

## ECONOMICS 140: ECONOMICS OF HEALTH PRODUCERS

Fall 2021

Tue and Thurs 5:00-6:20pm (Econ 300)

*Professor:* Jeffrey Clemens

Office: Econ 306

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**Office Hours:** Tuesdays from 2pm-3pm. Also available by appointment.

### *Course Readers*

(1) Yashna Nandan (Office hour Fridays 10am-11am) e-mail: [ynandan@ucsd.edu](mailto:ynandan@ucsd.edu)

**Yashna's office hours will be held via Zoom, with links available through our Canvas website. Professor Clemens will hold office hours in Econ 306 when possible. As needed, office hours will be held via Zoom.**

Prerequisites: Econ 2 OR 100B

*Course Objectives:* This course applies microeconomic theory to markets for health care goods and services, with a focus on the supply side of the health sector (physicians, nurses, hospitals, and pharmaceutical manufacturers). We will examine where markets work efficiently and where it may be possible for government intervention to improve efficiency. We will use microeconomic models to analyze how reform proposals affect the incentives facing health care providers and the outcomes that are realized in health care markets. Where possible, we will examine empirical research that tests the predictions from economic models.

Note: Econ 141 focuses on the consumer side of health care markets: the demand for health and medical care, the demand for health insurance, proposals to address the uninsured, employer provision of health insurance, and international comparisons of health systems.

### After passing this class you will be able to:

1. Apply microeconomics to the study of suppliers in healthcare markets.
2. Analyze current policy issues in the U.S. healthcare system from an economic perspective. Our focus will be on policy issues associated with how Medicare, Medicaid, and private insurance plans pay healthcare providers, although we will also discuss health policy issues related to redistribution and social insurance.

*Assessment:* Your course grade will be based on a set of written assignments and three exams. My plan is for the written assignments to account for a total of 40% of your grades and for each exam to account for 20% of your grade. Due to ongoing challenges associated with the pandemic and remote testing, however, I reserve flexibility in case it becomes necessary to adapt in response to unforeseen circumstances.

### *Exam Schedule (Both Sections):*

Midterm 1: October 19<sup>th</sup> (8:00pm-9:20pm; "Remote Room" 20% of grade)

Midterm 2: November 16<sup>th</sup> (8:00pm-9:20pm; "Remote Room" 20% of grade)

Final Exam: December 4<sup>th</sup> (3:00-6:00pm; "Remote Room" 20% of grade)

*Course Materials:*

*Optional Textbook:* Sherman Folland, Allen C. Goodman, and Miron Stano. “The Economics of Health and Health Care” Publisher: Pearson Education, Inc. 2013. 7<sup>th</sup> Edition.

*Canvas:* This is where you access the syllabus, additional required articles, problems sets, your grades, a discussion board, announcements regarding review sessions and supplemental office hours, etc.

*Additional Resources:*

- Cutler, David M. Your money or your life: Strong medicine for America's health care system. Oxford University Press, 2005.
- I recommend the “What the Health?” podcast from Kaiser Health News: <https://khn.org/news/tag/podcast/>
- The A16Z podcast covers a wide variety of tech issues. When they discuss health care applications, the content is often fascinating: <https://a16z.com/a16z-podcast/>
- The optional textbook is intended primarily for background material. Much of this material, for example key facts on how much money we spend on health care, how much is spent by Medicare, how much goes to hospitals, etc., can be found using google. The website of the Kaiser Family Foundation is a great resource for these and many other background facts: <https://www.kff.org/>

*Practice Problem Sets:* Posted on Friday and solutions available on *Canvas* the following Friday. These will be useful for exam preparation, but will not be graded.

*Additional Review Materials:* Practice midterms and any additional practice exam questions will be posted on *Canvas* prior to the weekend preceding each exam.

*Administrative Issues:*

- (1) If you believe an exam has not been graded properly, you may ask for a re-grade. We will re-grade your entire exam. The re-graded score will be your grade for the exam. You may not ask for another re-grade or go back to your first grade. To help maintain the integrity of the midterms and finals, we will require you to show your student IDs during your exam.
- (2) Any student found responsible for violating academic integrity will earn a failing grade for the course. In addition to the academic sanction that I impose, the Council of Deans of Student Affairs will impose a disciplinary penalty. For a review of UCSD policy, please see <https://senate.ucsd.edu/Operating-Procedures/Senate-Manual/appendices/2>.
- (3) If you have a documented disability, please bring your documentation and come to talk to me as soon as possible so that I can make suitable accommodations for you. If you believe that you may have a disability and will desire accommodation, please register with the Office for Students with Disabilities, Building 202 University Center.

