

HEALTH POLICY 2000B (SPRING 2023)
CORE COURSE IN HEALTH POLICY 2022-2023

CLASS MEETINGS

Tuesday & Thursday, 4:30-6:00pm
Course sessions will take place at the Kennedy School
R306 for Spring 1 (Jan 23- March 10)
T401, R306, and W332 for Spring 2 (March 20 – April 26)

INSTRUCTORS

Meredith Rosenthal (HSPH)

TEACHING FELLOW

Katherine Ianni
Office Hours: By appointment

COURSE OVERVIEW

This yearlong course (Core) is required for doctoral candidates in health policy and is open to other doctoral students at Harvard. The **purpose** of Core is to provide a foundational, interdisciplinary understanding of health policy for students who will undertake research that advances knowledge and leads to improvements in health.

Learning Objectives

After completing the course, students should be able to:

1. Describe and apply disciplinary frameworks and vocabulary used to formulate research questions in each discipline
2. Understand the methodological approaches that each discipline takes in answering research questions
3. Apply those frameworks in concert with one another to analyze policy tradeoffs and clearly communicate a case for or against specific policy options
4. Identify the interplay between social determinants of health, including racism and other forms of systemic oppression, and health policy
5. Anticipate the effects of policy on health equity, including consequences of health policies and practices that harm underserved groups
6. Practice critical reading of innovative scientific and policy papers from the disciplines that inform health policy

READINGS

Readings for the course will generally consist of journal articles assigned by the lecturer and should be read in advance of each lecture. These readings can be found on Canvas in the course Modules.

The majority of assigned readings are available electronically. Links are provided in the syllabus and on Canvas (under “Modules”), or students can search for the articles using the Harvard Library research website: <https://hollis.harvard.edu>. Some readings are available on the course website. Where readings are not available electronically or on the course website, it is suggested

that students use the Harvard Library's Scan & Deliver service: <http://library.harvard.edu/scan-deliver>.

COURSE REQUIREMENTS

Attendance & Participation:

33%

This course meets twice per week. Students are expected to attend and participate in the 105-minute lecture and discussion sessions. This participation includes reading 3-4 relevant articles assigned by the lecturers prior to each class. If you are unable to attend a lecture, please let the instructor and teaching fellows know by email in advance of the session.

Written Assignments:

67%

Over the course of the spring semester you will work on developing research questions and writing a project proposal. There will be intermediate deadlines throughout the semester, please refer to the research proposal assignment on Canvas for a complete list of due dates.

Human Subjects Training:

To pass the Spring semester, students must complete an online Human Subjects Training Course and present verification. The training can be accessed through the following link: <https://www.citiprogram.org/default.asp>. Complete the Basic Course in the Protection of Human Subjects for Social and Behavioral Research Investigators. For affiliation, please select Harvard University (Cambridge/Allston Campus). Completed training certificates should be e-mailed to the teaching fellow and to Colleen Yout (colleen_yout@harvard.edu) no later than 4/28.

Grades:

Grades will be assigned separately for the first semester and the second semester.

Academic Honesty:

Students must observe Harvard University rules regarding the citation of sources. Any sentences or paragraphs taken verbatim from the writing of any other person or persons, or from your own writing that has been published elsewhere, must be placed in quotation marks and their source must be clearly identified. Changing the wording of a sentence or passage slightly does not evade the requirement for citation. Indeed, whenever you are drawing an important argument or insight from someone else, even if you reword it into your own words, a reference to the source is required. Including material from others in the assignments without appropriate quotation marks and citations is regarded, as a matter of School and University policy, as a serious violation of academic and professional standards and can lead to a failing grade in the course, failure to graduate, and even expulsion from the University.

Classroom norms

As scholars and policy influencers we need to engage with the full range of perspectives and ideas in health policy. Thus, diversity and inclusion are fundamental to our work and core values of our program. Course instructors share responsibility with students for creating a learning climate that is hospitable to all perspectives, identities and cultures.

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Session 1 (01/24): Introduction to the Spring Semester (M. Rosenthal)

Learning objectives/preparation:

There are no required readings for the session, but please spend time on the 2 tasks below prior to class:

1. Meredith will be introducing the arc of the spring semester and inviting a discussion about your research projects. **Please review the latest spring assignment instructions and come prepared with questions.**
 - More details, including links to examples of proposals from previous years, are available on the Assignments page. It may be helpful to review these examples as you prepare for class on 1/24.
2. As we set up for the spring, please also come prepared to tell us about one thing you learned in Core last semester that surprised you and one thing about health policy or any of the "institutional" details that we discussed that still puzzles you.

Session 2 (01/26): Methods: Evaluating Evidence (L. Garabedian)

Learning objectives:

- Become familiar with threats to internal validity that are common in health policy research.
- Consider how different study designs protect against these threats to internal validity.
- Become familiar with rigorous quasi-experimental research designs (including difference-in-differences, interrupted time series, and regression discontinuity) and understand the conditions under which each design is feasible and appropriate.
- Prepare to apply these concepts to the development of your Core Research Proposal.
- Understand the components of a strong research proposal and the criteria on which research proposals are evaluated by external funders.

Required Readings:

1. Haffajee RL, Mello MM, Zhang F, Zaslavsky AM, Larochelle MR, Wharam JF. States with overall robust prescription monitoring programs experienced reductions in opioids prescribed to commercially-insured individuals. *Health Affairs (Millwood)*. 2018 June; 37(6): 964-974.
 - [<https://www.healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/10.1377/hlthaff.2017.1321>].
 - Plus skim Appendices A and B.
 - Policy evaluation that uses interrupted time series and difference-in-differences.
2. Wallace, J. and Z. Song (2016). Traditional Medicare Versus Private Insurance: How Spending, Volume, And Price Change At Age Sixty-Five. *Health Affairs (Millwood)*. 2016; 35(5): 864-872.
 - [<https://www.healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/10.1377/hlthaff.2015.1195>].
 - Policy evaluation that uses regression discontinuity.
3. Find an organization (i.e., NIH, AHRQ, foundation) that funds grants in your area of research. Read through a request for proposal (aka program announcement or program opportunity), paying particular attention to the criteria on which the proposals are evaluated.
 - (Examples: AHRQ Health Services Research Projects R01 [<https://grants.nih.gov/grants/guide/pa-files/pa-18-795.html>]; RWJF Foundation Innovative Research to Advance Racial Equity [<https://anr.rwjf.org/viewCfp.do?cfpId=1600&cfpOverviewId=1>])

Optional:

- Primers on the quasi-experimental research designs we will discuss:
 - Garabedian LF. Key Points: Quasi-experimental study designs.
 - Bernal JL, Cummins S, Gasparrini A. Interrupted time series regression for the evaluation of public health interventions: a tutorial. *International Journal of Epidemiology*. 2017; 348–355. [<https://academic-oup-com.ezp-prod1.hul.harvard.edu/ije/article/46/1/348/2622842>].
 - Venkataramani AS, Bor J, Jena AB. Regression discontinuity in health care research. *BMJ*. 2016; 352:i1216. [<https://www-bmj-com.ezp-prod1.hul.harvard.edu/content/352/bmj.i1216>].

