**THE ECONOMICS OF HEALTH CARE POLICY**

**SYLLABUS**

**HKS SUP-572, HSPH HPM-227ab, FAS ECONOMICS 1460**

**FALL SEMESTER 2020**

**Joseph P. Newhouse**

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**Classes will be Mondays and Wednesdays, 8:45-10:00 am Eastern time**
**Section Meetings on most Fridays, 8:45-10:00 am, Eastern time**
**Section meetings are Optional**
**But I will ask you to vote in Class 1 on whether you would prefer a 9 am start.**

**The class schedule below assumes enrollment is around its usual number. Two dates in that schedule are noteworthy: There *is* a class on Veterans Day (FAS holds classes on that day but HKS does not) and there is an in-class exam on December 4, which is the first day of the FAS reading period but the last day of classes for HKS.**

**If, however, enrollment is sufficiently small such that only two rather than three class sessions are needed for each of the two testimony exercises, the October 26 class will not be a testimony session and the dates for Classes 15-19 will move ahead correspondingly. In that event there will *not* be a class on Veterans Day, and Classes 20 and 21 will be on the dates shown below. November 23 and 30 will be testimony sessions, and if a third session is not needed the December 2 class will be a review session rather than a testimony session. There is no class on the Wednesday before Thanksgiving.**

**Because I give a high weight to class participation in grading (see below), I expect students to be in class, even though I understand this will be a hardship for some, especially those in the Pacific time zone, not to mention anyone from Hawaii, Alaska, or New Zealand. I am sorry to make you get up so early, but I do not think a separate class just for a small number of students is practical and I think participation needs to be synchronous. We will record class sessions so you can look at them later, but not being in class means no live participation and a corresponding handicap in grading.**

## COURSE OUTLINE

**August 31 – Shopping Day - Two Shopping Day sessions, one 8:45-9:15 and one 9:30-10:00**

**September 2 – Health Care Costs, Benefits, and Financing (Class 1) - In addition to doing the reading for this class, your assignment for this class is to come to class with your three best**

**ideas for policy to address the high and rising total cost of medical care in the US that the slides document. If you are not from the US and don't feel well enough acquainted with US institutions to answer this in the US context, answer it for your own country since cost is an issue throughout the industrialized world. You don't need to tell me your ideas, but we will put you into breakout groups to discuss this question.**

**September 7 - Holiday**

**September 9 - Health Care Financing and the Labor Market, Incidence, the Theory of the Demand for Health Care and for Health Insurance (Class 2)**

**September 14 - A Variety of Research Designs, with an Application to the Demand for Medical Care (Class 3)**

**September 16, 21, and 23 - Reimbursement Policy: Traditional Medicare (TM), Parts A and B (Classes 4-6)**

**September 28 - The Theory and Consequences of Selection in Health Insurance Markets with Individual Choice; Behavioral Economics and Health Care (Class 7)**

**September 30- Medicare Part C and Risk Adjustment (Class 8)**

**October 5 - Medicaid and Long Term Care (Class 9)**

**October 7 - Commercial Health Insurance Markets and the Affordable Care Act (Class 10)**

**October 12 - Holiday**

**October 14 - Administrative Costs, Minimum Loss Ratios, and Antitrust (Class 11) (first testimony due before class)**

**October 19, 21, and 26 - Testimony 1 (Classes 12-14)**

**October 28 – Pharmaceuticals and Medicare Part D (Class 15)**

**November 2 - Variations (Class 16)**

**November 4 – Quality of Care (Class 17)**

**November 9 - Restructuring the American Health Care Delivery System (Class 18)**

**November 11 - Comparative Effectiveness Analysis (Class 19) (Note: This is Veterans Day, but FAS holds classes on Veterans Day so there will be a class on this day even though it is an HKS holiday. There is no class on November 27, the Wednesday before Thanksgiving.)**

**November 16 - Malpractice (Class 20) (second testimony due before class)**

**November 18 - Workforce and a Wrapup (Class 21)**

**November 23, November 30, and December 2 - Testimony 2 (Classes 22-24)**

**December 4 - In class exam (Class 25)**

**WARNING**: **Although many of the readings are short, this course clearly has a long required reading list and a correspondingly heavy workload.** In addition to the reading, there are 100-200+ slides for each class session. Overall, the workload is heavier than the typical HKS course, but – though this may be small consolation – it is less than a graduate level course in FAS. To help you I have annotated the reading list to let you know my rationale for putting the reading on the syllabus. I hope this will let you read for the main points.

The reward for all this work is that you should be qualified for almost any policy analytic job in the US health care sector that does not require the research tools of a Ph.D. And the syllabus appears long in part because I have included a considerable amount of optional reading.

It seems appropriate at the beginning of the syllabus to comment on Covid-19 since it has upended all of our lives. Although Covid-19 comes up at a few points in the course, most of the course is about the economics of the US health care delivery and financing system pre-Covid-19. There are a number of reasons for that. Most fundamentally, to appraise the policy response to Covid-19, one must understand the system that the policy operates in. Further, to some degree we are still in the fog of war with respect to Covid-19; although there will be countless academic studies in a few years, when it comes to evaluating policies toward Covid-19 what we have now is largely in the realm of anecdote and uncertain data. What one can read about Covid-19 policy, both in the US and elsewhere, is mostly in the daily press, weekly magazines, blog postings, and podcasts rather than in the academic literature and to the degree it is quantitative, much of it is estimates with a high degree of uncertainty. Finally, and importantly, the pandemic will subside in a few years, and the set of issues the course deals with will again take center stage, although the politics of around those issues may well be different. For example, although issues around quality of care are taking something of a back seat at the moment, they will surely rise back in prominence once the pandemic subsides. In short, while virtually the whole world is intensely interested in Covid-19 at the moment, its effects on health policy are largely its immediate effects on the delivery system (e.g, treatment of cases and effects on the treatment of other diseases) and indirect effects through its effects on economic activity, though those will be longer term effects.

The course's required reading is in **bold**. You can download almost all the reading through Hollis (http://p.lib.harvard.edu/discovery/journals.html); the URLs are listed in the syllabus. National Bureau of Economic Research (NBER) working papers can be downloaded free *if* you log on to the NBER website (www.nber.org) through a Harvard account. I have assigned portions of three books, Free for All?, Pricing the Priceless, and Incentives and Choice in Health Care. I am making arrangements to have the relevant portions available remotely from the HKS library. In case you want to buy them, the first two books are in paperback. I have posted a modest amount of additional material on the course website on CANVAS. Some of the items that I have placed on the course website such as "How to Think Like an Economist" are not called out on the

syllabus but are just on the website as resources for you if you want to peruse them. Several of them were written by prior teaching fellows.

For each class session I will post slides on CANVAS the week prior to the class. **I expect you to have gone through the slides and the required reading for each class before the class.** Both the reading and the slides have embedded questions, some of which we will talk about in class. I will **not** discuss each slide in class; besides wasting your time if you have read through the slides, 75 minutes isn't nearly sufficient time to do that.

**A course requirement is to answer the following three questions and send your answers to me and to the teaching fellows through CANVAS by 10am Eastern time of the day before the class:**

1. **What in the reading or the slides did you find most interesting? Briefly say why.**
2. **What in the reading or the slides did you find most puzzling or do you want me to go over in class? If I don't get to your question in class or, even if I do, if you still don't understand the material, you should raise it in the Friday section.**
3. **What policy issue or issues did you feel most worthy of discussion in class? How would you frame the question you want discussed?**

I consider the answers to these questions that you submit to be part of class participation and hence part of your grade for the course. I am not especially concerned with the specifics of your questions; rather what I am looking for is that you have made an effort to engage intellectually with the course material. As a result, you should *not* be concerned about asking questions or raising issues about course material that confuses you; indeed, such questions generally indicate that you have in fact thought about the course material, which is what I wish to see.

I have tried to make the slides as self-explanatory as possible. In many cases I have added explanatory material in the footer or in the notes below the slide if you use Normal View in PowerPoint; in those cases I have put an * in the title or the body of the slide to alert you. I have tried to spell out acronyms in the footer or in the notes. Although I will try to avoid them, I will no doubt occasionally lapse into acronyms when speaking; if you don't understand them, send a question to the TF's using the Chat function.

**In addition to the requirement to submit answers to the three questions before each class, a second requirement of the course is to prepare "testimony" on two different occasions, once in the middle of the semester and the other at the end of the semester.** You should write 1,250 words or less of text, roughly five double-spaced pages or less, taking a position for or against a policy position that is relevant to the policy domains we covered in earlier class sessions. Thus, for the first testimony take up a question that is related to one of the first eleven class sessions. **Do not venture into topics that are covered in the second half of the course because not all of your fellow students will have the relevant background to critically evaluate your ideas and their ability to do that is part of their grade.** So that this does not happen, you should send the teaching team (Professor Newhouse and the TF's) a proposed topic at least one week before the deadlines for submitting the actual testimony (one week before is October 7 and November 9). For the second testimony anything the course covered is fair game. Although almost all of the course

material is about the US health care system, I encourage international students to write their testimony about analogous issues in their home countries. Similar problems to those in the US can be found in almost all the OECD countries and increasingly in middle income countries. Do not go over the 1,250 word limit, although international students can, if they wish, add an introductory page with relevant details about their country's institutions; this page does not count against the 1,250 word limit.

**In addition to writing your own testimony, everyone will read ten testimonies of other students and prepare one question per testimony for each author ("the witness"), who will answer selected questions about his or her testimony in front of the class, just as a witness would at a Congressional hearing. In class you will have one minute (perhaps more if there are few enough students) to summarize the main point of your testimony and then we will turn to questions from the class that you will answer. It is also a good idea to prepare one slide with the main point of your testimony that the class can look at while you are testifying. The TF's can post the slide if you e-mail them prior to the class.** You will know the menu of questions that the TF's and I will select specific questions from for you to answer. In other words, there will not be enough time in class to answer all ten questions that you receive, but you will not know which questions are to be answered in advance. You are, of course, welcome to follow up with your classmates on any questions that are not covered in class. There will be an opportunity in class for give and take between the persons asking and answering the questions and others as well if someone else wants to follow up, and I encourage you to follow up. Make your questions about the substance of the proposal, not its political feasibility. In real life the people you are testifying before, such as members of the US Congress or state legislatures, will rightly think that they know more than you do about political feasibility; in short, political feasibility is not what they are looking to you to enlighten them about. Your questions are due 3 days after the testimonies are submitted (by midnight on October 17 and November 19).

If your testimony is late, I will deduct one grade for each day it is late, because it is not fair to those preparing questions to not have adequate time to read what you wrote and to think about it. In addition, you yourself should be reading other testimonies rather than working on your own after the submission due date. There is no credit for any testimony that is more than 3 days late unless there is a medical reason.

