

# Econ 771: Health Economics II

Ian McCarthy

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E-mail: [ian.mccarthy@emory.edu](mailto:ian.mccarthy@emory.edu)

Web: [econ771f22.classes.ianmccarthyecon.com](http://econ771f22.classes.ianmccarthyecon.com)

Office Hours: MoWe 01:00-2:30 p.m.

Class Hours: MoWe 10:00-11:15 a.m

Office: PAIS 573

Class Room: Emerson, E103

## Course Description

This course explores the industrial organization of healthcare markets in the U.S. We will focus on the following areas: hospital ownership and production, physician agency, information disclosure, and hospital competition. If we have time, we will briefly cover some issues on health insurance markets. The class is effectively designed as a combination of empirical IO and causal inference, with applications to healthcare. As such, we will also examine several econometric tools and causal inference identification strategies. These methods will be introduced as needed throughout the course.

Supply-side health economics is a rapidly growing field with many new developments, particularly in the areas of bargaining in two-sided markets and physician learning. Some of these recent developments use tools from network analysis and machine learning, which we unfortunately do not have time to cover in this course. I've also chosen specific topics that overlap most with my own research — the upside here is that I can speak somewhat confidently about the literature and empirical studies in this area, but the downside is that some very interesting areas of health economics are not studied. For example, we will largely ignore issues of the prescription drug market, medical devices, and physician labor supply. My hope is that the content that we do cover will provide a springboard for those interested in these other important areas.

## Learning Outcomes

I have five central goals for this course:

1. Synthesize the current literature in each of the main areas of health economics covered in this class
2. Apply standard causal inference techniques in the area of healthcare
3. Provide constructive criticism of academic work in this area
4. Organize real-world data with current workflow and versioning tools
5. Develop your own preliminary research in some area of health economics

There are more specific learning outcomes for each module described on the relevant module's page of our class website, accessible [here](#).

## Text, Software, and Class Materials

1. **Readings:** As an elective PhD course, we will rely on academic papers from the reading list below. I expect everyone to read the papers in advance and come to class with questions on the study's contribution, empirical techniques, identification strategies, and datasets used. My goal with each paper is to discuss the analysis in detail. As such, the primary reading list is perhaps shorter than a standard PhD course. I've provided supplemental reading in each section for those interested in additional readings in a specific area.
2. **Software:** For almost everything in this class, I'll use R, but you are free to use whatever software you're most comfortable with. I encourage you to use R, Stata, or Python simply because these are the most common programs used in practice right now. You'll also need to have a basic working knowledge of Git and GitHub. If you're new to these tools, take a look at [Grant McDermott's](#) notes on [Data Science for Economists](#) as well as [Jenny Bryan's](#) online reference book, [Happy Git and GitHub with R](#).
3. **Accessing Data:** For any in-class activities, I will house all of the code and links to the data on our class website. For any real-life datasets, I will also point you to other GitHub repositories where available, and I'll make some data available via OneDrive. Details will be posted on Canvas and in class.
4. **Logistics:** For day-to-day communication, grades, and other private information (such as Zoom meeting links if needed), I'll use *Canvas*. I'll post all other materials to our class website. Please be sure to set up your Canvas alerts so that you receive class announcements in a timely manner.
5. **Slides and Notes:** Any presentations will be made available on our class website prior to any given class.

## Course Policies

Various policies for this course are described below. Basically, let's all work to be good citizens and take seriously our various roles as a student, teacher, friend, colleague, human, etc.

### Academic integrity

The Emory University Honor Code is taken seriously and governs all work in this course. Details about the Honor Code are available in the Laney Graduate School Handbook and available online [here](#). By taking this course, you affirm that it is a violation of the code to plagiarize, to deviate from the instructions about collaboration on work that is submitted for grades, to give false information to a faculty member, and to undertake any other form of academic misconduct. You also affirm that if you witness others violating the code you have a duty to report them to the honor council.

### Accessibility services

If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that accommodations are necessary, you may register with Accessibility Services at (404)727-9877 or via e-mail at [accessibility@emory.edu](mailto:accessibility@emory.edu). To register with OAS, students must self identify and initiate contact with the OAS office.

## Communication

I will post regular announcements to the class on *Canvas*, so please set up your notifications on *Canvas* accordingly. I will also use *Canvas* to post all grades and any other information that needs to stay in the class (like our *Zoom* meeting link for virtual meetings, if needed). All other course materials will be available on our class website, [econ771f22.classes.ianmccarthyecon.com/](http://econ771f22.classes.ianmccarthyecon.com/).

Please feel free to reach out to me for any reason. I generally respond to all e-mails within 24 hours.

## Office Hours

My office is in room 573 of the PAIS building. This is where I'll be for official office hours; however, I'm happy to meet outside of normal office hours as well. Please feel free to schedule another time to meet by following the link to select a time that works for you, <https://mccarthy-meetings.youcanbook.me>.

## Attendance

While there is no official "attendance" credit, everyone is expected to attend all class sessions. Given our small class, it is very important that we are all present and engaged.

## Assignments and Grading

There are four main assignments throughout the semester, along with a participation component. I describe each assignment below, with more detail provided on our [class website](#). Note that I **do not** expect or want anyone to treat these assignments as entirely separate. By that, I mean you should try to identify datasets from the exercises that you can use in your replication project, and you should try to select papers to present that use those data. At a minimum, you should present the paper that you will be replicating. With a little bit of up-front planning, you can create a lot of overlap across assignments, which will make your life much easier.

## Participation

Everyone will benefit much more from the class if we are all actively engaged. As a small incentive to stay engaged, I'll keep track of those who participate in our discussion each day. Any amount of participation (questions or comments) will be worth one point for that class. I'll tally everyone's participation points at the end of the semester.

## Empirical exercises

Each course module will have an applied component where we spend some time replicating analyses from selected papers based on real-world data. These will require some of your time outside of class to get the data in working order and implement the relevant identification strategy and econometric estimator. This empirical work should heavily complement your draft paper. The due dates for all empirical exercises are indicated in the schedule below. In general, we have one empirical assignment due at the end of each module.

