High Impact Research Conducted Using Medicare Claims Data

Compiled by Zack Cooper (<u>zack.cooper@yale.edu</u>) with the assistance of Alexia Witthaus and numerous health economists.

This document provides an incomplete list of high-impact scholarship that was conducted using Medicare claims data. This includes scholarship that¹:

- Formed the intellectual basis for the Affordable Care Act
- Helped motivate the Medicare Hospital Readmission Reduction Program
- Informed and helped assess Medicare payment policy, including ACOs and bundled payments
- Analyzed the efficiency of the Medicare Advantage program
- Identified the causes of mortality differences across regions
- Identified the causes of the opioid epidemic
- Described the causes and consequences of variation in Medicare spending across the US and identified strategies to address it
- Documented racial disparities in the Medicare program
- Identified the effect of private equity firms on the survival of Medicare beneficiaries
- Illustrated how hospital competition and mergers impact mortality
- Proposed strategies to identify and root out Medicare fraud
- Documented how to measure providers' quality and insurance plan quality
- Described the presence of low value care delivered to Medicare beneficiaries

This list includes a sample of the type of research that would be curtailed with the recent Centers for Medicare and Medicaid Services proposal to shift all Medicare claims data access to the CMS Virtual Research Data Center. This is research which improved public policy, led to reductions in mortality, likely led to billions of dollars of savings for the federal government, and reduced Medicare fraud.

Policy Programs and Evaluation

The Medicare Hospital Readmission Reduction Program

 Gupta, A. (2021). Impacts of performance pay for hospitals: The readmissions reduction program. *American Economic Review*, 111(4), 1241-1283.

¹ This list is not exhaustive. There are numerous amazing studies that have not been listed. Feel free to share additional studies that should be included.

- Ody, C., Msall, L., Dafny, L. S., Grabowski, D. C., & Cutler, D. M. (2019).
 Decreases in readmissions credited to Medicare's program to reduce hospital readmissions have been overstated. *Health Affairs*, 38(1), 36-43.
- Wadhera, R. K., Maddox, K. E. J., Wasfy, J. H., Haneuse, S., Shen, C., & Yeh, R. W. (2018). Association of the hospital readmissions reduction program with mortality among Medicare beneficiaries hospitalized for heart failure, acute myocardial infarction, and pneumonia. *JAMA*, 320(24), 2542-2552.
- Jencks, S. F., Williams, M. V., & Coleman, E. A. (2009). Rehospitalizations among patients in the Medicare fee-for-service program. *New England Journal of Medicine*, *360*(14), 1418-1428.
- Dharmarajan K, Hsieh AF, Lin Z, Bueno H, Ross JS, Horwitz LI, Barreto-Filho JA, Kim N, Bernheim SM, Suter LG, Drye EE, Krumholz HM. Diagnoses and timing of 30-day readmissions after hospitalization for heart failure, acute myocardial infarction, or pneumonia. *JAMA*. 2013 Jan 23;309(4):355-63. doi: 10.1001/jama.2012.216476. PMID: 23340637; PMCID: PMC3688083.
- Lindenauer PK, Bernheim SM, Grady JN, Lin Z, Wang Y, Wang Y, Merrill AR, Han LF, Rapp MT, Drye EE, Normand SL, Krumholz HM. The performance of US hospitals as reflected in risk-standardized 30-day mortality and readmission rates for medicare beneficiaries with pneumonia. J Hosp Med. 2010 Jul-Aug;5(6):E12-8. doi: 10.1002/jhm.822. PMID: 20665626.
- Bernheim SM, Grady JN, Lin Z, Wang Y, Wang Y, Savage SV, Bhat KR, Ross JS, Desai MM, Merrill AR, Han LF, Rapp MT, Drye EE, Normand SL, Krumholz HM. National patterns of risk-standardized mortality and readmission for acute myocardial infarction and heart failure. Update on publicly reported outcomes measures based on the 2010 release. Circ Cardiovasc Qual Outcomes. 2010 Sep;3(5):459-67. doi: 10.1161/CIRCOUTCOMES.110.957613. Epub 2010 Aug 24. PMID: 20736442; PMCID: PMC3027304.
- Ross JS, Chen J, Lin Z, Bueno H, Curtis JP, Keenan PS, Normand SL, Schreiner G, Spertus JA, Vidán MT, Wang Y, Wang Y, Krumholz HM.