**Although it would not seem to be said, for the testimony sessions come to class prepared with the questions you have posed to your classmates so that when I call on you to ask them, you do not waste time fumbling around trying to find your question. I say this because every year some students are not prepared. Do NOT read your either your questions or your answers**; it is fine to have a few notes to summarize your testimony and answer questions, but the give and take between you and the person asking or answering the question should be a conversation between two people, not reading from a prepared text. At an actual hearing in the US Congress, witnesses summarize their written testimony, usually in one or two minutes (Cabinet members and a few others have more leeway but they do not read their statements either), and then the witnesses just respond to questions that they do not necessarily know in advance, though they certainly may have anticipated them. I have posted examples of previous students' testimonies on the course website. For more professional (and longer than you are expected to write) examples of testimony, you can see testimony that MedPAC has prepared at http://www.medpac.gov/. At the top

of the MedPAC home page is a box titled "Documents." Click on the menu in the "Documents" box and select "Congressional Testimony."

Members of Congress and state legislatures neither want nor expect testimony to be laden with footnotes or citations. You should respect their expectations, and not make your testimony look like a law review article, i.e., with as much space taken up with footnotes as with text. That said, for the purposes of this class you must still respect scholarly standards of attribution. Any words, data, or substantial ideas you take from someone else ***should*** be credited to the original author through a standard scholarly citation. Any substantial borrowing from others that is not so credited is plagiarism, which is one of the few ways you can get yourself expelled from Harvard. This is not hypothetical; it has unfortunately happened in this class. ☹

Please resolve this tension as follows: Write your testimony without extensive footnoting or citation, although some may be necessary to document a key fact for your argument. BUT… add to the back of your 5 pages a page of documentation, giving the sources of key information you have used in your memo. Document your sources in sufficient detail that a reader (e.g., you, if 3 months after writing the memo you are called upon by your boss to document your data sources) could locate and recover your key sources. Treat this documentation as an annex that would not necessarily be included in the memo handed in to the decision maker, but that would be appended to the of the "file copy." Such documentation is required for this class. It's also a good practice when you leave this classroom for the world outside. Some of the examples of prior testimony on the website are from a time before I asked for documentation, so they do not have the extra page. The extra page does not count against the 1,250 word limit.

**Finally, there will be an in-class examination during the last class of the semester.** I have posted several prior final examinations on the course website.

Your final grade will depend upon:

1) Your participation in class discussion, part of which is being in class on time, and the questions that you submit for each class session. Class participation is 50% of the grade; it is this high because I want you to keep up with the course throughout the semester;
2) The two testimony exercises, including the quality of your questions for others and your answers to the questions posed to you on your own testimony (16+% each), and;
3) The in-class examination in the final class session (16+%).

I use the Kennedy School suggested grading curve as a guideline – around 40 percent A's or A-'s – but this is not rigid.

The TF's will conduct a review session on Fridays. Although these sessions are optional, prior students have found them very helpful and I recommend that you attend. Although the TF's will review material from that week's classes, you should submit to them beforehand any topics or questions you would like them to cover. If there are no questions, the TF's have the option to cancel the session.

**Office hours:** I will hold virtual "office hours" after class on Mondays 10:00-11:00. You

should let me know in advance that you would like an appointment; I will admit you in the order I have requests to talk with me.

**Guests: For some classes I have asked outside individuals to talk for the last half hour or so of the class about their experience. The relevant classes are Class 8 on Medicare Advantage, Class 9 on Medicaid, Class 10 on the ACA, and Class 17 on quality of care, and Class 18 on restructuring the delivery system. I have asked the guest to make about 5-10 minutes of opening remarks, and then go to Q&A. For those classes I will want you to submit at least one question for the guest to address at least 24 hours before the class. I will forward them to the guest.**

A final note on course logistics: I regard myself as a beginner when it comes to teaching remotely. Thus, there are likely to be some technical glitches, especially at the outset. I expect what you get out of the course will come from the reading and the slides and your interactions with other students. Toward that end, I will try to make fairly liberal use of breakout rooms, but I will be feeling my way with how best to teach using Zoom.

**Turning now away from course logistics, this course has several objectives:**

1. ***To enable you to think critically about health care policy.*** This is the course's primary aim. Note that I slipped in the word "care" between "health" and "policy;" there is a large health policy (as opposed to health care policy) literature as well, especially about the socioeconomic determinants of health and promoting healthy behaviors, but there is not time to go into those topics; most of you, if not all of you, will likely think the reading list is already too long. Although as said above I will touch on Covid-19 in places, the course will not deal with classic public health issues such as control of infectious diseases and food and water safety. Henceforth, I will just use the shorthand of health policy rather than health care policy. I put this aim first, because of a quote from Eric Hoffer that I find apt: "In times of change, learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists." And the years since the passage of the Affordable Care Act in 2010 have certainly been a time of change in US health policy.

2. ***To acquaint you with past analytical efforts in health policy, primarily those by economists, who, however, often are writing for non-economists (since when they write for other economists in economics journals the technical level may be too high for the non-economists in the class, and many health economists (including me!) think is important to reach non-economist professionals, journalists, and the general public since they all play important roles in formulating health policy***. This second goal is intended to accomplish several things:

    a) To teach you some of what is known and not known about health policy;
    b) To show you how the economic theory and econometric methods you have covered in other classes have been applied to issues of health policy and so to reinforce that learning; and
    c) To show you the connection between policy analysis and actual policy. Although the

connection is not always obvious, the manner in which issues appear on the policy agenda often is influenced by analysis, frequently with a substantial lag. Of course, there is also a reverse flow; what appears on the analysis agenda is certainly influenced by policy, though sadly by the time the analysis is done it is sometimes too late. A good policy analyst, like a good stock market analyst, is always trying to guess where things will be in a few years; both types of analysts are often wrong.

3. ***To acquaint you with some of the relevant political and legislative history of American health policy issues***. The issues we deal with in this course - the demand for medical care; pricing and reimbursement; the quality and organization of care, including tort law; and the health care workforce - all have legislative and political histories, frequently long histories. Several of the optional books listed near the beginning of the syllabus (below) describe not only the history of American medical care generally but also the history of several of the policy issues that the course takes up, especially those around financing. Frequently what is optimal considering just the economics is not feasible politically; the good policy analyst will seek to optimize within the feasible set. Of course, the feasible set can and does change over time.

4. To distinguish ***where within the health care sector the market seems to work reasonably well and where it does not work so well and what the public policy options are for improving outcomes in those domains where it does not work so well***. ***We will also see examples of government failure.*** For many reasons medical care does not resemble a classic textbook competitive market that is economically efficient, but incentives, including non-monetary incentives, are always important. You will have to decide where market failures are more tolerable and where government failures are more tolerable. Reasonable persons can and do differ on this issue.

5. I would also like to think you will ***learn something about the difference between higher and lower quality research since many of you are likely to be consumers of research at some point in your career***. Toward that end I devote a few classes in the first part of the course primarily to research methods, and I emphasize methods at several points in the course; the purpose of these classes is to make you a better consumer of research.

6. Finally, some of you at some point in your careers are likely to work on health policy in the US. As mentioned above, this course should prepare you for jobs of an analytical nature that do not require the research tools of a Ph.D.

**Rules of Classroom Conduct:**

This used to be a long list, but in the world of Zoom the only rule that applies is to b**e on time.** Class starts at 8:45 am Eastern. At that time you should be logged in and ready to start class. However, I will ask you to vote on whether you would prefer to start 15 minutes later. And there are some additional rules for the Zoom world:

- Join the class in a quiet place.
- Not only should you be on time, but you should stay until the end.

- Turn on your video. Mute your microphone unless you are speaking. If you need to have your video off for some reason, please check with one of the teaching fellows first.
- Close browser tabs that are not required for participating in class.

**Academic Integrity Policy:**

You should write your own testimony and your own questions on the testimony of others. The testimony is not a group exercise. And of course the examination is not a group exercise.

**Disability Policy:**

To request academic accommodations due to a disability or medical issue, please contact Grace Moskola (FAS), 617-496-8707 aeo@fas.harvard.edu, Melissa Wojciechowski (HKS) melissa_wojciechowski@hks.harvard.edu, 617-495-0860, or Colleen Cronin (Harvard Chan) ccronin@hsph.harvard.edu.

**A semantic note on the Syllabus and the slides:**

I use the acronym ACA to mean the Affordable Care Act. On December 24, 2009 and March 21, 2010 the Senate and House respectively passed the Patient Protection and Affordable Care Act of 2010. Three days after President Obama signed this Act into law, the House and Senate both passed the Health Care and Education Reconciliation Act, which amended the original legislation. By the ACA I mean the amended Act.

Even though many if not most of you will probably be familiar with key provisions of the ACA, in the slides I have tried to be self-explanatory when I refer to specific provisions. If you want a summary of the Act, you can read the second section of the McDonough book in the Optional prefatory reading below, though the book does not deal with the 20,000+ pages of regulations that the Obama and Trump administrations issued to implement the Act, and McDonough, like everyone else, did not anticipate the Supreme Court decision making Medicaid expansion optional (NFIB vs Sibelius).

**Background Material: General**

The Kaiser Family Foundation website www.kff.org has background material on many of the topics covered in the course, as well as other topics that the course does not cover. Although I assume you have some basic familiarity with the financing and organization of health care in the US, for example, you have taken HKS SUP-500, Chan HPM 210, or one of the undergraduate health policy courses, non-US students may find the descriptions of the Medicare and Medicaid programs on this website helpful. You may also find the Commonwealth Fund website useful, www.cmwf.org. Three useful government websites are www.cbo.gov/topics/health-care, which has the Congressional Budget Office materials related to health (some of the relevant CBO health material, however, is under "Budget" on the home page), www.medpac.gov, the Medicare Payment Advisory Commission (MedPAC) site, which is extremely useful for Medicare issues, and

www.macpac.gov, the Medicaid and CHIP Payment and Access Commission, which has material on Medicaid and the Children's Health Insurance Program (CHIP). Finally, the Health Policy Briefs on the *Health Affairs* web site are a summary of a great many policy issues (http://www.healthaffairs.org/healthpolicybriefs/archives.php?search=&x=11&y=4), and the *Health Affairs* blog has material on current events http://healthaffairs.org/blog/.

I next list some books that those of you intending to pursue a career in health policy should read at some point, but they are not necessary for this course; there is already plenty of reading!

**Background: Historical (US)**

The following books provide historical background on US health policy. All are in paperback.

