Homework 3

Due date: September 6 (Tuesday) in class

1. Consider two vaccines for different viruses χ and Ω. Assume that the marginal cost of producing each drug is constant and that the fixed cost is small. In other words, assume that the supply curve for both drugs is flat.
   a) Suppose that demand for vaccine χ is price elastic, whereas demand for vaccine Ω is relatively inelastic. Draw the private demand curve for both drugs on separate axes.

   b) For the sake of example, assume that both viruses have the same externality. Draw the social demand curve for both drugs and label the social loss in each case.

   c) Explain intuitively why, all other things the same, social loss is greater in the case of elastic demand than it is in the case of inelastic demand.

2. Consider the public good. Explain in words and show graphically how should we measure the social demand for a public good.

3. For each of the following forms of health insurance market, state one substantial economic problem.
   a) Completely private

   b) Universal government

   c) Employer-sponsored

4. Assume that the daily demand for packs of cigarettes in the tobacco-addicted nation is as follows: $Q = 100 - P$. Further assume that the marginal cost of producing a pack of cigarettes is \$6, and that the market for cigarettes is perfectly competitive. Assume that each pack of cigarettes smoked does a total of \$5 worth of health damage to the smoker's neighbors via second-hand smoke. Finally, assume that all cigarette consumers are aware of these costs.

   a) Assume that a smoker named Jay states that he is willing to buy a pack of cigarettes for \$8. In this market, where the price is \$6 per pack, what are the private benefits and private costs incurred whenever he buys a pack of cigarettes? Is it privately efficient for him to buy a pack of cigarettes at this price?

   b) What about the public benefits and public costs? Is it socially efficient for him to buy a pack of cigarettes at this price?

5. Review the assumptions from the previous problem, and assume that it still costs \$6 to produce a pack of cigarettes.
   a) Draw the private supply curve and the private demand curve in this market. What is the privately efficient quantity of packs of cigarettes?

   b) Draw the public supply curve in this market. Explain why it differs from the private supply curve, and how this represents the externality from second-hand smoke. Highlight the area(s) of your diagram that represent social loss, and interpret this loss in terms of cigarette smoking.

c) What is the socially efficient quantity of packs?

d) Suppose the government decides to pursue a Pigouvian solution to eliminate social loss. What sort of tax or subsidy would they implement, and what is the resulting quantity of cigarette packs purchased?

e) Assume that the Coase Theorem actually does apply in this setting. The government passes a new law giving anyone the right to forbid his neighbor from smoking. Who benefits, and who is harmed, by this new law? How will this affect the level of smoking?

6. Is it possible to have a health policy that maximize health, wealth and equity at the same time? Explain.

7. Comparing to other developed countries, what are the distinctive features about health care in US?

8. Why too much competition in the private hospital market can be problematic?