

January Examination Period 2022-23

ECN369 – Health Economics

Duration: 2 hours

**YOU ARE NOT PERMITTED TO READ THE CONTENTS OF THIS QUESTION PAPER UNTIL
INSTRUCTED TO DO SO BY AN INVIGILATOR**

Part A: answer all 20 questions. Each question carries 1 points.

Part B: answer 2 questions out of 4. Each question carries 15 points.

**Part C: answer 1 question out of 2. Each question carries 50 points,
divided equally between part a, b, c and d.**

If you answer more questions than specified, only the first answers will be marked. Cross out any answers that you do not wish to be marked.

You are permitted to bring 20 x A4 pages of notes into your examination (i.e. 10 double sided pieces of paper). These can be typed or handwritten and can include graphs and images. They can include material from any source. Your notes must be stapled together and include your student ID number and the module code on the first page. You must submit your notes at the end of the examination with your answer booklet.

Calculators are not permitted in this examination. Complete all rough workings in the answer book and cross through any work that is not to be assessed.

Possession of unauthorised material at any time when under examination conditions is an assessment offence and can lead to expulsion from QMUL. Check now to ensure you do not have more than 20 pages of notes. You should also not have mobile phones, smartwatches or unauthorised electronic devices on your person. If you do, raise your hand and give them to an invigilator immediately.

It is also an offence to have any writing of any kind on your person, including on your body. If you are found to have hidden unauthorised material elsewhere, including toilets and cloakrooms, it will be treated as being found in your possession. Unauthorised material found on your mobile phone or other electronic device will be considered an assessment offence. A mobile phone that causes a disruption in the exam is also an assessment offence.

EXAM PAPERS MUST NOT BE REMOVED FROM THE EXAM ROOM
Examiners: Francesca Cornaglia and Chiara Serra

PART A [20 marks]

1. Suppose a country has an income elasticity of demand of +1.2. If income ____, then the share of GDP going to health care _____.
 - A. rises; will fall.
 - B. rises; will stay constant.
 - C. falls; fall.
 - D. there is not enough information to answer.

2. If a researcher finds that the price elasticity for visits to a particular hospital is -3.0, this means:
 - A. all hospitals could raise their prices and raise their profits.
 - B. the hospitals serve as complements for each other.
 - C. the hospitals serve as good substitutes for each other.
 - D. the hospitals are normal goods.

3. Uncertainty in the health care economy suggests:
 - A. providers and their patients may not know whether treatments will be effective.
 - B. patients may wish to insure against unexpected illnesses or injuries.
 - C. Insurers may make substantial profits.
 - D. Answers (a), (b), and (c) are correct.

4. The term equity refers to:
 - A. the efficient production of services.
 - B. equal treatment of all individuals.
 - C. competition among health providers.
 - D. government provision of health care.

5. Fuchs's Utah-Nevada comparison implies that _____ makes the largest difference in the production of health.
 - A. geography
 - B. health care
 - C. life style
 - D. climate

6. Someone with a high discount rate would likely:
 - A. value a new TV rather than education.
 - B. value a new TV rather than health care.
 - C. value health care rather than education.
 - D. answers (a) and (b) are correct.

7. Hospital E has total costs of examining and running lab tests for 200 patients of \$2,000,000. Hospital F examining 200 patients for \$1,250,000 and sends the results to the laboratory for \$850,000. We can say that:

- A. Hospital E has economies of scale.
- B. Hospital F has economies of scale.
- C. It is more efficient for the health care system to use Hospital E than Hospital F and the lab.
- D. Hospital E has economies of scope.