**Concise Course Overview:**

**Lectures 1 and 2:** Introduction: Why Study Markets for Health Care Services; What Makes Health Service Markets Unique? Review of Key Concepts from Microeconomics

**Lectures 3 and 4:** Overview of the Physician Landscape; How Do Physicians Respond to Incentives and How Should We Pay Them?

**Lectures 5 and 6:** Continuation of Physician Payment

**Lecture 7:** Economics of the Affordable Care Act

**Midterm 1 on October 19<sup>th</sup> at 8:00pm Pacific Time**

**Lectures 8 and 9:** The Hospital Sector (Models and Empirical Analyses)

**Lectures 10 and 11:** Continuation of the Economics of the Hospital Sector

**Lectures 12 and 13:** Economics of Health Systems (Cost benefit analysis, preventive screenings, and managing systemwide incentives)

**Lecture 14** Introduction to the Pharmaceutical Sector

**Midterm 2 on November 16<sup>th</sup> at 8:00pm Pacific Time**

**Lectures 15 and 16:** Economics of Medical Innovation

**Lectures 17 and 18:** Continuation of Medical Innovation; Final Review

**Final Exam: Saturday December 4th from 3:00-6:00pm Pacific Time**

## Lectures 1 and 2:

### **Introduction: Why Study Markets for Health Care Services; What Makes Health Service Markets Unique?**

#### **Primary Topics:**

Overview of the Health Care Landscape  
Review of Consumer Demand  
Being Comfortable with Cost-Benefit Analysis  
Why We Buy Health Care through Insurance  
Review of Supply by Competitive Firms (Physicians?)  
The Decision to Become a Physician

#### **Relevant Textbook Chapters:**

**Chapter 1 (Overview)**

**Chapter 2 (Microeconomics Review)**

#### **Additional General Interest Materials:**

- Victor R. Fuchs, "Health Care Is Different—That's Why Expenditures Matter," *JAMA*. 303.18 (2010): 1859-1860. (Available on pages 21-23 at <https://jamanetwork.com/journals/jama/fullarticle/185819>)
- Baicker, Katherine, and Amitabh Chandra. "Myths and misconceptions about US health insurance." *Health Affairs* 27.6 (2008): w533-w543. (Available here: <https://www.healthaffairs.org/doi/10.1377/hlthaff.27.6.w533>)
- \*Cutler, David M., and Dan P. Ly. "The (paper) work of medicine: understanding international medical costs." *The Journal of Economic Perspectives* 25.2 (2011): 3-25. (Available here: <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.2.3>)
- Gottlieb, Joshua, and Avi Zenilman. "When Nurses Travel: Labor Supply Elasticity During COVID-19 Surges." <https://bfi.uchicago.edu/wp-content/uploads/2020/11/When-Nurses-Travel.pdf>
- \*Ateev Mehrotra, Michael Chernew, David Linetsky, Hilary Hatch, David Cutler, and Eric C. Schneider. "The Impact of the COVID-19 Pandemic on Outpatient Visits: A Rebound Emerges." *The Commonwealth Fund*. October 15, 2020. <https://www.commonwealthfund.org/publications/2020/oct/impact-covid-19-pandemic-outpatient-care-visits-return-prepandemic-levels>

## Lectures 3 and 4:

### How Do Physicians Respond to Incentives and How Should We Pay Them?

#### Primary Topics:

Overview of the Landscape  
The Decision to Become a Physician  
Choice of Specialty and Where to Practice  
The Physicians' Utility Function  
A Model of Optimal Payment Policy: Salary vs. Fee-For-Service  
Complications for Payment Policy  
How Does Medicare Stack Up?  
Paying for Capital and Technology Intensive Services

#### Relevant Textbook Chapters:

Chapter 16 (pp. 325-329; 339-341)

#### Additional General Interest Materials:

- DeZee KJ, Maurer D, Colt R, Shimeall W, Mallory R, Powers J, Durning SJ. "Effect of financial remuneration on specialty choice of fourth-year U.S. medical students." Acad Med. 2011 Feb; 86(2):187-93. (Available here: <http://www.ncbi.nlm.nih.gov/pubmed/21169785>)
- Mark Hogland. "How Does Your Doctor Get Paid?" (Available here: <http://www.pbs.org/wgbh/pages/frontline/shows/doctor/care/capitation.html>)
- \* Jeffrey Clemens. "Implications of Physician Ethics, Billing Norms, and Service Cost Structures for Medicare's Fee Schedule." (Available here: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2331103](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2331103))

#### Relatively Technical Readings:

- Center for Medicare and Medicaid Services. "Evaluation and Management Services Billing Guide." April 2013. (Available here: <https://www.medicarenhic.com/providers/pubs/REF-EDO-0056%20EvaluationManagementServicesBillingGuide.pdf>)
  - Note: Do not read this document in its entirety! This document is worth perusing if you want a taste for the complexity of Medicare's billing guidelines.

