

## ECONOMICS OF HEALTH CARE SYSTEMS

### AIMS OF THE COURSE

- To present a broad, up-to-date introduction to analytical methods used by economists to study health, health care, and health insurance.
- To provide a grounding in the microeconomic principles on which study of health, healthcare, and health insurance is based – consumer and producer behavior; the Fundamental Theorems of Welfare Economics; and sources of market failure.
- To introduce the idea that economists evaluate the desirability of market outcomes and policy outcomes using a Social Welfare Function, which embodies a certain view of the trade-off between equity and efficiency
- To introduce students to the range of economic policy instruments used in health care and health insurance markets.
- To provide students with tools to analyze the costs of market failures in health care and health insurance markets, as well as of government interventions to address these failures.
- To introduce students to some contemporary policy issues in health economics.

### INTENDED LEARNING OUTCOMES

By the end of the course the students should be able to:

- Analyze determinants of demand, supply and costs of production;
- Apply the concepts of elasticity, marginal analysis and opportunity cost;
- Understand the basic market model, market failure and the roles and limitations of markets and governments in the finance and organization of health care;
- Understand how different health systems generate incentives, and the likely outcomes in terms of efficiency and equity;
- Understand issues in measurement of costs and benefits of healthcare;
- Understand the principles of economic evaluation as applied to healthcare.

### REQUIRED KNOWLEDGE

The course assumes no previous training in Economics or Calculus. To accommodate the wide range of backgrounds among students undertaking this course, a basic introduction to microeconomics will be provided in the first sessions. These introductory lectures are required knowledge. Attendance to lectures is compulsory for all students.

### COURSE CONTENTS

Session	Lecture Topic
1	Introduction: Health, Health Care and Health Insurance
2	Decision Making by Individuals
3	The Profit Maximizing Firm
4	Supply, demand, and welfare
5	Group seminar - Problem Set 1 (Economics Concepts)

<b>6</b>	The role of Government
<b>7</b>	Markets and market failure
<b>8</b>	The Market for Health Care
<b>9</b>	Group seminar - Problem Set II (Health Care)
<b>10</b>	Health Insurance
<b>11</b>	Institutions and Incentives I – Why are Healthcare Costs Rising
<b>12</b>	Institutions and incentives II – Moral Hazard and Social Health Insurance
<b>13</b>	Institutions and incentives III – Provider Payment Mechanisms
<b>14</b>	Group seminar - Problem Set III
<b>15</b>	Health Care Labor Markets
<b>16</b>	Health Technology Assessment
<b>17</b>	Pharmaceutical Markets
<b>18</b>	Exam
<b>19</b>	Costa Rican Health Care Market
<b>20</b>	Activity

## **EVALUATION**

A one-hour exam in session 18 will count for 20 per cent of this subject's summative assessment, covering topics up to session 16.

There will be periodic short tests in the form of quizzes that will count for 20 per cent of the overall grade. The assigned problem sets will be also account for 20 per cent. In addition, there will be a research assignment (25 per cent) and presentation (5 per cent) due for the end of the term. Lastly, class participation accounts for 10 per cent of the grade.

Periodic short tests (quizzes):	20%
Problem set assignments:	20%
Exam:	20%
Research assignment:	25%
Presentation:	5%
Attendance & participation:	10%

### **What is Examinable?**

Everything covered in the Lectures and problem sets is examinable unless explicitly noted otherwise. While the Essential Readings are strictly speaking also examinable, I am not going to ask you an exam question on a topic that appears in an Essential Reading, but is not anywhere mentioned in a Lecture problem set. The scope and focus of the Lectures should be your main guide to what is examinable. The Essential Readings are only examinable in the sense that, to do well in this course, your exam responses may need to discuss a topic covered in the Lectures, but in greater detail than was provided by me.

It is possible to get a very good grade in this course by reading only the Essential Readings – though you may be able to improve your exam responses by making use of Additional Readings.



#### **AVERAGE MINIMUM AMOUNT OF OUT-OF-CLASS OR INDEPENDENT LEARNING EXPECTED PER WEEK:**

There will be twenty (20) lectures. The last lecture will be used for group presentations.

There will be four (4) problem sets assigned. Students are expected to come to lectures having completed the relevant problem sets and essential readings.

