Econ 771: Health Economics II

Ian McCarthy

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E-mail: ian.mccarthy@emory.edu
Office Hours: W 09:30-11:30 a.m.
Office: *online*

Web: imccart.github.io/Econ-771/
Class Hours: TuTh 9:40-10:55 a.m.
Class Room: Math and Science, N306

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, quality 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 four 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. 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. Where possible, we will work to replicate results or apply the paper's central methodology to some simulated data. 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. **Statistics Software:** For any data analysis or econometrics, I'll use `R` for my work, 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.

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. So you'll need to be sure to have a simple working knowledge of Git and GitHub. If you're new to Git or GitHub, 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.

4. **Cloud Storage and Analysis:** You have access Amazon Web Services (AWS) Cloud Computing services for all of the empirical work in the class through the AWS Classroom. This *should* act as a virtual console that each of you can access independently but where you are each working on an identical system. This avoids issues of different versions of stats programs or, in the case of `R` and `Python`, different packages or package versions. Using AWS isn't required for the class, but it is available to you for those interested.

5. **Logistics:** For day-to-day communication, grades, and other private information (such as Zoom meeting links), I'll use *Canvas*. I'll post all other materials to our class website.

6. **Lectures and Notes:** Any presentations will be made available on our class website prior to any given class. I may also annotate those slides during each class, for which I'll use *OneNote*. Everyone has access to this as an Emory student, so I will set up a classroom notebook which will serve as a single resource for all class notes. You can also take your own notes as part of the app, which should help with keeping things organized.

7. **Online Discussions:** We'll use GroupTweet to facilitate online discussions this semester. This will work with any smartphone. It's basically our own private Twittersphere for our class. You will receive an invitation to join the group, at which point we can post and respond throughout the semester. Participation in these online discussions is a small part of your grade, as discussed below.

8. **Turning things in:** We'll use GitHub Classroom to facilitate all of the assignments. You'll soon receive an invite which will get you access to the classroom. Within the classroom, you will have to accept each assignment, which will then create a separate GitHub repository for you for each assignment. You can then do all of your work in whatever software program you'd like, and then commit and push your changes to your repository. I will see this repository and can comment on it, which is how I will provide feedback on each assignment.

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. 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). All other course materials will be available on our class website, imccart.github.io/Econ-771/.

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

Virtual meetings

All meetings and office hours will take place virtually this semester on *Zoom*. I'll use the same *Zoom* meeting room for all meetings, the details of which are available on our *Canvas* site. If you can't make it to my usual office hours, please feel free to schedule another time to meet (virtually). Just follow the link to select a time that works for you, https://ian-meetings.youcanbook.me.

Attendance

While there is no official "attendance" credit, everyone is expect 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

We will have semi-weekly online discussion forums in GroupTweet where we discuss a variety of issues, ranging from specific areas of confusion on some papers to best coding practices for empirical work. I anticipate close to one discussion forum per week. Your final participation grade will reflect your percentage (out of a maximum of 10) of discussion forums in which you participate.

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 replication project as well as 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.

Presentations

You will present two papers throughout the course of the semester. A list of potential papers will be provided on our class website within the first week of class. Please inform me of your selected papers no later than **August 21, 2020**.

Each presentation should be no more than 30 minutes, including questions and class 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 are available on the assignments page in 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 13, 2020**.

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 13, 2020**.

Replication

You must replicate the empirical analysis of a recent health economics paper. 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 paper and presentation.

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 is just a cleaned version of the larger files.
- Analysis: This is where I keep my code files, log files, and results. I typically have a subfolder for the log files since I create one every time I run a code file as well as a subfolder for results.
- Manuscript: This is where I keep all of my files for the actual paper. I usually have a different subfolder for every month or two (whenever I create a sufficiently different version of the paper).

- 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!

I will provide a set of papers from which you can choose to replicate, but you are also free to select your own. You need to get approval from me on a paper to replicate by **Friday, September 4**. Final replications are due no later than **Friday, December 11, 2020**.

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.

