

ECON 890
HEALTH ECONOMICS: MARKETS AND SUPPLY-SIDE ACTORS
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
SPRING 2021

Time & location: [TBD]

Prerequisites: ECON 847/848/873/880/881
(any higher-year empirical micro course)

Instructors:

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Course synopsis: This course explores the economics of health care markets with a focus on supply-side actors, such as insurers, providers, and drug manufacturers. We will present an assortment of topics in health economics and analyze them using tools from applied microeconomics and industrial organization. Examples include the analysis of:

- The choice of capitation (fixed amount per patient) vs. fee-for-service (unbundled payments based on the kind and number of services) in incentivizing health care providers and their impact on the cost and quality of care.
- Horizontal and vertical mergers among provider groups and their impact on the allocation of patients, hospital prices and insurance premiums.
- The impact of price regulation in the pharmaceutical market.

Course objective: Our main objective is to prepare you to do original empirical microeconomics research, especially research in health economics. To this end, we will (i) introduce you to the main policy issues in health economics, with a focus on understanding how different players respond to market structures and regulations, and (ii) equip you with the modeling and estimation techniques that are central to current health economics research, most, if not all, of which can also be applied in empirical research outside of health.

Approach and prerequisites: Our approach is a combination of lectures on the essential methodology, surveys of the recent literature on the supply-side topics of health care markets, and em-

pirical exercises that familiarize you with the prominent econometric tools, data sources, and programming techniques.

This course will be the second of two health economics courses offered each year at UNC Economics. Its focus on the supply side actors of health care markets complements the existing course (ECON 850 Health Economics), which examines the consumer side of health economics. As a result, this course often employs a different set of tools that spans over various fields of empirical microeconomics, such as bargaining models, learning models, cost function estimation with adverse selection, etc. These two courses do not need to be taken in any specific order.

Students are expected to have taken at least one higher-year graduate empirical microeconomics or microeconometrics course. For example, ECON 847 or 848 (Empirical IO I/II), 873 (Microeconometrics), 880 (Labor I), or 881 (Labor II). Students who have not taken these courses but may fulfill the requirements (by taking similar courses offered by other departments) are welcome to contact the instructors and discuss their specific cases before enrollment.

Course structure and requirement: This course will be co-taught by two instructors, each covering half of the course materials. With this structure, the students are introduced to each topic by the instructor whose own research is more closely related to that topic. Throughout the semester, they are also welcome (and encouraged) to meet with any of the two instructors about the course, original research ideas, and other research-related questions.

While the course can be lecture-heavy at times, most class meetings require that you read the assigned papers in advance and actively participate as we discuss them in class. You will also be required to do an in-class presentation of a paper and your critique, as well as a proposal for an original research paper at the end of the semester. Homework will also be assigned regularly throughout the semester, which typically involves empirical exercises that apply tools introduced in class and/or used in the required readings. Your course grade will be calculated based on the weights below:

- **Homework:** 32% (4 assignments in total, 8% each)
 - a. **Due dates:** Homework assignments must be submitted *by noon* on the due dates, unless specified otherwise. Late submissions *before* solutions are posted or discussed in class will receive discounted grades depending on the length of the delay. Submissions *after* solutions are posted or discussed in class will *not* be accepted.

- b. **Submission:** Please submit your homework in the required format. For electronic versions, email your work to the instructor; for hardcopies, submit in person. Do *NOT* put hardcopies in the instructors' mailbox, slip them in under the office door, or give them to the Econ department staff members.
- c. **Collaboration:** You may discuss the reading materials and problems in the homework with each other. But each individual must write and submit their own work (i.e., you need to write your own answers and code your own programs, not copies of others' answers) and each individual will be graded separately on the assignment.
- d. **Grading:** Points for each question/subquestion in the homework will be specified. In case of late submission, the homework will be graded first, and then discounted based on when the work was submitted and when the solutions are posted/discussed in class.

- **Participation:** 18%

- a. **Assessment of required readings:** It is essential that you finish the required readings before they are discussed in class. Students will be (randomly) selected to answer factual questions on the reading (e.g., the research question, the empirical strategy, the key findings).
- b. **In-class discussions:** Students are expected to voluntarily participate in and contribute to the in-class discussions, including the presentation by your peers. You need to be fully engaged, communicate your ideas clearly, and be respectful to your peers and the instructors.
- c. **Questions and comments:** Students are welcome and encouraged to ask questions both during and after class. Good questions are most often not factual ones, but ones that demonstrate critical thinking and intellectual engagement.
- d. **Evaluation:** Your participation will be evaluated by the two instructors separately (9% each). An instructor will assign a score of 1 to 3 for each of the items (a), (b) and (c) above, where 3 = above average or outstanding, 2 = about average or satisfactory, and 1 = below average or less than satisfactory.

- **Presentation:** 20%

- a. **Importance:** Presentation is an essential skill throughout your graduate study and a crucial one when on the job market.

- b. **Attendance:** *All* are expected to attend the presentation sessions just as in the lectures, and are encouraged to provide constructive feedback for your peers.
- c. **Evaluation:** Your presentation will be evaluated by the two instructors separately (10% each). Key areas of evaluation include the content, the clarity and organization and the delivery. More detailed guidelines will be provided in class.

- **Research proposal: 30%**

- a. A brief proposal on your own research project due on the first day of final exam (5-6 pages maximum excluding the bibliography, 12 pt, single space, 1 inch margin on all sides).
- b. The format resembles that for the second-year paper proposal.
- c. Students are required to meet with the instructors at least 4 weeks before the due date to get feedback on their proposed ideas.
- d. More guidelines and detailed requirements will be provided in class as we go along.