For each assignment, your final product should consist of a discussion of the data sources, steps taken to clean the data and replicate the final analytic sample, a summary of your model and estimator, and your results. You must turn in your assignment on *GitHub*, including your code files (Stata, R, Python, SAS, etc.), all figures/tables, and of course the final write-up. I expect the

final product to be similar to an academic paper in terms of the quality of figures, tables, and general formatting.

Please organize your folders in a useful way. The way I organize things (though certainly not the only way to do it) is to keep a folder for each new project and named accordingly. I typically have the following subfolders:

- *Data*: This is where I keep the raw data files and any additional data files I create as part of my analysis. I also keep a “Research Data” folder on my computer that has raw data that I access regularly, in which case the “Data” folder in any given project includes symbolic links to the original raw data. I usually split this folder into two: “input” for raw data; and “output” for final or intermediate datasets.
- *Data Code*: This is where I keep the code for data management (merging, clean-up, wrangling, etc.). Final analytic datasets created by this code go to the “Data/output” subdirectory.
- *Analysis*: This is where I keep my analysis code files and log files (if relevant).
- *Results*: Output from the analysis code files. I tend to separate this into two subfolders - one for tables and one for figures.
- *Papers*: If I’m writing the paper in R Markdown, this is where I keep all of the markdown files. With most co-authored work, though, we write in Overleaf. In that case, I’ll still download different versions of the paper into this folder when necessary (e.g., for different journal submissions)
- *Presentation*: This is where I keep my slides and underlying code files.

It’s good to start developing some organization practices that work best for you. It’s extremely easy to forget what you were doing on a project once you have several things going at once, especially when you wait for 6-8 months after submitting a paper for publication. The last thing you want is to not be able to replicate your own work!

## Presentations

You will present three papers throughout the course of the semester. Any paper listed as **Primary Reading** in the class schedule can be selected for presentation, with the exception of papers or class days indicated by \*\*. Please inform me of your selected papers no later than **Friday, September 2**. Please also note your papers and class dates on the Google Sheet [here](#).

Each presentation should be no more than 30 minutes, including questions and brief discussion. The presentation should follow a standard conference setup, with a brief introduction/motivation, a very brief discussion of the literature and some context of the paper, discussion of the data, empirical analysis, and results.

Note that a presentation is not just a re-hashing of the paper in slide form. A good academic presentation should have as little information as possible on each slide, and the content on the slides doesn’t necessarily need to follow that of the paper. For example, in a real-time environment, it is much easier to move between different aspects of the empirical analysis and data.

In addition to the presentation, please send me your slides in advance. For people in the economics department, I expect the slides to be completed in Beamer (LaTeX), R Markdown, or Python. Others can use PowerPoint or some other presentation tool as they see fit. My only recommendation

with those other programs is that, for some of them like Prezi or Powtoon, it is easy for the presentation to become distracting. Slides should complement your presentation and not replace your presence!

Grades for each presentation will be based 50% on the slides and 50% on the actual presentation (delivery, clarity/organization, and content). Additional details and a grading rubric will be available on the assignments page of our class website.

### **Literature review (2nd year students)**

The literature review can be on any health economics topic of your choice, subject to my approval. There is no specific page requirement. 10 double-spaced pages might be a good target, but an efficiently-written paper could be shorter, while a student wishing to use the paper as a springboard to a dissertation may choose to write more. The paper will mostly consist of discussions of prior research, but should end with discussions of three open questions in the literature plus a proposed strategy for answering at least one of these questions. The paper is due by **Friday, November 18**.

### **Draft paper (3rd year students)**

The paper requirement is more extensive for 3rd year students. In this case, your papers should include not only an extensive literature review but also a preliminary empirical analysis, including a discussion of the data you're using, the construction of your sample, your identification strategy, econometric model and estimator, and some preliminary results. There is again no specific page requirement, but I expect at least 20 double-spaced pages to appropriately discuss your topic, context, data, and early results. Your draft paper should end with an outline of additional analyses you hope to run (i.e., robustness/sensitivity analyses, a discussion of different mechanisms of interest, policy-relevant heterogeneities in your estimated effects, etc.). The paper is due by **Friday, November 18**.

### **Due dates**

This section is just to highlight the most important dates on which an assignment is due. These dates are repeated within the description of each assignment above. Note that you can always turn assignments in prior to the official due date. Late assignments will receive an automatic 10% reduction in the grade for each day the assignment is turned in after the due date.

- **September 2:** Note the papers you plan to present on the Google Sheet [here](#). Only one student can present each paper, so this is first-come first-served.
- **Friday, November 18:** Due date for literature review or draft paper.
- Empirical exercises due one week after the end of each module (dates listed on website).

### **Final grades**

- 10% for participation (out of 25 possible points)
- 40% for empirical exercises (10% each)
- 30% for presentations of selected papers (10% each)
- 20% for literature review (2nd year students) or draft paper (3rd year students)

Letter grades will be assigned at the end of the course based on total score achieved: (A = 100-93%, A- = 92.99-90%, B+ = 89.99-87%, B = 86.99-83%, B- = 82.99-80%, C+ = 79.99-77%, C = 76.99-73%, C- = 72.99-70%, D+ = 69.99-67%, D = 66.99-60%, F = 60% or less)

## Class Schedule

Below is a preliminary outline of specific topics and readings throughout the semester. Based on our collective interests, discussions, and timing, individual papers and order may change somewhat, but any such changes will be announced in advance. For each class, one of us will present the “primary reading” papers, followed by a general discussion of the papers and topic among the class. Papers listed as “supplemental” represent other relevant papers in that area that we won’t have time to cover directly in class. Classes listed with \*\* denote “lecture” days. I’ll handle presentations and manage any in-class activities on those days.

Note that we have two scheduled virtual classes, one for Monday, 9/19, and another for Wednesday, 11/23. We also need to reschedule our class for Monday, 11/21. I’ve tentatively rescheduled that for Friday, December 2.