- **August 21**: Send me the references for the 2 papers that you would like to present throughout the semester. Only one student can present each paper, so this is first-come first-served.
- **September 4**: Send me the name of the paper you'd like to replicate for the main class project.
- **Friday, November 13**: Due date for literature review or draft paper.
- **Friday, December 11**: Due date for the replication.
- Empirical exercises due one week after the end of each module

Final grades

- **5%** for participation in online discussions
- **20%** for empirical exercises (5% each)
- **20%** for presentations of selected papers (10% each)
- **25%** for literature review (2nd year students) or draft paper (3rd year students)
- **30%** for a replication of a selected paper

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," followed by a general discussion of the papers and topic among the class. Where relevant, we will work through some simulation exercises or derive some theoretical results. Papers listed as "supplemental" represent other relevant papers in that area that we won't have time to cover directly in class. Days with ** indicate that no one will present a paper on that day. Those days are reserved for some basic theoretical derivations or presentation of new empirical methods.

Module 0: Kicking things off!

Class 01, 08/19: Introduction to the economics of healthcare

General references:

[1] K. J. Arrow. "Uncertainty and the Welfare Economics of Medical Care". In: *The American Economics Review* 53.5 (1963).

[2] D. Dranove and M. A. Satterthwaite. "The industrial organization of health care markets". In: *Handbook of health economics* 1 (2000), pp. 1093-1139.

[3] W. N. Evans, H. Levy, and K. I. Simon. "Data watch: Research data in health economics". In: *Journal of Economic Perspectives* 14.4 (2000), pp. 203-216.

Module 1: The hospital objective function(s) and financial incentives

*Class 02, 08/24: Theoretical models of not-for-profits***

Primary reading:

[1] D. Dranove. "Pricing by non-profit institutions: the case of hospital cost-shifting". In: *Journal of Health Economics* 7.1 (1988), pp. 47-57.

[2] J. P. Newhouse. "Toward a theory of nonprofit institutions: An economic model of a hospital". In: *American Economic Review* (1970), pp. 64-74.

[3] M. V. Pauly. "Medical staff characteristics and hospital costs". In: *Journal of Human Resources* (1978), pp. 77-111.

Supplemental:

[1] F. A. Sloan. "Not-for-profit ownership and hospital behavior". In: *Handbook of health economics* 1 (2000), pp. 1141-1174.

Class 03, 08/26: Empirical evidence on ownership type

Primary reading:

[1] E. E. Bayindir. "Hospital ownership type and treatment choices". In: *Journal of health economics* 31.2 (2012), pp. 359-370.

[2] M. Duggan. "Hospital Ownership and Public Medical Spending". In: *Quarterly Journal of Economics* 115.4 (2000), pp. 1343-1373.

[3] J. R. Horwitz and A. Nichols. "Hospital ownership and medical services: market mix, spillover effects, and nonprofit objectives". In: *Journal of health economics* 28.5 (2009), pp. 924-937.

Supplemental:

[1] T. Chang and M. Jacobson. *What do Nonprofit Hospitals Maximize. Evidence from California's Seismic Retrofit Mandate*. Working Paper. Case Western Reserve University, 2017.

[2] G. David. "The convergence between for-profit and nonprofit hospitals in the United States". In: *International journal of health care finance and economics* 9.4 (2009), pp. 403-428.

[3] D. Deneffe and R. T. Masson. "What do not-for-profit hospitals maximize?" In: *International Journal of Industrial Organization* 20.4 (2002), pp. 461-492.

[4] M. Duggan. "Hospital market structure and the behavior of not-for-profit hospitals". In: *RAND Journal of Economics* (2002), pp. 433-446.

[5] R. G. Frank and D. S. Salkever. "The supply of charity services by nonprofit hospitals: motives and market structure". In: *RAND journal of economics* (1991), pp. 430-445.

[6] M. Gaynor and W. B. Vogt. "Competition among Hospitals". In: *RAND Journal of Economics* (2003), pp. 764-785.

[7] J. Gruber. "The effect of competitive pressure on charity: Hospital responses to price shopping in California". In: *Journal of Health Economics* 13.2 (1994), pp. 183-211.

[8] D. P. Kessler, M. B. McClellan, and others. "The Effects of Hospital Ownership on Medical Productivity". In: *RAND Journal of Economics* 33.3 (2002), pp. 488-506.

[9] F. A. Sloan, G. A. Picone, D. H. Taylor, et al. "Hospital ownership and cost and quality of care: is there a dime's worth of difference?" In: *Journal of health economics* 20.1 (2001), pp. 1-21.

