

## **Economics of Healthcare (PPHA 48050 / ECON 37710)**

### **Syllabus<sup>1</sup>**

Prof. Joshua Gottlieb

Spring 2025

This version: April 3, 2025

**Overview:** This course provides graduate-level discussion of topics and methods in the economics of healthcare.

**Objectives:** This course has two objectives. The first is to teach current topics and methods in the economics of healthcare. The second is to advance students' development as economists by providing training in the production of high-quality research. This training may help students read, contribute to, and draw from recent progress in this literature.

The course covers a wide variety of applied econometric and theoretical approaches. It also discusses applications of a wide variety of datasets and methods that are useful in many settings for relevant research.

### **Requirements:**

1. Required reading: Papers marked with two stars (\*\*) are required reading for all students
2. 6-slide summaries: Each week, you will be required to prepare a 6-slide summary (not including the title slide) of one paper. **Submit these slides on Canvas by 10 pm the night before class.** I will randomly call on students to present their slides to class. You may choose among any of the papers for that week with one star (\*) for these 6-slide summaries.
3. Referee Report: You will be required to write a 3-to-5-page referee report on a recent paper in the field. A list of suitable papers will be distributed in class.

### **Recommendation:**

The Health Economics Workshop meets on Thursday afternoons at Harris a few times per quarter. There are great speakers this quarter, presenting on topics closely related to this class. I encourage you to attend.

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<sup>1</sup> Adapted from Neale Mahoney, David Meltzer, Jeffrey Clemens

## Topics and Reading List by Week

### 1. Week 1 [*Friday meeting this week*]: March 28 Health Insurance as Insurance: Adverse Selection, Moral Hazard

#### Background

Cutler, David and Richard Zeckhauser. 2000. "The Anatomy of Health Insurance" in A. Culyer and J. Newhouse, eds. *Handbook of Health Economics*, Volume IA, Amsterdam: Elsevier (also available as NBER WP 7176).

\*\*Arrow, Kenneth J. "Uncertainty and the Welfare Economics of Medical Care." *The American Economic Review* 53, no. 5 (1963): 941-73.

#### Adverse Selection

\*\*Einav, Liran and Amy Finkelstein. 2011. "Selection in Insurance Markets: Theory and Empirics in Pictures." *Journal of Economic Perspectives* 25(1): 115-138.

Chiappori, Pierre-André and Bernard Salanie. 2000. "Testing for asymmetric information in insurance markets." *Journal of Political Economy* 108(1): 56-78.

Finkelstein, Amy and Kathleen McGarry. 2006. "Multiple Dimensions of Private Information: Evidence from the Long-Term Care Insurance Market." *American Economic Review* 96(4): 938-958.

\*Einav, Liran, Amy Finkelstein and Mark Cullen. 2010. "Estimating Welfare in Insurance Markets Using Variation in Prices." *Quarterly Journal of Economics* 123(3): 877-921.

Mahoney, Neale, and E. Glen Weyl. "Imperfect competition in selection markets." *Review of Economics and Statistics* 99.4 (2017): 637-651.

\*Einav, Liran, Amy Finkelstein and Paul Schrimpf. 2010. "Optimal Mandates and the Welfare Cost of Asymmetric Information: Evidence from the U.K. Annuity Market." *Econometrica* 78(3): 1031-1092.

\*Bundorf, Kate M., Jonathan Levin, and Neale Mahoney. 2012. "Pricing, Matching and Efficiency in Health Plan Choice." *American Economic Review* 102(7): 3214-3248.

\*Hendren, Nathaniel. 2013. "Private Information and Insurance Rejections." *Econometrica* 81(5): 1713-1762.

\*Handel, Ben, Igal Hendel, and Michael D. Whinston. "Equilibria in health exchanges: Adverse selection versus reclassification risk." *Econometrica* 83.4 (2015): 1261-1313.

\*"Adverse Selection and Network Design Under Regulated Plan Prices: Evidence from Medicaid", Amanda R. Kreider, Timothy J. Layton, Mark Shepard, and Jacob Wallace, NBER Working Paper No. 30719, May 2024 [[Link](#)]

Cutler, David and Sarah Reber. 1998. "Paying for Health Insurance: The Trade-off Between Competition and Adverse Selection." *Quarterly Journal of Economics* 113(2): 433-466.