Recent national trends in readmission rates after heart failure hospitalization. Circ Heart Fail. 2010 Jan;3(1):97-103. doi: 10.1161/CIRCHEARTFAILURE.109.885210. Epub 2009 Nov 10. PMID: 19903931; PMCID: PMC2830811.

- Krumholz HM, Lin Z, Drye EE, Desai MM, Han LF, Rapp MT, Mattera JA, Normand SL. An administrative claims measure suitable for profiling hospital performance based on 30-day all-cause readmission rates among patients with acute myocardial infarction. Circ Cardiovasc Qual Outcomes. 2011 Mar;4(2):243-52. doi: 10.1161/CIRCOUTCOMES.110.957498. PMID: 21406673; PMCID: PMC3350811.
- Lindenauer PK, Normand SL, Drye EE, Lin Z, Goodrich K, Desai MM, Bratzler DW, O'Donnell WJ, Metersky ML, Krumholz HM. Development, validation, and results of a measure of 30-day readmission following hospitalization for pneumonia. J Hosp Med. 2011 Mar;6(3):142-50. doi: 10.1002/jhm.890. Epub 2011 Jan 5. PMID: 21387551.

Payment programs

- Einav, L., Finkelstein, A., Ji, Y., & Mahoney, N. (2020). Randomized trial shows healthcare payment reform has equal-sized spillover effects on patients not targeted by reform. *Proceedings of the National Academy of Sciences*, 117(32), 18939-18947.
- Finkelstein, A., Ji, Y., Mahoney, N., & Skinner, J. (2018). Mandatory Medicare bundled payment program for lower extremity joint replacement and discharge to institutional postacute care: interim analysis of the first year of a 5-year randomized trial. *JAMA*, *320*(9), 892-900.
- Navathe AS, Emanuel EJ, Venkataramani AS, Huang Q, Gupta A, Dinh CT, Shan EZ, Small D, Coe NB, Wang E, Ma X, Zhu J, Cousins DS, Liao JM. Spending And Quality After Three Years Of Medicare's Voluntary Bundled Payment For Joint Replacement Surgery. Health Aff (Millwood). 2020 Jan;39(1):58-66. doi: 10.1377/hlthaff.2019.00466. PMID: 31905062.
- Liran Einav, Amy Finkelstein, Yunan Ji, Neale Mahoney, Voluntary Regulation: Evidence from Medicare Payment Reform, *The Quarterly Journal of Economics*, Volume 137, Issue 1, February 2022, Pages 565–618, https://doi.org/10.1093/qje/qjab035

- Acevedo A, Mullin BO, Progovac AM, Caputi TL, McWilliams JM, Cook BL. Impact of the Medicare Shared Savings Program on utilization of mental health and substance use services by eligibility and race/ethnicity. Health Serv Res. 2021 Aug;56(4):581-591. doi: 10.1111/1475-6773.13625. Epub 2021 Feb 5. PMID: 33543782; PMCID: PMC8313953.
- McWILLIAMS JM, Hatfield LA, Landon BE, Chernew ME. Savings or Selection? Initial Spending Reductions in the Medicare Shared Savings Program and Considerations for Reform. Milbank Q. 2020 Sep;98(3):847-907. doi: 10.1111/1468-0009.12468. Epub 2020 Jul 22. PMID: 32697004; PMCID: PMC7482384.

Payment policy, spending, mortality, and outcomes

- Sjoding MW, Iwashyna TJ, Dimick JB, Cooke CR. Gaming hospital-level pneumonia 30-day mortality and readmission measures by legitimate changes to diagnostic coding. Crit Care Med. 2015 May;43(5):989-95. doi: 10.1097/CCM.0000000000000862. PMID: 25746747; PMCID: PMC4617210.
- Clemens, J., & Gottlieb, J. D. (2014). Do physicians' financial incentives affect medical treatment and patient health?. *American Economic Review*, 104(4), 1320-1349.
- Devlin, A. M., & McCormack, G. (2023). Physician responses to Medicare reimbursement rates. *Journal of Health Economics*, *92*, 102816.
- Einav, L., Finkelstein, A., Ji, Y., & Mahoney, N. (2020). Randomized trial shows healthcare payment reform has equal-sized spillover effects on patients not targeted by reform. *Proceedings of the National Academy of Sciences*, 117(32), 18939-18947.
- Einav, L., Finkelstein, A., & Mahoney, N. (2018). Provider incentives and healthcare costs: Evidence from long-term care hospitals. *Econometrica*, 86(6), 2161-2219.
- Miller DC, Gust C, Dimick JB, Birkmeyer N, Skinner J, Birkmeyer JD.
 Large variations in Medicare payments for surgery highlight savings potential from bundled payment programs. Health Aff (Millwood). 2011

Nov;30(11):2107-15. doi: 10.1377/hlthaff.2011.0783. PMID: 22068403; PMCID: PMC4003905.

