

Patient Indignation and Hospital Competition

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Motivation

- There is evidence that people are willing to take costly action to punish people who they feel have wronged them.
 - Experimental Game Theory Literature.
 - Fair Pricing Literature (Rotemberg).
- People are particularly apt to feel mistreated in health care markets.
 - People regard health care as a right rather than as an ordinary commodity.
 - Insurance has accustomed people to getting health care without paying for it.
 - Most health insurance was chosen by the employer, rather than by the patient.
 - There is a lot of confusion and uncertainty surrounding health care.
- The key assumptions in this paper:
 - People who have insurance plans that restrict which hospitals they are allowed to use become indignant when those restrictions are enforced.
 - This causes them to act in ways that impose costs on either the insurance company or on the hospital that denied them.

Main Idea

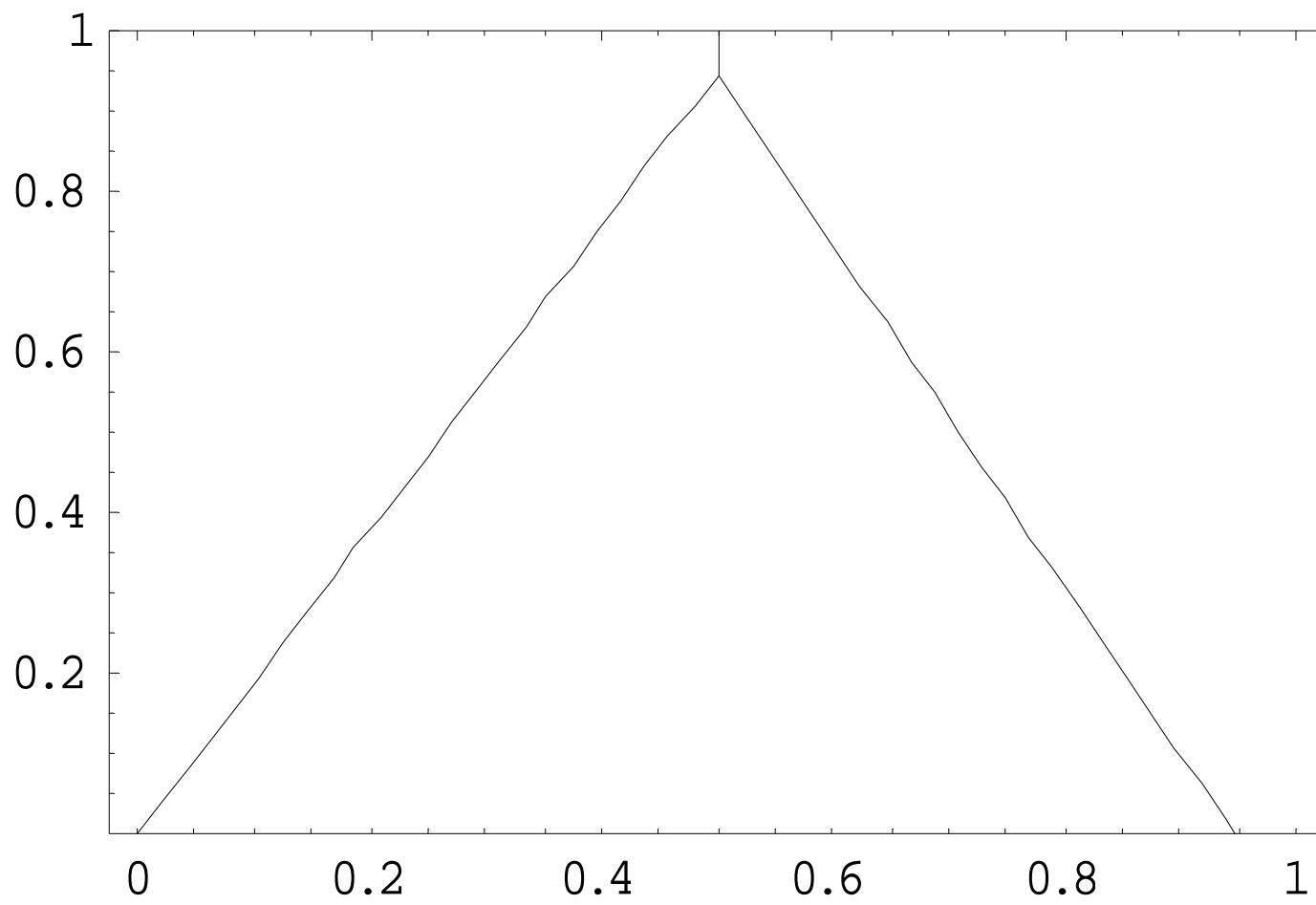
- To explore the effect of these “indignation” costs on prices and on welfare.
- To see how this effect differs depending on whether the indignation is directed at the insurance company or at the hospital.
- The results may have policy implications in two areas:
 - Hospital anti-trust enforcement.
 - Policies designed to reduce the number of uninsured.