OPTIONAL:

John E. McDonough, Inside National Health Reform; Berkeley: University of California Press, 2011. Part I is an insider's account of the enactment of the ACA; Part II is an analysis of the ACA, title by title. Two chapters from Part II appear on the Optional reading for class 10. Parts of the book are now out of date, most notably the chapter on Medicaid (Title II), which was written before the Supreme Court's 2012 decision that made Medicaid expansion optional, as well as the material on the CLASS Act (Class 9), which Secretary Sibelius determined could not be implemented.

Stuart Altman and David Shactman, Power, Politics, and Universal Health Care; Amherst, NY: Prometheus Books, 2011. A political history of the past century of health policy ending with the passage of the ACA, though most of the book focuses on the 1960's on. The first author - and occasionally his mother - is a participant in many of the chapters; he is currently the chair of the Massachusetts Health Policy Commission.

David Blumenthal and James A. Morone, The Heart of Power, Berkeley: University of California Press, 2009. Each chapter is a description of health policy in each Presidential administration from Franklin Roosevelt to George W. Bush except for Gerald Ford. The authors have rather harsh views of administration economists, although in my view they do not substantively rebut the arguments of the economists that they disparage. And they seem to ignore that many economists were (in their view) constructive contributors, e.g., Stuart Altman (in both the Nixon administration and the 1992 Clinton transition), Gail Wilensky (George H.W. Bush), and Mark McClellan (George W. Bush). If you want to read a (very) abbreviated version of the book, see James A. Morone and David Blumenthal, "The Arc of History Bends Toward Coverage: Health Policy at a Crossroads," Health Affairs, March 2018, 37(3):351-7.
https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.2017.1312

Paul Starr, The Social Transformation of American Medicine, updated edition, New York: Basic, 2017. A classic work on the history of American medical care, originally written to cover the period through the 1970's and subsequently updated.

Rosemary Stevens, In Sickness and in Wealth: American Hospitals in the Twentieth Century, Baltimore: Johns Hopkins, 1999. Another history, written from the hospital perspective.

Julius Richmond and Rashi Fein, The Health Care Mess; Cambridge: Harvard University Press, 2005. Part history, part memoir of two participants in health policy over the second half of the 20th century.

**Background: Economics**

This is a course in the economics of health policy rather than a course in health economics, meaning the course investigates a number of health policy issues through the lens of economics rather than starting with economic theory and showing how it applies to health policy as a typical health economics course might do. The difference, however, is more in emphasis than substance, and health economics textbooks cover most of the course topics in some fashion. For those who wish to see a textbook treatment, I mention three textbooks here; finding the relevant sections should not be difficult.

Charles E. Phelps, Health Economics, 6th edition; Routledge, 2017.

Sherman Folland, Allen C. Goodman, and Miron Stano, The Economics of Health and Health Care, 8th edition; Routledge, 2017.

Thomas E. Getzen, Health Economics and Financing, 5th edition; John Wiley & Sons, 2013.

An indispensable reference work for more advanced students of health economics is:

Handbook of Health Economics, vol. 1, eds., Anthony J. Culyer and Joseph P. Newhouse; Amsterdam: North Holland, 2000, and vol. 2, 2012, eds. Mark V. Pauly, Thomas G. McGuire, and Pedro Pita Barros. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science?_ob=TitleSrchURL&_method=submitForm&sterm=Handbook%20of%20Health%20Economics&_acct=C000014438&_version=1&_userid=209690&md5=f46d423af8c0c93de3d0773e6328d322. Several chapters from the Handbook are on the reading list, although only two are required because many of the chapters are hard going unless you have the requisite economics background. A mathematical intermediate microeconomics course such as HKS API-101Z, FAS Economics 1011a, or HSPH HPM-206 and an undergraduate econometrics class will suffice for much of the Handbook, but a graduate level microeconomics course such as FAS Economics 2010 or 2020 (HKS API-111, 112) and graduate level econometrics is necessary for some parts; those parts are not on the reading list.

**Health Care Systems Other than the United States**

Although the US health care financing and delivery systems are exceptional in several respects, there is much variety in the rest of the world as well – something many Americans find

surprising. If you wish to see sketches of 19 industrialized countries' health care systems, including the US, see https://international.commonwealthfund.org/. In addition, there are a few papers on this reading list that draw on experience in other countries, especially the UK and the Netherlands.

An economic treatment of how several OECD countries deal with many of the issues that this course takes up is Mark Stabile and Sarah Thomson, "The Changing Role of Government in Financing Health Care," Journal of Economic Literature, June 2014, 52(2):480-518. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/jel.52.2.480

A short paper that discusses differences between the US health care system and the rest of the OECD is Victor R. Fuchs, "How and Why US Health Care Differs from that in Other OECD Countries," JAMA, January 2, 2013, 309(1):33-4. As reasons for US exceptionalism, Fuchs cites American distrust of government, reluctance to redistribute, population heterogeneity (likely related to the reluctance to redistribute), and US political institutions. http://jama.jamanetwork.com/article.aspx?articleid=1555142

Some of the challenges of using international data to make comparisons across countries are described in Irene Papanicolas and Ashish K. Jha, "Challenges in International Comparisons of Health Care Systems," JAMA, August 8, 2017, 318(6):515-6, but I have assigned their later paper that actually makes such comparisons in Class 1. http://jamanetwork.com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2646461

**CLASS 1 – HEALTH CARE COSTS, BENEFITS, AND FINANCING (September 2)**

**This first class is an overview of issues around health care costs and financing, focusing on why costs have risen historically, how they are financed, and the policy issues raised by different financing methods. I have placed the issue of cost in the first class, since I regard it as the most important and most difficult issue US policy makers face - and probably policymakers elsewhere as well. In my view the high level of US cost paradoxically makes reform more difficult than if US costs were lower, since the scale of redistribution of any given reform is greater and the US political system tends to resist redistribution (see the Optional 2013 JAMA Fuchs reading immediately above). That attitude may change post-Covid-19; only the future will tell.**

**It is important to understand that there are several different meanings of cost. The general public mostly focuses on out-of-pocket cost, including amounts they pay for premiums. Public officials often focus on public budget cost, though of course they pay attention to what voters are concerned with as well. Health policy analysts take account of both out-of-pocket and budget cost, but often focus on total medical care cost/spending or some function of it such as cost per person or cost as a percent of GDP. All three of these types of cost come up in the slides, although total medical spending is the main focus.**

**In addition to the reading, your assignment for this class is to come to class with your three best ideas for policy to address the US total cost of medical care that is documented in the slides. You do not have to share them with me. If you are not from the US and don't feel well enough acquainted with US institutions to answer this in the US context, answer it for your**

**own country.**

**I will have you discuss your ideas in breakout groups and then we will have a general discussion of them. I want your breakout group to appoint a rapporteur who would give the class the consensus single best idea from your group. Then we will discuss those ideas. The reason I want you to write down your own three ideas is for you to compare what you think now with what you think at the end of course as a way for you to assess what you learned in the course.**

**In all countries health care is financed through a mix of premiums, out-of-pocket payment, and taxes, although the mix among the three varies widely and within taxes, the type of taxes used varies. Each of these methods creates various types of economic inefficiencies. The slides for this class touch on the inefficiencies related to taxes, but those particular inefficiencies are covered much more extensively in any economics of public finance course.**

**This session also takes up issues around the future financing of Medicare and Medicaid. I defer the issue of financing employment-based insurance to the next class.**

**The issue of cost is inextricably linked to the issue of what value all this spending buys. The conventional answer is that US spending buys little or nothing at the margin because we spend so much more than any other country and our life expectancy/mortality rates are worse or no better. It should be obvious – but is often lost in the public rhetoric – that many things other than medical care affect mortality and life expectancy. These other things can be grouped under the general headings of lifestyle and the social determinants of health. Conversely, much medical care spending affects morbidity/quality of life but has little effect on mortality. In short, US life expectancy may be worse for reasons other than its level of spending on medical care (though US medical care does not offset those other reasons) and US morbidity/quality of life may be better because of medical care, but there are few comparable morbidity data for other countries, which is why mortality rates are almost always cited in the public discussion.**

**In addition to the slides on cost and financing, several slides for this class touch on health outcomes or what the US buys for all its spending. The slides for this class are primarily descriptive; slides for subsequent classes will be more analytical and will draw on economic theory to a larger extent.**

**In this class we will do one other exercise in breakout groups. This exercise does not draw directly on economics or the readings below, but it tries to have you address a real policy problem, which I try to set up for you in the next several paragraphs so you can think about it before you get to class. In response to the Covid pandemic, the Congress in the spring passed several stimulus bills, and a portion of the funds subsidized the medical care system. The CARES Act, which was signed into law on March 27, 2020 and was the first large stimulus bill ($2 trillion, dwarfing any prior stimulus bill), appropriated $100 billion dollars for health care providers. Although the $100 billion was to be distributed to many types of medical providers, to simplify the problem for you, assume it was just to be used for hospitals. What I want you to do is to decide the procedures or rules you would use to allocate these funds**

**among individual hospitals. In approaching this kind of problem, it is best to *think first about the principles you think are appropriate for allocating funds, or in other words what you are trying to accomplish by allocating them however you decide to do it.***

**There are also some tactical questions. Hospitals have been pleading for funds now, saying they are being gouged on buying personal protective equipment, that they are having to bring in temporary staff because their employees are getting sick, and that they have cancelled elective procedures, which are a large source of their margin, all of which are leading to substantial losses. Some may even not be able to stay in business. At the same time there are reasons not to send out the entire $100 billion now. The virus will certainly continue to be with us, although there is uncertainty about how much the virus will spread in the future. You therefore have to decide *how much of the $100 billion to send out immediately* (in reality the Administration started sending out money the very next week after the bill was signed into law) and how much to hold back for future spread. You believe that there will likely be subsequent appropriations for health care providers – and in fact there were – but you don't know the magnitude or the restrictions that will come with those appropriations. Also, the more you send to hospitals immediately, the greater the pressure will be to favor other providers on subsequent round(s).**

**You also have to decide *how to deal with the uneven geographic spread of the virus* as of late March 2020. New York City, New Jersey, and some parts of Connecticut were especially hard hit, but there were other hot spots as well such as Detroit, Chicago, Boston, and New Orleans. Because there was no random testing, however, you have no data on the actual prevalence of the virus. You do have mortality data, but they are suspect, since some jurisdictions counted probable Covid deaths in their totals and others didn't. The only individual hospital data you have in hand are: a) Claims from Traditional Medicare patients, and as of late March 2020, they are only complete through roughly the end of calendar 2019, or pre-pandemic (hospitals don't file all claims right away and more complex, higher cost claims tend to be more delayed); and b) 2018 Medicare cost reports that hospitals filed, which give their occupied beds, total cost of operations, and mix of payers. Because of these data limitations, you will want to compensate in future rounds of funding for what you would have done had more complete data been available. To do that, however, you will need to establish a data portal, where hospitals can report and attest to any information that you will expect to use in allocating future funds among individual hospitals. *What information would you ask hospitals to provide*? This improvement in the data you will have available also bears on how much of the $100 billion to allocate immediately.**