- Soumerai SB, Starr D, Majumdar SR. How Do You Know Which Health Care Effectiveness Research You Can Trust? A Guide to Study Design for the Perplexed. *Prev Chronic Dis* 2015;12:150187. [https://www.cdc.gov/pcd/issues/2015/15_0187.htm]
 - Overview of threats to validity and weak vs. robust study designs.
- William R. Shadish, Thomas D. Cook, Donald T. Campbell, *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*, Boston: Houghton Mifflin, 2002. [Library]
 - Review Internal Validity, pages 53 – 63.
 - Chapter 5 (Designs that Use Both Control Groups and Pretests)
 - Chapter 6 (Interrupted Time Series)
 - Chapter 7 (Regression Discontinuity)
- Wagner AK, Soumerai SB, Zhang F, Ross-Degnan D. Segmented regression analysis of interrupted time series studies in medication use research. *J Clin Pharm Ther.* 2002; 27(4):299-309. [<https://www.ncbi.nlm.nih.gov.ezp-prod1.hul.harvard.edu/pubmed/12174032>]

Section V: Health Care Delivery: Management and Quality

Session 3 (01/31): Quality Measurement (N. Keating)

Learning Objectives

- Review definition of “quality”
- Understand goals of quality measurement & what makes a good quality measure
- Understand challenges of quality measurement
- Consider the role of equity in quality measurement

Required Readings

- Berwick, Donald M. 2002. A User’s Manual for the IOM’s ‘Quality Chasm’ Report. Health Affairs. 21(3): 80-90. [<https://www.healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/full/10.1377/hlthaff.21.3.80>]
- McGlynn EA, Adams JL. What makes a good quality measure? JAMA 2014; 312(15): 1517-1518 [<https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/1915591>]
- Keating, N. L., Landrum, M. B., Samuel-Ryals, C., Sinaiko, A. D., Wright, A., Brooks, G. A., ... & Zaslavsky, A. M. (2022). Measuring Racial Inequities In The Quality Of Care Across Oncology Practices In The US: Study examines racial inequities in the quality of care across oncology practices. Health Affairs, 41(4), 598-606. [<https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/full/10.1377/hlthaff.2021.01594>]

Optional Readings

- Donabedian A. Evaluating the quality of medical care. Milbank Quarterly 2005; 83 (4): 691-729. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1468-0009.2005.00397.x> Reprinted from the Millbank Quarterly 1966; 44(3) 166-203)
- McGlynn EA, Asch SM, Adams J, Keesey J, Hicks J, DeCristofaro A, Kerr EA. The quality of health care delivered to adults in the United States. N Engl J Med 2003; 348: 2634-2645. [<https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/nejmsa022615>]
- Keating NL, Cleveland JLF, Wright AA, Brooks GA, Meneades L, Riedel L, Zubizarreta JR, Landrum MB. Reliability and correlation of quality measures for oncology cancer care: implications for alternative payment models. JAMA Netw Open. 2021;4(3):e212474. doi:10.1001/jamanetworkopen.2021.2474 [<https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jamanetworkopen/fullarticle/2777742>]

Session 4 (02/02): Organizing Health Care for Learning, Improvement, and Innovation (R. Huckman)

Learning Objectives:

- Develop an understanding of a key theme in the health care management literature—designing and operating organizations to foster improvement and innovation
- Appreciate the tension between standardization and local autonomy as approaches for stimulating improvement and innovation
- Consider the extent to which improvement tools developed in manufacturing (e.g., lean production, learning curves and focused factories) can be applied to health care delivery

Reading Guide:

Please read the Rittenhouse Medical Center case closely and come prepared to discuss:

1. What is your assessment of the 3B Orthopedics model relative to that used for typical procedures performed by the faculty practice surgeons? Which is better? What are the key criteria for your assessment?
2. What are the possible sources of conflict between Booth's model of care and the faculty practice's model? How might this potential conflict be reduced?
3. Should Neela Wilson accede to Dr. Booth's request? If not, how should she respond?

Please also spend some time reading Huckman and Pisano (2006). You do not need to dig into every detail (though feel free to do so). Rather, read it to get a sense of it as one (and I stress, one) example of academic work in health care management. It also happens to be a paper that relates to some of the insights from the Rittenhouse case. We won't discuss Huckman and Pisano (2006) in as much detail as the case, but we will discuss it.

Required Readings:

- R.M.J. Bohmer, R.S Huckman, J. Weber, and K.J. Bozic, 2007. "Managing Orthopaedics at Rittenhouse Medical Center," HBS Case 607-152.
 - **TO ACCESS THE CASE:** You can access a copy of the case on Canvas under Files > Readings
 - **Please DO NOT DISTRIBUTE the PDF to others.** HBS cases are purchased by the program and distributed on a per-user basis. We purchased only the number of copies for the students in Core, but we are uploading a single PDF to Canvas for your convenience.
- R.S. Huckman and G.P. Pisano, 2006. "The Firm Specificity of Individual Performance: Evidence from Cardiac Surgery," *Management Science* 52(4): 473–488. [<https://pubsonline-informs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1287/mnsc.1050.0464>]

Optional readings:

- Bloom, R. Lemos, R. Sadun and J. Van Reenen, 2020. “Healthy Business? Managerial Education and Management in Healthcare,” *Review of Economics and Statistics* 102(3): 506–517. [<https://direct-mit-edu.ezp-prod1.hul.harvard.edu/rest/article/102/3/506/96786/Healthy-Business-Managerial-Education-and>]
- J.R. Clark and R.S. Huckman, 2012. “Broadening Focus: Spillovers, Complementarities and Specialization in the Hospital Industry,” *Management Science* 58(4): 708–722. [<https://pubsonline-informs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1287/mnsc.1110.1448>]
- KC, B.R. Staats, and F. Gino, 2013. “Learning from My Success and from Others' Failure: Evidence from Minimally Invasive Cardiac Surgery,” *Management Science* 59(11): 2435–2449. [<https://pubsonline-informs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1287/mnsc.2013.1720>]
- G.P. Pisano, R.M.J. Bohmer, and A.C. Edmondson, 2001. “Organizational Differences in Rates of Learning: Evidence from the Adoption of Minimally Invasive Cardiac Surgery,” *Management Science* 47(6): 752–768. [<https://pubsonline-informs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1287/mnsc.47.6.752.9811>]
- Reagans, L. Argote, and D. Brooks, 2005. “Individual Experience and Experience Working Together: Predicting Learning Rates from Knowing Who Knows What and Knowing How to Work Together,” *Management Science* 51(6): 869–881. [<https://pubsonline-informs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1287/mnsc.1050.0366>]
- B.J. Weiner, C.D. Helfrich, and A. Nguyen, 2020. “Complexity, Learning and Innovation,” Ch. 8 in *Shortell and Kaluzny's Health Care Management: Organization Design and Behavior*, L.R. Burns, E.H. Bradley, and B.J. Weiner, eds. [Request via [HOLLIS](#) if interested]

Session 5 (02/07): Methods: Qualitative Research in Health Management (E. Aveling)

[TF note: Emmilie would like you to watch a 45-min video lecture as preparation for class. Be sure to budget enough time to do so! Links to the 4 parts of the video (and 2 readings) are below.]

Learning objectives:

- Describe key features and foundational assumptions of the qualitative research paradigm
- Identify types of healthcare research questions that qualitative approaches can address
- Describe key considerations for assessing the quality and utility of qualitative research

Required reading/viewing:

- Priya Das, Tom Newton-Lewis, Karima Khalil, Madhavi Rajadhyaksha, Phalasha Nagpal, (2021) How performance targets can ingrain a culture of ‘performing out’: An ethnography of two Indian primary healthcare facilities, *Social Science & Medicine*, ISSN 0277-9536, <https://doi.org/10.1016/j.socscimed.2021.114489>.
 - As you read, consider the following prompts:
 - What is the **research question(s)** this study is addressing?
 - What do you think are some **strengths** of the study?
 - What do you think are some **limitations**? (Or, what methodological **questions**/concerns does it raise for you?)
 - What are the **implications** of this study for managing healthcare quality/strategies for improving healthcare quality?
- Malterud, Kirsti. (2001). Qualitative Research: Standards, Challenges, and Guidelines. *Lancet*. 358. 483-8. 10.1016/S0140-6736(01)05627-6. [Files > Readings](#)

Video lecture: Introduction to the Qualitative Research Paradigm (Emmilie Aveling) (From Chan School Course: MPH 101 – Qualitative Methods for Public Health)

Slides to accompany the videos are on Canvas under [Files > Readings](#). Kaltura links below (it’s divided into shorter segments totaling 45 minutes)

1.1 What is Qualitative Research?

<http://www.kaltura.com/tiny/02o0w>

1.2 Philosophical Assumptions and Methodological Choices

<http://www.kaltura.com/tiny/0vblb>

1.3 Research Paradigms: Why Do Underlying Assumptions Matter?

<http://www.kaltura.com/tiny/0vltt>

1.4 Fundamental Assumptions of the Qualitative Paradigm

<http://www.kaltura.com/tiny/03a0v>

Session 6 (02/09): Social Integration in Health Care Organizations (M. Kerrissey)

Learning Objectives:

- Develop familiarity with organizational behavior scholarship and its application in healthcare research
- Recognize common elements of research on psychological experience in teams
- Identify the value and limits of multi-method research within organizations

Required Readings:

- Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of management review*, 32(4), 1246-1264.
- Kerrissey, M. J., Mayo, A. T., & Edmondson, A. C. (2021). Joint problem-solving orientation in fluid cross-boundary teams. *Academy of Management Discoveries*, 7(3), 381-405.
- Can skim: Singer et al. (2020). Care Integration within and Outside Health System Boundaries. *Health Services Research*, 55(3): 1033-1048.

Optional Readings:

Perspectives on the field and methodological approaches:

- Davis, G. F. (2015). Editorial essay: What is organizational research for?. *Administrative Science Quarterly*, 60(2), 179-188. <https://doi.org/10.1177/0001839215585725>
- Gioia, D. (2021). On the Road to Hell: Why Academia Is Viewed as Irrelevant to Practicing Managers. *Academy of Management Discoveries*: <https://doi.org/10.5465/amd.2021.0200>
- Kerrissey, M. J., Satterstrom, P., & Edmondson, A. C. (2020). Into the fray: Adaptive approaches to studying novel teamwork forms. *Organizational Psychology Review*, 10(2), 62-86.

Additional example of multi-method paper:

- Valentine, M. A., & Edmondson, A. C. (2015). Team scaffolds: How mesolevel structures enable role-based coordination in temporary groups. *Organization Science*, 26(2), 405-422.

Papers on integration from social/organizational perspectives:

- Kerrissey, M., Tietschert, M., Novikov, Z., Bahadurzada, H., Sinaiko, A. D., Martin, V., & Singer, S. J. (2021). Social Features of Integration in Health Systems and Their Relationship to Provider Experience, Care Quality and Clinical Integration. *Medical Care Research and Review*: <https://doi.org/10.1177/1077558721102479>
- Burns, L. R., Nembhard, I. M., & Shortell, S. M. (2021). Integrating network theory into study of integrated healthcare. *Social Science & Medicine*, 114664. <https://doi.org/10.1016/j.socscimed.2021.114664>
- Singer, S. J., Kerrissey, M., Friedberg, M., & Phillips, R. (2020). A comprehensive theory of integration. *Medical Care Research and Review*, 77(2), 196-207. <https://doi.org/10.1177/1077558718767000>

Section VI: Health Care Delivery: Models and Incentives

Session 7 (02/14): Long-term Care (D. Grabowski)

Objectives:

- Understand the basic economics of the long-term care market.
- Review the reasons for long-standing quality of care problems in long-term care.
- Learn about potential policy factors to address these performance issues.
- Identify how COVID exacerbated these issues and further suggests reform is needed.