## Lectures 5 and 6

### Optimal Physician Payment; Quality Control; Empirical Evidence on Physician Payment; Assessing the Target Income and Cost-Shifting Hypotheses

#### Primary Topics:

Wrap-up Model of Optimal Payment Policy (Malpractice; Bonus Systems)  
Empirical Evidence  
Medicare's Influence on Private Payment Systems  
The Cost-Shifting Hypothesis  
Supplier-Induced-Demand  
The Target Income Hypothesis

#### Relevant Textbook Chapters:

Chapter 15 (Physicians' Practices)

#### Relatively Technical Readings:

- McGuire, Thomas G., and Mark V. Pauly. "Physician response to fee changes with multiple payers." *Journal of health economics* 10.4 (1991): 385-410. (Available here: <http://www.sciencedirect.com/science/article/pii/016762969190022F>)
  - Focus on the Introduction and Section 4. The remaining sections are quite technical.
- Clemens, Jeffrey, and Joshua Gottlieb. "Do Physicians' Financial Incentives Affect Medical Treatment and Patient Health?" (2014). (Available here: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2101251](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2101251)).
  - Focus on the Introduction and Section 1. The introduction describes the paper's findings. Section 1 provides some detail regarding how Medicare pays physicians.
- Clemens, Jeffrey, Joshua Gottlieb, and Timea Molnar. "Do Health Insurers Innovate? Evidence from the Anatomy of Physician Payments" (2014). (Link: [http://econweb.ucsd.edu/~j1clemens/pdfs/pricingrelationships\\_jhe\\_R2](http://econweb.ucsd.edu/~j1clemens/pdfs/pricingrelationships_jhe_R2)).
  - The Introduction and Section 1 are again the most relevant sections for class.

## Lecture 7

### Economics of the Affordable Care Act

#### Primary Topics:

The Affordable Care Act  
Economics of Adverse Selection

#### Relatively Technical Readings:

- Rothschild, Michael, and Joseph Stiglitz. "Equilibrium in competitive insurance markets: An essay on the economics of imperfect information." *Uncertainty in economics*. Academic Press, 1978. 257-280.  
<http://www.eco.uc3m.es/~mmachado/Teaching/HealthPhD/RothchildStiglitz.pdf>
- Einav, Liran, and Amy Finkelstein. "Selection in insurance markets: Theory and empirics in pictures." *Journal of Economic Perspectives* 25.1 (2011): 115-38.  
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.1.115>
- Clemens, Jeffrey. "Regulatory redistribution in the market for health insurance." *American Economic Journal: Applied Economics* 7.2 (2015): 109-34.  
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/app.20130169>
- Hackmann, Martin B., Jonathan T. Kolstad, and Amanda E. Kowalski. "Adverse selection and an individual mandate: When theory meets practice." *American Economic Review* 105.3 (2015): 1030-66.  
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.20130758>

**Midterm October 19<sup>th</sup> (8:00-9:20pm)**

## Lectures 8 and 9

### **Introduction to Hospitals; Health Care Providers with Market Power; Economics of Non-Profit Firms**

#### **Primary Topics:**

Overview of Hospital Sector  
Organizational Structure of Hospitals  
Suppliers with Market power (Monopoly and Monopsony)  
What Motivates Hospitals?  
    Kindly Non-Profits?  
    Empire Building?  
    Empirical Evidence on Hospital Behavior

#### **Relevant Textbook Chapters:**

**Chapter 14 (pp. 283-293, Hospital Overview)**

#### **Relatively Technical Readings:**

- Newhouse, Joseph P. "Toward a theory of nonprofit institutions: An economic model of a hospital." *The American economic review* 60.1 (1970): 64-74.  
[https://www.jstor.org/stable/1807855?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/1807855?seq=1#metadata_info_tab_contents)
- Pauly, Mark, and Michael Redisch. "The not-for-profit hospital as a physicians' cooperative." *The American Economic Review* 63.1 (1973): 87-99.  
[https://www.jstor.org/stable/1803128?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/1803128?seq=1#metadata_info_tab_contents)



## Lectures 10 and 11:

### More on the Economics of the Hospital Sector

#### Primary Topics:

Financing Hospital Care for the Uninsured

Hospital Behavior in the Real World

How Should We Pay Hospitals (Returning to our Model of Provider Behavior)

#### Relevant Textbook Chapters:

##### Chapter 13 (Economics of Non-Profit Firms)

#### Additional General Interest Materials:

- \* Brill, Steven. "Bitter pill: why medical bills are killing us." *Special report TIME magazine*, (Mar. 04, 2013) (2013). (Available here: <https://www.americanpatient.org/wp-content/uploads/2017/07/Bitter-Pill.pdf>)
  - Read through at least 2 of the anecdotes to get a flavor for the article.