Cohen, Alma and Liran Einav. 2007. "Estimating Risk Preferences from Deductible Choice." *American Economic Review* 97(3): 745-788

## **2. Week 2: April 1: Payment Systems**

### Provider Negotiations

\*\*Clemens, Jeffrey, and Joshua D. Gottlieb (2017), "In the Shadow of a Giant: Medicare's Influence on Private Payment Systems," *Journal of Political Economy*, January 2017, 125 (1), 1–44.

\*Cooper, Zack, Stuart V Craig, Martin Gaynor, and John Van Reenen, "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured," *The Quarterly Journal of Economics*, February 2019, 134 (1), 51–107.

Clemens, Jefferey, Joshua D. Gottlieb, and Tímea Laura Molnár, "Do Health Insurers Innovate? Evidence From the Anatomy of Physician Payments," *Journal of Health Economics*, September 2017, 55, 153–167.

Cooper, Zack, and Fiona Scott Morton (2016), "Out-of-Network Emergency-Physician Bills – An Unwelcome Surprise," *The New England Journal of Medicine*, November 2016, 375 (20), 1915–1918. [available [here](#)]

\*Ji, Yunan, "Can Competitive Bidding Work in Health Care? Evidence from Medicare Durable Medical Equipment." May 2023, working paper. [[Link](#)]

### Physician Behavior

\*\*Clemens, Jeffrey, and Joshua D. Gottlieb, "Do Physicians' Financial Incentives Affect Medical Treatment and Patient Health?," *American Economic Review*, April 2014, 104 (4), 1320–49. [available [here](#)]

Molitor, David, "The Evolution of Physician Practice Styles: Evidence from Cardiologist Migration," *American Economic Journal: Economic Policy*, February 2018, 10 (1), 326–56. [available [here](#)]

Ellis, Randall P., and Thomas McGuire, "Provider Behavior Under Prospective Reimbursement: Cost Sharing and Supply," *Journal of Health Economics*, June 1986, 5 (2), 129–152. [available [here](#)]

\*Martin Gaynor, Nirav Mehta, and Seth Richards-Shubik, "Optimal Contracting with Altruistic Agents: A Structural Model of Medicare Payments for Dialysis Drugs." *AER*, June 2023. [Link](#).

\* Joseph J. Doyle Jr. & Becky Staiger, "Physician Group Influences on Treatment Intensity and Health: Evidence from Physician Switchers." *American Economic Journal: Economic Policy*, forthcoming.

\*Ivan Badinski, Amy Finkelstein, Matthew Gentzkow and Peter Hull, "Geographic Variation in Healthcare Utilization: The Role of Physicians." [Link](#)

Kessler, Daniel and Mark McClellan, "Do Doctors Practice Defensive Medicine?," *Quarterly Journal of Economics*, May 1996, 111 (2), 353–390. [available [here](#)]

### Hospitals

\*\*Acemoglu, Daron, and Amy Finkelstein, "Input and Technology Choices in Regulated Industries: Evidence from the Health Care Sector," *Journal of Political Economy*, October 2008, 116 (5), 837–880. [available [here](#)]

\*\*Finkelstein, Amy, "The Aggregate Effects of Health Insurance: Evidence from the Introduction of Medicare," *Quarterly Journal of Economics*, February 2007, 122 (1), 1–37. [available [here](#)]

\*Gupta, Atul, "Impacts of Performance Pay for Hospitals: The Readmissions Reduction Program." *American Economic Review*, April 2021, 101(4): 1241-83. [available [here](#)]

\*Gaynor, Martin, 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*, November 2013, 5 (4), 134–66. [available [here](#)]

### Long-Term Care

\*Einav, Liran, Amy Finkelstein, and Neale Mahoney, "Provider Incentives and Health Care Costs: Evidence from Long-Term Care Hospitals." *Econometrica*, 86.6 (2018): 2161-2219.

\*Hackmann, Martin, Vincent Pohl and Nicolas Ziebarth “Patient Versus Provider Incentives in Long Term Care”, *American Economic Journal: Applied Economics*, 16(3): 178-218. [Link](#).

### Bundled payments

Einav, Finkelstein, Ji & Mahoney, “Voluntary Regulation: Evidence from Medicare Payment Reform,” *QJE* 2022. [Link](#)

Paul Eliason, Ben Heebsh, Riley League, Ryan McDevitt, and Jimmy Roberts, “Patient Heterogeneity and Treatment Choices: Evidence from the Dialysis Industry.” R&R, *AER*. [Link](#)

## **3. Week 3: April 8: Moral Hazard, Incidence on Patients and Insurers**

### Moral Hazard

Pauly, Mark V. 1968. “The Economics of Moral Hazard: Comment.” *The American Economic Review* 58(3), Part 1: 531-537.