As in many areas of life, the more you put in to this course the more you will get out. With this in mind, you are expected to undertake approximately ten (10) hours a week in self-study devoted to health economics. This includes preparing for the seminars and undertaking the Essential Readings.

#### **Special Needs**

In case of requiring additional time for taking exams, or if experiencing any circumstance during the course of the term that would interfere with the student's ability to complete his/her work or take a test, students should let the professor know ahead of time.



## BIBLIOGRAPHY:

### Accessing Course Materials

All readings will be provided to students in digital form, structured by lecture. Class slides will be sent electronically to students by 5 pm on the day before the lecture. To the extent possible, problem sets will be sent at the start of the course. Full worked solutions to the Problem Sets will be provided after the material is covered.

### Main Textbooks

The course is not based on a single text, but draws repeatedly from the following textbooks:

Santerre, R. E. and S.P. Neun, *Health Economics*, Richard D. Irwin, Chicago.

Gruber, J, *Public Finance and Public Policy* 5th ed., Worth Publishers, New York.

Bhattacharya, J. Hyde, T. Tu, P, *Health Economics*, Palgrave Macmillan, Basingstoke.

Unfortunately, neither of these texts is entirely adequate. The Gruber text is excellent, but is focused on public economics (the economics of government) more broadly, and not on health economics in particular. The Bhattacharya and Santerre texts have some good content but it misses too many essential topics. If money is no object, I recommend that you purchase both the Gruber and Bhattacharya texts. I will provide copies for the relevant Santerre chapters. If money is tight, I recommend that you buy neither, as I have worked hard to ensure that all the Essential Readings for this course are available as scanned PDFs.

### Other Textbooks

I also set some readings from the following health economics or public economics textbooks.

Folland, S. Goodman, A. Stano M., *The Economics of Health and Health Care*, 7th ed., Pearson Education, New Jersey.

Rice, T. Unruh. L, *The Economics of Health Reconsidered*, Health Administration Press, Chicago.

Barr. N, *The Economics of the Welfare State* 5th ed., Oxford University Press, Oxford.

## INTRODUCTORY MICROECONOMICS TEXTBOOKS AND RESOURCES

As some of you have studied not economics at university level before, this course provides an introduction to the basic building blocks of microeconomic theory. To this end, I assign some readings from introductory economics textbooks. The best textbook is:

Paul Krugman and Robin Wells (2015), *Economics* 4th ed., Worth Publishers, New York.

I will provide copies of the relevant chapters. I recommend Krugman and Wells to all of you wishing to purchase an introductory economics text. Other good references for some introductory topics are:

Richard Lipsey and Alec Chrystal (2005), *Economics* 10th ed., Oxford University Press, Oxford.



William J Baumol and Alan S Blinder (2012), Economics: Principles and Policy 12th international ed., South-Western Cengage Learning, Canada.

David K H Begg and GianluigiVernasca (2011), Economics 10th international ed., McGraw-Hill Education, London.

Finally, I refer you to an open access Microeconomics course run by MIT. It goes into more technical detail than you need, but you may nonetheless find it a useful reference.

<http://ocw.mit.edu/courses/economics/14-01sc-principles-of-microeconomics-fall-2011/>

## NOTES ON READINGS

**Essential Readings** cover material that you must know to achieve success in this course. I have tried to minimise the number of Essential Readings. You should be able to get a very good grade in this course by reading nothing other than the Essential Readings.

**Alternative Readings** are alternative treatments of introductory economics material covered in some Essential Readings. Different expository styles work for different students – if you are having trouble with an Essential Reading, an Alternative Reading may explain the same material in a manner that is more helpful for you. There is no need to read both. an Essential Reading and a corresponding Alternative Reading.

Additional Readings provide additional perspectives that could be of value, not only in your post-course life but also in the final exam. I do not label them as 'Recommended' because (i) you should be able to get a very good distinction reading nothing other than the Essential Readings, and (ii) it is much more important to read the Essential Readings deeply and thoroughly than to read the Additional Readings superficially. Unlike in some other subjects, in this course rather than reading large amounts, it is more important to understand what you read.

Background Readings and References are provided for students with a particular interest, for students pursuing a particular topic in more depth, and to provide references to all sources mentioned in the course materials.

Problem set readings are provided for a small number of lectures. Their role and importance is explained in the relevant Problem Sets – you are not expected to read all of them thoroughly, except when explicitly requested to do so in the Problem Set.