**The following five readings deal with the cost and benefit of American medical care:**

**Alan M. Garber and Jonathan Skinner, "Is American Health Care Uniquely Inefficient?" Journal of Economic Perspectives, 22(4), Fall 2008, pp. 27-50. Suggests US health care is not on the flat-of-the-curve (or even past it), as many non-economists infer from the US's lower life expectancy and higher spending, but is instead inside the production possibility frontier, a point also made in the slides for this class. More on this point in Classes 16, 17, and 18 on quality of care.**
**http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.22.4.27**

**Irene Papanicolas, Liana R. Woskie, and Ashish K. Jha, "Health Care Spending in the United States and Other High Income Countries," JAMA, March 13, 2018, 319(10):1024-39. They point to unit prices and secondarily to administrative cost as causes of the relatively high US spending. More on the latter in Class 11. https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2674671**

**Katherine Baicker and Amitabh Chandra, "Challenges in Understanding Differences in Health Care Spending Between the United States and Other High-Income Countries," JAMA, March 13, 2018, 319(10):986-7. An editorial on Papanicolas, et al., outlining the major objections to Papanicolas' et al.'s conclusions from an economist's perspective. https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2674648 The editors of JAMA clearly thought Papanicolas, et al. was an important paper, since they ran 3 additional editorials on the paper, from Parente, Emanuel, and themselves. Although the first two in particular are worth reading, in the interests of keeping the required reading down, they are Optional.**

**David M. Cutler, Sanjay Vijan, and Allison B. Rosen, "The Value of Medical Spending in the United States, 1960-2000," New England Journal of Medicine, 355(9), August 31, 2006, pp. 920-7.This paper makes the case that the benefits from the increased US spending on medical care in the last half of the 20th century were worth it on the basis of reductions in mortality, even without accounting for any gains in morbidity, though less so for the elderly. It is easy to become confused between two ideas: a) there is inefficiency in the production of health care (i.e., we are inside the production possibility frontier a la Garber and Skinner), but b) increases in health care spending may have been worth it. The first is a statement about the level of spending at a point in time, and the second is a statement about the change over time, so both may be true. http://www.nejm.org/doi/pdf/10.1056/NEJMsa054744 If you want, you can download a pdf of New England Journal papers by clicking on the down arrow icon to the left of the article.**

**Victor R. Fuchs, "Health Care Policy After the COVID-19 Pandemic," JAMA, published on line, June 12, 2020. Describes several issues in reforming the US health care system. I will give you a chance to discuss his ideas with your classmates during the class. https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2767352**

**You do not have to have read the following to understand much of the material for the first few class sessions, but I have assigned it for Class 1 not only because it serves as background for many parts of the course but also because some of the early material in the course anticipates later material, and this chapter introduces some of that later material. As a result, if you read this chapter now you will better understand the course as it unfolds.**

**David M. Cutler and Richard J. Zeckhauser, "The Anatomy of Health Insurance," in Handbook of Health Economics, eds., Anthony J. Culyer and Joseph P. Newhouse; Amsterdam: North-Holland, 2000 http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S1574006400801705. This chapter is an excellent introduction to and summary of the economics of health care financing. It is relevant to**

**many parts of the course, although I do not work through the chapter in this or in subsequent classes. The chapter uses the calculus in some places; for those of you whose calculus is rusty, keep reading; the authors mostly explain verbally what they are doing.**

OPTIONAL:

Henry J. Aaron and Paul B. Ginsburg, "Is Health Spending Excessive? If So, What Can We Do About It?" Health Affairs, September/October 2009, 28(5):1260-75. An overview of the cost issue. Their Table 2 is in the same spirit as the slide that compares the excess of US health care cost growth over GDP growth to the excess in other countries. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/5/1260.abstract

Margaret Kyle and Heidi Williams, "Is American Health Care Uniquely Inefficient? Evidence from Prescription Drugs," American Economic Review, May 2017, 107(5):486-90. Finds that lower quality drugs diffuse more in the US than in four other countries, supporting the Garber and Skinner claim that the US health care system is uniquely inefficient. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.p20171086

Victor R. Fuchs, "Major Trends in the U.S. Health Economy since 1950," New England Journal of Medicine, March 15, 2012, 366(11):973-7. A historical (since 1950) retrospective, written for the 200th anniversary of the New England Journal by the doyen of American health economists. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1200478

Sheila Smith, Joseph P. Newhouse, and Mark Freeland, "Income, Insurance, and Technology," Health Affairs, September/October 2009, 28(5):1276-84. Tries to quantitatively assess the factors driving the growth in cost. This paper updates an earlier paper of mine with seventeen new years of data and an explicit accounting for the endogeneity of technological change. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/5/1276.abstract

Victor R. Fuchs, "Eliminating 'Waste' in Health Care," JAMA, December 9, 2009, 302(22):2481-2. Economists and clinicians define waste differently – but the economists' definition is exceedingly hard to implement. You should think about why this is. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/302/22/2481.full.pdf

Katherine Baicker, Mark Shepard, and Jonathan Skinner, "Public Financing of the Medicare Program Will Make Its Uniform Structure Increasingly Costly to Sustain," Health Affairs, May 2013, 32(5):882-90. A non-technical summary of a model that calculates the welfare loss from increased taxes to finance the higher future cost of Medicare. It uses the size of this welfare loss to argue for coverage of basic medical services and redistribution in other forms. This paper builds on more technical work by the authors (see their reference 19 and the immediately following publication by two of the three authors).

Katherine Baicker and Jonathan Skinner, "Health Care Spending Growth and the Future of U.S. Tax Rates," in Tax Policy and the Economy," ed. Jeffrey R. Brown, Chicago: University of Chicago Press, 2011. To finance CBO's then projected federal health care spending top marginal tax rates could rise to 70% by 2060; deadweight loss is $1.48 per dollar collected and GDP declines (relative to trend) 11%. Importantly, however, CBO's projected health care spending has declined markedly since 2011 and therefore so have the required tax rates and the deadweight loss; see the slides for this class. http://www.nber.org.ezp-prod1.hul.harvard.edu/papers/w16772

David M. Cutler, Your Money or Your Life: Strong Medicine for America's Health Care System; New York: Oxford University Press, 2004. A book length version of the Cutler, et al. NEJM article on the required list. I recommend the entire book; it is optional because of the length of the reading list, but if you are so inclined, the book itself is short (123 pages), is written for a general audience, and is highly readable. The introduction and Chapters 1-6 are the most relevant to the material in this first class, but the remainder is the book is relevant to other parts of the course.

David M. Cutler, The Quality Cure; Berkeley: University of California Press, 2014. Another short, highly readable book by Cutler; this one makes the case that eliminating waste in the American system could buy around two decades of cost growth in line with GDP growth. Implicitly, however, that has been true for a long time; the issue is whether the share of GDP going to health care has risen to a level at which actions to reduce cost growth are likely to be implemented and if so the degree to which those actions will successfully target waste. Much of the rest of the course bears on that issue.

M. Gregg Bloche, "Beyond the 'R Word'? Medicine's New Frugality," New England Journal of Medicine, May 24, 2012, 366(21):1951-3. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1203521 Although reducing rents will reduce cost, once – or if – rents are taken out (and any services with negative benefits eliminated) reducing the rate of growth of cost ultimately means not giving some persons some medical services with positive benefits, or, more precisely, doing more of that than is done now. Cutler's book The Quality Cure argues that "ultimately" could be about two decades off, however. Some, perhaps much, of the public still believes that cost should not be a factor in determining medical treatment, at least judging from the traction that the words "rationing health care" get in the public debate, but accounting for cost is inevitable given that the rate of growth must at some point come down from historical levels. The key issue is really the mechanisms that are used to ration, which in turn determine who gets what medical services. The mechanisms that are used to ration are a key issue in every country. The Covid-19 pandemic has spurred some public discussion of rationing ventilators, but if there are more patients needing ventilators than there are ventilators, the rationing must be explicit.

The following are two papers supplement the Papanicolas, et al. paper on what might account for differences in the level of spending between the US and the rest of the world.

David M. Cutler and Dan P. Ly, "The (Paper)Work of Medicine: Understanding

International Medical Costs," Journal of Economic Perspectives, Spring 2011, 25(2):3-26. Similar to Papanicolas, et al. this paper focuses on factor prices and administrative cost in the US relative to elsewhere. Two of the figures are in the slides. We will cover administrative cost in some detail in Class 11. http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.2.3

Miriam J. Laugesen and Sherry A. Glied, "Higher Fees Paid To US Physicians Drive Higher Spending For Physician Services Compared To Other Countries," Health Affairs, September 2011, 30(9):1647-56. The title gives the punch line. We will take up physician reimbursement in Class 6. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/30/9/1647

Nadine Ketel, Edwin Leuven, Hessel Oosterbeek, and Bas van der Klaauw, "The Returns to Medical School: Evidence from Admission Lotteries," American Economic Journal: Applied Economics, April 2016, 8(2):225-54. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/app.20140506 These authors exploit a lottery for medical school admissions in the Netherlands and show substantial rents in Dutch physician incomes, i.e., much higher earnings for those winning the lottery and gaining admissions to medical school than in their next best occupation. Thus, the paper confirms the standard economic intuition that limited entry, which is present in many occupations in many countries, not just the US and not just health care, leads to rents. The same authors have a similar article with a similar finding about dentists in the Netherlands, who also participate in a lottery to gain admission to dental school, in the January 2019 Journal of Health Economics. https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629618302881

Victor R. Fuchs and John B. Shoven, "Funding Health Care for All Americans." An overview of financing options for health care. The Fuchs-Emanuel plan that they refer to in the latter part of this paper was a proposal to give everyone a health insurance voucher and have them buy insurance through an exchange, which anticipated the ACA's provisions for those without employer-based insurance (and for that matter earlier Republican proposals for Medicare). This paper is on the reading list, however, because of its lucid explanation of the various financing options for health care. http://www.fresh-thinking.org/docs/workshop_071018/FundingHealthCareForAllAmericans-AnEconomicPerspective.pdf

Martin S. Feldstein, "The Effect of Taxes on Efficiency and Growth," Cambridge, MA: NBER Working Paper 12201, May 2006. A non-technical paper that quantifies the inefficiencies induced by the American tax system. For those of you that want to read something on this subject but have not taken a public finance course, this would be a good choice. http://papers.nber.org.ezp-prod1.hul.harvard.edu/papers/w12201

Samuel Preston and Jessica Ho, "Low Life Expectancy in the United States: Is the Health Care System at Fault?" University of Pennsylvania Population Studies Center Working Paper Series, http://repository.upenn.edu/cgi/viewcontent.cgi?article=1012&context=psc_working_papers This paper is addressed to the many people

who believe that the US medical care system not only spends more, which is not controversial, but also delivers less, with the "delivers less" part largely, if not entirely, based on comparative mortality data. For those who prefer a short version, see the *New York Times* story http://query.nytimes.com/gst/fullpage.html?res=9902E7DE103DF931A1575AC0A96F9C8B63&sec=&spon=&pagewanted=2.