8. Providing increased levels of health care resources may decrease health if:

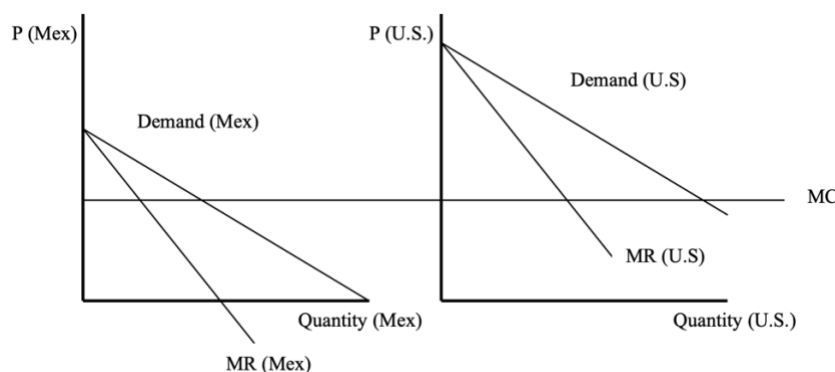
- a. Consumers reduce non-health care resources (like exercise).
- b. Consumers do not change their caloric intake.
- c. Consumers invest more time in their education.
- d. Answers a and b are correct.

9. QALYs place _____.

- A. A higher value on equity than on efficiency.
- B. A lower value on equity than on efficiency.
- C. The same value on equity than on efficiency.
- D. Not enough information to answer this question.

10. An economic rationale for imposing a “sugar drinks” tax would be that:

- A. sugar drinks causes obesity which imposes external costs on other people.
- B. sugar drinks causes obesity which is harmful to the consumers themselves.
- C. a sugar drinks tax is a good way to raise large amounts of revenue.
- D. the producers would bear the burden of the tax.



11. In the figure above, the pharmaceutical firm will:

- A. charge higher prices in the U.S. but sell larger quantities in Mexico than in the U.S.
- B. charge higher prices in the U.S. and sell larger quantities in the U.S than in Mexico.
- C. charge lower prices in the U.S. but sell larger quantities in Mexico than in the U.S.
- D. charge lower prices in the U.S. and sell lower quantities in Mexico than in the U.S.

12. Health can be described as a capital good because:

- A. we forego current consumption to improve health, which lasts into the future.
- B. we use capital goods and technology to produce it.
- C. we can increase it or let it depreciate through investment.
- D. Answers (a) and (c) are correct.

13. Rather than aggregate health expenditures, we often look at real expenditures per capita. This calculation requires us to deflate the aggregate expenditures by:

- A. the purchasing power of the currency.
- B. the size of the population.
- C. the cost of health care.
- D. Answers (a) and (b) are correct.

14. What is the effect of the introduction of a coinsurance rate on health care?

- A. Demand is less elastic.
- B. The demand for health care increases.
- C. The demand for health care decreases.
- D. Answers (a) and (b) are correct.

15. Many studies have found that physicians earn economic rents, payments over and above those necessary to induce them to provide their services. Which of the following statements does not characterize this type of market?

- A. there is free entry into and exit from this labor market.
- B. physicians are often rewarded for their activity as self-employed entrepreneurs.
- C. physicians may enjoy some monopoly power.
- D. economic rents for the physicians have often exceeded those accruing to dentists or to lawyers.

16. Home health care for the elderly _____ because _____.

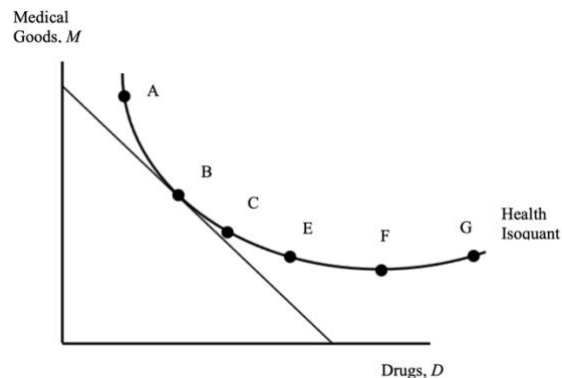
- A. costs nothing; the caregivers are not working anyhow.
- B. may be costly; caregivers must spend time providing care that they would have allocated differently.
- C. is costly; physicians must monitor the patients.
- D. is costly; the elderly need to take large amounts of prescription drugs.