List of topics and readings Below is a tentative list of topics to be covered in the course, the corresponding instructor, and a subset of (highly recommended/required) readings. The list of readings will be continually updated with additional materials, such as new working papers and exemplary job market papers.

1. Models and methods (Gong and Maini)

- (a) Random utility choice model (application: physician choices)
- (b) Cost functions with adverse selection
- (c) Bargaining models

2. Introduction (Gong)

- (a) Introduction to healthcare markets
 - Arrow, Kenneth J. *"Uncertainty and the welfare economics of medical care."* The American Economic Review 53, no. 5 (1963): 941-973.
 - Finkelstein, Amy. *"The Aggregate Effects of Health Insurance: Evidence from the Introduction of Medicare."* The Quarterly Journal of Economics (2007): 1-37.

- Einav, Liran, Amy Finkelstein, and Mark R. Cullen. “*Estimating Welfare in Insurance Markets Using Variation in Prices.*” *The Quarterly Journal of Economics* 125, no. 3 (2010): 877-921.
- Einav, Liran, and Amy Finkelstein. “*Selection in insurance markets: Theory and empirics in pictures.*” *The Journal of Economic Perspectives* 25, no. 1 (2011): 115-138.

(b) Topical issues in healthcare markets

(c) Introduction to structural estimation

(d) Supply-side explanation for health care spending variation

- Finkelstein, Amy, Matthew Gentzkow, and Heidi Williams, “*Sources of Geographic Variation in Health Care: Evidence from Patient Migration,*” *The Quarterly Journal of Economics*, 2016, 131 (4), 1681–1726.
- Chandra, Amitabh and Douglas O. Staiger, “*Productivity Spillovers in Healthcare: Evidence from the Treatment of Heart Attacks,*” *The Journal of Political Economy*, 2007, 115, 103.

3. Medical care providers (Gong)

(a) Agency

- Johnson, Erin M., and M. Marit ReHAVI. “*Physicians Treating Physicians: Information and Incentives in Childbirth.*” *American Economic Journal: Economic Policy*, 2016, 8 (1): 115-41.
- Geruso, Michael and Layton, Timothy J. “*Upcoding: Evidence from Medicare on Squishy Risk Adjustment.*” *Journal of Political Economy*, forthcoming.

(b) Physician Learning

- Coscelli, Andrea and Matthew Shum, “*An Empirical Model of Learning and Patient Spillovers in New Drug Entry,*” *Journal of Econometrics*, 2004, 122 (2), 213–246.
- Crawford, Gregory S and Matthew Shum, “*Uncertainty and Learning in Pharmaceutical Demand,*” *Econometrica*, 2005, 73 (4), 1137–1173.
- Dickstein, Michael J, “*Efficient Provision of Experience Goods: Evidence from Antidepressant Choice,*” Working Paper, 2018.
- Schnell, Molly. *Physician behavior in the presence of a secondary market: The case of prescription opioids.* Working paper, 2017.

(c) Design of physician payment schemes

4. Innovation and productivity in healthcare markets (Gong)

(a) Productivity

- Abaluck, Jason, Leila Agha, Chris Kabrhel, AliRaja, and ArjunVenkatesh, “*The Determinants of Productivity in Medical Testing: Intensity and Allocation of Care*,” *American Economic Review*, 2016, 106 (12), 3730–64.
- Currie, Janet and W. Bentley MacLeod, “*Diagnosing Expertise: Human Capital, Decision Making, and Performance among Physicians*,” *Journal of Labor Economics*, 2017, 35 (1-43).

(b) Technological diffusion

- Hamilton, Barton H., Andrés Hincapié, Robert A. Miller, and Nicholas W. Papageorge. “*Innovation and Diffusion of Medical Treatment*.” No. w24577. National Bureau of Economic Research, 2018.
- Agha, Leila, and David Molitor. “*The Local Influence of Pioneer Investigators on Technology Adoption: Evidence from New Cancer Drugs*.” *Review of Economics and Statistics*, 100, no. 1 (2018): 29-44.

5. Vertical relationships in healthcare markets (Maini)

(a) Hospitals and physician relationships

(b) Bargaining & restricted networks

- Ho, Katherine. “*The welfare effects of restricted hospital choice in the US medical care market*.” *Journal of Applied Econometrics* 21, no. 7 (2006): 1039-1079.
- Grennan, Matthew, and Ashley Swanson. “*Transparency and negotiated prices: The value of information in hospital-supplier bargaining*.” No. w22039. National Bureau of Economic Research, 2016.

6. Mergers (Maini)

(a) Hospital mergers

(b) Hospital-physician integration

- Nevo, Aviv. *“Mergers that increase bargaining leverage.”* Remarks as Prepared for the Stanford Institute for Economic Policy Research and Cornerstone Research Conference on Antitrust in Highly Innovative Industries (2014)

7. The pharmaceutical market (Maini)

(a) Pricing

- Duggan, Mark, and Fiona M. Scott Morton. *“The Effect of Medicare Part D on Pharmaceutical Prices and Utilization.”* American Economic Review 100, no.1 (2010): 590:607
- Duggan, Mark, and Fiona M. Scott Morton. *“The Distortionary Effects of Government Procurement: Evidence from Medicaid Prescription Drug Purchasing.”* Quarterly Journal of Economics 121, no.1 (2006): 1-30.

(b) Advertising

- Sinkinson, Michael, and Amanda Starc. *“Ask your doctor? Direct-to-consumer advertising of pharmaceuticals.”* The Review of Economic Studies 86, no. 2 (2018): 836-881.
- Shapiro, Bradley T. *“Positive spillovers and free riding in advertising of prescription pharmaceuticals: The case of antidepressants.”* Journal of Political Economy 126, no. 1 (2018): 381-437.