## CLASSES 2 - 3: EMPLOYMENT-BASED INSURANCE AND THE LABOR MARKET; THE THEORY AND EMPIRICS OF THE DEMAND FOR MEDICAL CARE AND HEALTH INSURANCE

### CLASS 2 – EMPLOYMENT-BASED HEALTH INSURANCE AND THE LABOR MARKET; THE THEORY OF DEMAND FOR MEDICAL CARE SERVICES AND FOR HEALTH INSURANCE INCLUDING BEHAVIORAL ECONOMIC PERSPECTIVES; PREVENTION (September 9)

**Like Gaul, this class is in three parts. First, we finish the financing discussion that we began in Class 1 by taking up the incidence of employer-paid premiums and then drawing out some consequences for the labor market. The historical rate of increase in health care costs that we covered in Class 1 has been one - but certainly not the only - reason real cash wages have stagnated for several decades, a topic covered in the slides, and also one reason why the number of uninsured increased prior to the implementation of the ACA. (I will cover the ACA in detail in Class 10.) The slides take up how a mandate that employers offer health insurance to their employees, which was part of the ACA, likely affects the labor market; there is no reading assigned on this material, however.**

**Second, we take up the demand for medical care as a function of cost sharing in health insurance (cost sharing means how much the patient pays at the point of service, e.g., for a physician visit), with the limiting forms of cost sharing being no insurance and full insurance, meaning the person seeking care pays either everything or else pays nothing with insurance paying everything. The purpose of insurance is to reduce financial risk to the individual and smooth an income stream over time, but in doing so it generally changes individual actions. The economics literature refers to this phenomenon as moral hazard, a term it borrowed from the actuarial literature. In the health insurance context moral hazard usually refers to the increase in demand for medical care as individuals have more complete insurance, but it sometimes refers to a decreased effort by an individual to prevent illness, such as not exercising or not eating sensibly. Thus, the slides and reading also cover prevention.**

**The slides cover the standard theory of the demand for medical care and moral hazard; I did not assign any reading on this topic because it is simply the theory of the consumer that should be familiar to you from microeconomics course(s). The slides for the next class take up the empirical work on this topic, although the Baicker and Goldman paper (assigned for this class in order to somewhat balance out the reading load across classes) summarizes much of it. The next class also takes up demand for medical care through the eyes of behavioral economics and "value-based health insurance," but this class just uses the standard microeconomic theory in covering demand for care.**

**The amount of cost sharing varies across countries. In general, cost sharing is more important in low and middle income countries than in higher income countries. Moreover, in some low and middle income countries under-the-table payments, which add to cost sharing, may be de facto necessary to receive care, but these are rarely found in the US or northern European countries. Somewhat related analytically to under-the-table payments is balance billing, whereby the provider, usually the physician, is allowed to bill the patient for amounts in addition to the prescribed cost sharing in the insurance contract. The Class 6 Optional reading has one reading on balance billing. On the whole, balance billing isn't very important in the US. It is limited by law in Medicare and Medicaid. In commercial insurance it plays no role for "in-network" services ("in-network" means the patient pays less to use specific physicians or providers that are in the insurer's network, more on that in Class 18), but it is important for out-of-network services (meaning providers who are not part of the insurer's network), including so-called "surprise bills." We will take up issues around out-of-network services and surprise bills in Class 18.**

**Third, this class covers the demand for insurance, which from an economic point of view is a demand for risk reduction or for smoothing over time the resources available to an individual or household for consumption. The tradeoff between the gain from risk reduction and the efficiency loss from moral hazard is sometimes referred to as Zeckhauser's dilemma after his classic 1970 paper (Optional reading). In covering the demand for insurance I include some material from the behavioral economics literature showing that consumer behavior is not entirely consistent with the standard theory of maximizing expected utility.**

**I have included two short papers as required reading that are in the domain of demand for insurance. One covers prevention, which from an economic point of view can be seen as a form of insurance. Insurance, however, is not always welfare enhancing, and, as the Cohen, et al. paper describes, in a majority of cases clinical preventive measures are not.**

**A second short empirical paper addresses a frequent claim about medical bills being a major cause of bankruptcy and also illustrates an important methodological point.**

**Finally, the slides for this class also cover the important distinction between positive and normative economics and key challenges in applying normative economics to medical care. Make sure you understand the distinction between positive and normative economics. Normative economics has challenges when behavioral biases are present. These biases mean the standard demand curve should not be given the normative significance that standard welfare economics gives it. The final slides in the slide deck touch on some of these behavioral biases, including loss aversion and overweighting small probabilities and underweighting large ones. The material in this class just touches on the challenges of applying standard normative economics to medical care; I will touch on it again in Class 7 when we discuss the market for health insurance; see especially the Beshears, et al. paper for Class 7, but at this point in time there is no settled answer to how to apply normative economics given behavioral biases. My personal view is the somewhat agnostic position that Bernheim and Rangel take in the Optional reading, but I advise only those of you who are both interested in the issue and**

**have a strong economics background to take it up. The notions of nudges or liberal paternalism, however, fit here, as does value-based health insurance.**

**Lawrence H. Summers, "Some Simple Economics of Mandated Benefits," American Economic Review, 79(2): 177-183, May 1989. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/1827753?seq=1#page_can_tab_contents Covers the basic economics of the incidence of employer paid insurance premiums, irrespective of whether they are mandatory or voluntary. Incidence refers to who ultimately pays a tax or pays for a mandate; it is one of the hardest economic concepts for non-economists to grasp. Although the notion that employees ultimately bear all or most of the cost of employer-paid premiums is almost universally accepted by economists (but often not by non-economists, including the Supreme Court majority in the Sibelius vs. Hobby Lobby case), the slides note some important caveats and draw out some implications of the theory.**

**Katherine Baicker and Dana Goldman, "Patient Cost Sharing and Health Care Spending Growth," Journal of Economic Perspectives, Spring 2011, 25(2):47-68. This paper has a misleading title, because it has little to do with the relationship between cost sharing and spending growth but a lot to do with the relationship between cost sharing and the level of spending. It is on the reading list because it is a good review of the empirical cost sharing literature. The slides for this class do not cover this empirical material, which we will cover in Class 3. If you want, you could put this reading off until the next class, but be warned that that class has a long reading list. http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.2.47**

**Joshua T. Cohen, Peter J. Neumann, and Milton C. Weinstein, "Does Preventive Care Save Money? Health Economics and the Presidential Candidates," New England Journal of Medicine, February 14, 2008, 358(7):661-663. http://content.nejm.org.ezp-prod1.hul.harvard.edu/cgi/reprint/358/7/661.pdf This paper presents the health policy analysts', as opposed to the general public's, view of how public policy should approach preventive care, namely that the case for preventive services should not be that they save money, but rather that they generally improve health - although in some cases they neither save money nor improve health. The ACA, however, shows the political power of the general public's view in its provision to override the fall 2009 recommendations of the US Preventive Services Task Force (USPSTF) on breast and cervical cancer screening (the USPSTF suggested women between 40-50 not at high risk need not have annual screening and women over 50 need it only biannually).** Related to this topic is the reaction of the public to the USPSTF's fall 2011 recommendation against the Prostate Specific Antigen (PSA) test for prostate cancer. If you want something more, there is a short discussion of the 2009 Task Force recommendations that explains false positives at http://www.nytimes.com/2009/12/20/business/20view.html?adxnnl=1&hpw=&adxnnlx=1261314342-1pI1E0YZlZtkh/RiLmbQxg and the 2011 Task force recommendations at http://www.nytimes.com/2011/10/07/health/07prostate.html?scp=2&sq=psa%20test%20harris&st=cse , but these latter two readings are Optional. And if you want something to show skeptics who won't read a journal article, you can refer them to Aaron Carroll, "Preventive Care Saves Money? Sorry, It's Too Good to be True," New York Times, January 29, 2018, https://www.nytimes.com/2018/01/29/upshot/preventive-health-care-costs.html?em_pos=small&emc=edit_up_20180129&nl=upshot&nl_art=0&nlid=32431973&ref=headline&te=1

**Carlos Dobkin, Amy Finkelstein, Raymond Kluender, and Matthew J. Notowidigdo, "Myth and Measurement – The Case of Medical Bankruptcies," New England Journal of Medicine, March 22, 2018, 378(12):1076-8.**
**http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1716604 I included this paper mainly for its methodological point. Substantively it refutes the common claim that out-of-pocket medical bills are a major cause of personal bankruptcies.**

**Benjamin Handel and Joshua Schwartzstein, "Frictions or Mental Gaps: What's Behind the Information We (Don't) Use and When Do We Care?," Journal of Economic Perspectives, Winter 2018, 32(1):155-78. A treatment of why consumers fail to optimize (in the sense of experienced utility, see the slides), as standard welfare economics assumes. They offer many health-related examples from both health insurance and medical care.**
**https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.32.1.155**

OPTIONAL:

*Health Insurance and the Labor Market*

Almost 60 percent of non-elderly Americans obtain their health insurance through their place of employment or their spouse's place of employment, and around a quarter of the elderly with Traditional Medicare have supplementary insurance through their prior employer. (Some additional Medicare beneficiaries with Medicare Advantage also receive that through their prior employer.) Prior to the ACA, employment-based insurance had consequences not only for who pays the costs of health insurance (i.e., Summers, on the required list) but also for the efficiency with which the labor market operated, especially the phenomenon of "job lock," which refers to workers not moving to jobs that they would otherwise move to because doing so would entail a change in their health insurance. (There was also "marriage lock" for similar reasons.) For material on job lock from employment-based health insurance, see the Gruber chapter in the *Handbook of Health Economics* (volume 1), which is on the supplementary reading list, and the literature cited there. The establishment of exchanges/marketplaces has presumably diminished job lock, although it is certainly the case for any given worker that his or her employer policy may be more generous than the policy that can be bought in the exchange, so job lock is still relevant.

The slide with the Kolstad-Kowalski data on wages in Massachusetts is by far the strongest empirical evidence I know of on the incidence of employer paid premiums; there are some figures from a preliminary version of this paper in the slides, and the final version of their paper is published as Jonathan T. Kolstad and Amanda E. Kowalski, "Mandate-based Health Reform and the Labor Market: Evidence from the Massachusetts Reform," Journal of Health Economics, 2016, 47:81-106. I use the data from the earlier version in the slides because it is not materially different from the final but is easier to grasp than the figures in the journal article. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629616000278/1-s2.0-S0167629616000278-main.pdf?