Required Readings:

- Grabowski DC. The market for long-term care services. *Inquiry*. 2008 Spring;45(1):58-74. doi: 10.5034/inquiryjrnl_45.01.58. PMID: 18524292.
 - [https://journals-sagepub-com.ezp-prod1.hul.harvard.edu/doi/pdf/10.5034/inquiryjrnl_45.01.58]
- Konetzka RT, Werner RM. Applying market-based reforms to long-term care. *Health Aff (Millwood)*. 2010 Jan-Feb;29(1):74-80. doi: 10.1377/hlthaff.2009.0559. PMID: 20048363.
 - [<https://www.healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/10.1377/hlthaff.2009.0559>]
- McGarry BE, Grabowski DC. Nursing Homes and COVID-19: A Crisis on Top of a Crisis. *Annals AAPSS*, In press.
 - [<https://journals-sagepub-com.ezp-prod1.hul.harvard.edu/doi/full/10.1177/00027162211061509>]

Session 8 (02/16): Quality improvement/patient safety and health equity (T. Sequist)

Learning Objectives:

1. To introduce the concept of quality improvement in health care
2. To explore what we know and need to know about improving quality of care for racial/ethnic/linguistic minority populations and other groups that experience worse health outcomes

Required Readings:

- Sequist, Thomas D. et al. “Cultural Competency Training and Performance Reports to Improve Diabetes Care for Black Patients.” *Annals of Internal Medicine*, vol. 152, no. 1, 2010, p. 40. [<https://www-acpjournals-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.7326/0003-4819-152-1-201001050-00009>]
- Rodriguez, Jorge A., Betancourt, Joseph R., Sequist, Thomas D., and Ganguli, Ishani. “Differences in the Use of Telephone and Video Telemedicine Visits during the COVID-19 Pandemic.” *The American Journal of Managed Care*, vol. 27, no. 1, 2021, pp. 21–26., <https://doi.org/10.37765/ajmc.2021.88573>
- <https://www.ajmc.com/view/differences-in-the-use-of-telephone-and-video-telemedicine-visits-during-the-covid-19-pandemic>)

Session 9 (02/21): Methods for Adjustment (J. Zubizarreta)

Learning goals:

- To understand how different methods for adjustment, such as regression, matching, and weighting, act on the individual-level data to approximate a hypothetical randomized experiment under different identification strategies.
- To understand the strengths and weaknesses of these methods in terms of study design, statistical efficiency, and computational tractability.

Readings:

- Silber, J.H., Rosenbaum, P.R., Ross, R.N., Ludwig, J.M., Wang, W., Niknam, B.A., Mukherjee, N., Saynisch, P.A., Even-Shoshan, O., Kelz, R.R. and Fleisher, L.A., 2014. Template matching for auditing hospital cost and quality. *Health Services Research*, 49(5), pp.1446-1474.
 - [<https://onlinelibrary-wiley-com.ezp-prod1.hul.harvard.edu/doi/full/10.1111/1475-6773.12156>]
- Ambarish Chattopadhyay, José R Zubizarreta, On the implied weights of linear regression for causal inference, *Biometrika*, 2022;, asac058, [<https://doi.org/10.1093/biomet/asac058>]
- Ellis, & McGuire, T. G. (1996). Hospital response to prospective payment: Moral hazard, selection, and practice-style effects. *Journal of Health Economics*, 15(3), 257–277. [[https://doi.org/10.1016/0167-6296\(96\)00002-1](https://doi.org/10.1016/0167-6296(96)00002-1)]
 - [<https://www.sciencedirect-com.ezp-prod1.hul.harvard.edu/science/article/pii/0167629696000021>]

Optional/Recommended readings:

- Imbens, G.W., 2015. Matching methods in practice: Three examples. *Journal of Human Resources*, 50(2), pp.373-419. [<https://muse-jhu-edu.ezp-prod1.hul.harvard.edu/article/581179>]

Session 10 (02/23): Payment Incentives (M. Rosenthal)

Learning Objectives:

By the end of this session, you will be able to:

- Describe the major types of provider payment methods including “value-based” approaches
- Explain the principles of incentive design
- Analyze the likely effects and potential adverse consequences of alternative payment approaches

Be prepared to discuss:

- How important do you think financial incentives are at the point of care (i.e., how much to they enter into a decision to do or not do something for a patient)?
- What is the ideal way to pay doctors and hospitals?
- What unintended consequences might ensue as we incorporate quality and cost measures into payment formulas?
- What needs to happen for value-based purchasing to be successful in health care?

Required Readings

1. Robinson JC. The Theory and Practice of Physician Payment Incentives. *Milbank Quarterly*; May 2001, Vol. 79 Issue 2, p149, 29p. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2751195/pdf/milq_202.pdf [<https://onlinelibrary-wiley-com.ezp-prod1.hul.harvard.edu/doi/pdfdirect/10.1111/1468-0009.00202>]
2. VanLare, Jordan M., and Patrick H. Conway. "Value-based purchasing—national programs to move from volume to value." *New England Journal of Medicine* 4 (2012): 292-295. [<https://www.nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1204939>]
3. Kaufman, B.G., Spivack, B.S., Stearns, S.C., Song, P.H. and O'Brien, E.C., 2019. Impact of accountable care organizations on utilization, care, and outcomes: a systematic review. *Medical Care Research and Review*, 76(3), pp.255-290. [<https://journals-sagepub-com.ezp-prod1.hul.harvard.edu/doi/full/10.1177/1077558717745916>]

Required Video

- Watch the short video here for an introduction to ACOs: <https://innovation.cms.gov/innovation-models/aco>

Session 11 (02/28): Behavioral Design and Maternal Health (M. McConnell)

Learning objectives: The overall objective of the session is to familiarize students with how a behavioral insights approach can support the design of interventions to improve maternal and child health. The session has the following specific goals:

- To introduce students to the process of behavioral design including the identification of a problem, diagnosis of behavioral challenges, design of intervention and evaluation of the intervention's effectiveness using specific examples from applied health settings
- To compare disciplinary approaches to both the design and evaluation of interventions to improve maternal and child health
- To discuss how approaches informed by behavioral insights in global settings can be applied to US populations

Required readings:

- Kremer, Rao and Schilbach, "Behavioral Development Economics," Chapter in the Handbook of Behavioral Economics
 - Online Here: <https://economics.mit.edu/files/16499>
- Datta, & Mullainathan, S. (2014). Behavioral Design: A New Approach to Development Policy. The Review of Income and Wealth, 60(1), 7–35.
<https://doi.org/10.1111/roiw.12093>
 - [<https://onlinelibrary-wiley-com.ezp-prod1.hul.harvard.edu/doi/full/10.1111/roiw.12093>]
- McConnell MA, Rokicki S, Ayers S, Allouch F, Perreault N, Gourevitch RA, Martin MW, Zhou RA, Zera C, Hacker MR, Chien A, Bates MA, Baicker K. Effect of an Intensive Nurse Home Visiting Program on Adverse Birth Outcomes in a Medicaid-Eligible Population: A Randomized Clinical Trial. JAMA. 2022 Jul 5;328(1):27-37. doi: 10.1001/jama.2022.9703. PMID: 35788794; PMCID: PMC9257581.
- Andrews KG, Martin MW, Shenberger E, Pereira S, Fink G, McConnell M. Financial Support to Medicaid-Eligible Mothers Increases Caregiving for Preterm Infants. Matern Child Health J. 2020 May;24(5):587-600. doi: 10.1007/s10995-020-02905-7. PMID: 32277384.