- Gross, T., Sacarny, A., Shi, M., & Silver, D. (2022). Regulated Revenues and Hospital Behavior: Evidence from a Medicare Overhaul. *The Review* of Economics and Statistics. https://doi.org/10.1162/rest a 01254
- Cutler, D. M. (1995). The Incidence of Adverse Medical Outcomes Under Prospective Payment. *Econometrica*, 63(1), 29–50. https://doi.org/10.2307/2951696
- Barnett, M., Olenski, A., & Sacarny, A. (2023). Common Practice:
 Spillovers from Medicare on Private Health Care. American Economic Journal: Economic Policy, 15(3), 65-88.
- Clemens J, Gottlieb JD. In the Shadow of a Giant: Medicare's Influence on Private Physician Payments. J Polit Econ. 2017 Feb;125(1):1-39. doi: 10.1086/689772. Epub 2016 Dec 16. PMID: 28713176; PMCID: PMC5509075.
- Dafny LS. How Do Hospitals Respond to Price Changes? Am Econ Rev. 2005 Dec;95(5):1525-47. doi: 10.1257/000282805775014236. PMID: 29125726.
- Barnett ML, Wilcock A, McWilliams JM, Epstein AM, Joynt Maddox KE, Orav EJ, Grabowski DC, Mehrotra A. Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement. N Engl J Med. 2019 Jan 17;380(3):252-262. doi: 10.1056/NEJMsa1809010. Epub 2019 Jan 2. Erratum in: N Engl J Med. 2019 May 23;380(21):2082. PMID: 30601709; PMCID: PMC6504974.

Work assessing Medicare Advantage versus traditional medicare

- Curto, V., Einav, L., Finkelstein, A., Levin, J., & Bhattacharya, J. (2019).
 Health care spending and utilization in public and private Medicare.
 American Economic Journal: Applied Economics, 11(2), 302-332.
- Brown, Jason, Mark Duggan, Ilyana Kuziemko, and William Woolston.
 2014. "How Does Risk Selection Respond to Risk Adjustment? New

- Evidence from the Medicare Advantage Program." *American Economic Review*, 104 (10): 3335-64.
- Cabral, M., Geruso, M., Mahoney, N. (2018). Do Larger Health Insurance Subsidies Benefit Patients or Producers? Evidence from Medicare Advantage. *American Economic Review*, 108(8): 2048-87.

Medicare payment rules, vertical integration, and spending

- Dranove, D., & Ody, C. (2019). Employed for higher pay? How Medicare payment rules affect hospital employment of physicians. *American Economic Journal: Economic Policy*, 11(4), 249-271
- Song Z, Wallace J, Neprash HT, McKellar MR, Chernew ME, McWilliams JM. Medicare Fee Cuts and Cardiologist-Hospital Integration. JAMA Intern Med. 2015 Jul;175(7):1229-31. doi: 10.1001/jamainternmed.2015.2017. PMID: 26011666; PMCID: PMC4664603.

Work that led to the development, implementation, and assessment of ACOs

- Fisher ES, McClellan MB, Bertko J, Lieberman SM, Lee JJ, Lewis JL, Skinner JS. Fostering accountable health care: moving forward in medicare. Health Aff (Millwood). 2009 Mar-Apr;28(2):w219-31. doi: 10.1377/hlthaff.28.2.w219. Epub 2009 Jan 27. PMID: 19174383; PMCID: PMC2656392.
- Lyu PF, Chernew ME, McWilliams JM. Benchmarking Changes And Selective Participation In The Medicare Shared Savings Program. Health Aff (Millwood). 2023 May;42(5):622-631. doi: 10.1377/hlthaff.2022.01061. PMID: 37126741; PMCID: PMC10228701.
- McWilliams JM, Landon BE, Chernew ME. Changes in health care spending and quality for Medicare beneficiaries associated with a commercial ACO contract. JAMA. 2013 Aug 28;310(8):829-36. doi: 10.1001/jama.2013.276302. PMID: 23982369; PMCID: PMC3860102.
- Kyle MA, McWilliams JM, Landrum MB, Landon BE, Trompke P, Nyweide DJ, Chernew ME. Spending variation among ACOs in the Medicare Shared Savings Program. Am J Manag Care. 2020 Apr;26(4):170-175. doi: 10.37765/ajmc.2020.42834. PMID: 32270984.