Some of the introductory economics readings are quite long. This is because they are aimed at first year economics undergraduates. I encourage you to try to move through them quickly, to understand the basic models they set forth, and not get too bogged down in the excruciating "real world examples" they provide. Your aim, with these readings, should be to absorb enough to understand the lecture slides – no more. All readings are provided for you either physically or electronically.



## LECTURE TOPICS AND READINGS

### **Lecture 1. Introduction: Health, Health Care and Health Insurance**

- 1.1. Introduction and Motivation
- 1.2. Health, Health Care and Health Insurance
- 1.3. Introduction to Economics

#### **Essential Readings**

- 1.2. Health, Health Care and Health Insurance

Timothy Besley (1989), 'The demand for health care and health insurance', Oxford Review of Economic Policy 5(1), Spring, pp.21-33

An authoritative overview; don't worry if you don't understand everything in this article. It is in many ways a 12-page summary of the course – by the end you will!

- 1.3. Introduction to Economics

Paul Krugman and Robin Wells (2015), Economics: Chapter 1

### **Lecture 2. Decision Making by Individuals**

- 2.1. Consumer behavior

#### **Essential Readings**

- 2.1. Consumer behaviour

Paul Krugman and Robin Wells (2015), Economics: Chapter 10

### **Lecture 3. The Profit Maximizing Firm**

- 3.1. Producer behaviour

#### **Essential Readings**

- 3.1. Producer Behavior

Paul Krugman and Robin Wells (2015), Economics: Chapter 11 and 12

### **Lecture 4. Supply, Demand, and Welfare**

#### **Essential Readings**

- Begg and Vernon, Chapter 3 ('Demand, supply and the market')
- Lipsey and Chrystal, Chapter 4 ('Elasticity of Demand and Supply')

#### **Alternative Readings**

- Krugman and Wells, Chapters 3 ('Supply and Demand'), 4 ('Consumer and Producer Surplus'), 5 ('Price Controls and Quotas: Meddling with Markets') and 6 ('Elasticity').



An excellent introductory reference: This is an alternative to the readings by Begg and Vernasca, and by Lipsey and Chrystal.

### **Lecture 5. Group Seminar - Problem Set I**

#### **Essential Readings**

Michael J Sandel (2012), 'Chapter 3: How Markets Crowd Out Morals', *What Money Can't Buy: The Moral Limits of Markets*, Allen Lane, London.

Amy L Friedman (2006), 'Payment for living organ donation should be legalised', *British Medical Journal* 333, 7 October, pp.746-8.

### **Lecture 6. The Economic Role of Government**

- 6.1. When should government intervene?
- 6.2. How should policies be designed?
- 6.3. What are the effects of economic policies?
- 6.4. Why do public authorities act in the way they do?
- 6.5. What are the unique structures of firms and markets in the health sector?

#### **Essential Readings**

Gruber, Chapter1, Section1.1: The Four Questions of Public Finance.

I can only provide a scan of Section 1.1, but in fact I recommend the whole of Chapter 1.

Krugman and Wells, Chapters 19: Economics of the Welfare State

#### **Additional Readings**

Barr, Chapter1 ('Introduction'), specially Section1.3 ('Objectives of the welfare state').

James M Poterba (1995), 'Government intervention in the markets for education and healthcare: how and why?' NBER Working Paper Series, Working Paper No. 4916, National Bureau of Economic Research, Cambridge MA. All sections except 1.1, 2.1 and 4.1

### **Lecture 7. Markets and Market failure**

- 7.1. The Perfectly Competitive Firm
- 7.2. Market Failure: The First Welfare Theorem
- 7.3. Externalities, Internalities and Public Goods
- 7.4. Monopoly and Market Power
  - 7.4.1. Quantity
  - 7.4.2. Quality
  - 7.4.3. Competition vs. Economies of Scale

#### **Essential Readings**



Bhattacharya, Chapter 20, Sections 20.1 ('Externalities in health') and 20.2 ('Pigouvian subsidies and taxes')

Jonathan Gruber (2002/2003), 'Smoking's Internalities', Regulation 25(4), Winter, pp.52-7

A J Culyer (1989), 'The normative economics of health care finance and provision', Oxford Review of Economic Policy 5(1), pp.34-58

You are only required to read pp.39-45 on the caring externality: sections (iv) 'Caring and Sharing' and (v) '... And Where Does This Get Us?'