Class 04, 08/31: Response to Medicare payment changes

Primary reading:

[1] L. S. Dafny. "How Do Hospitals Respond to Price Changes?" In: *American Economic Review* 95.5 (2005), pp. 1525-1547.

[2] D. Dranove and C. Ody. "Employed for higher pay? How Medicare facility fees affect hospital employment of physicians". In: *American Economics Journal: Economic Policy* 11.4 (2019), pp. 249-271.

Supplemental:

[1] A. Cook and S. Averett. "Do Hospitals Respond to Changing Incentive Structures? Evidence from Medicare's 2007 DRG Restructuring". In: *Journal of Health Economics* (2020), p. 102319.

[2] S. Desai and J. M. McWilliams. "Consequences of the 340B drug pricing program". In: *New England Journal of Medicine* 378.6 (2018), pp. 539-548.

[3] E. Silverman and J. Skinner. "Medicare upcoding and hospital ownership". In: *Journal of health economics* 23.2 (2004), pp. 369-389.

Class 05, 09/02: Hospital cost-shifting

Primary reading:

[1] D. Dranove. "Pricing by non-profit institutions: the case of hospital cost-shifting". In: *Journal of Health Economics* 7.1 (1988), pp. 47-57.

[2] D. Dranove, C. Garthwaite, and C. Ody. "How do nonprofits respond to negative wealth shocks? The impact of the 2008 stock market collapse on hospitals". In: *The Rand Journal of Economics* 48.2 (2017), pp. 485-525.

Supplemental:

[1] M. Darden, I. McCarthy, and E. Barrette. *Who Pays in Pay-for-Performance? Evidence from Hospital Pricing*. Working Paper w24304. National Bureau of Economic Research, 2018.

[2] G. David, R. C. Lindrooth, L. A. Helmchen, et al. "Do hospitals cross-subsidize?" In: *Journal of health economics* 37 (2014), pp. 198-218.

[3] A. B. Frakt. "How much do hospitals cost shift? A review of the evidence". In: *Milbank Quarterly* 89.1 (2011), pp. 90-130.

[4] J. W. Hay. "The impact of public health care financing policies on private-sector hospital costs". In: *Journal of Health Politics, Policy and Law* 7.4 (1983), pp. 945-952.

[5] V. Y. Wu. "Hospital cost shifting revisited: new evidence from the balanced budget act of 1997". In: *International journal of health care finance and economics* 10.1 (2010), pp. 61-83.

[6] J. Zwanziger, G. A. Melnick, A. Bamezai, et al. "Can cost shifting continue in a price competitive environment?" In: *Health Economics* 9.3 (2000), pp. 211-226.

Class 06, 09/07: Response to insurance policies

Primary reading:

[1] M. Batty and B. Ippolito. "Financial incentives, hospital care, and health outcomes: Evidence from fair pricing laws". In: *American Economic Journal: Economic Policy* 9.2 (2017), pp. 28-56.

[2] P. J. Eliason, P. L. Grieco, R. C. McDevitt, et al. "Strategic patient discharge: The case of long-term care hospitals". In: *American Economic Review* 108.11 (2018), pp. 3232-65.

[3] M. Geruso and T. Layton. "Upcoding: Evidence from Medicare on squishy risk adjustment". In: *Journal of Political Economy* 128.3 (2020), pp. 984-1026.

Supplemental:

[1] G. Gowrisankaran, K. A. Joiner, and J. Lin. *How do Hospitals Respond to Payment Incentives?* Tech. rep. National Bureau of Economic Research, 2019.

[2] A. Lee. "How do hospitals respond to managed care? Evidence from at-risk newborns". In: *Journal of Public Economics* 184 (2020), p. 104130.

Class 07, 09/09: Working with data

Causal inference with panel data

- Difference-in-differences and parallel trends
- Event studies and time-varying treatment effects
- Inference with few treated groups

Applications and data

- Provider of Services files and Inpatient Prospective Payment System Final Rule files
- Replicate parts of Dafny (2005)

Module 2: Physician agency and treatment decisions

*Class 08, 09/14: The agency problem in healthcare***

Primary reading:

[1] T. G. McGuire. "Physician agency". In: *Handbook of health economics* 1 (2000), pp. 461-536.

