Understanding How Senior Citizens Make Health Insurance Choices

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Why Modelling Choice Behaviour Matters

- Understanding how people make insurance choices is important for the design/reform of any health care system.
- Unfortunately, there is a tendency for health economists and governments to think about design of health care systems *without paying attention to what consumers really want or know*.
- I will present some results on these questions from three different published papers.

How Senior Citizens Make Health Insurance Choices

- Harris and Keane (*Journal of Econometrics*, 1999, "A model of health plan choice….")
- A model of health insurance choices by senior citizens (65+) in the "Twin Cities" of Minneapolis and St. Paul, Minnesota, USA
- Data collected by HCFA in 1988. N = 1274. Mean age = 74.

How Senior Citizens Make Health Insurance Choices

- Background:
- In the US all senior citizens have basic Medicare, but this leaves substantial gaps in coverage. So the basic choice is pretty simple: Do you get extra private insurance to fill the gaps? (“Medigap” insurance).
- Given the regulatory environment at the time, there were basically only 4 private insurance options. This makes the choice set pretty simple.

Insurance Plan Options

	Medicare only	Medigap w/o drugs	Medigap with drugs	IPA	HMO
Monthly Premium	$26	$71-$82 (by age)	$95-$109 (by age)	$53	$40
Drug Coverage			Yes		Yes
Preventive Care				Yes	Yes
Provider Choice	Yes	Yes	Yes	Yes	
Submit Claims	Yes	Yes	Yes		

Unobserved Attributes

- Two key attributes of health insurance plans not measured in the data:
  - quality of care
  - cost sharing requirements
- This isn't a specific failure of these data, because these attributes are intrinsically difficult to measure.

Unobserved Attributes

- But in the Twin Cities data consumers were asked how much they cared about different health insurance plan attributes
- Harris-Keane (JoE, 1999) developed a method to combine such stated preference data with consumers' observed health plan choices to:
  - 1) measure how consumers value the unobserved attributes
  - 2) measure the levels of the unobserved attributes possessed by each insurance plan (as perceived by consumers).

The Harris-Keane Model

- Utility of person *i* from choosing plan *j*:
- $U_{ij} = X_j\beta_i + A_jW_i + \varepsilon_{ij}$
- X_j = *observed attributes of option j*
- A_j = ***un**-observed attributes of option j*
- $\beta_i = \beta_0 + \boldsymbol{\beta_1 S_i} + \mu_i$
- $W_i = \boldsymbol{W_1 S_i} + \mu_i$
- *The stated importance levels S convey info about how much people care about the observed and unobserved attributes*

Examples of attribute importance measures

How important is X for choosing a plan?

	Must Have	Like to Have	Don't Care
Low Premium	23	59	18
Drug Coverage	22	60	18
Provider Choice	35	55	10
Low Cost Sharing	31	60	9
Highest Quality	44	52	4

Stated Preference Data

- Economists usually ignore this kind of data (what people say they care about).
- But Harris and Keane (JoE,1999) showed it is highly predictive of market choices

  Doubles the R^2 of the model !!

Preference Weights, Observed Attributes

Attribute	Intercept	Slope
Premium	.014	-.007**
Drug Coverage	.057	.384**
Preventive Care and No Claims	1.887	.766**
Provider Choice	-.395	1.430**
Must Submit Claims	(All plans with preventive care have no claims)	-.274**

People Care **a Lot** About Provider Choice

Preference Weights Conditional of stated preference S = (1, 2 or 3)

S=1 Don't Care	S=2 Like to Have	S=3 Must Have
Drug Coverage		
.057+(1)(.384) =.441	.057+(2)(.384) =.825	.057+(3)(.384) =1.209
Provider Choice		
-.395+(1)(1.430) =1.035	-.395+(2)(1.430) =2.465	-.395+(3)(1.430) =3.895

Three times more important than Drug coverage.

Estimated **Un**observed Attribute Levels

Quality (relative to Basic Medicare)

Medicare Only	.000
Medigap w/o Drugs	.269
Medigap with Drugs	.261
IPA type HMO	-.081
Group HMO	.161

Preference weight is 2.688 times S = (1, 2, 3).