### Module 0: Kicking things off!

*Class 01, 08/24: Introduction to the economics of healthcare and causal inference\*\**

#### General health econ references:

- Kenneth J. Arrow “Uncertainty and the Welfare Economics of Medical Care,” *The American Economics Review* 53, no. 5 (1963).
- David Dranove and Mark A Satterthwaite “The Industrial Organization of Health Care Markets,” *Handbook of Health Economics* 1 (2000): 1093–1139.
- William N Evans, Helen Levy, and Kosali I Simon “Data Watch: Research Data in Health Economics,” *Journal of Economic Perspectives* 14, no. 4 (2000): 203–216.
- Ben Handel and Kate Ho “The Industrial Organization of Health Care Markets,” in *Handbook of Industrial Organization*, ed. Kate Ho, Ali Hortaçsu, and Alessandro Lizzeri, vol. 5, *Handbook of Industrial Organization*, Volume 5 (Elsevier, 2021), 521–614.
- M Gaynor, K Ho, and R Town “The Industrial Organization of Health Care Markets,” *Journal of Economic Literature* 47, no. 2 (2015): 235–284.

#### General causal inference references:

- Chapters 1-5 of [Causal Inference: The Mixtape](#)
- Chapters 1-5, 10, 13, and 14 of [The Effect: An Introduction to Research Design and Causality](#)

### Module 1: Hospitals

*Class 02, 08/29: Background and institutional details*

#### Primary reading:

- Tom Chang and Mireille Jacobson *What Do Nonprofit Hospitals Maximize? Evidence from California’s Seismic Retrofit Mandate*, Working {Paper} (Case Western Reserve University, 2017).
- Esra Eren Bayindir “Hospital Ownership Type and Treatment Choices,” *Journal of Health Economics* 31, no. 2 (2012): 359–370.

#### Supplemental reading:

- Joseph P Newhouse “Toward a Theory of Nonprofit Institutions: An Economic Model of a Hospital,” *American Economic Review* (1970): 64–74.
- Frank A Sloan “Not-for-Profit Ownership and Hospital Behavior,” *Handbook of Health Economics* 1 (2000): 1141–1174.

- David Dranove “Pricing by Non-Profit Institutions: The Case of Hospital Cost-Shifting,” *Journal of Health Economics* 7, no. 1 (1988): 47–57.
- Mark V Pauly “Medical Staff Characteristics and Hospital Costs,” *Journal of Human Resources* (1978): 77–111.
- Mark Duggan “Hospital Ownership and Public Medical Spending,” *Quarterly Journal of Economics* 115, no. 4 (2000): 1343–1373.
- Jill R Horwitz and Austin Nichols “Hospital Ownership and Medical Services: Market Mix, Spillover Effects, and Nonprofit Objectives,” *Journal of Health Economics* 28, no. 5 (2009): 924–937.
- Richard G Frank and David S Salkever “The Supply of Charity Services by Nonprofit Hospitals: Motives and Market Structure,” *RAND Journal of Economics* (1991): 430–445.
- Jonathan Gruber “The Effect of Competitive Pressure on Charity: Hospital Responses to Price Shopping in California,” *Journal of Health Economics* 13, no. 2 (1994): 183–211.
- Frank A Sloan et al. “Hospital Ownership and Cost and Quality of Care: Is There a Dime’s Worth of Difference?” *Journal of Health Economics* 20, no. 1 (2001): 1–21.
- Daniel Deneffe and Robert T Masson “What Do Not-for-Profit Hospitals Maximize?” *International Journal of Industrial Organization* 20, no. 4 (2002): 461–492.
- Mark Duggan “Hospital Market Structure and the Behavior of Not-for-Profit Hospitals,” *RAND Journal of Economics* (2002): 433–446.
- Daniel P Kessler, Mark B McClellan, et al. “The Effects of Hospital Ownership on Medical Productivity,” *RAND Journal of Economics* 33, no. 3 (2002): 488–506.
- Martin Gaynor and William B Vogt “Competition Among Hospitals,” *RAND Journal of Economics* (2003): 764–785.
- Guy David “The Convergence Between for-Profit and Nonprofit Hospitals in the United States,” *International Journal of Health Care Finance and Economics* 9, no. 4 (2009): 403–428.

Class 03, 08/31: Hospitals and financial incentives, part I

#### Primary reading:

- Leemore S. Dafny “How Do Hospitals Respond to Price Changes?” *American Economic Review* 95, no. 5 (2005): 1525–1547.
- Paul J Eliason et al. “Strategic Patient Discharge: The Case of Long-Term Care Hospitals,” *American Economic Review* 108, no. 11 (2018): 3232–65.
- Atul Gupta “Impacts of Performance Pay for Hospitals: The Readmissions Reduction Program,” *American Economic Review* 111, no. 4 (April 2021): 1241–1283.

#### Supplemental reading:

- David Dranove “Rate-Setting by Diagnosis Related Groups and Hospital Specialization,” *The RAND Journal of Economics* (1987): 417–427.
- David M Cutler “The Incidence of Adverse Medical Outcomes Under Prospective Payment,” *Econometrica* 63, no. 1 (1995): 29.
- Randall P Ellis and Thomas G McGuire “Hospital Response to Prospective Payment: Moral Hazard, Selection, and Practice-Style Effects,” *Journal of Health Economics* 15, no. 3 (1996): 257–277.
- Elaine Silverman and Jonathan Skinner “Medicare Upcoding and Hospital Ownership,” *Journal of Health Economics* 23, no. 2 (2004): 369–389.
- Caitlin Carroll et al. “Effects of Episode-Based Payment on Health Care Spending and Uti-

lization: Evidence from Perinatal Care in Arkansas,” *Journal of Health Economics* 61 (2018): 47–62.

