UNIVERSITY OF VICTORIA DEPARTMENT OF ECONOMICS

ECONOMICS 317 HEALTH ECONOMICS

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Midterm Examination II March 21, 2012

Instructions. Answer all questions. For multiple choice questions, choose the single, best answer. For short answer questions, respond concisely, using equations or a diagram if necessary, noting that undefended answers are worth zero marks. Neither calculators nor any other electronic device, including but not limited to cell phones, are needed and you may not use any such device during the exam. Each multiple choice question is worth 2 points and the short answer question is worth 15 points.

1 MULTIPLE CHOICE QUESTIONS.

Instructions. Choose the best answer for each question. Record your answers clearly on the first blank page of your answer book. Each question is worth 2 marks.

- 1. In the context of health insurance, moral hazard refers to
 - (a) increased use of health care resulting from decreased effective prices.
 - (b) increased use of health care resulting from sexually transmitted diseases, alcoholism, and drug abuse.
 - (c) increased use of health care resulting from increased risk aversion.
 - (d) increased use of health care resulting from decreased elasticity of the MEI schedule.
- 2. Adverse selection in health insurance markets
 - (a) refers to the tendency of insured people to take fewer preventive actions, increasing everyone's costs.
 - (b) refers to the tendency of low risk people to opt out of insurance, increasing the price of insurance.
 - (c) refers to firms refusing to insure people with pre-existing conditions, leading to social problems.

- (d) refers to efforts by consumers to select the lowest priced insurance on the market, leading to pervasive disequilibrium.
- 3. The market equilibrium for vaccinations against a contagious disease
 - (a) will be Pareto efficient, as implied by the First Welfare Theorem.
 - (b) will be Pareto efficient, as implied by the Second Welfare Theorem.
 - (c) will involve too few vaccinations because of the uncaptured positive externality.
 - (d) will involve too many vaccinations because of the uncaptured negative externality.
- 4. In the model of physician behavior we discussed in class, we assumed that
 - (a) physicians maximize their incomes.
 - (b) physicians make a labor-leisure tradeoff and are indifferent to patient health.
 - (c) physicians make a labor-leisure tradeoff and must be sufficiently compensated to harm patient health.
 - (d) physicians make a labor-leisure tradeoff but always seek to maximize patient health.
- 5. In Grossman's model, the aging process is represented by
 - (a) eventually increasing rates of depreciation of health stock.
 - (b) decreases in the efficiency of health investment.
 - (c) MEI schedules which are monotonically decreasing in age.
 - (d) decreases in "effective education" levels as memory fades
- 6. A public good is a
 - (a) good or service provided by a local or national government.
 - (b) good which involuntarily imposes costs or benefits on third parties.
 - (c) good which is non-rivalrous and non-excludable.
 - (d) good which which people display as a signal of wealth, such that demand for
- 7. Which of the following is evidence that higher income causes better health?
 - (a) Using a large population survey, it is found that income and health are positively correlated.
 - (b) Analysts discover that patients randomized to a more effective treatment also had higher incomes.
 - (c) People who win the lottery are found to be in better health than lottery players who did not win.

- (d) Statistical results demonstrate that people who place relatively large weight on future outcomes are likely to obtain more education and less likely to smoke than others.
- 8. Canada's socialized health insurance program means that
 - (a) moral hazard is a problem.
 - (b) moral hazard is not an issue.
 - (c) moral hazard occurs on the intensive but not the extensive margin.
 - (d) moral hazard is canceled by adverse selection.
- 9. Across OECD countries,
 - (a) specialist visits tend to be more pro-poor than GP visits.
 - (b) specialist visits tend to be more pro-rich than GP visits.
 - (c) specialist visits and GP visits are roughly equally pro-poor.
 - (d) specialist visits and GP visits are roughly equally pro-rich.
- 10. The Second Fundamental Theorem of Welfare Economics asserts that
 - (a) all competitive equilibria are Pareto efficient.
 - (b) welfare is maximized when social indifference curves are tangent to the PPF.
 - (c) welfare payments are a more efficient manner of redistributing income than trade on Pareto manifolds.
 - (d) any Pareto efficient allocation may be obtained as a competitive equilibrium.
- 11. Demand for health care is given by Q = 10 2P, where Q is quantity and P is price. Supply is given by Q = P. All consumers have health insurance which pays 50% of their expenditures. The equilibrium price and quantity are
 - (a) Q = 10, P = 0.
 - (b) Q = 10/3, P = 10/3.
 - (c) Q = 5, P = 10/3.
 - (d) Q = 5, P = 5.
- 12. Which of the following is NOT an example of a negative externality?
 - (a) A factory emitting greenhouse gases.
 - (b) Nature pollinating a flowering plant.
 - (c) A parent choosing not to vaccinate a child against polio.
 - (d) A promiscuous man choosing not to use condoms.

- 13. A Pigouvian tax
 - (a) maximizes government revenue.
 - (b) selects tax rates across goods to minimize distortions subject to a revenue constraint.
 - (c) internalizes externalities.
 - (d) raises the optimal revenue to efficiently reallocate income.
- 14. In Grossman's model, an increase in education causes better health because
 - (a) people who choose higher levels education tend to have other characteristics which are associated with good health.
 - (b) people endowed with higher levels of education are more efficient producers of health.
 - (c) people with high temporal discount rates are both more likely to smoke and less likely to go to university.
 - (d) moral hazard induces people to select low-paying jobs when the MEI schedule is inelastic.
- 15. You have utility function for wealth $U(W) = W^2$ (*hint: sketch this function*). You are offered actuarially fair insurance against some risk. You
 - (a) fully insure.
 - (b) buy no insurance.
 - (c) buy some insurance, but you do not fully insure.
 - (d) there is not enough information to decide if (a), (b), or (c) is correct.

2 Short-Answer Question (15 Marks).

Instructions. Answer the question clearly and concisely. No marks will be awarded to undefended answers. Ensure graphs are clearly labeled.

- 1. (10 marks) A physician chooses to induce $I \ge 0$ units of services. The physician is paid m per unit of service. A physician who induces no services provides $Q_0 > 0$ units of services.
 - (a) Sketch the physician's budget set on a graph on which units of services are on the x-axis and income is on the y-axis. Label the intercept(s). Indicate which allocations are feasible and which are not.
 - (b) Show the physician's optimal allocation and label that point A, assuming the physician chooses a positive level of inducement. Draw the indifference curve passing through the optimal allocation.
 - (c) On a new graph, show the initial point A and the budget constraint passing through that point, and the new budget constraint which the physician faces if the fee m rises from m to m'. Show a new equilibrium assuming the physician chooses to induce less when her fee rises. Label the new equilibrium B and show an indifference curve passing through that allocation.
 - (d) Suppose the government pays this physician a lump-sum bonus. Would this physician increase or decrease inducement? Briefly explain.