Note: (.161)(2.688)(3) = 1.298, so the higher perceived quality of the Group HMO does not nearly outweigh the lack of provider choice

Estimated **Un**observed Attribute Levels

Cost Sharing (relative to Basic Medicare)

Medicare Only	.000
Medigap w/o Drugs	-.270
Medigap with Drugs	-.355
IPA type HMO	-.414
Group HMO	-.271

Preference weight is 2.688 times S = (1, 2, 3).

Senior Citizens do not seem to understand that Medicare has higher co-pays than all the other options !!

Mis-Perceptions about Health Insurance

- Literature suggesting that senior citizens have mis-perceptions about Medicare and Medigap plans:
  - E.g., Cafferata (1984), McCall et al. (1986), Davidson (1992)
- Literature showing consumers have difficulty understanding health insurance plans more generally:
  - E.g., Cunningham et al. (2001), Gibbs et al. (1996), Isaacs (1996), Tumlinson et al. (1997)
- Given this, it is not surprising that senior citizens have mis-perceptions about cost sharing requirements.

Medicare Drug Plans

- Medicare introduced supplemental plans to cover ***prescription drug costs*** in 2006.
- Net cost of a plan is premium plus co-pays on your prescriptions – mostly known *ex ante*.
- People have 30 to 60 plans to choose from.
- But the Choice Task is **pretty simple**:
  - Make sure you pick a plan that covers the prescription drugs you actually take…
  - Especially any expensive ones.

Medicare Drug Plans

- But Keane, Ketcham, Kuminoff, Neal (2020) find that very few people choose the lowest cost plan – or even come close.
- The typical person's loss from choosing a suboptimal drug plan are small…
- …simply because all plans reduce the cost of many drugs substantially.
- But people with cognitive limitations like AD+ADRD or depression often have much large losses.

Medigap Choice and Cognitive Ability

- Fang, Keane and Silverman (JPE, 2008) also study the Medigap insurance market for senior citizens in the US.
- Using the Medicare Current Beneficiary Survey (MCBS) we assign to each person an expected level of health care costs.
- This is done by regressing realized costs on an extensive list of health measures.

Medigap Choice and Cognitive Ability

- The standard theory of adverse selection predicts that people with higher expected health care costs should be more likely to buy insurance
- But FKS find the reverse: healthier people are more likely to buy Medigap insurance
- We call this “Advantageous Selection”

Medigap Choice and Cognitive Ability

- Why do healthier people buy more insurance?
- Maybe because people have different levels of risk aversion?
- Maybe more risk averse people:
  - 1) take better care of their health, **and**
  - 2) demand more insurance (*ceteris paribus*)?
- This doesn't work: It turns out more risk averse people do demand more insurance
- But they are <u>not</u> healthier !!

Medigap Choice and Cognitive Ability

- FKS find that Cognitive Ability is a strong predictor of demand for health insurance:
- A 1-std. dev. increase in cognitive ability increases probability of buying Medigap by 5.4 points.
- This is surprising, as standard economic theory says cognitive ability has nothing to do with it.

So What Have We Learned About Insurance Choices of Senior Citizens?

1. They care a lot about provider choice
2. They don't understand the rules and benefits of insurance plans very well, especially co-pay arrangements
3. Those with higher cognitive ability are more likely to buy supplemental insurance

Conclusions: I

- I think these 3 points are closely related:
- The reason people with higher cognitive ability are more likely to buy supplemental insurance is probably that they can better understand the rules of different insurance plans, especially how co-pay arrangements work

Conclusions: II

- The reasons we don't see adverse selection empirically are that:
  - 1) Many people don't understand how their out-of-pocket costs will differ under different plans
  - 2) Factors like provider choice and cognitive ability are far more important drivers of insurance choice than the likely out-of-pocket costs under different plans

Conclusions: III

- One can't use co-pays as an effective cost control device if people don't understand how they work
- Any managed care based approach to cost control faces the stumbling block that people care so much about provider choice
- Unfortunately, co-pays are a primary method of cost control in countries like Australia and the US.

The End

- In general, any successful approach to health care reform and cost control must be based on an empirical understanding of how consumers actually behave, not just theoretical considerations.