#### Relatively Technical Readings:

- Duggan, Mark. "Hospital ownership and public medical spending." *Quarterly Journal of Economics*. 15(4): 1343-1373. 2000.
- Dafny, Leemore S. *How do hospitals respond to price changes?*. *American Economic Review*. 95(5):1525-1547. 2005. (Available here: <http://www.ingentaconnect.com/content/aea/aer/2005/00000095/00000005/art00009>)
- Cooper, Zack, Fiona Scott Morton, and Nathan Shekita. "Surprise! Out-of-Network Billing for Emergency Care in the United States." No. w23623. National Bureau of Economic Research, 2017. (Available here: [http://isps.yale.edu/sites/default/files/publication/2017/07/surpriseoutofnetwrokbilling\\_isps17-22.pdf](http://isps.yale.edu/sites/default/files/publication/2017/07/surpriseoutofnetwrokbilling_isps17-22.pdf))
- Clemens, Jeffrey, and Benedic Ippolito. Uncompensated Care and the Collapse of Hospital Payment Regulation: An Illustration of the Tinbergen Rule. No. w23758. National Bureau of Economic Research, 2017. (Available here: <http://www.nber.org/papers/w23758>)

## Lectures 12 and 13:

### Economics of Health Systems

#### Primary Topics:

Systemwide Cost-Benefit Analyses

The “Statistical Value of Life”

Preventive Care and the Economics of Testing/Screening

#### Additional General Interest Materials:

- \*Paul Romer. Appearance on the *Econtalk* Podcast. May 15, 2020.  
<https://www.econtalk.org/paul-romer-on-the-covid-19-pandemic/>
- Michael Mina. “How We Can Stop the Spread of COVID-19 By Christmas” *Time*. November 17, 2020. <https://time.com/5912705/covid-19-stop-spread-christmas/>
- \*Laurence J. Kotlikoff and Michael Mina. “A Cheap, Simple Way to Control the Coronavirus.” *New York Times*. July 3, 2020.  
<https://www.nytimes.com/2020/07/03/opinion/coronavirus-tests.html>
- U.S. Preventive Care Task Force. “Final Recommendation Statement
- Breast Cancer: Screening.” January 11, 2016.  
<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening>
- \*Aaron Carroll. “New Screening Guidelines Won’t Assure Fewer Mammograms.” October 23, 2015.  
<https://theincidentaleconomist.com/wordpress/new-screening-guidelines-wont-assure-fewer-mammograms/>

#### Relatively Technical Readings:

- Gupta, Atul. “Impacts of performance pay for hospitals: The readmissions reduction program.” *American Economic Review* 111.4 (2021): 1241-83. (Available here: <https://www.aeaweb.org/articles?id=10.1257/aer.20171825>)
- Becker, Gary and Julio Elias, “Introducing Incentives in the Market for Live and Cadaveric Organs,” *Journal of Economic Perspectives*, Vol 21. No. 3, Summer 2007, p. 3-24. (Available here: <http://www.aeaweb.org/articles.php?doi=10.1257/jep.21.3.3&title=>)

## Lectures 14:

### Intro to the Pharmaceutical Sector

#### Primary Topics:

The Advance of Health Care Innovation  
Health Gains  
Rising Costs  
The Pharmaceutical Pipeline  
The “Public Goods” Problem

#### Relevant Textbook Chapters:

Chapter 17 (Pharmaceuticals Overview)  
Chapter 6 (pp. 121-126, Medical Technology Overview)

#### Additional General Interest Materials:

- \*Michael Kremer Webinar. “Encouraging the development and manufacturing of vaccines and diagnostics.” May 1, 2020.  
[https://www.youtube.com/watch?v=C8W8JQLTECc&ab\\_channel=PrincetonEconomics](https://www.youtube.com/watch?v=C8W8JQLTECc&ab_channel=PrincetonEconomics)
- \*Susan Athey, Michael Kremer, Christopher Snyder and Alex Tabarrok. “In the Race for a Coronavirus Vaccine, We Must Go Big. Really, Really Big.” *New York Times*. May 4, 2020. <https://www.nytimes.com/2020/05/04/opinion/coronavirus-vaccine.html>
- Kremer, Michael. "Pharmaceuticals and the developing world." *The Journal of Economic Perspectives* 16.4 (2002): 67-90. (Available here: <http://www.jstor.org/stable/3216915>)