Session 12 (03/02): Searching for Health Equity in US Health Care Policy (J. Figueroa)

Objectives:

- Understand how structural racism has been embedded in US healthcare policy related to healthcare coverage and value-based payment reform
- Understand how key value-based payment models in the US (e.g., pay-for-performance programs, ACOs) have affected health equity

Readings:

1. Yearby, Clark, Figueroa. Structural Racism in Historical and Modern US Health Care Policy. Health Affairs. Vol 41, No. 2. 2022.
<https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2021.01466>
2. Joynt-Maddox KE. Financial incentives and vulnerable populations – will alternative payment models help or hurt? N Engl J Med. 2018 Mar 15;378(11):977-979.
<https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMp1715455>
3. Gondi S, Joynt-Maddox KE, Wadhera RK. “REACHing for Equity – Moving from Regressive toward Progressive Value-Based Payment. N Eng. Med 2022; 387:97-99.
<https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp2204749>

Session 13 (03/07): Impact Evaluation and RCTs (J. Cohen)

[TF note: Please read these papers (at least the Finkelstein) closely, as you will be working through the key design features, assumptions, identification strategies, statistics/models, and interpretation of results with Jessica in class.]

Learning Objectives:

- Discuss design decisions for sampling and intervention in randomized controlled trials (RCTs).
- Discuss how null results inform us about what works and what doesn't and how this relates to our theory of change.
- Discuss the design and implementation of RCTs with an example of an intervention currently underway at Mass General Hospital

Required Readings

- Finkelstein, Zhou, A., Taubman, S., & Doyle, J. (2020). Health Care Hotspotting — A Randomized, Controlled Trial. *The New England Journal of Medicine*, 382(2), 152–162. <https://doi.org/10.1056/NEJMsa1906848>
 - <https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMsa1906848>
- Jessica L Cohen and Jamie R Daw. (2021). Postpartum Cliffs—Missed Opportunities to Promote Maternal Health in the United States. *JAMA Health Forum* 2(12): e214164.
 - <https://jamanetwork.com/journals/jama-health-forum/fullarticle/2787275>
- AEA RCT Registry, “Bridging the Gap from Postpartum to Primary Care: A Behavioral Science Informed Intervention to Improve Chronic Disease Management among Postpartum Women:
 - <https://www.socialscienceregistry.org/trials/10071>

Optional Readings

- Semrau, Hirschhorn, L. R., Marx Delaney, M., Singh, V. P., Saurastri, R., Sharma, N., Tuller, D. E., Firestone, R., Lipsitz, S., Dhingra-Kumar, N., Kodkany, B. S., Kumar, V., & Gawande, A. A. (2017). Outcomes of a Coaching-Based WHO Safe Childbirth Checklist Program in India. *The New England Journal of Medicine*, 377(24), 2313–2324. <https://doi.org/10.1056/NEJMoa1701075>
 - <https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMoa1701075>

Session 14 (03/09): Competition (L. Dafny)

Learning Objectives:

- Understand the general motivations for consolidation
- Learn about the recent trends in health care consolidation in the US (particularly among providers)
- Describe the evidence regarding costs and benefits of consolidation
- Familiarize yourself with the regulations and regulators that promote competition and enforce competition law

Readings:

- Dafny L. Hospital Industry Consolidation — Still More to Come? N Engl J Med. 2014;370(3):198-199. doi:10.1056/NEJMp1313948
 - [<https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMp1313948>]
- Tsai TC, Jha AK. Hospital Consolidation, Competition, and Quality: Is Bigger Necessarily Better? JAMA. 2014;312(1):29. doi:10.1001/jama.2014.4692
 - [<https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/1884584>]
- Dafny LS, Lee TH. The Good Merger. N Engl J Med. 2015;372(22):2077-2079. doi:10.1056/NEJMp1502338
 - [<https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMp1502338>]
- KFF: What we know about providers
 - [<https://www.kff.org/health-costs/issue-brief/what-we-know-about-provider-consolidation/>]

Section VII: Public Health Policy

Session 15 (03/21): Harm Reduction (A. Brandt)

Learning Objectives:

This session will assess the history and philosophy of health interventions that focus on reducing risks of morbidity and mortality. Over recent decades these strategies and technologies have proven controversial. These debates have centered on problems of reducing versus eliminating serious risks to health, and the relationship of alternative approaches. The class will center attention on several cases: methadone and other medically-assisted treatments for substance use disorders; safe-injection equipment and sites for opiate use; e-cigarettes and vaping technology to reduce tobacco related harms. We will discuss strategies for the evaluation of harm reduction interventions, as well as cultural and political obstacles to their implementation.

Readings:

Methadone and medically assisted treatment:

- Kuehn, Bridget M. “Methadone Treatment Marks 40 Years.” *JAMA* 294, no. 8 (August 24, 2005): 887–89. [<https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/1719708>]
- Kalk, Nicola J. “Harm Reduction in Opioid Treatment: An Established Idea under Threat.” *Addiction* 114, no. 1 (2019): 20–21. [<https://onlinelibrary-wiley-com.ezp-prod1.hul.harvard.edu/doi/full/10.1111/add.14468>]

Safe injection of opiates:

- Potier, Lapr v te, V., Dubois-Arber, F., Cottencin, O., & Rolland, B. (2014). Supervised injection services: What has been demonstrated? A systematic literature review. *Drug and Alcohol Dependence*, 145, 48–68. [<https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/science/article/pii/S0376871614018754>]
- Barry, Sherman, S. G., & McGinty, E. E. (2018). Language Matters in Combatting the Opioid Epidemic: Safe Consumption Sites Versus Overdose Prevention Sites. *American Journal of Public Health* (1971), 108(9), 1157–1159. [<https://ajph-aphapublications-org.ezp-prod1.hul.harvard.edu/doi/10.2105/AJPH.2018.304588>]
- Harm Reduction Grant Program <https://www.samhsa.gov/grants/grant-announcements/sp-22-001>
- Recent reporting/journalism
 - Noah Wieland, “Workers Fighting America’s Overdose Crisis Are ‘Hanging by a Thread’ *New York Times*, February 10, 2023.