17. Education, feedback, and surveillance programs are concerned with:

- A. reducing the amount of inappropriate medical care.
- B. increasing patient access to the latest medical technology.
- C. retaining a qualified hospital staff.
- D. the low enrolments in medical school.

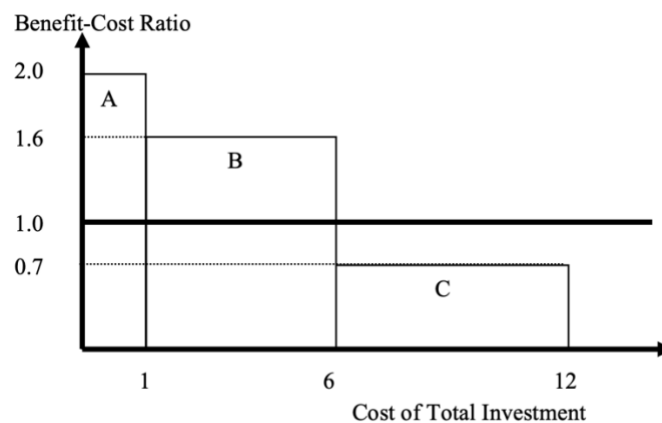
18. In the figure below, the rational consumer would never purchase drugs between points ____ and ____:

- a. A; B.
- b. B; C.
- c. E; F.
- d. F; G.



19. Suppose that increasing co-payments for all drugs from \$10 to \$50 reduced total expenditures by 22%. This implies a demand elasticity for drugs of about:

- A. -0.10.
- B. -0.17.
- C. -1.50.
- D. -3.00.



20. Consider the diagram above. Project A is a \$1 million dollar project; Project B is a \$5 million dollar project; Project C is also a \$5 million dollar project. Investment ____ is the most economically efficient estimate with net benefits of \$ ____ million.

- A. A; 1.
- B. B; 0.6.
- C. B; 3.0.
- D. Information is insufficient.

PART B: answer 2 questions out of 4. Each question carries 15 marks out of 100.

- 1) What is the main contribution of the paper by Almond (2006) '*Is the 1918 influenza pandemic over? Long-term effects of utero influenza exposure in the post-1940 US population?*'
[15 marks]
- 2) In "*Income and the utilization of long-term care services*" Goda et al (2010) find that a positive permanent income shock lowers nursing home use but increases the utilization of paid home care services. Discuss the empirical strategy used in the paper.
[15 marks]
- 3) What is the identification strategy used by Thornton (2008) "*The Demand for, and Impact of, Learning HIV Status*"
[15 marks]
- 4) Discuss the main contributions of the paper "*Early Life Health Interventions and Academic Achievement*" by Bharadwaj et al. (2013).
[15 marks]

PART C: answer 1 question out of 2. Each question carries 50 marks out of 100, divided equally between part a, b, c and d.

- 1) Consider the paper by Dafny (2001) *“How do hospitals respond to price change?”* and answer the following questions:
 - A. Explain the research question and discuss the motivation of the paper.
[12.5 marks]
 - B. What is the empirical strategy adopted by the author?
[12.5 marks]
 - C. What is the difference between a “nominal” and a “real” response to price changes?
[12.5 marks]
 - D. Discuss the main results of the paper (see Table 3 in Appendix 1 below).
[12.5 marks]

 - 2) Consider the paper *“Modern medicine and the 20th century decline in mortality: new evidence on the impact of sulfa drugs”* By Jayachandran et al. (2010) and answer the following questions:
 - A. What is the research question asked in the paper and why is it relevant?
[12.5 marks]
 - B. Why are sulfa drugs well suited to answer this research question?
[12.5 marks]
 - C. Explain and discuss the identification strategy used by the author.
[12.5 marks]
 - D. Describe the results of the paper presented in Table 4 and Figure 5 (see Appendix 2 below).
[12.5 marks]
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End of Paper - An appendix of 2 pages follows