Supplemental:

[1] A. Chandra, A. Jena, and J. Skinner. "The Pragmatist's Guide to Comparative Effectiveness Research". In: *The Journal of Economic Perspectives* 25.2 (2011), pp. 27-46.

[2] S. J. Grossman and O. D. Hart. "An analysis of the principal-agent problem". In: *Econometrica: Journal of the Econometric Society* (1983), pp. 7-45.

Class 09, 09/16: Supply-side variation in healthcare

Primary reading:

[1] A. Finkelstein, M. Gentzkow, and H. Williams. "Sources of geographic variation in health care: Evidence from patient migration". In: *The quarterly journal of economics* 131.4 (2016), pp. 1681-1726.

[2] D. Molitor. "The evolution of physician practice styles: evidence from cardiologist migration". In: *American Economic Journal: Economic Policy* 10.1 (2018), pp. 326-56.

Class 10, 09/21: Physician response to payment changes

Primary reading:

[1] J. Clemens and J. D. Gottlieb. "Do Physicians' Financial Incentives Affect Medical Treatment and Patient Health?" In: *American Economic Review* 104.4 (2014), pp. 1320-1349.

[2] J. Gruber and M. Owings. "Physician financial incentives and cesarean section delivery". In: *The RAND Journal of Economics* 27.1 (1996), pp. 99-123.

Supplemental:

[1] L. C. Baker, M. K. Bundorf, and D. P. Kessler. "The Effect of Hospital/Physician Integration on Hospital Choice". In: *Journal of Health Economics* 50 (2016), pp. 1-8.

[2] W. Beckert. "Choice in the presence of experts: The role of general practitioners in patients' hospital choice". In: *Journal of Health Economics* 60 (2018), pp. 98 - 117. ISSN: 0167-6296. DOI: https://doi.org/10.1016/j.jhealeco.2018.06.003. <URL: http://www.sciencedirect.com/science/article/pii/S0167629617302722>.

[3] M. Gaynor, C. Propper, and S. Seiler. "Free to Choose? Reform, Choice, and Consideration Sets in the English National Health Service". In: *American Economic Review* 106.11 (Nov. 2016), pp. 3521-57. DOI: 10.1257/aer.20121532. <URL: http://www.aeaweb.org/articles?id=10.1257/aer.20121532>.

Class 11, 09/23: Physician spillovers

Primary reading:

[1] K. Baicker, M. E. Chernew, and J. A. Robbins. "The spillover effects of Medicare managed care: Medicare Advantage and hospital utilization". In: *Journal of health economics* 32.6 (2013), pp. 1289-1300.

[2] J. Clemens and J. D. Gottlieb. "In the shadow of a giant: Medicare's influence on private physician payments". In: *Journal of Political Economy* 125.1 (2017), pp. 1-39.

Supplemental:

[1] L. C. Baker. "Managed care spillover effects". In: *Annual review of public health* 24.1 (2003), pp. 435-456.

[2] A. Chandra and D. O. Staiger. "Productivity spillovers in health care: evidence from the treatment of heart attacks". In: *Journal of Political Economy* 115.1 (2007), pp. 103-140.

[3] M. Chernew, K. Baicker, and C. Martin. *Spillovers in Health Care Markets: Implications for Current Law Projections.* Report. Centers for Medicare and Medicaid Services, 2010.

[4] R. G. Frank and R. J. Zeckhauser. "Custom-made versus ready-to-wear treatments: Behavioral propensities in physicians' choices". In: *Journal of health economics* 26.6 (2007), pp. 1101-1127.

[5] S. Glied and J. G. Zivin. "How do doctors behave when some (but not all) of their patients are in managed care?" In: *Journal of Health Economics* 21.2 (2002), pp. 337-353.

[6] B. E. Landon. "Tipping the scale: The norms hypothesis and primary care physician behavior". In: *New England Journal of Medicine* 376.9 (2017), pp. 810-811.

[7] T. G. McGuire and M. V. Pauly. "Physician response to fee changes with multiple payers". In: *Journal of health economics* 10.4 (1991), pp. 385-410.

[8] J. P. Newhouse and M. S. Marquis. "The norms hypothesis and the demand for medical care". In: *Journal of Human Resources* (1978), pp. 159-182.