Feldstein, Martin. 1973. “The Welfare Loss of Excess Health Insurance.” *Journal of Political Economy* 81(2): 251-280.

\*Baicker, Katherine, Sendhil Mullainathan, Joshua Schwartzstein, 2015. “Behavioral Hazard in Health Insurance.” *Quarterly Journal of Economics* 130(4): 1623-1667

Zeckhauser, Richard. 1970. "Medical Insurance: A Case Study of the Tradeoff between Risk Spreading and Appropriate Incentives." *Journal of Economic Theory* 2(1): 10-26.

Aron-Dine, Aviva, Liran Einav and Amy Finkelstein. 2013. “The RAND Health Insurance Experiment, Three Decades Later.” *Journal of Economic Perspectives* 27(1): 197-222.

Finkelstein, Amy, Sarah Taubman, Bill Wright, Mira Bernstein, Jonathan Gruber, Joseph P. Newhouse, Heidi Allen, Katherine Baicker, and the Oregon Health Study Group. 2012. “The Oregon Health Insurance Experiment: Evidence from the First Year.” *Quarterly Journal of Economics* 127(3): 1057-1106.

\*Einav, Liran, Amy Finkelstein, Paul Schrimpf, Stephen Ryan and Mark Cullen. 2013. “Selection on Moral Hazard in Health Insurance.” *American Economic Review* 103(1): 178-219.

\*Brot-Goldberg, Zarek C., 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* 132.3 (2017): 1261-1318.

\*Finkelstein, Amy and Robin McKnight. 2008. "What Did Medicare Do? The Initial Impact of Medicare on Mortality and Out of Pocket Medical Spending." *Journal of Public Economics* 92(7): 1644-1668.

### Choice Frictions

\*Bhargava, Saurabh, George Loewenstein, and Justin Sydnor. "Choose to Lose: Health Plan Choices from a Menu with Dominated Option." *The Quarterly Journal of Economics* 132.3 (2017): 1319-1372.

\*Handel, Benjamin. 2013. "Adverse selection and Inertia in Health Insurance Markets: When Nudging Hurts." *American Economic Review* 103(7): 2643-2682.

### Incidence of Insurance

\*\*Marika Cabral & Michael Geruso & Neale Mahoney, 2018. "Do Larger Health Insurance Subsidies Benefit Patients or Producers? Evidence from Medicare Advantage," *American Economic Review*, 108(8): 2048-2087.

\*Mahoney, Neale. 2015. "Bankruptcy as Implicit Health Insurance." *The American Economic Review* 105(2): 710-746.

\*Garthwaite, Craig, Tal Gross and Matthew J. Notowidigdo. 2018. "Hospitals as Insurers of Last Resort." *American Economic Journal: Applied Economics* 10(1): 1-39.

\*Dobkin, Carlos, Amy Finkelstein, Raymond Kluender, Matthew J. Notowidigdo. 2018. "The Economic Consequences of Hospital Admissions" *American Economic Review*, 108(2): 308-52.

## **4. Week 4: April 15: Waste, Fraud & Abuse**

**Guest Lecture: Maggie Shi, Harris**

\*\* Shi, Maggie, "Monitoring for Waste: Evidence from Medicare Audits," *The Quarterly Journal of Economics*, May 2024, 139(2): 993-1049. [[Link](#)]

\* "Ambulance Taxis: The Impact of Regulation and Litigation on Health Care Fraud," Paul Eliason, Riley League, Jetson Leder-Luis, Ryan McDevitt, and James Roberts, *Journal of Political Economy*, forthcoming. [[Link](#)]

\* Jetson Leder-Luis (2023), "Can Whistleblowers Root Out Public Expenditure Fraud? Evidence from Medicare" Forthcoming, *Review of Economics and Statistics*. [[Link](#)]

\* Jetson Leder-Luis & Anup Malani, “The Economics of Healthcare Fraud”. NBER WP 33592, March 2025 [[Link](#)]

Dafny, Leemore S. "[How Do Hospitals Respond to Price Changes?](#)" (pdf) American Economic Review 95, no. 5 (December 2005): 1525–1547. [View Details](#)

## **5. Week 5: April 22: Administering Health Insurance**

### Administration and Billing

\*\*Cutler, David M., and Dan P. Ly, “The (Paper)Work of Medicine: Understanding International Medical Costs,” *Journal of Economic Perspectives*, Spring 2011, 25 (2), 3–25.