Krugman and Wells, Chapter 13 ('Monopoly')

Rice and Unruh, Chapter 6, Sections 6.2 ('Do Firms Have Monopoly Power?') and 6.4 ('Are There Increasing Returns to Scale?').

#### Alternative Readings

Krugman and Wells, Chapter 16 ('Externalities')

Krugman and Wells, Chapters 18 (Public goods and common resources)

### **Lecture 8. The Market for Health Care**

- 8.1. Informational Asymmetry in Health Care Markets
- 8.2. Agency and the Doctor-Patient Relationship
- 8.3. Supplier-Induced Demand
- 8.4. Complexity, Natural Monopoly, and Information Asymmetry

#### Essential Readings

Alistair McGuire, Paul Fenn, and Ken Mayhew (1989), 'The assessment: the economics of health care', Oxford Review of Economic Policy 5(1), Spring, pp.1-20

Angus Deaton (2006), 'Trying to be a good hip op consumer', Royal Economic Society Newsletter 133, April

Rice and Unruh, Chapter 6, Section 6.1 ('Are Supply and Demand Independently Determined?').

### **Lecture 9. Group Seminar - Problem set II**

#### **Lecture 10. Health Insurance**

- 10.1. Why People Value Insurance
- 10.2. Health Insurance Market Failure
- 10.3. Adverse Selection
- 10.4. Moral Hazard

#### Essential Readings



Gruber, Chapter12 ('Social Insurance: The New Function of Government').

Gruber, Chapter 15, Section 15.2 ('How Generous Should Insurance Be to Patients?')

Malcolm Gladwell (2005), 'The Moral-Hazard Myth: The bad idea behind our failed health-care system', New Yorker, 29 August.

John A Nyman, (2004), 'Is' Moral Hazard Inefficient? The Policy Implications of A New Theory' Alternative Readings

Santerre, R. E. and S.P. Neun, Health Economics, (Chapter 12)

### **Lecture 11. Institutions and Incentives I**

11.1. Introduction: Institutions and Incentives

11.2. Why Are Health Care Costs Rising?

11.3. Consumer Moral Hazard & Demand-Side Cost Sharing

    11.3.1. Price-Based Rationing

#### **Essential Readings**

Sheila Smith, Joseph Newhouse and Mark Freeland (2009), 'Income, Insurance, And Technology: Why Does Health Spending Outpace Economic Growth?' Health Affairs 28(5), September, pp.1276-84

Bhattacharya, Chapter 11 ('Moral Hazard'), except Section 11.5.

Katherine Baicker, Sarah L Taubman, Heidi L Allen, Mira Bernstein, Jonathan H Gruber, Joseph P Newhouse, Eric C Schneider, Bill J Wright, Alan M Zaslavsky and Amy N Finkelstein (2013), 'The Oregon Experiment — Effects of Medicaid on Clinical Outcomes', New England Journal of Medicine 368(18), 2 May, pp.1713-22

Aviva Aron-Dine, LiranEinav, Amy Finkelstein (2012), 'The RAND Health Insurance Experiment, Three Decades Later', NBER Working Paper 18642, December

### **Lecture 12. Institutions and Incentives II**

12.1. Consumer Moral Hazard & Demand-Side Cost Sharing

    12.1.1. Non-Price-Based Rationing

12.2. Social Health Insurance

#### **Essential Readings**

Bhattacharya, Chapter 16 ('The Beveridge model: nationalized health care')

Gruber, Chapter 17 ('Income Distribution and Welfare Programs'), especially Section 17.4 ('Reducing the Moral Hazard Costs of Welfare')

Gruber, Chapter12 ('Social Insurance: The New Function of Government'). This was also an Essential Reading for lecture 9

#### **Alternative Readings**



Santerre, R. E. and S.P. Neun, Health Economics, (Chapter 10)

### **Lecture 13. Institutions and Incentives III**

- 13.1. Supplier Moral Hazard & Supply-Side Cost Sharing
- 13.2. Price Regulation: Prospective Reimbursement
- 13.3. Pay for Performance
- 13.4. Private vs. Government Provision
- 13.5. Vertical Integration: Managed Care

#### **Essential Readings**

Randall P Ellis and Thomas G McGuire (1993), 'Supply-Side and Demand-Side Cost Sharing in Health Care', *Journal of Economic Perspectives* 7(4), Autumn, pp.135-51

Joseph P Newhouse (2002), 'Chapter 2: The Integration of Medical Insurance and Medical Care',

Pricing the Priceless: A Health Care Conundrum, MIT Press, Cambridge, pp.63-78.

