

Supply of health care – Labor 1

Angela Fertig

Spring 2009

Labor Topics

Last time, we discussed hospitals. Now, we are moving to the workers in the health care industry.

- ▶ Physician productivity
- ▶ Shortages
- ▶ Physician price discrimination
- ▶ Supplier induced demand
- ▶ Small area variation
- ▶ Malpractice

Physician Productivity

- ▶ High productivity leads to:
 - ▶ high wages
 - ▶ lower prices
- ▶ Are physicians as productive as their salaries imply?
- ▶ Since we would like lower health care prices, how can they become more productive?

Factor Productivity

There are two measures of factor productivity

- ▶ Average Product

$$\frac{Q}{L}$$

- ▶ Marginal Product

$$\frac{\Delta Q}{\Delta L}$$

Are physicians productive enough to justify high salaries?

Input	MP
Physician	2.967
Secretary	0.192
Registered Nurse	0.585
Practical Nurse	0.542
Technician	0.320
Physician Assistant	0.231

They are more productive than others with lower salaries.

Could physician practices be more productive?

- ▶ Are physicians underutilizing aides/substitutes?
- ▶ Comparative advantage claims that trading services with workers who are less productive than you are still benefits you. It frees you do spend more time on what you do best.
- ▶ MP/W tells us where we will get the most MP from an additional dollar spent. It can help us decide whether we are underutilizing certain types of workers.

Could physician practices be more productive?

Input	MP/W Solo Practice	MP/W Group Practice
Physician	0.102	0.110
Secretary	0.058	0.023
Registered Nurse	0.109	0.114
Practical Nurse	0.132	0.109
Technician	0.059	0.057
Physician Assistant	-0.003	0.192

Yes: Solos should hire more nurses, Groups should hire more PAs.

Shortages

- ▶ Graphical Depiction: more demanded than supplied at given wage
- ▶ Why doesn't the wage rise to get rid of the excess demand?
 1. Short-term shortages
 2. Monopsony power
 3. Medical education and licensure

Short-term Shortages

Demand increases, wage rises, supply is slow to increase because

- ▶ time needed for training (although foreign trained medical graduates can move here to adjust excess demand)
- ▶ barriers to increasing supply (# of nursing schools, faculty)

Monopsony power

- ▶ A hospital may be the only buyer of health care labor in the area.
- ▶ As a result, they set the wage.
- ▶ This is called a monopsony.
- ▶ Similar to monopoly (where firm sets the price b/c they are only seller).

Monopsony

- ▶ If want to hire one more nurse, what would revenue be?

Monopsony

- ▶ If want to hire one more nurse, what would revenue be?

$$MR_L = MP_L * P$$

- ▶ What is the cost of one more nurse?

Monopsony

- ▶ If want to hire one more nurse, what would revenue be?

$$MR_L = MP_L * P$$

- ▶ What is the cost of one more nurse?
 - ▶ have to offer her higher wage to induce her to work
 - ▶ can't offer different wages to same kinds of nurses so must raise wage for all nurses
 - ▶ So, cost $MC_L = w_1 + (w_1 - w_0) * N_{current}$
 - ▶ So, additional nurse is expensive. As a result, hire fewer of them than if not monopsony.

Monopsony Graph

- ▶ Set MR_L equal to MC_L to get profit max N^*
- ▶ To hire N^* , set wage at W^*
- ▶ At W^* , hospital demands N'
 - ▶ But no new nurses will join market at W^*
 - ▶ And hospital won't pay more than W^*
- ▶ This can cause appearance of shortage ($N' - N^*$)

Monopsony Graph

Medical Education and Licensure

- ▶ AMA controls accreditation of medical schools, internship/residency slots, substitute providers (chiropractors), and licensing
- ▶ They do these things in order to ensure quality care – patients are not able to assess quality so need help determining quality
- ▶ But, as a result, they can restrict supply to drive up medical prices and causing some shortages

Medical Education and Licensure Graph

Physician Price Discrimination

- ▶ Doctor is like monopoly:
 - ▶ can set own price, won't lose all customers if charge higher price than other doctors
- ▶ Doctor can charge different prices to different patients
 - ▶ Gas station can't charge women higher prices – just have men buy the gas and resell it to women
 - ▶ But surgery can't be resold to someone else

Physician Price Discrimination

Doctor maximizes profit by charging different prices

- ▶ **If only 1 price**, must choose price and then
profit = $(P - AC) * Q$ (recall from last lecture)
- ▶ **If can charge 2 prices**, choose first price as above and then
choose a lower price to get additional customers/profit
- ▶ Most profit if can charge each person a different price – their
exact willingness to pay (perfect price discrimination)
- ▶ Could be selfish motive, but can also be charitable motive
(lower price to poorer patients)

Physician Price Discrimination Graph