_tid=3ad9f672-48f2-11e6-880a-00000aab0f01&acdnat=1468411768_c9616a11f5013785101ad4d1bb037c7d

One other paper along similar lines is:

Katherine Baicker and Amitabh Chandra, "The Labor Market Effects of Rising Health Insurance Premiums," Journal of Labor Economics, July 2006, 24(3):609-634.http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/10.1086/505049

Jeffrey Liebman and Richard J. Zeckhauser, "Simple Humans, Complex Insurance, Subtle Subsidies," paper prepared for a Tax Policy Center conference, February 24, 2008. http://www.taxpolicycenter.org/tpccontent/healthconference_zeckhauser.pdf. This paper was published in Using Taxes to Reform Health Insurance, eds. Henry J. Aaron and Leonard E. Burman, eds., Washington: Brookings, 2009, but the contents of that book are not on line. This paper is mainly about how insights from behavioral economics might affect health policy. I have included this paper because the concluding section has positive comments on the role of the employer in structuring the market for health insurance in contrast to the relatively large literature on job lock that is negative on employment-based insurance. Liebman and Zeckhauser's comments are relevant to the debate over whether the US should move away from employment-based insurance toward individually purchased policies, a debate that has continued with the implementation of exchanges/marketplaces.

Leemore Dafny, Kate Ho, and Mauricio Varela, "Let Them Have Choice: Gains from Shifting Away from Employer-Sponsored Health Insurance and Toward an Individual Exchange," American Economic Journal: Economic Policy, February 2013, 5(1):32-58. A paper to contrast with Liebman and Zeckhauser. Dafny, et al. estimate non-trivial welfare gains from accommodating heterogeneous preferences through allowing individual choice of plan rather than having insurance choices constrained by employers. They do not, however, consider behavioral biases nor do they consider potential difficulties for adjusting for selection effects in an individual market (risk adjustment). More in this in Classes 7 and 8, especially the Ericson and Sydnor paper in the Class 8 Optional reading, which reaches the opposite conclusion from Dafny, et al. The behavioral biases of consumers presumptively do not apply to employers making choices. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles.php?doi=10.1257/pol.5.1.32

Because of the many two-worker families, it is advantageous for each employer to provide less subsidy for dependent insurance, so that the family elects dependent coverage from the other employer. Sometimes this takes the form of a bonus for not insuring dependents through one's own employer. Some data are consistent with this view: The 2018 Kaiser-HRET Survey of Employer Health Benefits found that covered workers on average contributed 18% of the premium for an individual policy but 29% for a family policy (Figure 6.1). For a model of dependent health insurance as a ruinous game, see: David Dranove, Kathryn Spier, and Laurence Baker, "Competition Among Employers Offering Health Insurance," Journal of Health Economics, January 2000, 19(1): 121-140. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629699000077

In the ACA debate the Wyden-Bennett bill was an approach that would have moved away from employment-based insurance, but it did not attract much political support. Although the lack of support may have partly reflected the substantive arguments, it no doubt also reflected the political difficulty of changing from employment-based insurance because of the amount of redistribution it would entail and, if a public program were the alternative, the amount of money that would be shifted to the government budget and would need to be raised through taxes (see the discussion of single payer in Vermont in Class 11). Furthermore, because of worker investment in firm-specific capital (meaning the worker is more productive at his or her current firm and therefore can earn more than at other firms), it is not clear that workers would promptly receive in wages what firms now pay in health insurance premiums (even if the incidence is mostly on workers in long run equilibrium), so the short-run redistribution that a move from employment-based insurance would cause is not easy to predict. Nonetheless, some employment-based insurance has evolved toward a defined contribution model, meaning the employer gives the employee a specified dollar amount as a voucher to purchase a health insurance plan among a limited set of options; this is, in fact, Harvard University's model for its employees.

That the incidence of employer paid premiums is on workers as a group is nearly universally accepted by economists, as noted above, but the issue of incidence *within* the work group is not resolved. There is not much literature on this issue and what literature there is conflicting, as the following papers illustrate.

Frank A. Scott, Mark C. Berger, and John E. Garen, "Do Health Insurance and Pension Costs Reduce the Job Opportunities of Older Workers?" Industrial & Labor Relations Review, July 1995, 48 (4), pp. 775-91. This is one of the few papers in the literature that bears on the incidence of employer paid health insurance premiums *within* a firm. It shows that companies that subsidize health insurance as a fringe benefit are less likely to hire 55-64 year old workers than companies that do not offer health insurance, as are companies with more rather than less health generous insurance plans, suggesting that the incidence within the work group is *not* age-specific. This result contrasts with the Bhattacharya and Bundorf paper below as well as with Gruber papers on the Supplementary list which suggest subgroup-specific incidence.
http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/2524356

Benjamin Cowan and Benjamin Schwab, "Employer-Sponsored Health Insurance and the Gender Wage Gap," Journal of Health Economics, January 2016, 45:103-14. Employer health insurance rates are not gender rated, but during their prime working years women have higher health care spending than men. This paper finds that the shift of this higher spending to female wages accounts for about 10% of the gender wage gap.
http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629615001095

Jay Bhattacharya and M. Kate Bundorf, "The Incidence of the Health Care Cost of Obesity," Journal of Health Economics, May 2009, 28(3):649-58. Shows that the

incremental health care costs of obesity appear to be passed on in the form of lower cash wages to obese workers, because obese workers without health insurance do not show a wage difference with non-obese workers, whereas obese workers with health insurance do. In effect, the cost of health insurance accounts for a non-trivial amount of the apparent wage discrimination faced by obese females. They do not distinguish self-insured firms from non-self-insured firms, however; whereas self-insured firms, who cover about half of American workers, pay any health costs of obesity, non-self-insured firms do not except for any indirect effect through experience rating, which is muted for many non-self-insured firms. Also workers are almost certainly of varying productivity, and it could be that the firms with health insurance are more selective in hiring obese females than are firms without health insurance. In other words, the adjustment the authors observe could be on the hiring margin, not the wage margin. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629609000113/1-s2.0-S0167629609000113-main.pdf?_tid=5fe5d46c-a638-11e4-ba78-00000aab0f01&acdnat=1422372358_54537a184b3c89bb1fe38d36f231236d

Workers 65 years of age and older face potential discrimination in the labor market because of a Medicare requirement that employer insurance is the primary payer and Medicare is the secondary payer for workers who are eligible for Medicare but who are also eligible for health insurance from their employer (provided the employer has 20 or more employees). For example, Harvard is the primary source of insurance for professors who are 65 or older and are still active employees. The requirement that the employer's insurance is primary and Medicare is secondary means that the employer's insurance pays health care bills first. This provision of the law was adopted in 1983 to prevent crowdout, i.e., employers dropping coverage of workers age 65 and over and telling them to use Medicare. Although this provision means that older workers with employer-based insurance pay payroll taxes on their earnings to finance Medicare with little or no offsetting benefit, many current workers over 65 have gotten a good deal from Medicare, in terms of their lifetime taxes they have paid relative to their expected lifetime benefit. Nonetheless, the implicit tax on older workers' earnings from this treatment by Medicare is roughly 15-25% at ages 65-74 for men and 20-30% for women, thus discouraging work at older ages. See Gopi Shah Goda, John B. Shoven, and Sita Nataraj Slavov, "Implicit Taxes on Work from Social Security and Medicare," in Tax Policy and the Economy, ed. Jeffrey R. Brown, Chicago: University of Chicago Press, 2011. An earlier version of their paper is available as http://www.nber.org.ezp-prod1.hul.harvard.edu/papers/w13383.

*Moral Hazard and Welfare Economics*

The following two papers expand the usual presentation of demand and moral hazard to consider multiple goods, which is the context for preventive services. The usual presentation of moral hazard, which treats just one good, can be found in any of the textbooks listed at the beginning of the syllabus, and the slides for this class go over it as well.

Randall P. Ellis and Willard G. Manning, "Optimal Health Insurance for Prevention and

Treatment," Journal of Health Economics, December 2007, 26(6):1128-50 is a formal treatment of the standard theory of demand that accounts for both preventive and treatment services. The main result is that preventive services should have less cost sharing than treatment services, the intuition for which is that the individual ignores savings on treatment costs accruing to others in the insurance pool when deciding on the amount of preventive care. The theory is consistent with the ACA's mandate of no cost sharing for preventive service. Ellis and Manning also show that if there are uncompensated monetary losses of treatment, such as time and travel, insurance rates on insured treatment services should be lower than they otherwise would be. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629607000598

Dana Goldman and Tomas J. Philipson, "Integrated Insurance Design in the Presence of Multiple Medical Technologies," American Economic Review, May 2007, 97(2): 427-432. An argument similar to that of Ellis-Manning and the Chernew, et al. argument for value-based insurance design taken up below. Goldman and Philipson show that if two services are substitutes, say hospital care and drugs (for example, more hospitalization if I don't take my drugs), the cost sharing on drugs should be lower than if the two services were unrelated. http://www.ingentaconnect.com.ezp-prod1.hul.harvard.edu/content/aea/aer/2007/00000097/00000002/art00075

The slides discuss the normative assumptions needed to treat consumer and producer surplus as a measure of welfare. One frequently mentioned concern about applying standard welfare economics in the health policy domain is the inability of the consumer/patient to judge the advice of the physician. This type of problem is not limited to health care, and the type of good or service where it arises is called a credence good. For more on credence goods (but this article is long and somewhat hard going), see Uwe Dulleck and Rudolf Kerschbamer, "On Doctors, Mechanics, and Computer Specialists: The Economics of Credence Goods," Journal of Economic Literature, March 2006, 44(1):5-42. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/002205106776162717

Lisa Rosenbaum, "Invisible Risks, Emotional Choices – Mammography and Medical Decision Making," New England Journal of Medicine, October 16, 2014, 371(16):1549-52. An excellent description of why it is hard for the general public to assess risk as experts do, which is related to the common difficulty in processing probabilities. This paper serves as context for the Congressional reaction to guidelines around age-related screening. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMms1409003

Richard Zeckhauser, "Medical Insurance: A Case Study of the Tradeoff Between Risk Sharing and Moral Hazard," Journal of Economic Theory, March 1970, 2(1):10-26. A classic paper pointing on the welfare gain and loss from insurance. https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/journal/journal-of-economic-theory/vol/2/issue/1

Victor R. Fuchs, "The Doctor's Dilemma – What Is Appropriate Care?" New England Journal of Medicine, August 11, 2011, 365(7):585-7. We will go more into issue of

appropriateness, the main point of this short paper, in Class 17, but it also fits in this class because it discusses the skewness of medical spending in the context of reducing moral hazard. Fuchs makes the point that the skewness of medical spending together with a cap on out-of-pocket spending limits the use of cost sharing, but some go further and say that those who go over the cap are unaffected by cost sharing. Why is this not the case? A paper written for economists rather than physicians that both makes and elaborates on Fuchs' point that the benefits of innovation vary across patients is Amitabh Chandra and Jonathan Skinner, "Technology Growth and Expenditure Growth in Health Care," Journal of Economic Literature, September 2012, 50(3): 645-80. Because of its length, however, this paper is Optional. We will also come back to that point in Class 17. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/jel.50.3.645

*Demand for Insurance*

The following reading is a comprehensive review of the demand for insurance, both theoretical and empirical. I have made it Optional, however, because the theory is formally derived, meaning those with weak math backgrounds will likely struggle:

Thomas G. McGuire, "Demand for Health Insurance," in Handbook of Health Economics, vol. 2, 2012; Amsterdam: North Holland, 2012, eds. Mark V. Pauly, Thomas G. McGuire, and Pedro Pita Barros. This chapter also updates the Cutler and Zeckhauser chapter in volume 1 of the Handbook, which was assigned for Class 1. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science?_ob=TitleSrchURL&_method=submitForm&sterm=Handbook%20of%20Health%20Economics&_acct=C000014438&_version=1&_userid=209690&md5=f46d423af8c0c93de3d0773e6328d322.