Class 12, 09/28: Working with data

Instrumental variables

- What is a good instrument?
- What are we estimating with IV?
- Specification tests and current robustness checks

Applications and data

- Medicare Advantage data and Area Health Resources File
- Replicate elements of Baicker, Chernew, and Robbins (2013)

Module 3: Information disclosure and patient decision making

Class 13, 09/30: Poor decisions in healthcare and health insurance

Primary reading:

[1] M. Chernew, Z. Cooper, E. Larsen-Hallock, et al. *Are Health Care Services Shoppable? Evidence from the Consumption of Lower-Limb MRI Scans*. Working Paper 24869. National Bureau of Economic Research, Jul. 2018. <URL: http://www.nber.org/papers/w24869>.

[2] J. D. Ketcham, C. Lucarelli, E. J. Miravete, et al. "Sinking, swimming, or learning to swim in Medicare Part D". In: *American Economic Review* 102.6 (2012), pp. 2639-2673.

Supplemental:

[1] J. Abaluck and J. Gruber. "Heterogeneity in choice inconsistencies among the elderly: evidence from prescription drug plan choice". In: *American Economic Review* 101.3 (2011), pp. 377-381.

[2] J. Farrell and P. Klemperer. "Coordination and lock-in: Competition with switching costs and network effects". In: *Handbook of industrial organization* 3 (2007), pp. 1967-2072.

Class 14, 10/05: Inertia in health insurance choice

Primary reading:

[1] K. M. Ericson. "Consumer inertia and firm pricing in the Medicare Part D prescription drug insurance exchange". In: *American Economic Journal: Economic Policy* 6.1 (2014), pp. 38-64.

[2] B. R. Handel. "Adverse selection and inertia in health insurance markets: When nudging hurts". In: *American Economic Review* 103.7 (2013), pp. 2643-2682.

Class 15, 10/07: Effects of quality disclosure

Primary reading:

[1] L. Dafny and D. Dranove. "Do report cards tell consumers anything they don't already know? The case of Medicare HMOs". In: *The Rand journal of economics* 39.3 (2008), pp. 790-821.

[2] D. Dranove, D. Kessler, M. McClellan, et al. "Is More Information Better? The Effects of Report Cards on Health Care Providers". In: *The Journal of Political Economy* 111.3 (2003), pp. 555-588.

Supplemental:

[1] M. Chernew, D. Scanlon, and others. "Health plan report cards and insurance choice." In: *Inquiry: a journal of medical care organization, provision and financing* 35.1 (1998), p. 9.

[2] M. Darden and I. McCarthy. "The Star Treatment: Estimating the Impact of Star Ratings on Medicare Advantage Enrollments". In: *Journal of Human Resources* 50.4 (2015), pp. 980-1008.

[3] D. Dranove and G. Z. Jin. "Quality Disclosure and Certification: Theory and Practice". In: *Journal of Economic Literature* 48.4 (2010), pp. 935-963.

[4] G. Jin and A. Sorensen. "Information and consumer choice: the value of publicized health plan ratings". In: *Journal of Health Economics* 25.2 (2006), pp. 248-275.

[5] I. McCarthy and M. Darden. "Supply-side Responses to Public Quality Ratings: Evidence from Medicare Advantage". In: *American Journal of Health Economics* 3.2 (2017), pp. 140-164.

[6] R. O. Reid, P. Deb, B. L. Howell, et al. "Association Between Medicare Advantage Plan Star Ratings and EnrollmentStar Ratings for Medicare Advantage Plan". In: *JAMA* 309.3 (2013), pp. 267-274.

[7] D. Scanlon, M. Chernew, C. McLaughlin, et al. "The impact of health plan report cards on managed care enrollment". In: *Journal of Health Economics* 21.1 (2002), pp. 19-41.

[8] G. Wedig and M. Tai-Seale. "The effect of report cards on consumer choice in the health insurance market". In: *Journal of Health Economics* 21.6 (2002), pp. 1031-1048.

Class 16, 10/12: Effects of price disclosure

Primary reading:

[1] M. Grennan and A. Swanson. "Transparency and negotiated prices: The value of information in hospital-supplier bargaining". In: *Journal of Political Economy* 128.4 (2020), pp. 1234-1268.