Randall P Ellis and Thomas G McGuire (1986), 'Provider Behavior Under Prospective Reimbursement: Cost Sharing and Supply', *Journal of Health Economics* 5(2), Summer, pp.417-27.

#### **Alternative Readings**

Santerre, R. E. and S.P. Neun, Health Economics, (Chapter 6)

### **Lecture 14. Group Seminar - Problem set III**

### **Lecture 15. Health Care Labour Markets**

- 15.1. Introduction
- 15.2. Demand and Supply of Labour in Health Care Markets
- 15.3. Labour Market Equilibrium Under Different Market Structures

#### **Essential Readings**

Folland, Chapter 16: Health Care Labour Markets and Professional Training Alternative Readings

Santerre, R. E. and S.P. Neun, Health Economics, (Chapter 13)

### **Lecture 16. Health Technology Assessment**

- 16.1. Cost-Benefit Analysis
- 16.2. Cost-Effectiveness Analysis
- 16.3. Quality-Adjusted Life Years
- 16.4. Do QALYs Capture Health-Related Utilities or Health Status?
- 16.5. Equity: Is a QALY a QALY?



### **Essential Readings**

Ray Robinson (1993), 'Economic evaluation and health care: What does it mean?', British Medical Journal 307, 11 September, pp.670-3.

Ray Robinson (1993), 'Economic evaluation and health care: Costs and cost-minimisation analysis, British Medical Journal 307, 18 September, pp.726-8.

Ray Robinson (1993), 'Economic evaluation and health care: Cost-effectiveness analysis,' British Medical Journal 307, 25 September, pp.793-5.

Ray Robinson (1993), 'Economic evaluation and health care: Cost-utility analysis,' British Medical Journal 307, 2 October, pp.859-62.

Ray Robinson (1993), 'Economic evaluation and health care: Cost-benefit analysis, British Medical Journal 307, 9 October, pp.924-6.

Ray Robinson (1993), 'Economic evaluation and health care: The policy context', British Medical Journal 307, 16 October, pp.994-6.

Alistair McGuire, 'Chapter 1 : Theoretical concepts in the economic evaluation of health care', in Alistair McGuire and Michael Drummond eds. (2001), Economic Evaluation in Health Care: Merging Theory with Practice, Oxford University Press, Oxford, pp.1-21. - Don't worry if you can't understand everything in this chapter.

### **Lecture 17. Pharmaceutical Markets**

#### **Essential Readings**

TBD

### **Lecture 18. Exam**

### **Lecture 19. Costa Rican Health Care Market**

### **Lecture 20. Group Presentations**



## ACADEMIC INTEGRITY CODE

Students in this course are expected to abide by common sense, normal regulations on Academic Integrity. Violations of the Academic Integrity policy include, but are not limited to plagiarism, fabrication, cheating, and academic misconduct, including dishonest acts such as tampering with grades or taking part in obtaining or distributing any part of an administered or non-administered test/assignment. The intent to violate this policy also represents a violation of this policy.

**Possible Sanctions for Violating Academic Integrity Policy:** If an act of academic dishonesty is determined to have occurred, one or more of the following sanctions will be imposed, depending on the severity of a first-time offense:

- Reduction of a course grade
- Obtention of an "F" grade for the assignment or exam
- Failure for the entire course
- Other action deemed appropriate by the faculty member
- Any of the above sanctions with the inability to withdraw.

The decision about the sanction to apply will be made jointly by the course's professor and ICDS' Academic Director, in consultation with home university on-site Director for the program, if applicable. The incident will be reported to the home university and may result in an official conduct record for the student(s).

**Second Academic Violation:** A second violation will result in suspension or expulsion from the program, in addition to any sanction issued from the list above.

**Changes to Syllabus:** The student acknowledges receipt of this syllabus and the information herein by continuing to attend this course. The Instructor reserves the right to make changes to this syllabus if circumstances warrant such change, with previous approval of ICDS' Academic Director. All major changes will be provided to the student in writing.

## SAFETY AND SECURITY

In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelter at the ICDS Office during office hours, or go straight to your home as the predetermined rendezvous location and wait for ICDS' instructions.