For those of you that have the economics background to understand it, the following work by Chetty and Szeidl explains why consumers may appear more risk averse to intermediate losses than standard theory would predict. I give the intuition in the slide deck ("Insurance 201"). This insight may partially explain consumers' aversion to high deductible plans unless they are funded by the employer (i.e., unless the employer makes a lump sum transfer that can be used for out-of-pocket health spending and may carry over with interest to the following year). The behavioral economics concept of loss aversion, however, is another (not mutually exclusive) explanation of why consumers don't like high deductible plans.

Raj Chetty and Adam Szeidl, "Consumption Commitments and Risk Preferences," Quarterly Journal of Economics, May 2007, 122(2):831-74. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/122/2/831.full.pdf+html

Carlos Dobkin, Amy Finkelstein, Raymond Kluender, and Matthew J. Notowidigdo, "The Economic Consequences of Hospital Admissions," American Economic Review, February 2018, 108(2):308-52. The article on which the New England Journal required paper by these same authors is based, but this article makes the important point, which is just mentioned in passing in the New England Journal paper, that earning losses following

hospitalization are much larger than out-of-pocket medical costs. This suggests that extending disability insurance, or protection against negative income shocks, is at least as important for policy as further extending health insurance. If you don't have time to read the paper, you can get its main idea from the New York *Times*, https://www.nytimes.com/2018/03/21/upshot/getting-sick-is-really-expensive.html

*Behavioral Biases in the Demand for Insurance*

Some of the last slides refer to prospect theory and behavioral economics to explain many consumers' seeming aversion to moderate amounts of cost sharing. If you want to read a good exposition of prospect theory, see Nicholas Barberis, "Thirty Years of Prospect Theory in Economics: A Review and Assessment," Journal of Economic Perspectives, Winter 2013, 27(1):173-96.

A less technical and in my view quite enjoyable read on behavioral economics is Richard Thaler's Nobel Prize address. Richard Thaler, "From Cashews to Nudges: The Evolution of Behavioral Economics," American Economic Review, June 2018, 108(6):1265-87. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.108.6.1265

A lucid book that is written for a non-technical audience and covers much of the same ground as Barberis by one of the originators of behavioral economics is Daniel Kahneman, Thinking, Fast and Slow, New York: Farrar, Straus, and Giroux, 2011. I highly recommend the Kahneman book. A better known book may be Michael Lewis, The Undoing Project: A Friendship That Changed Our Minds, New York: W.W. Norton, 2016, which is about Kahneman and his collaborator Amos Tversky. (Tversky, had he lived, would surely have shared the Nobel Prize in economics with Kahneman.) Although Lewis covers some of the substance of behavioral economics (in a highly readable way!), there is considerably more substance in Kahneman's book.

Amitabh Chandra, Benjamin Handel, and Joshua Schwartzstein, "Behavioral Economics and Health Care Markets," in Handbook of Behavioral Economics, vol. 2, pp 459-502, eds. B. Douglas Bernheim, Stefano DellaVigna, and David Laibson; Amsterdam: North-Holland, 2019.
https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/science/article/pii/S2352239918300241

B. Douglas Bernheim and Antonio Rangel, "Behavioral Hazard in Health Insurance," Quarterly Journal of Economics, February 2009, 124(1):51-104. Lays out when standard welfare economics can apply even if behavioral biases are present and offers some counsel for situations when it does not.
https://academic-oup-com.ezp-prod1.hul.harvard.edu/qje/article/124/1/51/1890374

*Prevention*

Joseph P. Newhouse, "An Ounce of Prevention." This paper, which is forthcoming in the Journal of Economic Perspectives, presents an economic view of prevention that contrasts with the general public's view. https://www.nber.org/papers/w27553.pdf

If you want a short piece on QALYs that analyzes some of their shortcomings for judging health benefit as well as the opposition to using them, see Peter J. Neumann, "What Next for QALYs?", JAMA, May 4, 2011, 305(17):1806-7. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/305/17/1806.short

*What Services Are Covered?*

Non-coverage of a medical service is the extreme form of cost sharing, which is why these papers appear in the cost-sharing section of the reading list, even though their main thrust differs from the other material in this section. All insurers, public and private, must determine whether new products and procedures will be covered. We will come at this problem somewhat obliquely in Class 19 since policy issues around outcomes research and comparative effectiveness frequently arise in this context.

Muriel R. Gillick, "Medicare Coverage for Technological Innovations – Time for New Criteria?" New England Journal of Medicine, 350(21), May 20, 2004, pp. 2199-2203. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsb032612 Describes three major Medicare coverage decisions. See also the editorial by Sean Tunis in the same issue. It has proven politically difficult for a US public insurance program to incorporate cost as a formal criterion in coverage decisions. As a side note, in the Medicare context coverage and reimbursement are distinct decisions such that a decision to reimburse at a low rate could effectively vitiate a decision to cover. I return to reimbursement of new technology in Class 5.

Mark B. McClellan and Sean R. Tunis, "Medicare Coverage of ICDs," New England Journal of Medicine, 352(3), January 20, 2005, pp. 222-224. ICDs are implantable cardioverter defibrillators to prevent sudden cardiac death; they cost about $30,000 per case at the time this paper was written. Medicare liberalized its coverage criteria in 2005 at an approximate cost of $3 billion, but the quid pro quo was that data were to be collected on effectiveness in subgroups in order to potentially sharpen the coverage decision. Medicare has followed this precedent in several subsequent coverage decisions. Keep this point in mind when we come to the discussion of randomized trials versus observational studies in Class 19. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp048354. Medicare coverage can be mandated by Congress (e.g., mammography for women between age 40 and 49), though coverage decisions are more commonly left to CMS.

**CLASS 3 - A VARIETY OF RESEARCH DESIGNS, WITH AN APPLICATION TO THE DEMAND FOR MEDICAL CARE (September 14)**

**The intent of this class is to review, and I hope improve, your understanding of the strengths and weaknesses of various research designs. Although the context is empirical studies in the literature on cost sharing, the methods that the following papers use are**

**found in many applied contexts. Thus, you can think of this class as partially fulfilling my goal of improving your ability to distinguish studies that use stronger and weaker methods.**

**One way to test your understanding is to critique the methods used in the readings for this class. The first paper below is a study that uses non-experimental (observational) methods and the second and third describe controlled experiments. (I will return to strengths and weaknesses of experimental and non-experimental studies in Class 19.) The second reading describes the RAND Health Insurance Experiment. Although it ended almost four decades ago, the RAND results are still taken in many quarters as the gold standard for the effects of cost sharing on both utilization and health outcomes and are still frequently referred to by all sides in debates over cost sharing. The third reading describes the Oregon Health Insurance Experiment, which is of more recent vintage and answers a different question than the RAND Experiment did. Specifically, whereas everyone in the RAND Experiment had an insurance plan that varied the amount of cost sharing, the Oregon Experiment looked at the consequences of being uninsured vs being eligible for the Oregon Medicaid program for adults without dependent children. The slides warn you to be prepared to discuss the differences in both the design and the results/conclusions of the RAND Experiment and the Oregon Experiment.**

**The slides also cover several applications of demand analysis, including the economics and politics of a catastrophic benefit in Medicare (no reading assigned) and Health Savings Accounts and Health Reimbursement Accounts (no reading assigned).**

**Anne Scitovsky and Nelda McCall, "Coinsurance and the Demand for Physician Services: Four Years Later," Social Security Bulletin, May 1977, 40:19-27. A very early study of the effect of varying copayment, and in my view one of the first to credibly establish that demand does respond to consumer incentives. Fifty years ago there was no consensus on that point. http://www.heinonline.org.ezp-prod1.hul.harvard.edu/HOL/Page?handle=hein.journals/ssbul40&collection=journals&set_as_cursor=0&men_tab=srchresults&id=349**

**Joseph P. Newhouse and the Insurance Experiment Group, Free for All? Lessons from the RAND Health Insurance Experiment, Harvard University Press, 1993, ch. 2, p. 41, chapter 11.**
**https://canvas.harvard.edu/courses/78138/files/10399506/preview**
**The slides go over some of the design issues of the RAND Experiment, and they are covered in more detail in chapter 2 of Free for All. Also, as a tie back to the theory of coinsurance in Class 2, think about how the Participation Incentive in the RAND Experiment should be treated theoretically. If you want to kill 15 minutes, RAND put together a video to commemorate the 40th anniversary of the RAND HIE; you might enjoy watching it, since it has clips from many of those who worked on the HIE, including me, plus some photos from many decades ago. https://www.rand.org/multimedia/video/2017/01/13/health-insurance-experiment-retrospective-40-years.html#the-rand-health-insurance-experiment-a-retrospective-at-40-years**

**Katherine Baicker, Sarah Taubman, Heidi Allen, Mira Bernstein, Jonathan Gruber, Joseph**

**P. Newhouse, Eric Schneider, Bill Wright, Alan Zaslavsky, Amy Finkelstein, and the Oregon Health Study Group, "The Oregon Experiment – Medicaid's Effects on Clinical Outcomes," New England Journal of Medicine, May 2, 2013, 368(18):1713-22. The Oregon Experiment showed that the expansion of Medicaid among adults with no dependent children reduced depression and improved self-rated health, but it found no statistically significant change in the biomarkers it measured (blood pressure, cholesterol, Hba1c). The RAND Experiment, however, did detect a main effect on blood pressure. Why do you think RAND, with a smaller sample and a less vulnerable population, found an effect while Oregon did not? (The slides also raise this issue.) You can find more design details of the Oregon Experiment in the Finkelstein, et al. paper on the Optional list, but I have not required that paper in order to keep the reading burden down.**
**http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa1212321**

