>-65.5%</td>
</tr>
<tr>
<td>Business serv.</td>
<td>-60.1%</td>
</tr>
<tr>
<td>At home rate</td>
<td>0.17</td>
</tr>
</tbody>
</table>