Module 3: Hospital Pricing and Competition

Prices and Bargaining

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What is a hospital's *price*?

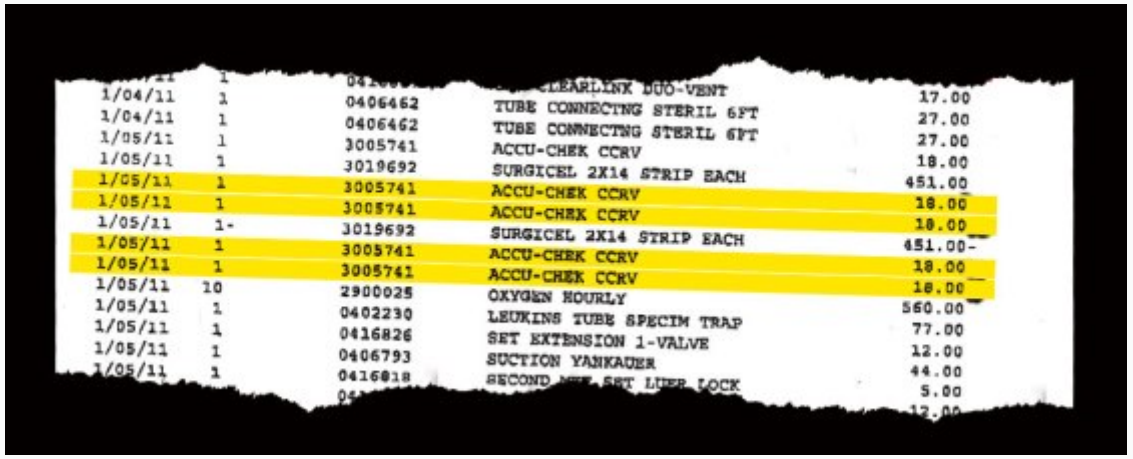
What is a hospital price?

In practice, it's a negotiation with insurers

- Hospitals can't set price on their own
- Negotiation with insurers
- Bargaining problem where insurer and hospital split some total amount
- Agent/entity with higher bargaining position will get larger share

What is a hospital price?

Defining characteristic of hospital prices and services: *it's complicated!*



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1/05/11	1	0406793	SUCTION YANKAUER	12.00
1/05/11	1	0416018	SECOND [illegible] SET LUER LOCK	44.00
				5.00

Brill, Steven. 2013. "Bitter Pill: Why Medical Bills are Killing Us." *Time Magazine*.

What is a hospital price?

Lots of different payers paying lots of different prices:

- Medicare fee-for-service prices
- Medicaid payments
- Private insurance negotiations (including Medicare Advantage)
- But what about the price to patients?

$$\text{Price} \neq \text{charge} \neq \text{cost} \neq \text{patient out-of-pocket spending}$$

What is a hospital price?

What is a hospital price?

Not clear what exactly is negotiated...

Fee-for-service

- price per procedure
- percentage of charges
- markup over Medicare rates

Capitation

- payment per patient
- pay-for-performance
- shared savings

Hospital prices in real life

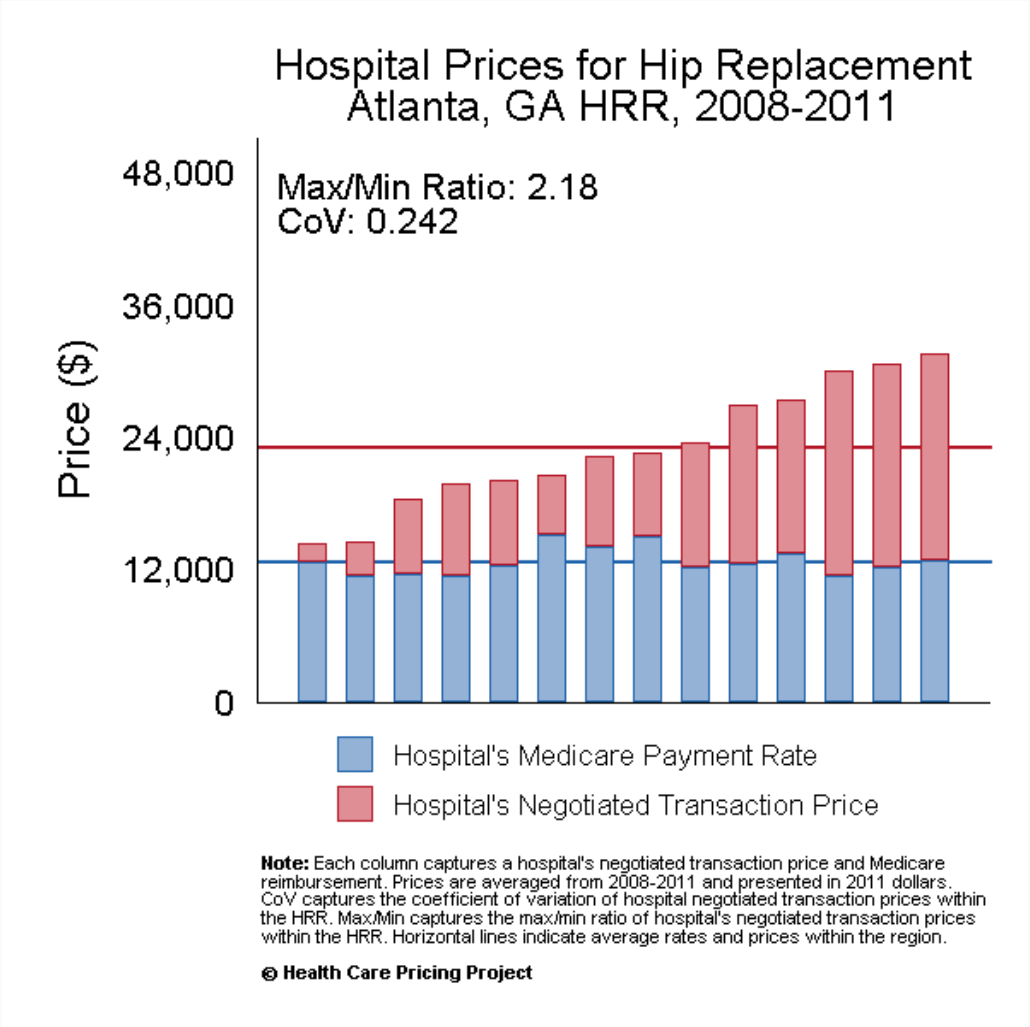
We'll get into the real data in a bit, but for now...a few facts:

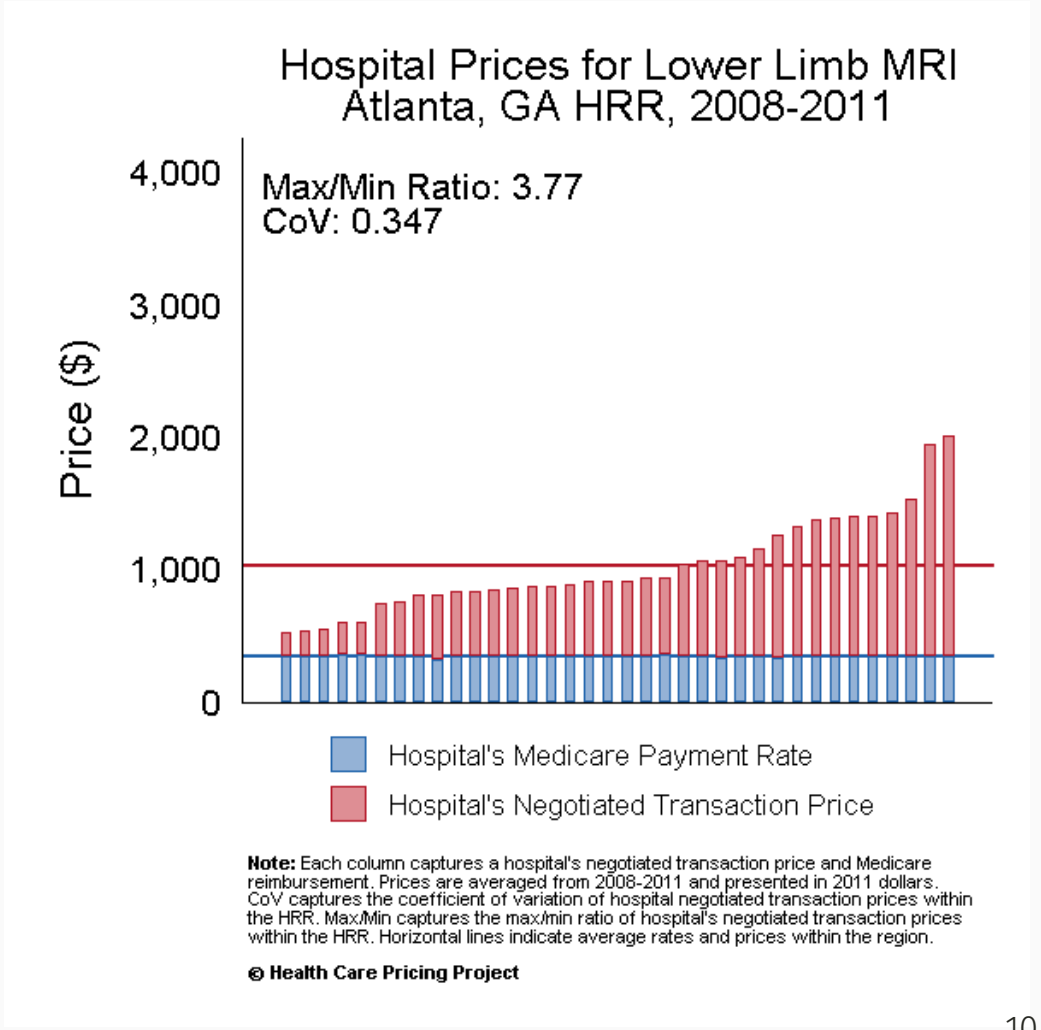
1. Hospital services are expensive

2. Prices vary dramatically across different areas

3. Lack of competition is a major reason for high prices

Hospital prices in real life





Pricing and Negotiations

Nash Bargaining problem

We model this bargaining problem as a "Nash bargaining" problem.

- Two people are faced with a negotiation
- If they agree, each gets payoffs u_1 u_2, respectively
- If they disagree, each gets some other payoff, t_1 and t_2, with $u_1 > t_1$ and $u_2 > t_2$
- Nash showed that the solution is $\mathbf{max}(u_1 - t_1)(u_2 - t_2)$

Understanding the outside option

Key part of understanding effect on price is to understand the "outside option". What does this mean?

Outside option in this case is the profit to the hospital or insurer if a negotiation "breaks down". What is the outside option to an insurer if they are in a monopoly hospital market?

In-class problem (Nash bargaining)

Assume that two agents are negotiating over how best to divide their quantity of good x, which is normalized to 1. If the players reach an agreement, player 1 receives utility $u_1 = x$, and player 2 receives utility $u_2 = (1 - x)$. If the players do not reach an agreement, player 1 receives a payoff of $t1 = 0$, and player 2 receives payoff $t_2 = a > 0$.

1. Find the Nash bargaining solution to this game.
2. Explain how this solution varies with a.