Midterm on Nov 16<sup>th</sup> (8:00-9:20pm)

## Lectures 15 and 16:

### Medical Innovation Continued

#### Primary Topics:

Pharmaceutical Innovation  
The Decision to Invest in R&D  
Patent Law and Monopoly Pricing  
Drugs for Developing Countries  
The Difficulty of Evaluating Technology Policy  
Innovation in Medical Equipment and Devices

#### Additional General Interest Materials:

- \*Clemens, Jeffrey. "How the Civil War drove medical innovation – and the pandemic could, too." *The Conversation*. September 8, 2020.  
<https://theconversation.com/how-the-civil-war-drove-medical-innovation-and-the-pandemic-could-too-144181>
- Roberts, EDWARD B. "Technological innovation and medical devices." *New medical devices: invention, development, and use* (1988): 35-51.
  - This article appears as a chapter in a book. The relevant pages (35-51) can be accessed via google books by searching for the article title from the "Google Scholar" home page. The chapter provides an excellent discussion of what medical device innovation looks like and how it differs from pharmaceutical innovation.

#### Relatively Technical Readings:

- Clemens, Jeffrey and Parker Rogers. "Demand Shocks, Procurement Policies, and the Nature of Medical Innovation: Evidence from Wartime Prosthetic Device Patents." NBER Working Paper 26679.  
<https://econweb.ucsd.edu/~j1clemens/pdfs/ProstheticsPaperLatest>
- Cutler, David M., Allison B. Rosen, and Sandeep Vijan. "The value of medical spending in the United States, 1960–2000." *New England Journal of Medicine* 355.9 (2006): 920-927. (Available here:  
<http://www.nejm.org/doi/full/10.1056/NEJMsa054744>)

## Lectures 17 and 18:

### Medical Innovation Continued; Final Review

#### Primary Topics:

Empirical Evidence on Innovation  
Pharmaceutical Sector  
Medical Equipment  
Payment Policy and the Nature of Innovation  
  
Final Review

#### Additional General Interest Materials:

- \*Department of Health and Human Services. "Fact Sheet: Explaining Operation Warp Speed." 2020. <https://www.hhs.gov/coronavirus/explaining-operation-warp-speed/index.html>

#### Relatively Technical Readings:

- Finkelstein, Amy. "Static and dynamic effects of health policy: Evidence from the vaccine industry." *Quarterly Journal of Economics* 119.2 (2004): 527-564. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.932.6628&rep=rep1&type=pdf>
- Blume-Kohout, Margaret E., and Neeraj Sood. "Market size and innovation: Effects of Medicare Part D on pharmaceutical research and development." *Journal of Public Economics* 97 (2013): 327-336. <https://www.sciencedirect.com/science/article/abs/pii/S0047272712001119>
- Acemoglu, Daron, and Joshua Linn. "Market size in innovation: theory and evidence from the pharmaceutical industry." *Quarterly Journal of Economics* 119.3 (2004): 1049-1090. <https://academic.oup.com/qje/article-abstract/119/3/1049/1938820>
- Budish, Eric, Benjamin N. Roin, and Heidi Williams. "Do firms underinvest in long-term research? Evidence from cancer clinical trials." *American Economic Review* 105.7 (2015): 2044-85. [https://sites.duke.edu/collardwexler/files/2015/01/budish\\_williams.pdf](https://sites.duke.edu/collardwexler/files/2015/01/budish_williams.pdf)
- Yin, Wesley. "Market incentives and pharmaceutical innovation." *Journal of Health Economics* 27.4 (2008): 1060-1077. [https://luskin.ucla.edu/sites/default/files/download-pdfs/ODA\\_innovation.pdf](https://luskin.ucla.edu/sites/default/files/download-pdfs/ODA_innovation.pdf)
- Agha, Leila, Soomi Kim, and Danielle Li. "Insurance Design and Pharmaceutical Innovation." *NBER Working Paper* w27563 (2020). [https://www.nber.org/system/files/working\\_papers/w27563/w27563.pdf?sy=563](https://www.nber.org/system/files/working_papers/w27563/w27563.pdf?sy=563)

**Final Exam: Both Sections on Saturday December 4<sup>th</sup> from 3:00-6:00pm**