\*\*Dunn, Abe, Joshua D. Gottlieb, Adam Hale Shapiro, and Pietro Tebaldi, “A Denial A Day Keeps the Doctor Away.” *The Quarterly Journal of Economics*, February 2024, 139(1): 187-233 [[Link](#)].

\* Clemens et al, “Plugging Gaps in Payment Systems: Evidence from the Take-Up of New Medicare Billing Codes.” NBER WP 31336.

\*League, Riley, “Administrative Burden and Consolidation in Health Care: Evidence from Medicare Contractor Transitions,” September 2023. [[Link](#)]

Abe Dunn, Joshua D. Gottlieb and Adam Hale Shapiro, “Administration above Administrators: The Changing Technology of Health Care Management.” *AEA P&P* 110, May 2020 (pp. 274-78). [[Link](#)]

### Pre-authorization

\*“[Rationing Medicine Through Bureaucracy: Authorization Restrictions in Medicare](#)” Zarek Brot-Goldberg, Samantha Burn, Timothy Layton and Boris Vabson, forthcoming *American Economic Review*

### Coding

\*Geruso, Michael and Timothy Layton, 2020. “Upcoding: Evidence from Medicare on Squishy Risk Adjustment.” *Journal of Political Economy* 128(3): 984-1026.

\*Brown, Jason, et al. 2014. “How Does Risk Selection Respond to Risk Adjustment? New Evidence from the Medicare Advantage Program.” *American Economic Review* 104(10): 3335-3364.

**6. Week 6: April 29: Regional Variations in Healthcare**  
***Guest Lecture: Jonathan Skinner, Dartmouth***

**[Note: BFI Health Initiative Conference on Friday May 1-2]**

\*\*Cutler, David, Jonathan S. Skinner, Ariel Dora Stern, and David Wennberg. 2019. "Physician Beliefs and Patient Preferences: A New Look at Regional Variation in Health Care Spending." *American Economic Journal: Economic Policy* 11 (1): 192–221.

Gawande, Atul. 2009. "The Cost Conundrum." *The New Yorker*, June 1, 2009.

Doyle, Joseph, John Graves, Jonathan Gruber and Samuel Kleiner. 2015. "Measuring Returns to Hospital Care: Evidence from Ambulance Referral Patterns." *Journal of Political Economy* 123(1): 170-214.

\*Finkelstein, Amy, Matthew Gentzkow and Heidi Williams. 2016. "Sources of Geographic Variation in Health Care: Evidence from Patient Migration." *Quarterly Journal of Economics* 131(4): 1681-1726.

\*Finkelstein, Amy, Matthew Gentzkow and Heidi Williams. "Place-Based Drivers of Mortality - Evidence from Migration" *American Economic Review*, 111(8):2697-2735, August 2021.

**7. Week 7: May 6: Agglomeration and Specialization**

\*\*Dingel, Jonathan, Josh Gottlieb, Maya Lozinski, Pauline Mourot, "Market Size and Trade in Medical Services." NBER Working Paper, March 2023.

\*Chandra, Amitabh and Douglas Staiger. 2007. "Productivity Spillovers in Health Care: Evidence from the Treatment of Heart Attacks." *Journal of Political Economy* 115(1): 103-140.

\*Amitabh Chandra, Carrie H. Colla and Jonathan S. Skinner, "Productivity Variation and Input Misallocation: Evidence from Hospitals." NBER WP 31569.

\*David C. Chan and Yiqun Chen, "The Productivity of Professions: Evidence from the Emergency Department," R&R *American Economic Review*. [[Link](#)]

\*Amanda Dahlstrand, Nestor Le Nestour & Guy Michaels, "Online versus In-Person Services: Effects on Patients and Providers," October 2024. [[Link](#)]

\*Amanda Dahlstrand, "Defying Distance? The Provision of Services in the Digital Age." R&R *AER*, May 2024. [[Link](#)]



## **8. Week 8: May 13: Health Insurance Market Structure**

***Guest lecture: Zarek Brot, Harris***

### Insurer Competition

Dafny, Leemore S., Mark Duggan, and Subramaniam Ramanarayanan, "Paying a Premium on Your Premium? Consolidation in the US Health Insurance Industry," *American Economic Review*, April 2012, 102 (2), 1161-85. [available [here](#)]

Dafny, Leemore S., "Are Health Insurance Markets Competitive?," *American Economic Review*, September 2010, 100 (4): 1399-1431. [available [here](#)]

\*Amanda Starc and Robert J. Town, "Externalities and Benefit Design in Health Insurance," *Review of Economic Studies*, November 2020, 87(6): 2827-2858.