Class 17, 10/14: Working with data

Regression discontinuity

- Basics of strict and fuzzy RD
- Specification tests
- Bin and bandwidth selection

Applications and data

- Medicare Part D Data
- Replicate Ericson (2014)

Module 4: Healthcare competition and industrial organization

*Class 18, 10/19: Competition in price and quality***

Primary reading:

[1] D. Dranove and M. A. Satterthwaite. "Monopolistic competition when price and quality are imperfectly observable". In: *The RAND Journal of Economics* (1992), pp. 518-534.

[2] Y. Fan. "Ownership consolidation and product characteristics: A study of the US daily newspaper market". In: *American Economic Review* 103.5 (2013), pp. 1598-1628.

[3] M. Lewis and K. Pflum. "Competition and Quality Choice in Hospital Markets". In: *Working Paper* (2016).

Supplemental:

[1] J. D. Dana Jr and Y. Fong. "Product quality, reputation, and market structure". In: *International Economic Review* 52.4 (2011), pp. 1059-1076.

[2] J. Hausman, G. Leonard, and J. D. Zona. "Competitive analysis with differenciated products". In: *Annales d'Economie et de Statistique* (1994), pp. 159-180.

[3] M. Mussa and S. Rosen. "Monopoly and product quality". In: *Journal of Economic theory* 18.2 (1978), pp. 301-317.

[4] A. Spence. "Monopoly, Quality, and Regulation". In: *Bell Journal of Economics* 6.2 (1975), pp. 417-429.

Class 19, 10/21: Measuring hospital market power

Primary reading:

[1] D. Dranove and C. Ody. "Evolving Measures of Provider Market Power". In: *American Journal of Health Economics* 2.2 (2016), pp. 145-160.

Supplemental:

[1] C. Capps, D. Dranove, and M. Satterthwaite. "Competition and market power in option demand markets". In: *RAND Journal of Economics* (2003), pp. 737-763.

[2] D. Dranove and M. Shanley. "A note on the relational aspects of hospital market definitions". In: *Journal of health economics* 8.4 (1990), pp. 473-478.

Class 20, 10/26: Evidence from "structure-conduct-performance" studies

Primary reading:

[1] Z. Cooper, S. V. Craig, M. Gaynor, et al. *The price ain't right? Hospital prices and health spending on the privately insured*. Working Paper. National Bureau of Economic Research, 2017.

[2] D. Kessler and M. McClellan. "Is hospital competition socially wasteful?" In: *Quarterly Journal of Economics* 2.115 (2000), pp. 577-615.

Supplemental:

[1] D. Dranove, M. Shanley, and C. Simon. "Is hospital competition wasteful?" In: *The RAND journal of economics* (1992), pp. 247-262.

[2] E. B. Keeler, G. Melnick, and J. Zwanziger. "The changing effects of competition on non-profit and for-profit hospital pricing behavior". In: *Journal of health economics* 18.1 (1999), pp. 69-86.

[3] W. J. Lynk. "Nonprofit hospital mergers and the exercise of market power". In: *The Journal of Law and Economics* 38.2 (1995), pp. 437-461.

Class 21, 10/28: Competition in a bargaining model

Primary reading:

[1] K. Ho and R. S. Lee. "Insurer competition in health care markets". In: *Econometrica* 85.2 (2017), pp. 379-417.

Supplemental:

[1] J. Abraham, M. Gaynor, and W. B. Vogt. "Entry and Competition in Local Hospital Markets". In: *The Journal of Industrial Economics* 55.2 (2007), pp. 265-288.

[2] T. F. Bresnahan and P. C. Reiss. "Entry and competition in concentrated markets". In: *Journal of Political Economy* (1991), pp. 977-1009.

[3] G. Gowrisankaran, A. Nevo, and R. Town. "Mergers When Prices Are Negotiated: Evidence from the Hospital Industry". In: *American Economic Review* 105.1 (2015), pp. 172-203.

[4] M. Lewis and K. Pflum. "Diagnosing Hospital System Bargaining Power in Managed Care Networks". In: *American Economic Journal: Economic Policy* 7.1 (2015), pp. 243-274.

[5] P. Reiss, F. Wolak, and E. Learner. "Handbook of econometrics". In: *Structural econometric modeling: Rationales and examples from industrial organization* 6A (2007).

Class 22, 11/02: Evidence from mergers and closures

Primary reading:

[1] L. Dafny. "Estimation and Identification of Merger Effects: An Application to Hospital Mergers". In: *Journal of Law and Economics* 52.3 (2009), pp. 523-550.