- Amanda Cook and Susan Averett “Do Hospitals Respond to Changing Incentive Structures? Evidence from Medicare’s 2007 DRG Restructuring,” *Journal of Health Economics* (2020): 102319.
- Sunita Desai and J Michael McWilliams “Consequences of the 340b Drug Pricing Program,” *New England Journal of Medicine* 378, no. 6 (2018): 539–548.
- Gautam Gowrisankaran, Keith A Joiner, and Jianjing Lin *How Do Hospitals Respond to Payment Incentives?* (National Bureau of Economic Research, 2019).

*Class 04, 09/05: Labor Day, no class*

*Class 05, 09/07: Hospitals and financial incentives, part II*

**Primary reading:**

- Michael Batty and Benedic Ippolito “Financial Incentives, Hospital Care, and Health Outcomes: Evidence from Fair Pricing Laws,” *American Economic Journal: Economic Policy* 9, no. 2 (2017): 28–56.
- Ajin Lee “How Do Hospitals Respond to Managed Care? Evidence from at-Risk Newborns,” *Journal of Public Economics* 184 (2020): 104130.

**Supplemental reading:**

- See supplemental reading in hospitals and financial incentives, part I

*Class 06, 09/12 - Class 08, 09/19: Application\*\**

- **Question:** How does insurance expansion affect hospital uncompensated care?
- **Research design:** Difference-in-differences

**Primary reading:**

- Brantly Callaway and Pedro H. C. Sant’Anna “Difference-in-Differences with Multiple Time Periods,” *Journal of Econometrics* 225, no. 2, Themed Issue: Treatment Effect 1 (December 2021): 200–230.
- Liyang Sun and Sarah Abraham “Estimating Dynamic Treatment Effects in Event Studies with Heterogeneous Treatment Effects,” *Journal of Econometrics* 225, no. 2, Themed Issue: Treatment Effect 1 (December 2021): 175–199.
- Ashesh Rambachan and Jonathan Roth “A More Credible Approach to Parallel Trends,” *Working Paper* (2022).
- Jonathan Roth et al. “What’s Trending in Difference-in-Differences? A Synthesis of the Recent Econometrics Literature,” *arXiv Preprint arXiv:2201.01194* (2022).

**Supplemental reading:**

- Too many to list! If you want to get up to speed on DD, please take a look at this [DiD Project](#). It has code, lit review, and links to other videos and blog posts.
- Dmitry Arkhangelsky et al. “Synthetic Difference-in-Differences,” *American Economic Review* 111, no. 12 (December 2021): 4088–4118.

## Module 2: Physicians

*Class 09, 09/21: Background and institutional details*

### Primary reading:

- Amy Finkelstein, Matthew Gentzkow, and Heidi Williams “Sources of Geographic Variation in Health Care: Evidence from Patient Migration,” *The Quarterly Journal of Economics* 131, no. 4 (2016): 1681–1726.
- David Molitor “The Evolution of Physician Practice Styles: Evidence from Cardiologist Migration,” *American Economic Journal: Economic Policy* 10, no. 1 (2018): 326–56.

### Supplemental reading:

- Thomas G McGuire “Physician Agency,” *Handbook of Health Economics* 1 (2000): 461–536.
- Sanford J Grossman and Oliver D Hart “An Analysis of the Principal-Agent Problem,” *Econometrica* (1983): 7–45.
- John Wennberg and Alan Gittelsohn “Small Area Variations in Health Care Delivery: A Population-Based Health Information System Can Guide Planning and Regulatory Decision-Making,” *Science* 182, no. 4117 (1973): 1102–1108.
- John E. Wennberg, Elliott S. Fisher, and Jonathan S. Skinner “Geography And The Debate Over Medicare Reform,” *Health Affairs* (2004): W96–W114.
- Jonathan Skinner and Elliott Fisher “Regional Disparities in Medicare Expenditures: An Opportunity for Reform,” *National Tax Journal* 50, no. 3 (1997): 413–425.

*Class 10, 09/26: Physician agency, financial incentives, and referrals*

### Primary reading:

- Jeffrey Clemens and Joshua D Gottlieb “Do Physicians’ Financial Incentives Affect Medical Treatment and Patient Health?” *American Economic Review* 104, no. 4 (2014): 1320–1349.
- Dan Zeltzer “Gender Homophily in Referral Networks: Consequences for the Medicare Physician Earnings Gap,” *American Economic Journal: Applied Economics* 12, no. 2 (April 2020): 169–97.
- Michael Chernew et al. “Physician Agency, Consumerism, and the Consumption of Lower-Limb MRI Scans,” *Journal of Health Economics* 76 (March 2021): 102427.

### Supplemental reading:

- Laurence C Baker, M Kate Bundorf, and Daniel P Kessler “The Effect of Hospital/Physician Integration on Hospital Choice,” *Journal of Health Economics* 50 (2016): 1–8.
- Jonathan Gruber and Maria Owings “Physician Financial Incentives and Cesarean Section Delivery,” *The RAND Journal of Economics* 27, no. 1 (1996): 99–123.
- Christopher C. Afendulis and Daniel P. Kessler “Tradeoffs from Integrating Diagnosis and Treatment in Markets for Health Care,” *American Economic Review* 97, no. 3 (June 2007): 1013–1020.
- Toshiaki Iizuka “Physician Agency and Adoption of Generic Pharmaceuticals,” *American Economic Review* 102, no. 6 (2012): 2826–58.
- Christopher M Whaley et al. “Higher Medicare Spending on Imaging and Lab Services After Primary Care Physician Group Vertical Integration,” *Health Affairs* 40, no. 5 (2021): 702–709.
- Gary J Young et al. “Hospital Employment of Physicians in Massachusetts Is Associated with Inappropriate Diagnostic Imaging,” *Health Affairs* 40, no. 5 (2021): 710–718.

- Emily Walden *Can Hospitals Buy Referrals? The Impact of Physician Group Acquisitions on Market-Wide Referral Patterns*, Working {Paper} (University of Wisconsin, Madison, 2016).
- Michael R. Richards, Jonathan A. Seward, and Christopher M. Whaley “Treatment Consolidation After Vertical Integration: Evidence from Outpatient Procedure Markets,” *Journal of Health Economics* 81 (January 2022): 102569.
- Thomas G McGuire and Mark V Pauly “Physician Response to Fee Changes with Multiple Payers,” *Journal of Health Economics* 10, no. 4 (January 1991): 385–410.
- Kate Ho and Ariel Pakes “Hospital Choices, Hospital Prices, and Financial Incentives to Physicians,” *The American Economic Review* 104, no. 12 (December 2014): 3841–3884.

