Focus on the Actuarially Fair Premium

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Why Make Actuarially Fair Premium the Focus?

• Key to Key Policy Issues (& Business Issues)
  • Risk Pool Impact via AFP:
    • High Risk Pools, Obamacare premium drivers, Ted Cruz proposal...
  • Cost of care drivers:
    • Affordability to not-rich, Reasons for cost growth...

• Not high entry barriers
  • Works for professional masters students, clinicians, non-economics undergrads
Conceptual Structure of Content Taught

• Actuarially Fair Premium = Expected costs of care for specific pool of insured
  • Value of Insurance: Fixed risk, care

• Selection: Focus on risk pool composition
  • Keep expected care constant (for given risk)
• Moral Hazard/Cost-containment: Focus on care drivers
  • Keep risk pool constant (uniform)
Brief Exercise Actuarially Fair Premium (AFP):

Suppose that the population of some place is 95% low risk and 5% high risk. Low-risk people have expected medical expenditures of $500 and high-risk people have expected medical expenditures of $30,000.

• What is the AFP for an insurance plan with only low-risk people?

• What is the AFP for an insurance plan with only high-risk people?
95% low-risk: expected medical expenditures of $500
5% high-risk: expected medical expenditures of $30,000

• What is AFP for an insurance plan covering the entire population?

• What is AFP for an insurance plan covering a representative sample of the entire population?

• What is AFP for a plan with disproportionately greater share of high-risk people, specifically 50% high risk?
Risk Adjustment: With the same population and ignoring administrative costs (loading)...

- What do plans have to receive (in total from agency plus policy buyer...) in order for the plans to be willing to provide a sell a policy for a high-risk person?

- What do plans have to receive in order for them to be willing to sell to low-risk people but not try cherry-pick the low-risk people?
Imagine you want to implement a risk adjustment scheme with these characteristics:

- Everyone pays the same premium out-of-pocket, regardless of risk
- Plans have no incentives to lemon-dump or cherry-pick
- Scheme is budget-neutral, w/ no outside subsidies

- How would you implement this scheme?
- What would you charge people for plans?
- What would you pay plans for the different risk categories?
- What rules would you need?
Suppose AIDS patients are 5% of Xanadu’s population and have expected medical care costs of $100,000/year. The remaining 95% of the population has expected medical care costs of $1000/year. *Per capita* income in Xanadu is $50,000/year.

(a) Lemon dumping, administrative costs...
(b) Purchasing alliances (high risk pools...)
(c) Mandatory Pooling of all risks
(d) Risk-adjustment
In-class Exercises: AFP & Different Treatment Choices

Model like class with assumptions: Initially (ex ante) everyone has the same risks. There are only three periods: uncertainty, plan purchase decisions and consumption of non-health stuff; uncertainty resolved; enjoying resulting health.

<table>
<thead>
<tr>
<th>Health State</th>
<th>Probability</th>
<th>Health Care Costs to Treat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney disease</td>
<td>1%</td>
<td>$250,000</td>
</tr>
<tr>
<td>Heart attack</td>
<td>4%</td>
<td>$100,000</td>
</tr>
<tr>
<td>Good health</td>
<td>95%</td>
<td>$1000</td>
</tr>
</tbody>
</table>
Exercise Moral Hazard/Cost Growth & Containment

Assume there are 2 possible treatment choices for those who get kidney disease:

<table>
<thead>
<tr>
<th>Treatment for kidney disease</th>
<th>Cost (Opposite of reality)</th>
<th>Quality of Life (1-10 scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>$50,000</td>
<td>2</td>
</tr>
<tr>
<td>Transplant</td>
<td>$250,000</td>
<td>9</td>
</tr>
</tbody>
</table>
In expectation (*ex ante*), from perspective of not knowing whether or not will get kidney disease, consider policy that covers transplant or dialysis vs. covering only dialysis.

- What is incremental expected cost (incremental increase in AFP) of insurance policy that covers transplant relative to policy that covers only dialysis?
- What is real-world opportunity cost?
- What are the incremental expected benefits of an insurance policy that covers transplant relative to policy that covers only dialysis? Give in *both* in everyday words & QoL #s.
- What would you personally choose?
Summary

• Drivers of AFP, across groups & over time, are biggest issues in health economics (policy & business)

• Understanding these issues requires being analytical & quantitative
  • But does not require standard economics tools

• Simple toy models w/ different simplifying assumptions can teach most important concepts & tools to wide variety of students