<https://www.nytimes.com/2023/02/10/us/politics/harm-reduction-overdoses-iowa.html?searchResultPosition=2>

- NIH NIDA. <https://nida.nih.gov/research-topics/harm-reduction>
- Jenine Interlandi “One Year Inside a Radical New Approach to America’s Overdose Crisis”. *New York Times Magazine*, February 22, 2023. <https://www.nytimes.com/2023/02/22/opinion/drug-crisis-addiction-harm-reduction.html?searchResultPosition=6>

E-cigarettes:

- Fairchild AL, Lee JS, Bayer R, Curran J. “E-cigarettes and the harm-reduction continuum.” *N Engl J Med* 2018; 378:216-219. [<https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMp1711991>]

Optional:

- Chang, Andrew Y., and Michele Barry. “The Global Health Implications of E-Cigarettes.” *JAMA* 314, no. 7 (August 18, 2015): 663–64. [<https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2428965>]

Session 16 (03/23): Mental Health Policy: Global Perspectives (S. Saxena)

Learning Objectives

By the end of this session, you will be able to:

- Describe the place of mental health policy within the global health and development agenda
- Explain the core characteristics of evidence and value based mental health policy
- Provide some examples of opportunities and challenges for implementation of mental health policy during and beyond COVID-19 pandemic

Required Readings:

- World Mental Health Report (executive summary), World Health Organization, 2022
 - <https://www.who.int/publications/i/item/9789240049338>
- Kola L et al. "COVID-19 mental health impact and responses in low-income and middle-income countries: reimagining global mental health" *The Lancet Psychiatry* (2021)
 - <https://www.thelancet.com/action/showPdf?pii=S2215-0366%2821%2900025-0>

Optional Reading:

- Patel et al., "The Lancet Commission on global mental health and sustainable development" *The Lancet Commissions* (2018).
 - [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(18\)31612-X.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(18)31612-X.pdf)

Session 17 (03/28): Law and Public Health (A. Sarpatwari)

Learning Objectives:

- To understand some of the major policy issues at the nexus of public health and the law
- To explain the powers and roles of legislatures, courts, and administrative agencies in regulating matters of public health, and the strengths and weaknesses of each as a regulator
- To describe the nature and sources of legal rights
- To read a judicial opinion

Required Readings:

- SOUTH BAY UNITED PENTECOSTAL CHURCH, ET AL. v. GAVIN NEWSOM, GOVERNOR OF CALIFORNIA, ET AL. [Canvas > Files > Readings > “1-South Bay”]
- RITESH TANDON, ET AL. v. GAVIN NEWSOM, GOVERNOR OF CALIFORNIA, ET AL. [Canvas > Files > Readings > “2-Tandon”]
- Mello, M. M., & Parmet, W. E. (2022). US Public Health Law-Foundations and Emerging Shifts. *The New England journal of medicine*, 386(9), 805-808. [Canvas > Files > Readings > “3-US Public Health Law-Foundations and Emerging Shifts”]

Session 18 (03/30): Nutrition Policy (S. Bleich)

Learning Objectives:

- Understand the problems of obesity and food insecurity
- Identify promising policy solutions
- Key Federal efforts to tackle food and nutrition security

Required Readings:

- GBD 2015 Obesity Collaborators. Health Effects of Overweight and Obesity in 195 Countries over 25 Years. *New England Journal of Medicine*. 2017;377(1):13-27. [\[https://pubmed.ncbi.nlm.nih.gov/28604169/\]](https://pubmed.ncbi.nlm.nih.gov/28604169/)
- Bleich SN, Ard JD (2021). COVID-19, obesity, and structural racism: Understanding the past and identifying solutions for the future. *Cell Metabolism*. 33(2):234-241. <https://www.ncbi.nlm.nih.gov.ezp-prod1.hul.harvard.edu/pmc/articles/PMC8807028/>
- Roberto CA, Lawman HG, LeVasseur MT, Mitra N, Peterhans A, Herring BJ, Bleich SN (2019). Association of a beverage tax on sugar and artificially-sweetened beverages with changes in beverage prices and sales at chain retailers in a large urban setting. *Journal of the American Medical Association*. 321(18):1799-1810. <https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2733208>
- Bleich SN, Sullivan K, Broad Leib E, Dunn CG, Woteki C, Yaroch AL, Fleischhacker S. Executive Summary (2021). Strengthening the Public Health Impacts of SNAP: Key Opportunities for the Next Farm Bill. Durham, NC: Healthy Eating Research. <https://healthyeatingresearch.org/research/strengthening-the-public-health-impacts-of-snap-key-opportunities-for-the-next-farm-bill/>

Optional Readings:

- Ward ZJ, Bleich SN, Cradock AL, Barrett JL, Giles CM, Flax C, Long MW, Gortmaker SL (2019). Projected State-Level Adult Obesity and Severe Obesity in the United States. *New England Journal of Medicine*. 381(25):2440-2450. [\[https://www.nejm.org/doi/full/10.1056/NEJMsa1909301\]](https://www.nejm.org/doi/full/10.1056/NEJMsa1909301)
- Lynch-Smith M, Bleich SN, Sommers, BD (2022). New Federal Efforts to Address Food and Nutrition Insecurity. *JAMA Health Forum*. In press. <https://jamanetwork.com/journals/jama-health-forum/fullarticle/2798658#:~:text=In%20September%202022%2C%20the%20Biden,diseases%20and%20disparities%20by%202030.>

Session 19 (04/04): Cancer Modeling for Policy Development (J. Kim)

This session brings together core concepts of decision analysis and cost-effectiveness analysis as a methodological approach to informing health policy, using cancer prevention as an applied example. Principles of decision analysis, including framing of policy questions and consideration of tradeoffs in decision making, will be reinforced; the advantages and limitations of mathematical modeling for decision making will be discussed; and the emerging use of modeling to evaluate the impacts of structural racism on cancer disparities will be introduced. The session will conclude with a conversation and Q&A of how and why decision analysis has shaped policy decisions in certain areas of health, and what barriers remain.