## Class 11, 09/28: Physician learning

### Primary reading:

- Gregory S Crawford and Matthew Shum “Uncertainty and Learning in Pharmaceutical Demand,” *Econometrica* 73, no. 4 (2005): 1137–1173.
- Heather Sarsons *Interpreting Signals in the Labor Market: Evidence from Medical Referrals*, Working {Paper} (Harvard University, 2018).
- Erin M Johnson *Ability, Learning and the Career Path of Cardiac Specialists*, Working {Paper} (MIT, 2011).

### Supplemental reading:

- Andrea Coscelli and Matthew Shum “An Empirical Model of Learning and Patient Spillovers in New Drug Entry,” *Journal of Econometrics* 122, no. 2 (2004): 213–246.
- Maria Marta Ferreyra and Grigory Kosenok “Learning about New Products: An Empirical Study of Physician’s Behavior,” *Economic Inquiry* 49, no. 3 (2011): 876–898.
- Tat Chan, Chakravarthi Narasimhan, and Ying Xie “Treatment Effectiveness and Side Effects: A Model of Physician Learning,” *Management Science* 59, no. 6 (2013): 1309–1325.
- Michael Dickstein *Efficient Provision of Experience Goods: Evidence from Antidepressant Choice*, Working {Paper} (New York University, Leonard N. Stern School of Business, 2018).
- Qing Gong *Physician Learning and Treatment Choices Evidence from Brain Aneurysms*, Working {Paper} (University of North Carolina at Chapel Hill, 2018).
- Vivian Ho “Learning and the Evolution of Medical Technologies: The Diffusion of Coronary Angioplasty,” *Journal of Health Economics* 21, no. 5 (2002): 873–885.

Class 12, 10/03 - Class 13, 10/05: Application\*\*

- **Question:** Physician effort and integration with hospitals
- **Research design:** Instrumental variables

### Primary reading:

- David Dranove and Christopher Ody “Employed for Higher Pay? How Medicare Facility Fees Affect Hospital Employment of Physicians,” *American Economics Journal: Economic Policy* 11, no. 4 (2019): 249–271.
- Kirill Borusyak and Peter Hull *Non-Random Exposure to Exogenous Shocks: Theory and Applications* (National Bureau of Economic Research, 2021).
- Emily Oster “Unobservable Selection and Coefficient Stability: Theory and Evidence,” *Journal of Business & Economic Statistics* 37, no. 2 (2019): 187–204.

### Supplemental reading:

- Guido W. Imbens “Better LATE Than Nothing: Some Comments on Deaton (2009) and Heckman and Urzua (2009),” *Journal of Economic Literature* 48, no. 2 (June 2010): 399–423.
- Victor Chernozhukov et al. “Double/Debiased Machine Learning for Treatment and Structural Parameters,” *The Econometrics Journal* 21, no. 1 (February 2018): C1–C68.
- Joshua Angrist and Michal Kolesár “One Instrument to Rule Them All: The Bias and Coverage of Just-ID IV,” Working {Paper}, Working Paper Series (National Bureau of Economic Research, October 2021).
- James Heckman, Sergio Urzua, and Edward Vytlacil “Understanding Instrumental Variables in Models with Essential Heterogeneity,” *The Review of Economics and Statistics* 88 (2006): 389–432.
- Isaiah Andrews, James H Stock, and Liyang Sun “Weak Instruments in Instrumental Variables Regression: Theory and Practice,” *Annual Review of Economics* 11 (2019): 727–753.
- David S. Lee et al. “Valid t-Ratio Inference for IV,” Working {Paper}, Working Paper Series (National Bureau of Economic Research, August 2021).
- Kirill Borusyak, Peter Hull, and Xavier Jaravel “Quasi-Experimental Shift-Share Research Designs,” *Review of Economic Studies* (2021).

*Class 14, 10/10: Fall break*

*Class 15, 10/12: Application, cont’d*

### **Module 3: Information disclosure**

*Class 16, 10/17: Patient decision-making*

#### **Primary reading:**

- Jonathan D Ketcham et al. “Sinking, Swimming, or Learning to Swim in Medicare Part D,” *American Economic Review* 102, no. 6 (2012): 2639–2673.
- Martin Gaynor, Carol Propper, and Stephan Seiler “Free to Choose? Reform, Choice, and Consideration Sets in the English National Health Service,” *American Economic Review* 106, no. 11 (November 2016): 3521–57.

#### **Supplemental:**

- Joseph Farrell and Paul Klempner “Coordination and Lock-in: Competition with Switching Costs and Network Effects,” *Handbook of Industrial Organization* 3 (2007): 1967–2072.
- Jason Abaluck and Jonathan Gruber “Choice Inconsistencies Among the Elderly: Evidence from Plan Choice in the Medicare Part D Program,” *American Economic Review* 101, no. 4 (June 2011): 1180–1210.

*Class 17, 10/19: Inertia in health insurance choice*

#### **Primary reading:**

- Benjamin R. Handel “Adverse Selection and Inertia in Health Insurance Markets: When Nudging Hurts,” *American Economic Review* 103, no. 7 (December 2013): 2643–2682.
- Keith M Ericson “Consumer Inertia and Firm Pricing in the Medicare Part D Prescription Drug Insurance Exchange,” *American Economic Journal: Economic Policy* 6, no. 1 (2014): 38–64.

*Class 18, 10/24: Effects of quality disclosure***Primary reading:**

- David Dranove et al. “Is More Information Better? The Effects of Report Cards on Health Care Providers,” *Journal of Political Economy* 111, no. 3 (2003): 555–588.
- L. Dafny and D. Dranove “Do Report Cards Tell Consumers Anything They Don’t Already Know? The Case of Medicare HMOs,” *RAND Journal of Economics* 39, no. 3 (2008): 790–821.
- Jonathan T Kolstad “Information and Quality When Motivation Is Intrinsic: Evidence from Surgeon Report Cards,” *American Economic Review* 103, no. 7 (2013): 2875–2910.