Supplemental:

[1] M. Gaynor and R. Town. *The impact of hospital consolidation - Update*. Policy Brief. Robert Wood Johnson Foundation, 2012.

[2] M. Gaynor and W. B. Vogt. "Competition among Hospitals". In: *RAND Journal of Economics* (2003), pp. 764-785.

[3] R. C. Lindrooth, A. T. L. Sasso, and G. J. Bazzoli. "The effect of urban hospital closure on markets". In: *Journal of Health Economics* 22.5 (2003), pp. 691-712.

[4] M. G. Vita and S. Sacher. "The competitive effects of not-for-profit hospital mergers: a case study". In: *The Journal of Industrial Economics* 49.1 (2001), pp. 63-84.

Class 23, 11/04: Evidence from out-of-market mergers

Primary reading:

[1] L. Dafny, K. Ho, and R. S. Lee. "The price effects of cross-market mergers: theory and evidence from the hospital industry". In: *The RAND Journal of Economics* 50.2 (2019), pp. 286-325.

[2] M. Schmitt. "Multimarket Contact in the Hospital Industry". In: *American Economic Journal: Economic Policy* 10.3 (2018), pp. 361-87.

Class 24, 11/09: Mergers and acquisitions in dialysis

Primary reading:

[1] P. J. Eliason, B. Heebsh, R. C. McDevitt, et al. "How Acquisitions Affect Firm Behavior and Performance: Evidence from the Dialysis Industry". In: *The Quarterly Journal of Economics* 135.1 (2020), pp. 221-267.

Class 25, 11/11: Vertical integration between hospitals and physicians

Primary reading:

[1] T. G. Koch, B. W. Wendling, and N. E. Wilson. "How vertical integration affects the quantity and cost of care for Medicare beneficiaries". In: *Journal of Health Economics* 52 (2017), pp. 19-32.

[2] H. Lin, I. McCarthy, and M. Richards. *How does hospital-physician integration affect hospital prices and quality of care?* Working Paper. Indiana University, Kelley School of Business, 2020.

[3] F. Luco and G. Marshall. "The Competitive Impact of Vertical Integration by Multiproduct Firms". In: *American Economic Review* (2020).

Supplemental:

[1] L. C. Baker, M. K. Bundorf, and D. P. Kessler. "The Effect of Hospital/Physician Integration on Hospital Choice". In: *Journal of Health Economics* 50 (2016), pp. 1-8.

[2] L. R. Burns and M. V. Pauly. "Integrated delivery networks: a detour on the road to integrated health care?" In: *Health affairs* 21.4 (2002), pp. 128-143.

[3] C. Capps, D. Dranove, and C. Ody. "The effect of hospital acquisitions of physician practices on prices and spending". In: *Journal of health economics* 59 (2018), pp. 139-152.

[4] F. Ciliberto and D. Dranove. "The effect of physician-hospital affiliations on hospital prices in California". In: *Journal of Health Economics* 25.1 (2006), pp. 29-38.

[5] A. E. Cuellar and P. J. Gertler. "Strategic integration of hospitals and physicians". In: *Journal of Health Economics* 25.1 (2006), pp. 1-28.

[6] R. T. Konetzka, E. A. Stuart, and R. M. Werner. "The effect of integration of hospitals and post-acute care providers on Medicare payment and patient outcomes". In: *Journal of health economics* (2018).

[7] H. T. Neprash, M. E. Chernew, A. L. Hicks, et al. "Association of financial integration between physicians and hospitals with commercial health care prices". In: *JAMA internal medicine* 175.12 (2015), pp. 1932-1939.

Class 26, 11/16: Working with data

Module 5: Health insurance markets (likely won't get to this)

Insurance markets and competitiveness

Primary reading:

[1] M. K. Bundorf, J. Levin, and N. Mahoney. "Pricing and welfare in health plan choice". In: *American Economic Review* 102.7 (2012), pp. 3214-3248.

[2] L. Dafny. "Are Health Insurance Markets Competitive?" In: *American Economic Review* 100.4 (2010), pp. 1399-1431.

[3] L. Dafny, M. Duggan, and S. Ramanarayanan. "Paying a Premium on Your Premium? Consolidation in the US Health Insurance Industry". In: *American Economic Review* 102.2 (2012), pp. 1161-1185.