Model Setup

- There is a town (located at a single point) that has a monopoly hospital.
- There is another town one unit away that has a competitive hospital market.
- People in the monopolized town can choose between:
 - A “deluxe” insurance policy that permits them to use the local hospital.
 - A “basic” insurance policy that includes the hospitals in the competitive town but excludes the local hospital.
 - No insurance at all.
- The insurance market is perfectly competitive.
- The population is characterized by a joint uniform distribution of marginal utility of income (δ) and travel costs (τ).

Model I (Costs Imposed on the Insurance Company)

- The indifference locus (in δ - τ space) between deluxe and basic is: $\tau = \delta(p - c - \omega\phi)$
 - p is the price that the local hospital charges to insurance companies.
 - c is the (constant) marginal cost of hospital services.
 - ω is the probability that a basic insurance customer tries to use the local hospital, is denied, and becomes indignant.
 - ϕ is the cost an indignant patient imposes on the insurance company.
 - The locus goes through the origin.
 - The locus is upward-sloping as long as the monopoly hospital's price is greater than the cost (to insurance companies) of providing basic insurance.
- The indifference locus between basic and no insurance is: $\tau = h - \delta(c + \omega\phi)$
 - h is the (constant) health value of having insurance.
 - The locus is downward-sloping.
- The two loci cross at $\delta = h/p$.