- McWilliams JM, Hatfield LA, Landon BE, Hamed P, Chernew ME.
 Medicare Spending after 3 Years of the Medicare Shared Savings
 Program. N Engl J Med. 2018 Sep 20;379(12):1139-1149. doi:
 10.1056/NEJMsa1803388. Epub 2018 Sep 5. PMID: 30183495; PMCID: PMC6269647.
- McWilliams JM, Landon BE, Chernew ME. Performance in Year 1 of Pioneer Accountable Care Organizations. N Engl J Med. 2015 Aug 20;373(8):777. doi: 10.1056/NEJMc1507320. PMID: 26287859.
- Trombley MJ, Fout B, Brodsky S, McWilliams JM, Nyweide DJ, Morefield B. Early Effects of an Accountable Care Organization Model for Underserved Areas. N Engl J Med. 2019 Aug 8;381(6):543-551. doi: 10.1056/NEJMsa1816660. Epub 2019 Jul 10. PMID: 31291511.
- Schwartz AL, Chernew ME, Landon BE, McWilliams JM. Changes in Low-Value Services in Year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Intern Med*.2015;175(11):1815–1825. doi:10.1001/jamainternmed.2015.4525
- Gilstrap LG, Huskamp HA, Stevenson DG, Chernew ME, Grabowski DC, McWilliams JM. Changes In End-Of-Life Care In The Medicare Shared Savings Program. Health Aff (Millwood). 2018 Oct;37(10):1693-1700. doi: 10.1377/hlthaff.2018.0491. PMID: 30273040; PMCID: PMC6233308.
- McWilliams JM. Changes in Medicare Shared Savings Program Savings From 2013 to 2014. JAMA. 2016 Oct 25;316(16):1711-1713. doi: 10.1001/jama.2016.12049. PMID: 27612292; PMCID: PMC5083197.

Work That Analyzes Drivers of Mortality

- Finkelstein, A., Gentzkow, M., & Williams, H. (2021). Place-based drivers of mortality: Evidence from migration. *American Economic Review*, 111(8), 2697-2735.
- Ross JS, Normand SL, Wang Y, Ko DT, Chen J, Drye EE, Keenan PS, Lichtman JH, Bueno H, Schreiner GC, Krumholz HM. Hospital volume and 30-day mortality for three common medical conditions. *New England Journal of Medicine*. 2010

Mar 25;362(12):1110-8. doi: 10.1056/NEJMsa0907130. PMID: 20335587; PMCID: PMC2880468.

Work Analyzing the Drivers of the Opioid Epidemic

- Finkelstein, A., Gentzkow, M., Li, D., & Williams, H. L. (2022). "What Drives Risky Prescription Opioid Use? Evidence from Migration" (No. w30471). National Bureau of Economic Research.
- Barnett ML, Olenski AR, Jena AB. Opioid-Prescribing Patterns of Emergency Physicians and Risk of Long-Term Use. N Engl J Med. 2017 Feb 16;376(7):663-673. doi: 10.1056/NEJMsa1610524. PMID: 28199807; PMCID: PMC5428548.
- Marzilli Ericson, K. M., Sacarny, A., & Zhou, A. (2023). Dangerous Prescribing and Healthcare Fragmentation: Evidence from Opioids. *Journal of Public Economics*, 225, 104980.
- Morden NE, Chyn D, Wood A, Meara E. Racial Inequality in Prescription Opioid Receipt - Role of Individual Health Systems. N Engl J Med. 2021 Jul 22;385(4):342-351. doi: 10.1056/NEJMsa2034159. PMID: 34289277; PMCID: PMC8402927.

Work Assessing The Presence, Causes, and Consequences of Variation in Medicare spending

- Finkelstein, A., Gentzkow, M., & Williams, H. (2016). Sources of geographic variation in health care: Evidence from patient migration. *The Quarterly Journal of Economics*, *131*(4), 1681-1726.
- Cooper, Z., Craig, S. V., Gaynor, M., & Van Reenen, J. (2019). The price ain't right? Hospital prices and health spending on the privately insured. *The Quarterly Journal of Economics*, 134(1), 51-107.
- Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The implications of regional variations in Medicare spending. Part 1: the content, quality, and accessibility of care. *Ann Intern Med.* 2003 Feb 18;138(4):273-87.

- Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The implications of regional variations in Medicare spending. Part 2: health outcomes and satisfaction with care. *Ann Intern Med*. 2003 Feb 18;138(4):288-98.
- Chernew ME, Sabik LM, Chandra A, Gibson TB, Newhouse JP. Geographic correlation between large-firm commercial spending and Medicare spending. Am J Manag Care. 2010 Feb;16(2):131-8. PMID: 20148618; PMCID: PMC3322373.
- Cooper Z, Stiegman O, Ndumele CD, Staiger B, Skinner J. Geographical Variation in Health Spending Across the US Among Privately Insured Individuals and Enrollees in Medicaid and Medicare. *JAMA Netw Open.*2022;5(7):e2222138. doi:10.1001/jamanetworkopen.2022.22138

Differences in Care Delivered Across Patients as a Function of Race and Income in the Medicare Program

- Baicker, K., Chandra, A., Skinner, J. S., & Wennberg, J. E. (2004). Who you are and where you live: how race and geography affect the treatment of medicare beneficiaries. *Health Affairs (Millwood)*, *Suppl Variation*, VAR33-VAR44. doi:10.1377/hlthaff.var.33
- Skinner, J., Chandra, A., Staiger, D., Lee, J., & McClellan, M. (2005). Mortality after acute myocardial infarction in hospitals that disproportionately treat black patients. *Circulation*, *112*(17), 2634-2641. https://doi.org/10.1161/CIRCULATIONAHA.105.543231
- Austin, Andrea M., et al. "Measuring racial segregation in health system networks using the dissimilarity index." Social Science & Medicine, vol. 240, 2019, p. 112570. ISSN 0277-9536, https://doi.org/10.1016/j.socscimed.2019.112570. (https://www.sciencedirect.com/science/article/pii/S0277953619305647)
- Joynt KE, Orav EJ, Jha AK. Thirty-day readmission rates for Medicare beneficiaries by race and site of care. JAMA. 2011 Feb 16;305(7):675-81. doi: 10.1001/jama.2011.123. PMID: 21325183; PMCID: PMC3332042.
- Anderson RE, Ayanian JZ, Zaslavsky AM, McWilliams JM. Quality of care and racial disparities in medicare among potential ACOs. J Gen Intern Med. 2014 Sep;29(9):1296-304. doi: 10.1007/s11606-014-2900-3. Epub 2014 May 31. PMID: 24879050; PMCID: PMC4139518.

Hospital Competition, Mergers and Mortality

- Beaulieu ND, Dafny LS, Landon BE, Dalton JB, Kuye I, McWilliams JM. Changes in Quality of Care after Hospital Mergers and Acquisitions. *New England Journal* of *Medicine*. 2020 Jan 2;382(1):51-59. doi: 10.1056/NEJMsa1901383. PMID: 31893515; PMCID: PMC7080214.
- Kessler, D. P., & McClellan, M. B. (2000). Is hospital competition socially wasteful? *The Quarterly Journal of Economics*, *115*(2), 577-615.

Vertical Integration of Doctors and Hospitals and Medicare Spending

 Whaley CM, Zhao X, Richards M, Damberg CL. Higher Medicare Spending On Imaging And Lab Services After Primary Care Physician Group Vertical Integration. Health Aff (Millwood). 2021 May;40(5):702-709. doi: 10.1377/hlthaff.2020.01006. PMID: 33939518; PMCID: PMC9924392.

Hospital Closures and Mortality

Joynt KE, Chatterjee P, Orav EJ, Jha AK. Hospital closures had no measurable impact on local hospitalization rates or mortality rates, 2003-11. Health Aff (Millwood). 2015 May;34(5):765-72. doi: 10.1377/hlthaff.2014.1352. PMID: 25941277.

Work on Health Care Fraud and Waste

- O'Malley, A. J., Bubolz, T. A., & Skinner, J. S. (2023). The diffusion of health care fraud: A bipartite network analysis. *Social Science & Medicine*, 327, 115927.
- Leder-Luis, J. (2023). Can whistleblowers root out public expenditure fraud? evidence from medicare. *Review of Economics and Statistics*, Forthcoming.
- Eliason, P. J., League, R. J., Leder-Luis, J., McDevitt, R. C., & Roberts, J. W. (2021). Ambulance taxis: The impact of regulation and litigation on health care fraud (No. w29491). National Bureau of Economic Research.
- Gruber, J., Howard, D. H., Leder-Luis, J., & Caputi, T. L. (2023). *Dying or Lying?* For-Profit Hospices and End of Life Care (No. w31035). National Bureau of
 Economic Research.