Supplemental:

[1] L. Einav, A. Finkelstein, and M. R. Cullen. "Estimating Welfare in Insurance Markets Using Variation in Prices". In: *Quarterly Journal of Economics* 125.3 (2010), pp. 877-921.

[2] L. Einav, A. Finkelstein, and J. Levin. "Beyond Testing: Empirical Models of Insurance Markets". In: *Annu. Rev. Econ.* 2.1 (2010), pp. 311-336.

[3] A. Starc. "Insurer pricing and consumer welfare: Evidence from medigap". In: *The RAND Journal of Economics* 45.1 (2014), pp. 198-220.

[4] R. Town and S. Liu. "The welfare impact of Medicare HMOs". In: *RAND Journal of Economics* (2003), pp. 719-736.

Adverse selection

Primary reading:

[1] D. M. Cutler and S. J. Reber. "Paying for Health Insurance: The Trade-Off between Competition and Adverse Selection". In: *Quarterly Journal of Economics* 113.2 (1998), pp. 433-466.

[2] F. Decarolis and A. Guglielmo. "Insurers' response to selection risk: Evidence from Medicare enrollment reforms". In: *Journal of health economics* 56 (2017), pp. 383-396.

Supplemental:

[1] G. Ackerloff. "The market for lemons: Quality uncertainty and the market mechanism". In: *Quarterly Journal of Economics* 84.3 (1970), pp. 488-500.

[2] L. Einav and A. Finkelstein. "Selection in Insurance Markets: Theory and Empirics in Pictures". In: *The Journal of Economic Perspectives* 25.1 (2011), pp. 115-138.

[3] R. G. Frank, J. Glazer, and T. G. McGuire. "Measuring adverse selection in managed health care". In: *Journal of Health Economics* 19.6 (2000), pp. 829-854.

[4] M. Rothschild and J. Stiglitz. "Equilibrium in competitive insurance markets: An essay on the economics of imperfect information". In: *Quarterly Journal of Economics* (1976), pp. 629-649.

Moral hazard

Primary reading:

[1] L. Einav, A. Finkelstein, S. P. Ryan, et al. "Selection on moral hazard in health insurance". In: *American Economic Review* 103.1 (2013), pp. 178-219.

Supplemental:

[1] L. Einav and A. Finkelstein. *Moral Hazard in Health Insurance: What We Know and How We Know It*. Tech. rep. 24055. National Bureau of Economic Research, 2017.

[2] A. Finkelstein. *Moral hazard in health insurance*. Columbia University Press, 2014.

[3] W. G. Manning and M. S. Marquis. "Health insurance: the tradeoff between risk pooling and moral hazard". In: *Journal of health economics* 15.5 (1996), pp. 609-639.

Managed competition

Primary reading:

[1] V. Curto, L. Einav, J. Levin, et al. *Can Health Insurance Competition Work? Evidence from Medicare Advantage*. Working Paper. Department of Economics, Stanford University, 2015.

[2] L. Einav and J. Levin. "Managed competition in health insurance". In: *Journal of the European Economic Association* 13.6 (2015), pp. 998-1021.

Supplemental:

[1] M. Cabral, M. Geruso, and N. Mahoney. *Does privatized health insurance benefit patients or producers? Evidence from Medicare Advantage*. Tech. rep. 20470. National Bureau of Economic Research, 2014.

[2] M. Duggan, A. Starc, and B. Vabson. "Who benefits when the government pays more? Pass-through in the Medicare Advantage program". In: *Journal of Public Economics* 141 (2016), pp. 50-67.

[3] D. Pelech. "Paying more for less? Insurer competition and health plan generosity in the Medicare Advantage program". In: *Journal of Health Economics* 61 (2018), pp. 77-92.

[4] Z. Song, M. B. Landrum, and M. E. Chernew. "Competitive bidding in Medicare Advantage: Effect of benchmark changes on plan bids". In: *Journal of health economics* 32.6 (2013), pp. 1301-1312.

[5] K. Stockley, T. McGuire, C. Afendulis, et al. *Premium Transparency in the Medicare Advantage Market: Implications for Premiums, Benefits, and Efficiency*. Working Paper. National Bureau of Economic Research, 2014.