Required Readings:

- Kim JJ, Tosteson ANA, Zauber AG, Sprague BL, Stout NK, Alagoz O, Trentham-Dietz A, Armstrong K, Pruitt SL, Rutter CM, on behalf of the PROSPR (Population-based Research Optimizing Screening through Personalized Regimens) consortium. Cancer models and real-world data: Better together. *J Natl Cancer Inst* 2015;108(2).
 - [<http://ezp-prod1.hul.harvard.edu/login?url=http://dx.doi.org/10.1093/jnci/djv316?nosfx=y>]
- Kim JJ, Campos NG, Sy S, Burger EA, Cuzick J, Castle PE, Hunt WC, Waxman A, Wheeler CM on behalf of the New Mexico HPV Pap Registry Steering Committee. Inefficiencies and high-value improvements in current U.S. cervical cancer screening practice: A cost-effectiveness analysis. *Ann Intern Med* 2015; 163:589-597.
 - [<http://ezp-prod1.hul.harvard.edu/login?url=http://dx.doi.org/10.7326/M15-0420?nosfx=y>]
- Chapman CH, Schechter CB, Cadham CJ, Trentham-Dietz A, Gangnon RE, Jaggi R, Mandelblatt JS. Identifying Equitable Screening Mammography Strategies for Black Women in the United States Using Simulation Modeling. *Ann Intern Med* 2021;174(12):1637-1646. doi: 10.7326/M20-6506. Epub 2021 Oct 19.
 - [<https://pubmed-ncbi-nlm-nih-gov.ezp-prod1.hul.harvard.edu/34662151/>]

Optional Reading:

- Pallok K, De Maio F, Ansell DA. Structural Racism - A 60-Year-Old Black Woman with Breast Cancer. *N Engl J Med* 2019;380(16):1489-1493. doi: 10.1056/NEJMp1811499.
 - [<https://pubmed-ncbi-nlm-nih-gov.ezp-prod1.hul.harvard.edu/30995369/>]

Section VIII: Innovation and Health

Session 20 (04/06): Regulation of Drugs and Devices (A. Kesselheim)

CLASS CANCELED

Learning Objectives

- Understand the basic FDA rules for drug approval and how the accelerated approval program adjusts those rules
- Consider the appropriateness of the approval of aducanumab under the accelerated approval program and policy options for changes to the accelerated approval program
- Understand the strategies manufacturers use to delay generic entry and extend market exclusivity for brand-name drugs
- Evaluate the costs of those strategies and consider proposals for reform.

Required Readings

- Alexander, Knopman, D. S., Emerson, S. S., Ovbiagele, B., Kryscio, R. J., Perlmutter, J. S., & Kesselheim, A. S. (2021). Revisiting FDA Approval of Aducanumab. *The New England Journal of Medicine*, 385(9), 769–771. <https://doi.org/10.1056/NEJMp2110468>
 - <https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMp2110468>
- Dunn Billy, Stein Peter, Temple Robert, Cavazzoni Patrizia. (2021) An Appropriate Use of Accelerated Approval — Aducanumab for Alzheimer’s Disease. *N Engl J Med* 385:9, 856-857.
 - <https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMc2111960>
- Rabinovici. (2021). Controversy and Progress in Alzheimer’s Disease — FDA Approval of Aducanumab. *The New England Journal of Medicine*, 385(9), 771–774. <https://doi.org/10.1056/NEJMp2111320>
 - <https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMp2111320>
- Rome, Tessema, F. A., & Kesselheim, A. S. (2020). US Spending Associated With Transition From Daily to 3-Times-Weekly Glatiramer Acetate. *Archives of Internal Medicine (1960)*, 180(9), 1165–1172. <https://doi.org/10.1001/jamainternmed.2020.2771>
 - <https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jamainternalmedicine/fullarticle/2770468>
- Rome, & Kesselheim, A. S. (2021). Raising Medicaid Rebates For Drugs With Accelerated Approval. *Health Affairs*, 40(12), 1935–1942. <https://doi.org/10.1377/hlthaff.2021.00762>
 - <https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/10.1377/hlthaff.2021.00762>
- Vokinger, Kesselheim, A. S., Avorn, J., & Sarpatwari, A. (2017). Strategies That Delay Market Entry of Generic Drugs. *JAMA Internal Medicine*, 177(11), 1665–1669. <https://doi.org/10.1001/jamainternmed.2017.4650>
 - <https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jamainternalmedicine/fullarticle/2653452>

Session 21 (04/11): Diffusion of Technology (L. Agha)

Learning Objectives:

- Define technology diffusion and describe the S-curve diffusion process.
- Understand how information asymmetries, social ties, geography, adoption costs, and adoption benefits shape diffusion processes.
- Explain the importance of technology diffusion for health care access, health outcomes, and equity.

Pre-Class Assignment and Required Readings:

Each student is assigned to an exhibit from one of the required papers. I will call on the assigned student(s) to summarize what the exhibit. **Be ready to discuss:**

- *How* the exhibit was constructed? What is the underlying data analysis or method?
- *Why* this exhibit is included in the paper? How does it support the paper's thesis and narrative?

If the paper is not within your disciplinary focus or unrelated to your methodological training, feel free to focus more on the *why* question than the details of the methods.

- Agha, Leila, and David Molitor. "The local influence of pioneer investigators on technology adoption: evidence from new cancer drugs." *Review of Economics and Statistics* 100, no. 1 (2018): 29-44.
 - Figure 2 and 3: New Cancer Drug Utilization Rates, by Years since FDA Approval, Influence of Author Proximity on Drug Use – **Amanda Gutierrez , J. Wyatt Koma**
 - Table 3 Author Proximity Effect on Drug Utilization – **Towo Babayemi, Jacob Jameson**
 - Table 6 IV Estimates of Proximity Effect on Drug Utilization - **Louis-Jonas Heizlsperger**
- Chandra, Amitabh, Pragma Kakani, and Adam Sacarny. "Hospital allocation and racial disparities in health care." *Review of Economics and Statistics* (2022): 1-39.
 - Figure 2: Between-Race Gap in Hospital Performance at Baseline and Endline - **Rebecca Bromley-Dulfano, Nolan Kavanagh**
 - Figure 1: Decomposition of Between-Race Gap in Hospital Performance at Baseline - **Bohan Li, Jenna Rogers**
 - Table 3 - Dynamic Decomposition of Racial Disparities in Hospital Allocation – **Reigne Dadey, Hassina Bahadurzada**
 - Table 4 - Decomposition of Hospital Technology Adoption - **Christopher Lim, Katarina Swanson**

Optional Readings:

- Agha, Leila, and Dan Zeltzer. "Drug diffusion through peer networks: The influence of industry payments." *American Economic Journal: Economic Policy* 14, no. 2 (2022): 1-33.