- Shekhar, S., Leder-Luis, J., & Akoglu, L. (2023). Unsupervised Machine Learning for Explainable Health Care Fraud Detection (No. w30946). National Bureau of Economic Research.
- Johnson, J. M., & Khoshgoftaar, T. M. (2019). Medicare fraud detection using neural networks. *Journal of Big Data*, *6*(1), 1-35.
- Herland, M., Bauder, R. A., & Khoshgoftaar, T. M. (2020). Approaches for identifying US medicare fraud in provider claims data. *Health care management science*, 23, 2-19.
- Shi, M. (Forthcoming). *Monitoring for Waste: Evidence from Medicare Audits*. Quarterly Journal of Economics.

Work Analyzing Ways to Measure Quality

- Krumholz HM, Wang Y, Mattera JA, Wang Y, Han LF, Ingber MJ, Roman S, Normand SL. An administrative claims model suitable for profiling hospital performance based on 30-day mortality rates among patients with an acute myocardial infarction. Circulation. 2006 Apr 4;113(13):1683-92. doi: 10.1161/CIRCULATIONAHA.105.611186. Epub 2006 Mar 20.
- Doyle, J., Graves, J., & Gruber, J. (2019). Evaluating measures of hospital quality: Evidence from ambulance referral patterns. *Review of Economics and Statistics*, *101*(5), 841-852.
- Hull, P. (2018). Estimating hospital quality with quasi-experimental data. *Available at SSRN 3118358*.
- Abaluck, J., Caceres Bravo, M., Hull, P., & Starc, A. (2021). Mortality effects and choice across private health insurance plans. The Quarterly Journal of Economics, 136(3), 1557-1610.
- Horwitz LI, Partovian C, Lin Z, Grady JN, Herrin J, Conover M, Montague J, Dillaway C, Bartczak K, Suter LG, Ross JS, Bernheim SM, Krumholz HM, Drye EE. Development and use of an administrative claims measure for profiling hospital-wide performance on 30-day unplanned readmission. Ann Intern Med. 2014 Nov 18;161(10 Suppl):S66-75. doi: 10.7326/M13-3000.

Work Assessing Private Equity Acquisitions, Mortality, and Spending

- Gupta, A., Howell, S. T., Yannelis, C., & Gupta, A. (2023). Owner incentives and performance in healthcare: Private equity investment in nursing homes. *The Review of Financial Studies*, hhad082.
- Kannan, S., Bruch, J. D., & Song, Z. (2023). Changes in hospital adverse events and patient outcomes associated with private equity acquisition. *JAMA*, 330(24), 2365-2375.
- PE and mortality: Cerullo, M., Yang, K., Maddox, K. E. J., McDevitt, R. C., Roberts, J. W., & Offodile, A. C. (2022). Association between hospital private equity acquisition and outcomes of acute medical conditions among Medicare beneficiaries. *JAMA Network Open*, 5(4), e229581-e229581

Low Value Care

- Einav, L., Finkelstein, A., & Mahoney, N. (2023). Long-term care hospitals: A case study in waste. *Review of Economics and Statistics*, *105*(4), 745-765.
- Schwartz, A. L., Jena, A. B., Zaslavsky, A. M., & McWilliams, J. M. (2019).
 Analysis of physician variation in provision of low-value services. *JAMA Internal Medicine*, 179(1), 16-25.

Medicare and End of Life Spending

- Wennberg JE, Fisher ES, Stukel TA, Skinner JS, Sharp SM, Bronner KK. Use of hospitals, physician visits, and hospice care during last six months of life among cohorts loyal to highly respected hospitals in the United States. *BMJ*. 2004 Mar 13;328(7440):607. doi: 10.1136/bmj.328.7440.607. PMID: 15016692; PMCID: PMC381130.
- Einav L, Finkelstein A, Mullainathan S, Obermeyer Z. Predictive modeling of U.S. health care spending in late life. *Science*. 2018 Jun 29;360(6396):1462-1465. doi: 10.1126/science.aar5045. PMID: 29954980; PMCID: PMC6038121.
- Colla CH, Morden NE, Skinner JS, Hoverman JR, Meara E. Impact of payment reform on chemotherapy at the end of life. *J Oncol Pract*. 2012 May;8(3 Suppl):e6s-e13s. doi: 10.1200/JOP.2012.000539. PMID: 22942834; PMCID: PMC3348594.