

Economics of healthcare and pharmaceuticals

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Course syllabus

The following is an outline of the main topics covered in this course:

I. Introduction

Warm-up exercise: Investment and pricing decisions in health care: Merck Gardasil case

What price should Merck set for its new vaccine (Gardasil)?

Should a firm develop a vaccine or a drug?

II. Health insurance

Risk aversion and the social benefits of health insurance; optimal insurance coverage

Moral hazard and the social costs of health insurance

Asymmetric information, adverse selection, and private health insurance market failures; potential remedies

Choice among health plans: health insurance benefit design (optimal premium and copayment structure)

Empirical evidence about the impact of health insurance on the use of medical care

III. Measuring and valuing health: the quantity, price, and quality of life-years

Longevity, the “quantity” of life-years

Alternative indicators: life expectancy, premature mortality, cancer survival rate, etc.

Explaining interstate and international variation in longevity growth

The “price” (value) of life-years: How much should we pay to save a “statistical life”?

Three alternative approaches: human capital approach, “full income” approach, and compensating differentials approach

The “quality” of life-years: Is average quality of life likely to be improved by advances in medicine?

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IV. Comparative effectiveness, cost effectiveness, and health technology assessment

How cost-effective are new cancer drugs in the U.S. and globally?

Medicare's attempt to equalize the cost-effectiveness of 2 drugs

V. Pharmaceutical industry

Intellectual property, innovation and imitation

Patents: benefits and risks—a simple model

Does patent protection restrict U.S. drug use?

Can imitators favor stronger intellectual property protection?

Drug development and pricing decisions

Is transparency of prices of medical goods (e.g. drugs) and services desirable?

Multiple markets and price discrimination

Precision medicine and pharmacogenomics

Medication adherence

VI. Physician behavior: effects of payment system, medical malpractice regime, and information

Alternative ways of paying doctors and other providers:

Retrospective payment; how do physicians respond to fee changes?

Prospective payment; the risk of “upcoding”

Value-based payment: theory, and a case study of incentives in HMOs

Effect of medical malpractice regime on physician behavior: Do doctors practice defensive medicine?

Is more information better? The effects of “report cards” on health care providers

Assignment and Coursework Structure. The course will be taught using a combination of case discussions and lectures, including a few guest lectures. Students will be evaluated on the basis of class participation (20%), several homework assignments (20%), and a final exam (60%).

Connection with the core. The learning in this course will utilize, build on, and extend concepts covered in the following core courses:

<i>MANAGERIAL ECONOMICS</i>	<ul style="list-style-type: none"> • Maximization and thinking on the margin • Analyzing complex decision-making under uncertainty • Pricing with market power • Market segmentation and other advanced pricing strategies • Understanding market competition and equilibrium thinking (in the short run) • Market equilibrium thinking (in the long-run) and barriers to entry • Strategic interaction among firms
<i>CORPORATE FINANCE</i>	<ul style="list-style-type: none"> • Risk (health insurance) • Incremental cost/benefit (of medical expenditure)
<i>GLOBAL ECONOMIC ENVIRONMENT I</i>	<ul style="list-style-type: none"> • GDP (as an incomplete measure of economic prosperity)

Student focus: Students who plan to work in any of the following segments of the health care field should find this course to be valuable:

- pharmaceutical, biotechnology, and medical device companies
- health insurance companies and managed care organizations
- hospitals and physician practices
- financial services focused on health care
- public and not-for-profit organizations focused on health care

Core culture. This course adheres to Columbia Core Culture. Students are expected to be:

- Present: (1) On time and present for every session; (2) Attendance tracked
- Prepared: (1) Complete pre-work needed, expect cold calling; (2) Bring nameplates and clickers
- Participating: (1) Constructive participation expected and part of grade; (2) No electronic devices unless explicitly called for by the instructor