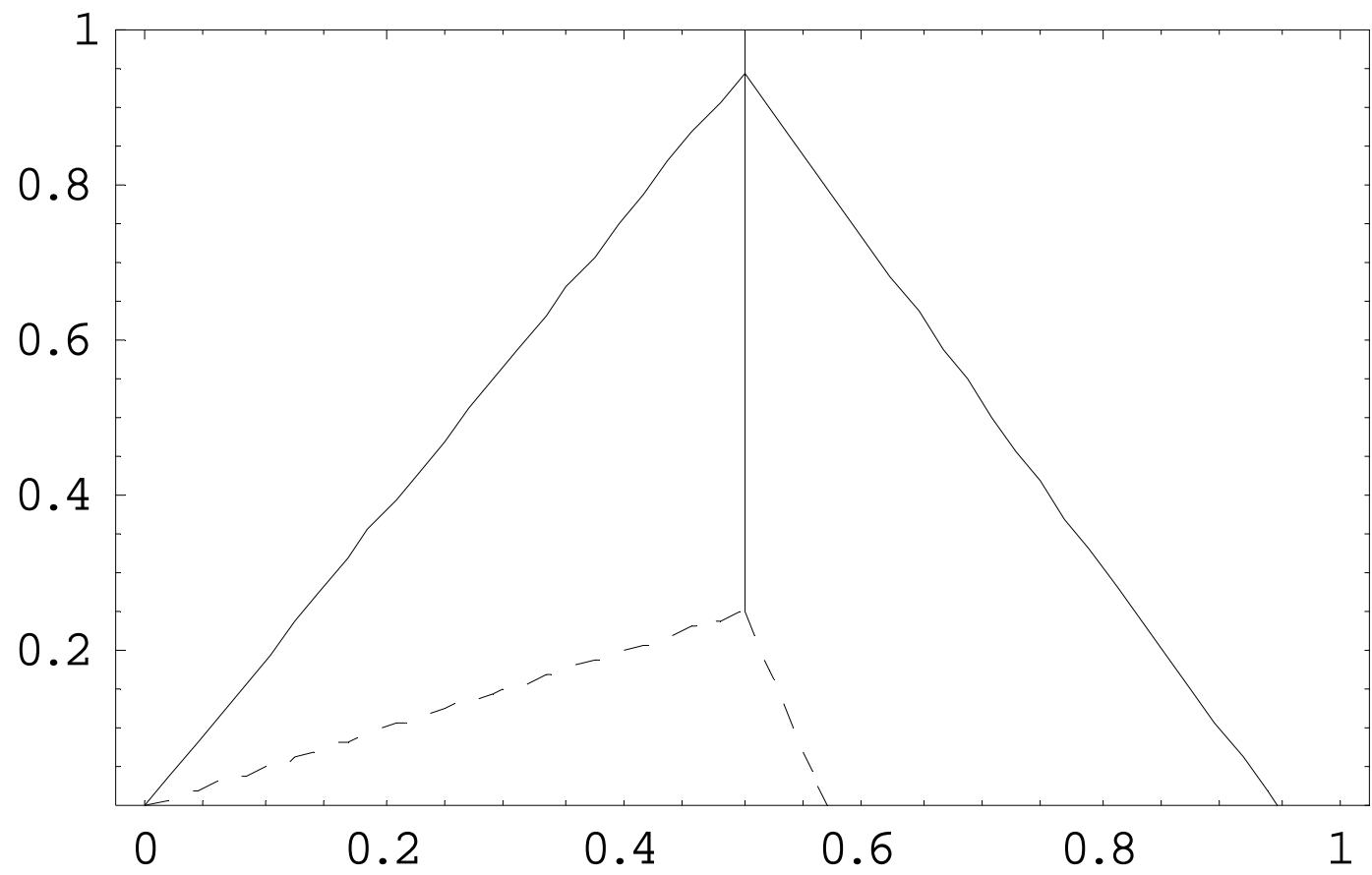
Model I Results

- When $\phi = 0$, the two loci cross at $\tau = T$; when $\phi > 0$, they cross at $\tau < T$.
 - T is the upper bound of τ .

- Increasing ϕ can make the monopoly hospital's price increase or decrease.

- $$\frac{dp^*}{d\phi} = \frac{2c^2 h\omega(h - 2T)}{[2c(h - T) + h\omega\phi]^2}$$

- Increasing ϕ (and holding p constant) causes the crossing point of the two loci to be at the same value of δ , but a lower value of τ .
- Increasing ϕ makes basic insurance more expensive, which shifts out demand for the monopoly hospital, which tends to make p^* increase.
- On the other hand, the basic insurance/no insurance locus becomes steeper, so a given price rise causes more loss of customers, which tends to make p^* decrease.
- The net effect is ambiguous.



Model I Results

- Increasing ϕ always makes the monopoly hospital's profits increase.

$$\text{➤ } \frac{d\pi^*}{d\phi} = \frac{\rho(2cT + h\omega\phi)^2}{8cTD(c + \omega\phi)} > 0$$

- ρ is the probability that an individual needs a hospital.
- D is the upper bound of δ .
- The monopoly hospital has an incentive to encourage the patients who are turned away to become indignant.

- Increasing ϕ has ambiguous effects on the number of uninsured.

$$\text{➤ } \frac{dq_c(p^*)}{d\phi} = -\frac{\omega[4c^2T(T - 2h) + 2ch^2\omega\phi + h^2\omega^2\phi^2]}{8c^2TD(c + \omega\phi)^2}$$

- An increase in ϕ causes basic insurance to be more expensive.
- If it also causes deluxe insurance to be more expensive, then the number of uninsured increase.
- If not, then the net effect is ambiguous.

Model I Results

- There are three welfare issues:
 - ϕ -related costs.
 - Travel costs.
 - Costs associated with being uninsured.
- An increase in ϕ has an ambiguous effect on total ϕ -related costs.
 - Higher ϕ means higher per-patient indignation costs.
 - Also means fewer people with basic insurance, and hence fewer indignant patients.
- An increase in ϕ reduces transportation costs.
 - Higher ϕ means fewer people have basic insurance.
 - Whether they switch to deluxe insurance or to no insurance, they don't travel.
- An increase in ϕ has ambiguous effects on costs associated with the uninsured.
 - The reason is that the effect on the number of insured is ambiguous.

Model II (Costs Imposed on the Monopoly Hospital)

- The indifference locus (in δ - τ space) between deluxe and basic is: $\tau = \delta(p - c)$
 - The locus goes through the origin.
 - The locus is upward-sloping as long as the monopoly hospital's price is greater than the cost (to insurance companies) of providing basic insurance.
- The indifference locus between basic and no insurance is: $\tau = h - \delta c$
 - The locus is downward-sloping.
- The two loci cross at $\delta = h/p$.

Model II Results

- Increasing ϕ makes the monopoly hospital's price decrease.

$$\text{➤ } \frac{dp^*}{d\phi} = -\frac{2c^2h^2\omega}{[2c(h-T) + h\omega\phi]^2} < 0$$

- ϕ is still the indignation cost, but now it is directed at the hospital.
 - Every person who buys basic insurance imposes (in expectation) a cost of $\omega\phi$ on the monopoly hospital.
- Increasing ϕ always causes the number of uninsured to decrease.
- $$\text{➤ } \frac{dq_c(p^*)}{d\phi} = -\frac{h^2\phi\omega^2}{4c^3TD} < 0$$
- Higher ϕ has no effect on the price of basic insurance, but it decreases the price of deluxe insurance.
- Welfare effects are in progress.

Conclusions

- A lot of features of health markets likely may affect peoples' behavior in non-standard ways.
- This will affect firm behavior.
- Welfare effects not obvious.
- All this may also have effects on policy.