**Supplemental:**

- M. Chernew, D. P. Scanlon, et al. “Health Plan Report Cards and Insurance Choice.” *Inquiry* 35, no. 1 (1998): 9.
- D. P. Scanlon et al. “The Impact of Health Plan Report Cards on Managed Care Enrollment,” *Journal of Health Economics* 21, no. 1 (2002): 19–41.
- G. J. Wedig and M. Tai-Seale “The Effect of Report Cards on Consumer Choice in the Health Insurance Market,” *Journal of Health Economics* 21, no. 6 (2002): 1031–1048.
- G. Z. Jin and A. T. Sorensen “Information and Consumer Choice: The Value of Publicized Health Plan Ratings,” *Journal of Health Economics* 25, no. 2 (2006): 248–275.
- David Dranove and Ginger Zhe Jin “Quality Disclosure and Certification: Theory and Practice,” *Journal of Economic Literature* 48, no. 4 (2010): 935–963.
- Rachel O Reid et al. “Association Between Medicare Advantage Plan Star Ratings and Enrollment Star Ratings for Medicare Advantage Plan,” *JAMA* 309, no. 3 (2013): 267–274.
- M. Darden and I. McCarthy “The Star Treatment: Estimating the Impact of Star Ratings on Medicare Advantage Enrollments,” *Journal of Human Resources* 50, no. 4 (2015): 980–1008.
- I. McCarthy and M. Darden “Supply-Side Responses to Public Quality Ratings: Evidence from Medicare Advantage,” *American Journal of Health Economics* 3, no. 2 (2017): 140–164.
- Andrew J. Epstein “Effects of Report Cards on Referral Patterns to Cardiac Surgeons,” *Journal of Health Economics* 29, no. 5 (September 2010): 718–731.

*Class 19, 10/26: Effects of price disclosure***Primary reading:**

- Zach Y. Brown “Equilibrium Effects of Health Care Price Information,” *The Review of Economics and Statistics* 101, no. 4 (October 2019): 699–712.
- Matthew Grennan and Ashley Swanson “Transparency and Negotiated Prices: The Value of Information in Hospital-Supplier Bargaining,” *Journal of Political Economy* 128, no. 4 (2020): 1234–1268.

**Supplemental reading:**

- Chernew et al. “Physician Agency, Consumerism, and the Consumption of Lower-Limb MRI Scans.”
- Zarek C. Brot-Goldberg et al. “What Does a Deductible Do? The Impact of Cost-Sharing on Health Care Prices, Quantities, and Spending Dynamics\*,” *The Quarterly Journal of Economics* 132, no. 3 (August 2017): 1261–1318.

*Class 20, 10/31 and Class 21, 11/02: Application\*\**

- **Question:** Consumer inertia and insurer premiums
- **Research design:** Regression discontinuity

**Primary reading:**

- Ericson “Consumer Inertia and Firm Pricing in the Medicare Part D Prescription Drug Insurance Exchange.”

**Supplemental reading:**

- Best starting place for most up-to-date info on RD is from Matias Cattaneo and team. Their site, [RD Packages](#), has a tone of great info with links to the most recent literature.

**Module 4: Healthcare competition and industrial organization**

*Class 22, 11/07: Competition in price and quality*

**Primary reading:**

- David Dranove, Mark Shanley, and Carol Simon “Is Hospital Competition Wasteful?” *RAND Journal of Economics* (1992): 247–262.
- Ying Fan “Ownership Consolidation and Product Characteristics: A Study of the US Daily Newspaper Market,” *American Economic Review* 103, no. 5 (2013): 1598–1628.
- Matthew Lewis and Kevin Pflum “Competition and Quality Choice in Hospital Markets,” *Working Paper* (2016).

**Supplemental:**

- A Spence “Monopoly, Quality, and Regulation,” *Bell Journal of Economics* 6, no. 2 (1975): 417–429.
- Michael Mussa and Sherwin Rosen “Monopoly and Product Quality,” *Journal of Economic Theory* 18, no. 2 (1978): 301–317.
- Jerry Hausman, Gregory Leonard, and J Douglas Zona “Competitive Analysis with Differentiated Products,” *Annales d’Economie Et de Statistique* (1994): 159–180.
- James D Dana Jr and Yuk-Fai Fong “Product Quality, Reputation, and Market Structure,” *International Economic Review* 52, no. 4 (2011): 1059–1076.

*Class 23, 11/09: Measuring hospital markets and market power*

**Primary reading:**

- David Dranove and Christopher Ody “Evolving Measures of Provider Market Power,” *American Journal of Health Economics* 2, no. 2 (2016): 145–160.
- Jordan Everson, John M Hollingsworth, and Julia Adler-Milstein “Comparing Methods of Grouping Hospitals,” *Health Services Research* 54, no. 5 (2019): 1090–1098.

**Supplemental:**

- David Dranove and Mark Shanley “A Note on the Relational Aspects of Hospital Market Definitions,” *Journal of Health Economics* 8, no. 4 (1990): 473–478.
- Cory Capps, David Dranove, and Mark Satterthwaite “Competition and Market Power in Option Demand Markets,” *RAND Journal of Economics* (2003): 737–763.

*Class 24, 11/14: “Structure-Conduct-Performance”***Primary reading:**

- Daniel Kessler and Mark McClellan “Is Hospital Competition Socially Wasteful?” *Quarterly Journal of Economics* 2, no. 115 (2000): 577–615.
- Nathan Miller et al. “On the Misuse of Regressions of Price on the HHI in Merger Review,” *Journal of Antitrust Enforcement* 10, no. 2 (July 2022): 248–259.