\*Stuart V. Craig, Keith Ericson, and Amanda Starc, "How Important Is Price Variation Between Health Insurers?" *Journal of Health Economics*, May 2021, vol 77.

\*Stuart V. Craig, "Competition in Employer Sponsored Health Insurance: Implications for a Public Option". Working paper, available at <https://stuartcraig.github.io/research/>

### Medicare Advantage (formerly Part C)

McGuire, Thomas, Joseph Newhouse and Anna Sinaiko. 2011. "An Economic History of Medicare Part C." *Milbank Quarterly* 89(2): 289-323.

\*Curto, Vilsa, et al. 2014. "Can Health Insurance Competition Work? Evidence from Medicare Advantage." *Journal of Political Economy* Volume 129, Number 2 February 2021

\*\*Duggan, Mark, Jonathan Gruber, and Boris Vabson. 2018. "The Consequences of Health Care Privatization: Evidence from Medicare Advantage Exits." *American Economic Journal: Economic Policy*, 10 (1): 153-86.

Newhouse, Joseph P., et al. 2012. "Steps to Reduce Favorable Risk Selection in Medicare Advantage Largely Succeeded, Boding Well For Health Insurance Exchanges." *Health Affairs* 31(12): 2618-2628.

Berwick, Donald. 2011. "Launching Accountable Care Organizations—The Proposed Rule for the Medicare Shared Savings Program." *The New England Journal of Medicine* 364(16): 32-e32.

### Health insurance and health outcomes

\*\*Jason Abaluck, Mauricio M. Caceres Bravo, Peter Hull & Amanda Starc, “Mortality Effects and Choice Across Private Health Insurance Plans”, *The Quarterly Journal of Economics*, Volume 136, Issue 3, August 2021, Pages 1557–1610.

\*Sarah Miller, Sean Altekruse, Norman Johnson, Laura R. Wherry, “Medicaid and Mortality: New Evidence from Linked Survey and Administrative Data,” NBER Working Paper No. 26081.

\* Jacob Goldin, Ithai Lurie and Janet McCubbin, [Health Insurance and Mortality: Experimental Evidence from Taxpayer Outreach](#), *The Quarterly Journal of Economics* (2021)

Card, David, Carlos Dobkin and Nicole Maestas. 2009. “Does Medicare Save Lives?” *The Quarterly Journal of Economics* 124(2): 597-636.

\*Layton, Timothy J, Nicole Maestas, Daniel Prinz, and Boris Vabson, “Private vs. Public Provision of Social Insurance: Evidence from Medicaid,” Working Paper 26042, National Bureau of Economic Research, July 2019.

## **9. Week 9: May 20: Healthcare Labor Markets**

\*\*Gottlieb, Joshua D., Maria Polyakova, Kevin Rinz, Hugh Shiplett, and Victoria Udalova, “The Earnings and Labor Supply of U.S. Physicians”, *Quarterly Journal of Economics*, May 2025. [available [here](#)]

\*Propper, Carol, and John Van Reenen, “Can Pay Regulation Kill? Panel Data Evidence on the Effect of Labor Markets on Hospital Performance,” *Journal of Political Economy*, April 2010, 118 (2), 222–273. [available [here](#)]

Bhattacharya, Jayanta, “Specialty Selection and Lifetime Returns to Specialization Within Medicine,” *Journal of Human Resources*, Winter 2005, 40 (1), 115–143. [available [here](#)]

\*Nikhil Agarwal, An Empirical Model of the Medical Match *American Economic Review*, July 2015. [[link](#)]

\*Martin Hackmann and Benjamin Friedrich, “The Returns to Nursing: Evidence from a Parental Leave Program”, *Review of Economic Studies*, October 2021. [[link](#)]

\* Doug Staiger, Joanne Spetz and Ciaran Phibbs, “Is There Monopsony in the Labor Market? Evidence from a Natural Experiment,” *Journal of Labor Economics*, 28(2):211-236, 2010. [[link](#)]