Appendix 1

Table 3. Effect of Policy Change on Upcoding
(N=650)

	fraction(young) mean = .66	fraction(old) mean = .85
$\Delta \text{spread}_{88-87} \cdot \text{post}$	0.077 *** (0.016)	0.108 *** (0.015)
$\text{fraction(young)}_{87} \cdot \text{post}$		0.731 *** (0.020)
<i>Year dummies</i>		
1986	0.044 *** (0.008)	0.000 (0.005)
1987	0.077 *** (0.008)	-0.011 * (0.005)
1988	0.058 *** (0.011)	-0.813 *** (0.014)
1989	0.097 *** (0.009)	-0.780 *** (0.014)
1990	0.115 *** (0.009)	-0.764 *** (0.014)
1991	0.128 *** (0.010)	-0.748 *** (0.014)
Adj. R-squared	0.948	0.960

Appendix 2

TABLE 4—EFFECTS OF SULFA DRUGS ON MORTALITY FOR “TREATED” DISEASES, 1937–1943

Dependent variable = ln (mortality)	MMR		Pneumonia/influenza		Scarlet fever	
	(1)	(2)	(1)	(2)	(1)	(2)
<i>Panel B. State-level, all years, 1925–1943</i>						
Treated × post-1937	−0.281** (0.108)	−0.144*** (0.035)	−0.143 (0.169)	−0.041 (0.128)	−0.733*** (0.267)	−0.488*** (0.107)
Treated × year × post-1937		−0.103*** (0.010)		−0.077** (0.032)		−0.184*** (0.036)
Observations	1,736	1,736	1,736	1,736	1,721	1,721
R ²	0.999	0.999	0.822	0.839	0.932	0.940

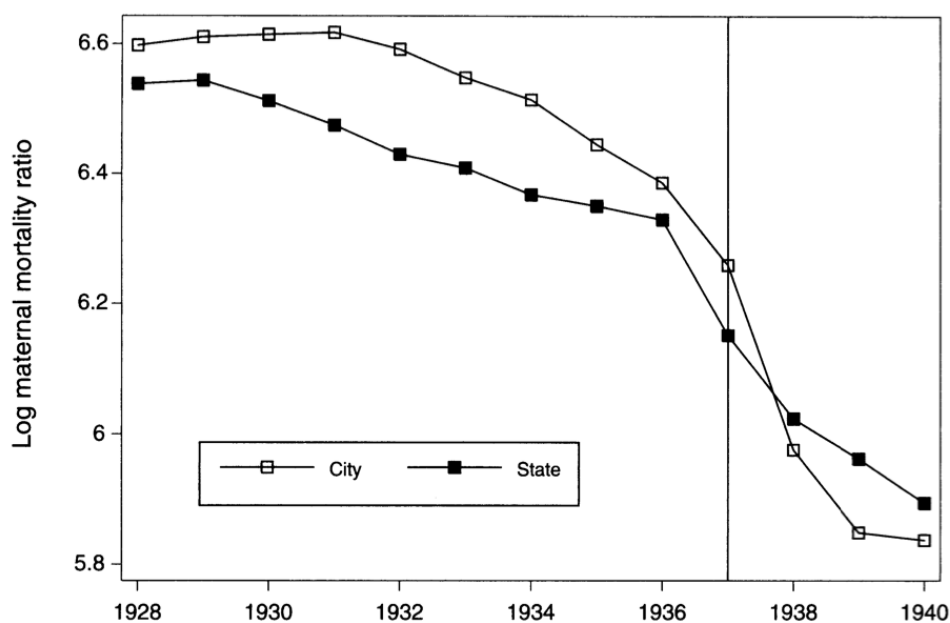


FIGURE 5. CITY AND STATE TRENDS IN MMR (*in logs*) 1928–1940

Note: The city series is the unweighted mean of the city-level observations, and the state series is the unweighted mean of the state-level observations.

End of Examination
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