**Supplemental:**

- Dranove, Shanley, and Simon “Is Hospital Competition Wasteful?”
- William J Lynk “Nonprofit Hospital Mergers and the Exercise of Market Power,” *The Journal of Law and Economics* 38, no. 2 (1995): 437–461.
- Emmett B Keeler, Glenn Melnick, and Jack Zwanziger “The Changing Effects of Competition on Non-Profit and for-Profit Hospital Pricing Behavior,” *Journal of Health Economics* 18, no. 1 (1999): 69–86.
- Zack Cooper et al. “The Price Ain’t Right? Hospital Prices and Health Spending on the Privately Insured,” *Quarterly Journal of Economics* 134, no. 1 (2019): 51–107.

*Class 25, 11/16: Bargaining framework***Primary reading:**

- Kate Ho and Robin S Lee “Insurer Competition in Health Care Markets,” *Econometrica* 85, no. 2 (2017): 379–417.
- Jeffrey Clemens and Joshua D Gottlieb “In the Shadow of a Giant: Medicare’s Influence on Private Physician Payments,” *Journal of Political Economy* 125, no. 1 (2017): 1–39.
- Matthew Lewis and Kevin Pflum “Diagnosing Hospital System Bargaining Power in Managed Care Networks,” *American Economic Journal: Economic Policy* 7, no. 1 (2015): 243–274.

**Supplemental:**

- Timothy F Bresnahan and Peter C Reiss “Entry and Competition in Concentrated Markets,” *Journal of Political Economy* (1991): 977–1009.
- Peter C. Reiss and F. Wolak “Structural Econometric Modeling: Rationales and Examples from Industrial Organization. Handbook of Econometrics,” *Handbook of Econometrics, Edition 1* (2007).
- Jean Abraham, Martin Gaynor, and William B Vogt “Entry and Competition in Local Hospital Markets,” *Journal of Industrial Economics* 55, no. 2 (2007): 265–288.
- Gautam Gowrisankaran, Aviv Nevo, and Robert Town “Mergers When Prices Are Negotiated: Evidence from the Hospital Industry,” *American Economic Review* 105, no. 1 (2015): 172–203.

*Class 26, 11/21: No meeting today. Class rescheduled for December 2**Class 27, 11/23: Effects of mergers/closures (virtual class)***Primary reading:**

- Stuart V. Craig, Matthew Grennan, and Ashley Swanson “Mergers and Marginal Costs: New Evidence on Hospital Buyer Power,” *The RAND Journal of Economics* 52, no. 1 (2021): 151–178.

- Paul J Eliason et al. “How Acquisitions Affect Firm Behavior and Performance: Evidence from the Dialysis Industry,” *Quarterly Journal of Economics* 135, no. 1 (2020): 221–267.
- Martin Gaynor, Rodrigo Moreno-Serra, and Carol Propper “Death by Market Power: Reform, Competition, and Patient Outcomes in the National Health Service,” *American Economic Journal: Economic Policy* 5, no. 4 (2013): 134–66.

### Supplemental:

- Michael G Vita and Seth Sacher “The Competitive Effects of Not-for-Profit Hospital Mergers: A Case Study,” *Journal of Industrial Economics* 49, no. 1 (2001): 63–84.
- Gaynor and Vogt “Competition Among Hospitals.”
- Richard C Lindrooth, Anthony T Lo Sasso, and Gloria J Bazzoli “The Effect of Urban Hospital Closure on Markets,” *Journal of Health Economics* 22, no. 5 (2003): 691–712.
- M Gaynor and R Town *The Impact of Hospital Consolidation - Update, Policy* {Brief} (Robert Wood Johnson Foundation, 2012).
- Leemore Dafny “Estimation and Identification of Merger Effects: An Application to Hospital Mergers,” *Journal of Law and Economics* 52, no. 3 (2009): 523–550.

Class 28, 11/28: Out-of-market mergers

### Primary reading:

- Leemore Dafny, Kate Ho, and Robin S Lee “The Price Effects of Cross-Market Mergers: Theory and Evidence from the Hospital Industry,” *RAND Journal of Economics* 50, no. 2 (2019): 286–325.
- Matt Schmitt “Multimarket Contact in the Hospital Industry,” *American Economic Journal: Economic Policy* 10, no. 3 (2018): 361–87.

Class 29, 11/30: Vertical integration

### Primary reading:

- Fernando Luco and Guillermo Marshall “The Competitive Impact of Vertical Integration by Multiproduct Firms,” *American Economic Review* 110, no. 7 (July 2020): 2041–2064.
- Thomas G. Koch, Brett W. Wendling, and Nathan E. Wilson “The Effects of Physician and Hospital Integration on Medicare Beneficiaries’ Health Outcomes,” *The Review of Economics and Statistics* 103, no. 4 (September 2021): 725–739.

### Supplemental:

- Dranove and Ody “Employed for Higher Pay? How Medicare Facility Fees Affect Hospital Employment of Physicians.”
- Thomas G Koch, Brett W Wendling, and Nathan E Wilson “How Vertical Integration Affects the Quantity and Cost of Care for Medicare Beneficiaries,” *Journal of Health Economics* 52 (2017): 19–32.
- Haizhen Lin, Ian M. McCarthy, and Michael Richards “Hospital Pricing Following Integration with Physician Practices,” *Journal of Health Economics* 77 (May 2021): 102444.
- Lawton R Burns and Mark V Pauly “Integrated Delivery Networks: A Detour on the Road to Integrated Health Care?” *Health Affairs* 21, no. 4 (2002): 128–143.
- Federico Ciliberto and David Dranove “The Effect of Physician–Hospital Affiliations on Hospital Prices in California,” *Journal of Health Economics* 25, no. 1 (2006): 29–38.