- Coleman, James, Elihu Katz, and Herbert Menzel. "The diffusion of an innovation among physicians." *Sociometry* 20, no. 4 (1957): 253-270.
- Griliches, Zvi. "Hybrid corn: An exploration in the economics of technological change." *Econometrica, Journal of the Econometric Society* (1957): 501-522.
- Kyle, M.K., 2006. The role of firm characteristics in pharmaceutical product launches. *The RAND journal of economics*, 37(3), pp.602-618.
- Skinner, Jonathan, and Douglas Staiger. "Technology diffusion and productivity growth in health care." *Review of Economics and Statistics* 97, no. 5 (2015): 951-964.

Session 22 (04/13): Diffusion of Innovation (A. Chandra)

Learning Objectives

- Discuss how patent policy drives investment in certain types of innovation.
- Describe the key challenges in designing the optimal patent policy.
- Discuss the social welfare consequences of our current patent policy in relation to pharmaceuticals.
- Discuss the optimal allocation of resources for innovation in Alzheimer's disease that addresses the interests of both society and private firms.
- Give examples of factors that are important to consider in when thinking through an economic framework for a disease in which a person is (or will be) cognitively constrained.

Required Readings

- Budish, Roin, B. N., & Williams, H. (2015). Do Firms Underinvest in Long-Term Research? Evidence from Cancer Clinical Trials. *The American Economic Review*, 105(7), 2044–2085. <https://doi.org/10.1257/aer.20131176>
 - <https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.20131176>
- Chandra, Coile, C., & Mommaerts, C. (2020). What can economics say about Alzheimer's disease?: Vol. no. 27760. National Bureau of Economic Research.
 - https://www.nber.org/system/files/working_papers/w27760/w27760.pdf

Session 23 (04/18): Artificial Intelligence and Health Policy (A. Beam)

Learning Objectives:

- Understand the technology behind GPT-4 and ChatGPT
- Define near-term opportunities for benefit in medicine and public health
- Identify how this technology may present new kinds of harm from bias and misinformation

Required Readings:

- ChatGPT-assisted diagnosis: Is the future suddenly here?
<https://www.statnews.com/2023/02/13/chatgpt-assisted-diagnosis/>
- Moor, M., Banerjee, O., Abad, Z. S. H., Krumholz, H. M., Leskovec, J., Topol, E. J., & Rajpurkar, P. (2023). Foundation models for generalist medical artificial intelligence. *Nature*, 616(7956), 259-265.
<https://www.nature.com/articles/s41586-023-05881-4>

Session 24 (04/20): Digital Health (A.D. Stern)

TF Note: Ariel will structure class in a true seminar format without slides or lecture. Please come prepared for discussion and engagement.

Learning objectives:

- Describe different applications of digital products and the opportunities and risks are associated with each product type
- Consider and evaluate strategies and incentives for implementing digital health tools in practice
- Discuss promising research areas in the various areas of digital health and how they may overlap with other topical interests you may have (e.g., value-based care, precision medicine, quality improvement initiatives, bundled payments, technology adoption, health disparities and under-served populations)

Required Readings:

- Please read the first item on the list (a non-peer-reviewed blog post from the Digital Medicine Society) as background and for a few clear definitions. The other six readings are all *short* articles that touch on different aspects of digital health/digital medicine.
 - Our discussion during this session will focus on exploring promising research questions in various areas of digital health and at their intersection with other topics in health care policy.
1. Jennifer Goldsack, Megan Coder, Chandana Fitzgerald, Natalie Navar-Mattingly, Andy Coravos, and Ashish Atreja “Digital Health, Digital Medicine, Digital Therapeutics (DTx): What’s the difference?” Digital Medicine Society.
 - [Blog Post](#) (Medium.com)
 2. Goldsack, Jennifer C., Andrea Coravos, Jessie P. Bakker, Brinnae Bent, Ariel V. Dowling, Cheryl Fitzer-Attas, Alan Godfrey et al. "Verification, analytical validation, and clinical validation (V3): the foundation of determining fit-for-purpose for Biometric Monitoring Technologies (BioMeTs)." *NPJ digital medicine* 3, no. 1 (2020): 1-15.
 - <https://www-nature-com.ezp-prod1.hul.harvard.edu/articles/s41746-020-0260-4>
 3. Marra, Caroline, Jacqueline L. Chen, Andrea Coravos, and Ariel D. Stern. "Quantifying the use of connected digital products in clinical research." *NPJ digital medicine* 3, no. 1 (2020): 1-5.
 - <https://www-nature-com.ezp-prod1.hul.harvard.edu/articles/s41746-020-0259-x>
 4. Gordon, William J., Adam Landman, Haipeng Zhang, and David W. Bates. "Beyond validation: getting health apps into clinical practice." *NPJ digital medicine* 3, no. 1 (2020): 1-6.
 - <https://www-nature-com.ezp-prod1.hul.harvard.edu/articles/s41746-019-0212-z>
 5. Sanders, Samantha F., Mats Terwiesch, William J. Gordon, and Ariel D. Stern. "How artificial intelligence is changing health care delivery." *NEJM Catalyst* 5, no. 5 (2019).
 - <https://catalyst.nejm.org/doi/full/10.1056/CAT.19.0699>

6. Mecklai, Keizra, Nicholas Smith, Ariel D. Stern, and Daniel B. Kramer. "Remote patient monitoring-overdue or overused?." *The New England journal of medicine* 384, no. 15 (2021): 1384-1386.
 - <https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/10.1056/NEJMp2033275>
7. Tang, Mitchell, Carter H. Nakamoto, Ariel D. Stern, and Ateev Mehrotra. "Trends in remote patient monitoring use in traditional Medicare." *JAMA Internal Medicine* 182, no. 9 (2022): 1005-1006.
 - <https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jamainternalmedicine/fullarticle/2794655>

Final Presentations
Session 25 (04/25): Research Project Presentations

Note: Class will be held from 4:30-6:45pm to allow more time for presentations