

Answer all questions in the space provided on the exam.

Total of 36 points (and worth 22.5% of final grade).

Read each question carefully, so that you answer the question.

Short Answer (6 points each question)

1. Consider results from the by paper D.B. Rein et al “Cost-Effectiveness of Routine Childhood Vaccination for Hepatitis A in the United States”, Pediatrics, Vol.119, January 2007, e12-e21.

All costs, life years and QALYS’s are measured in 2005 \$ and are discounted at 3% annual rate.

The proposal is to vaccinate all one year-old children against Hepatitis A. For children born in 2005, 4 million children would be vaccinated at a cost of \$150 million. Compared to no vaccination this will prevent 170,000 infections. Most of these infections lead to symptoms of less than a month, but in some cases infection is fatal. Vaccination is estimated to save \$100 million in medical costs and in lost productivity. And vaccination saves 2000 QALY’s.

(a) Perform a cost-benefit analysis of vaccination, compared to no vaccination, assuming a QALY is worth \$50,000. State what you conclude.

(b) Perform a cost-effectiveness analysis of vaccination, compared to no vaccination. State what you conclude.

(c) Provide a policy recommendation based on the following table from the article by Neuhauser and Lewicki (1975).

Table 2. Cancer Detection and Screening Costs with Sequential Guaiac Tests.

NO. OF TESTS	CANCER DETECTION			SCREENING COSTS (\$)		
	<i>no. of cases</i>	<i>incremental gain</i>	<i>total*</i>	<i>incremental</i>	<i>marginal'</i>	<i>average^d</i>
1	65.9469	65.9469	77,511	77,511	1,175	1,175
2	71.4424	5.4956	107,690	30,179	5,492	1,507
3	71.9004	0.4580	130,199	22,509	49,150	1,810
4	71.9385	0.0382	148,116	17,917	469,534	2,059
5	71.9417	0.0032	163,141	15,024	4,724,695	2,268
6	71.9420	0.0003	176,331	13,190	47,107,214	2,451

2.(a) On an appropriate diagram show **consumer choice between consumption of non-health goods and the level of health.**

(b) Suppose that an uninsured individual loses their job and moves to a lower-paid job that leads to their income being halved. **On the same diagram as that in part (a)**, show the effect on consumer choice between consumption of non-health goods and level of health. State, with explanation, whether or not out-of-pocket expenditure on medical goods consumption has increased **for your diagram.**

(c) Name two key variables that determine individual demand for health care aside from income, price of health inputs, coinsurance rates and copayments.

3. Circle True or False to each of the following statements about the U.S. health market in 2007.

[One point each.]

- (a) **True** **False** Indirect methods estimate the value of life to be in excess of \$10 million.
- (b) **True** **False** Empirical studies find that health demand is price elastic.
- (c) **True** **False** Capitation is a single payment per month to a physician for all services.
- (d) **True** **False** The annual rate of return on training for a doctor is over 10 percent.
- (e) **True** **False** Monopsony in the labor market for nurses leads to higher wages for nurses
- (f) **True** **False** Veterans Administration hospitals are reimbursed via fee-for-service.

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4.(a) The LHCPC (Libertarian Health Care Provider Coalition) argues that strict licensing of doctors has led to higher medical prices. Show this on an appropriate diagram.

(b) The SAA (Salespersons Association of America) claims that doctors are unusual in being able to directly influence their patients through “physician-induced demand.” Show this on an appropriate diagram.

(c) The Federal Trade Commission has sued Doctor Quincy Jones, a health care provider in an isolated town, for having monopoly power. On an appropriate diagram show how such monopoly power affects Dr. Jones behavior, assuming he is a monopolist.

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5.(a) In a closed HMO a physician is often paid a salary.

State two consequences of this payment mechanism: one good and one bad.

(b) Where possible hospitals are paid under a prospective payment system using diagnostic related groups (DRG's).

State two consequences of this payment mechanism: one good and one bad.

(c) In the U.S. pharmaceutical companies are allowed to patent drugs.

State two consequences of this: one good and one bad.

Multiple Choice (1 point each) Note: You should spend 15-20 % of time on these!

1. Managed competition has not been very successful in driving down health care prices because
 - a. consumers are not responsive to the price of health care insurance plans
 - b. different health insurance plans try to provide access to the same doctors and hospitals
 - c. neither a. nor b.
 - d. both a. and b.

2. Relatively few individuals purchase high deductible health plans because
 - a. the premia are very high
 - b. the Bush administration has not encouraged the use of these plans
 - c. neither a. nor b.
 - d. both a. and b.

3. Since 1950 the real cost of a patient bed day in hospital in the U.S. has
 - a. not increased at all
 - b. increased at roughly the same rate as the growth rate of per capita GDP
 - c. increased greatly, mainly due to increase in the real wage of labor
 - d. increased greatly, mainly due to use of more labor

4. The biggest use of funds by U.S. pharmaceutical companies, aside from the cost of drugs is
 - a. sales, marketing advertising and administration
 - b. research and development
 - c. profits
 - d. taxes

5. In order to be approved by the FDA a drug must be
 - a. Safe
 - b. Safe and effective
 - c. Safe, effective, and more cost-effective than existing treatments
 - d. none of the above

6. Pharmaceutical companies charge greatly different prices for a patented drug in different countries because
 - a. the price responsiveness of demand differs greatly in different countries
 - b. the cost of producing the drug differs greatly in different countries
 - c. both a. and b.
 - d. neither a. nor b.