- Alison Evans Cuellar and Paul J Gertler “Strategic Integration of Hospitals and Physicians,” *Journal of Health Economics* 25, no. 1 (2006): 1–28.
- Baker, Bundorf, and Kessler “The Effect of Hospital/Physician Integration on Hospital Choice.”
- Hannah T Neprash et al. “Association of Financial Integration Between Physicians and Hospitals with Commercial Health Care Prices,” *JAMA Internal Medicine* 175, no. 12 (2015): 1932–1939.
- Cory Capps, David Dranove, and Christopher Ody “The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending,” *Journal of Health Economics* 59 (2018): 139–152.
- R Tamara Konetzka, Elizabeth A Stuart, and Rachel M Werner “The Effect of Integration of Hospitals and Post-Acute Care Providers on Medicare Payment and Patient Outcomes,” *Journal of Health Economics* (2018).

12/02 (rescheduled from 11/21) and Class 30, 12/05: Application\*\*

- **Question:** Sensitivity of demand estimates to market definition
- **Research design:** Structural demand estimation

#### Primary reading:

- Everson, Hollingsworth, and Adler-Milstein “Comparing Methods of Grouping Hospitals.”

#### Supplemental reading:

- Aviv Nevo “A Practitioner’s Guide to Estimation of Random-Coefficients Logit Models of Demand,” *Journal of Economics & Management Strategy* 9, no. 4 (2000): 513–548.
- Christopher Conlon and Jeff Gortmaker “Best Practices for Differentiated Products Demand Estimation with PyBLP,” *The RAND Journal of Economics* 51, no. 4 (2020): 1108–1161.

### Module 5: Health insurance markets (we won’t get to this)

*Insurance markets and competitiveness*

#### Primary reading:

- Leemore Dafny “Are Health Insurance Markets Competitive?” *American Economic Review* 100, no. 4 (2010): 1399–1431.
- Leemore Dafny, Mark Duggan, and Subramaniam Ramanarayanan “Paying a Premium on Your Premium? Consolidation in the US Health Insurance Industry,” *American Economic Review* 102, no. 2 (2012): 1161–1185.
- M Kate Bundorf, Jonathan Levin, and Neale Mahoney “Pricing and Welfare in Health Plan Choice,” *American Economic Review* 102, no. 7 (2012): 3214–3248.

#### Supplemental:

- Robert Town and Su Liu “The Welfare Impact of Medicare HMOs,” *RAND Journal of Economics* 24, no. 4 (2003): 719–736.
- Liran Einav, Amy Finkelstein, and Jonathan Levin “Beyond Testing: Empirical Models of Insurance Markets,” *Annual Review of Economics* 2, no. 1 (2010): 311–336.
- Liran Einav, Amy Finkelstein, and Mark R Cullen “Estimating Welfare in Insurance Markets Using Variation in Prices,” *Quarterly Journal of Economics* 125, no. 3 (2010): 877–921.
- Amanda Starc “Insurer Pricing and Consumer Welfare: Evidence from Medigap,” *RAND Journal of Economics* 45, no. 1 (2014): 198–220.

*Adverse selection***Primary reading:**

- David M Cutler and Sarah J Reber “Paying for Health Insurance: The Trade-Off Between Competition and Adverse Selection,” *Quarterly Journal of Economics* 113, no. 2 (1998): 433–466.
- Francesco Decarolis and Andrea Guglielmo “Insurers’ Response to Selection Risk: Evidence from Medicare Enrollment Reforms,” *Journal of Health Economics* 56 (2017): 383–396.

**Supplemental:**

- George Akerloff “The Market for Lemons: Quality Uncertainty and the Market Mechanism,” *Quarterly Journal of Economics* 84, no. 3 (1970): 488–500.
- Michael Rothschild and Joseph Stiglitz “Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information,” *Quarterly Journal of Economics* (1976): 629–649.
- Richard G Frank, Jacob Glazer, and Thomas G McGuire “Measuring Adverse Selection in Managed Health Care,” *Journal of Health Economics* 19, no. 6 (2000): 829–854.
- Liran Einav and Amy Finkelstein “Selection in Insurance Markets: Theory and Empirics in Pictures,” *The Journal of Economic Perspectives* 25, no. 1 (2011): 115–138.

*Moral hazard***Primary reading:**

- Liran Einav et al. “Selection on Moral Hazard in Health Insurance,” *American Economic Review* 103, no. 1 (2013): 178–219.

**Supplemental:**

- Willard G Manning and M Susan Marquis “Health Insurance: The Tradeoff Between Risk Pooling and Moral Hazard,” *Journal of Health Economics* 15, no. 5 (1996): 609–639.
- Amy Finkelstein *Moral Hazard in Health Insurance* (Columbia University Press, 2014).
- Liran Einav and Amy Finkelstein “Moral Hazard in Health Insurance: What We Know and How We Know It,” *Journal of the European Economic Association* 16, no. 4 (August 2018): 957–982.

*Managed competition***Primary reading:**

- Vilsa Curto et al. “Can Health Insurance Competition Work? Evidence from Medicare Advantage,” *Journal of Political Economy* 129, no. 2 (2021): 570–606.
- Liran Einav and Jonathan Levin “Managed Competition in Health Insurance,” *Journal of the European Economic Association* 13, no. 6 (2015): 998–1021.

**Supplemental:**

- Zirui Song, Mary Beth Landrum, and Michael E Chernew “Competitive Bidding in Medicare Advantage: Effect of Benchmark Changes on Plan Bids,” *Journal of Health Economics* 32, no. 6 (2013): 1301–1312.

- Marika Cabral, Michael Geruso, and Neale Mahoney “Do Larger Health Insurance Subsidies Benefit Patients or Producers? Evidence from Medicare Advantage,” *American Economic Review* 108, no. 8 (2018): 2048–87.
- Karen Stockley et al. *Premium Transparency in the Medicare Advantage Market: Implications for Premiums, Benefits, and Efficiency*, Working {Paper} (National Bureau of Economic Research, 2014).
- Mark Duggan, Amanda Starc, and Boris Vabson “Who Benefits When the Government Pays More? Pass-Through in the Medicare Advantage Program,” *Journal of Public Economics* 141 (2016): 50–67.
- Daria Pelech “Paying More for Less? Insurer Competition and Health Plan Generosity in the Medicare Advantage Program,” *Journal of Health Economics* 61 (2018): 77–92.