The physician's practice. Folland *et al* Chapter 15

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Stuff in the textbook we're skipping.

1. Chapter 11: The organization of health insurance markets.
2. 12: Managed care.
3. 13: Nonprofit firms.
4. 14: Hospitals and long term care.

Physician behavior.

- To a large extent physicians determine how health care is allocated.
- We want to understand how changes in the environment in which physicians find themselves affect their decisions and in turn our health and finances.

A model of physician behavior.

- Recall economists usually model people as *goal directed.*
- A tension we will explore exists between physicians' goals of making people healthier and making more money.
- Recall we have argued that there is an information asymmetry between patients and physicians.
- Physicians can exploit that asymmetry to provide too much (or too little) care.
- (What do we mean by "too much" or "too little"?)

Physician labor supply.

- Physicians are small firms, but these firms do not maximize profits, they face a tradeoff between profits and hours spent not working.
- How much do physicians work?
- What effect should we expect changes in the manner or level of physician compensation to have on the amount physicians work?
- (graph: labor leisure tradeoff, backward-bending supply of labor)

Supplier induced demand (SID).

- Suppose physicians can use their information to influence demand for their services.
- e.g. a physician thinks that treatment A or treatment B will be roughly equally effective for some patient. Does an increase in the physician's compensation for A relative to B make it more likely the physician chooses A?
- The physician can generate more demand for her services by telling more patients they need more extensive treatments.

Model.

- Consider modeling this situation as follows. The goals of the physician are represented by a utility function of the form

$$U(\pi, L, I) \tag{1}$$

where

π	net income	likes
L	leisure (non-work) time	likes
I	level of inducement	dislikes

Model cont.

- "Inducement" (I) represents how much extra demand for services the physician generates by telling people they need treatments they do not need.
- $I = 0$ means "ideal" care. Say, the care the physician would give to their own children.
- $I > 0$ means the physician is driving up demand for their services.
- Income $= m(Q_0 + I)$, where m is profit per unit of care, Q_0 is units of care at $I = 0$, and I is induced units.
- (graph: income–inducement tradeoff)

Model cont.

- The model predicts that, under some reasonable assumptions over preferences:
  - Increases in income given level of care (a shift up in the budget constraint) will cause physicians to induce less and work less.
  - An increase in profits per unit of care has two effects. Physicians will substitute towards more inducement, but the income effect works in the opposite direction.
  - If the substitution effect dominates, then paying less per unit of services leads physicians to induce less.

Target income

- In early versions of the argument physicians were assumed to have a "target" income.
- Change quantity when fees change such that income remains constant.
- This is a special case of the more general model we have considered.
- Under income targets, increases (decreases) in fees must decrease (increase) quantity.

SID in markets.

- The usual SID story makes no sense in a supply-demand framework.
- (graph)
- However, the supply and demand framework helps us highlight empirical difficulties.
- It seems that we might be able to test for SID by checking to see whether quantity rises when fees fall.

Limits to SID.

- Reputations.
- Patients can gain information on appropriate treatments (eg. WebMD).
- Punitive mechanisms for inappropriate care (eg, malpractice suits).
- Second opinions.
- Question: should government aid provision of information? (ratemydoctor.gov.ca?)

Evidence.

- Suppose more physicians move to a given region.
- Increased competition drives down fees m (or, in Canada, fewer patients walk in the door, or perhaps political pressure drives down m).
- If SID story is true (and, in our version, income effects dominate) then each physician induces demand and the quantity of services should rise.
- But this is exactly what we would expect to see absent SID if markets work perfectly!
- More physicians should be located where demand for medical services is higher (Roemer's Law: "A built bed is a filled bed") so we cannot use this correlation as evidence for SID.

Induced demand for childbirths?

- Many studies have tried to overcome this problem by attempting to make indirect inferences that should reveal SID.
- e.g.: If more amenities lead to more physicians locating in a given area, and physicians can induce demand, then more services should be provided in areas with more amenities.
- Using this statistical methodology it appears that OBGYNs induce demand for childbirths!
- Problem: there may be other reasons why more services are provided in areas with high amenities.

Other evidence.

- Lots of studies look at caesarean sections. Pregnancies are decided by patients, not doctors, remuneration for caesareans sometimes bounces around, and health affects not clear for many patients.
- Example finding: in places and times where fertility is relatively low, the probability of a ceasarean section relative to natural birth is relatively high.
- In U.S., medicare fee reductions cause increase in quantity.
- In Canada, changes to provincial fee schedules which make some procedure more lucrative increase use of that procedure.

SID evidence cont.

- Hickson et al (1987). randomized physicians to salary or fee for service. FFS physicians scheduled more visits per patient and saw patients more frequently.
- Quebec fee caps in the 1980s (total billings are $X, if more claims are made against that pool amount per claim is reduced) induced physicians to provide more services.

Policy implications.

- Suppose SID exists. Producing more physicians will lead to greater demand on the health care system. Since we have seen in previous lectures that the marginal product of health services is low, we will have greater expenditures but not much more health.
- So should we limit places in med schools? We have in the past because of these considerations.

Small area variations.

- Suppose people across Canada are more or less the same and physicians across Canada have the same understanding of which treatments are appropriate given observed symptoms.
- Then it is the case the case the frequency of given procedures should be the same across Canada, up to statistical noise.
- In fact, frequencies of various procedures vary much more than we should expect, and we cannot make those discrepancies go away by controlling for patient characteristics.
- These variations may reveal differences in "styles" across physicians. There may be resulting welfare losses. Suggests SID is at least an option.