\*Melanie Wasserman, “Hours Constraints, Occupational Choice, and Gender: Evidence from Medical Residents”, *Review of Economic Studies*, May 2023, 90(3): 1535-1568. [\[Link\]](#)

### **Further Reading—important topics we lack time to cover**

#### External Causes of Death

\*Finkelstein, Notowidigdo, Schilbach & Zhang, “Lives vs. Livelihoods: The Impact of the Great Recession on Mortality and Welfare”. Forthcoming, *QJE*. [\[Link\]](#)

\*Drango, Sarah, Sarah Moshary & Brad Shapiro, “Preferences for Firearms.” *American Economic Review: Insights*, forthcoming. [\[Link\]](#)

#### Value of Care

\*Hall, Robert and Charles Jones. 2007. “The Value of Life and the Rise in Health Spending.” *Quarterly Journal of Economics* 122(1): 39-72.

\*Murphy, Kevin and Robert Topel. 2006. “The Value of Health and Longevity.” *Journal of Political Economy* 114(5): 871-904.

Acemoglu, Daron, Amy Finkelstein and Matthew J. Notowidigdo. 2013. “Income and Health Spending: Evidence from Oil Price Shocks.” *Review of Economics and Statistics* 95(4): 1079-1095.

#### Medicare Part D

\*Duggan, Mark and Fiona Scott Morton. 2010. “The Effect of Medicare Part D on Pharmaceutical Prices and Utilization.” *The American Economic Review* 100(1): 590-607.

\*Decarolis, Francesco, Maria Polyakova, and Stephen P. Ryan, "Subsidy Design in Privately Provided Social Insurance: Lessons from Medicare Part D," *Journal of Political Economy* 128, no. 5 (May 2020): 1712-1752.

\*Abaluck, Jason and Jonathan Gruber. 2016. “Choice Inconsistencies among the Elderly: Evidence from Plan Choice in the Medicare Part D Program.” *American Economic Review* 101(4): 1180-1210.

\*Ketcham, Jonathan D., et al. 2012. “Sinking, Swimming, or Learning to Swim in Medicare Part D.” *The American Economic Review* 102(6): 2639-2673

Einav, Liran, Amy Finkelstein, and Maria Polyakova, "Private Provision of Social Insurance: Drug-Specific Price Elasticities and Cost Sharing in Medicare Part D," *American Economic Journal: Economic Policy*, August 2018, 10 (3), 122-53.

### Medicaid

Currie, Janet, and Jonathan Gruber. 1996. "Saving Babies: The Efficacy and Cost of Recent Expansions of Medicaid Eligibility for Pregnant Women." *Journal of Political Economy* 104(6): 1263-1296.

Cutler, David M. and Jonathan Gruber. 1996. "Does Public Insurance Crowd Out Private Insurance?" *Quarterly Journal of Economics*, 111(2): 391-430.

### **Innovation**

#### Pharmaceuticals

\*\*Duggan, Mark and Fiona M. Scott Morton. 2006. "The Distortionary Effects of Government Procurement: Evidence from Medicaid Prescription Drug Purchasing." *Quarterly Journal of Economics* 121(1): 1-30.

\*Acemoglu, Daron & Joshua Linn, "Market Size in Innovation: Theory and Evidence from the Pharmaceutical Industry." *The Quarterly Journal of Economics*, Volume 119, Issue 3, August 2004, Pages 1049–1090

Duggan, Mark & Craig Garthwaite & Aparajita Goyal, 2016. "The Market Impacts of Pharmaceutical Product Patents in Developing Countries: Evidence from India," *American Economic Review*, vol. 106(1), pages 99-135, January.

#### Devices

\* Clemens and Olsen, "Medicare and the Rise of American Medical Patenting: The Economics of User-Driven Innovation." January 2021 [[Link](#)].

\*Ji, Yunan and Parker Rogers, "The Long-Run Impacts of Regulated Price Cuts: Evidence from Medicare." NBER Working Paper 33083, October 2024. [[Link](#)]

#### Vaccines & Public Health

\*\*Finkelstein, Amy, "Static and Dynamic Effects of Health Policy: Evidence from the Vaccine Industry", *Quarterly Journal of Economics* 2004, 119(2): 527-564

\*Oster, Emily, "Does Disease Cause Vaccination? Disease Outbreaks and Vaccination Response," *Journal of Health Economics*, 2018.