**Benjamin D. Sommers, Katherine Baicker, and Arnold M. Epstein, "Mortality and Access to Care After State Medicaid Expansions," New England Journal of Medicine, September 13, 2012, 367(11):1025-34.**
**http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa1202099 Shows that access to care improved and, even more importantly, that mortality fell among states that expanded Medicaid to adults with no dependent children following the Affordable Care Act. The statistical methods in this paper will probably be beyond many of you; if so, just read it for the main results and the variation that is generating the estimated effect, which is called the variation that is "identifying" the effect. The slides cover a potential statistical issue with this study known as the ecological fallacy. There is another paper by Sommers, Long, and Baicker in the Optional reading that uses similar methods to look at the same question in the context of the insurance expansion in Massachusetts after 2006, again using counties as the unit of observation. It gets similar results as this required paper. Also in the Optional reading is another longer paper of Sommers that uses improved data to revisit the question the 2012 paper addresses, and reaches similar conclusions. Finally in the Optional reading there is a review of a number of studies, including many on this reading list, by Sommers, Gawande, and Baicker.**

**Niteesh K. Choudhry, Jerry Avorn, Robert J. Glynn, Elliott M. Antman, Sebastian Schneeweiss, Michele Toscano, Lonny Reisman, Joaquim Fernandes, Claire Spettell, Joy L. Lee, Raisa Levin, Troyen Brennan, and William H. Shrank, "Full Coverage for Preventive Medications after Myocardial Infarction," New England Journal of Medicine, December 1, 2011, 365(22):2088-97.**
**http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa1107913**
**This paper describes the MI FREEE trial, which tested "value-based" insurance design (VBID), a notion popularized by Mark Fendrick and Michael Chernew and described in the Chernew, et al. paper in the Optional reading. The basic idea of VBID is to promote adherence by lowering the price to the patient of efficacious medications or procedures in order to improve compliance and outcomes, reduce total medical care cost, and reduce financial risk to the patient. The paper reports the results of a randomized trial of the VBID concept in the context of medication following myocardial infarction ("heart attack"). For patients in the treatment group, drugs in the following four classes were free: statins, beta blockers, ACE inhibitors, and ARB's. The drugs in these classes are known from clinical**

**trials to be effective in reducing the likelihood of a subsequent heart attack. Patients were enrolled over a 33 month period and followed for at least 9 months. Adherence improved in the treatment group, some outcomes improved, and the increased cost of drugs roughly offset the decreased cost of hospitalization and physician treatment. Risk to the patient was reduced, both because the patient did not have to pay for drugs and because the cost of other medical treatment fell. Even with free drugs, however, adherence was poor, a result that replicates the result for preventive treatments in the RAND HIE (Free for All?, ch. 5, not required). Importantly, a later trial, described in Asch, et al. in the Optional reading, showed that if *both* patients and physicians rather than either alone received a financial incentive, adherence improved.**

**How does the intent of VBID fits with the concept of moral hazard?**

**A subsequent subgroup analysis of the MI FREEE data showed a large effect for non-whites and no effect for whites; for that subgroup analysis see Choudhry, et al. in the Optional reading. In general, however, analyses of effects in subgroups in clinical trials are discounted unless the subgroup analysis is prespecified before the analyst has seen the data from the trial, meaning the analyst announces before the trial he or she expects to see effects in one or more subgroups but not in others. Why do you think such analyses would be discounted unless they were prespecified? (It isn't clear if Choudhry, et al. prespecified their subgroup analysis, but since they did not explicitly say they did, I suspect they did not. In my view, in this type of situation it is incumbent on the authors to say if the subgroup analysis was prespecified or not. In any event, the default should be that it was not prespecified.) Publication of a trial in major medical journals now requires registration at clinicaltrials.gov and publication of trials in American Economics Association journals requires registration with the American Economics Association randomized controlled trial registry. Such registration requires pre-specifying an analysis plan.**

**Robert H. Brook, "Health Policy and Public Trust," JAMA, July 9, 2008, 300(2):211-3. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/cgi/reprint/300/2/211 This short editorial could also fit at the end of the course, but I put it here because one of Brook's three examples is the RAND Health Insurance Experiment, where he was the lead physician researcher. (The Rogers, et al. paper in the Optional reading for Class 4 is another one of his three examples.) By having you read this short paper, I hope you acquire a feel for the environment in which a policy researcher operates. If some of you manage policy research at some point in your career, I hope you will remember this paper. If you want to read more (but not too much more) along these lines, you can get a reprise of the main theme at Robert H. Brook, "Quality, Transparency, and the US Government," JAMA, April 1, 2009, 301:13:1377-8. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/301/13/1377.full**

OPTIONAL:

Joseph P. Newhouse and Sharon-Lise T. Normand, "Health Policy Trials," New England Journal of Medicine, June 1, 2017, 376(22):2160-7. This is a review of many design issues that arise in policy experiments; it uses the RAND and Oregon Experiments to illustrate. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMra1602774

Zarek C. Brot-Goldberg, Amitabh Chandra, Benjamin R. Handel, and Jonathan T. Kolstad, "What Does a Deductible Do? The Impact of Cost-Sharing on Health Care Prices, Quantities, and Spending Dynamics," Quarterly Journal of Economics, August 2017, 132(3):1261-1318.
https://academic-oup-com.ezp-prod1.hul.harvard.edu/qje/article/132/3/1261/3769421 A non-experimental study of the behavior of employees at a firm that moved all its employees, who previously had had free care, to a high deductible plan with a Health Savings Account. The degree of response was about half as large as in the RAND HIE, but that does not mean the response in RAND was seriously overstated because this firm was unusual in having very high income employees (median earnings were $125,000-$150,000) and response to price may be less among the very high income. Furthermore, it was only one firm. Like the RAND HIE all the response was in the quantity of services used; persons did not switch to lower unit cost providers. Also like the RAND HIE the employees at this firm were myopic in the region below the deductible, i.e., they showed no anticipatory effect that the marginal service would be free if they later exceeded the deductible. And like the RAND HIE, once they exceeded the deductible they consumed at the free plan rate, whereas a fully rational consumer would have consumed at a rate that exceeded the free plan rate, because medical care was in effect on sale only for the rest of the year, after which time the deductible would again be in force. These last findings are related to the question on the slide that asks: "Suppose there is a deductible, say $1,000, with 20% coinsurance above the deductible and a rational consumer is making her first physician visit that costs $200. Is $200 the "price" of the visit that should be in a regression equation to estimate demand?"

J. Frank Wharam, Fang Zhang, Emma M. Eggleston, Christine Y. Lu, Stephen Soumerai, and Dennis Ross-Degnan, "Diabetes Outpatient Care and Acute Complications Before and After High-Deductible Insurance Enrollment A Natural Experiment for Translation in Diabetes (NEXT-D) Study," JAMA Internal Medicine, March 2017, 177(3):359-68. Somewhat similar findings as the RAND HIE, this paper finds little effect of forced switches to a high deductible plan for the average employed person with diabetes, but there were more ED visits for preventable complications for the low income employed person.
https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jamainternalmedicine/fullarticle/2596008?resultClick=1
Another article from this group along the same lines is in Diabetes Care, May 2018.
https://care-diabetesjournals-org.ezp-prod1.hul.harvard.edu/content/diacare/41/5/940.full.pdf

David A. Asch, Andrea B. Troxel, Walter F. Stewart, Thomas D. Sequist, James B. Jones, AnneMarie G. Hirsch, Karen Hoffer, Jingsan Zhu, Wenli Wang, Amanda Hodlofski, Antonette B. Frasch, Mark G. Weiner, Darra D. Finnerty, Meredith B. Rosenthal, Kelsey Gangemi, and Kevin G. Volpp, "Effect of Financial Incentives to Physicians, Patients, or Both on Lipid Levels: A Randomized Clinical Trial," JAMA, November 10, 2015, 314(18):1926-35. Shows that financial incentives to patients or physicians alone did not reduce low density lipoprotein-cholesterol (LDL) among patients with high cardiovascular risk but that financial incentives to both did. In the arm of the trial where both physicians and patients got a financial incentive, patients achieved the LDL goal

about 10 percentage points more frequently.
http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2468891

Amitabh Chandra, Jonathan Gruber, and Robin McKnight, "The Impact of Patient Cost Sharing on the Poor: Evidence from Massachusetts," Journal of Health Economics, 2014, 33:57-66. https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/journal/journal-of-health-economics/vol/33/suppl/C Substantively this paper finds similar effects of cost sharing as the RAND Experiment, except it finds no evidence of effects on hospitalizations or emergency department (ED) use in a low income population. The null result for ED use differs from both RAND and Oregon. (Another paper by the same three authors that has similar methods is immediately below.) The authors use a difference-in-difference type design; one group of people had their copayments increased (those households with incomes and family sizes between 100% and 200% of the Federal Poverty Limit, or FPL). Some people in another group (those from 200%-300% of the FPL) also had their copayments increased while others in that group had them increased even more. Don't get bogged down in the econometrics of Generalized Linear Models in their estimation section; that is not my main point in putting this reading on the list. Focus instead on the variation in cost sharing that the authors use to generate their estimates of demand response. This variation is called "identification" in econometrics. How does the variation or identification that this study uses compare with the Scitovsky-Snyder study? A key question to ask about any empirical study is where the identification is coming from.

Amitabh Chandra, Jonathan Gruber, and Robin McKnight, "Patient Cost Sharing, Hospitalization Offsets, and the Design of Optimal Health Insurance for the Elderly," American Economic Review, March 2010, 100(1):193-213. This paper, based on a California sample, finds larger effects of cost sharing than the RAND Experiment and also large offset effects on other types of spending, which RAND did not find.
http://www.aeaweb.org.ezp-prod1.hul.harvard.edu/articles.php?doi=10.1257/aer.100.1.193
The authors make no attempt to reconcile the different results of this paper with their paper immediately above on Massachusetts, though one obvious difference is that this sample is elderly and the other is not.

Amal Trivedi, Husein Moloo, and Vincent Mor, "Increased Ambulatory Care Copayments and Hospitalizations among the Elderly," New England Journal of Medicine, January 28, 2010, 362(4):320-8. Shows that increased copayment led to fewer ambulatory visits and more hospitalizations among the elderly, consistent with the California Chandra, et al. paper just above, but not with the Massachusetts paper above it. What variation generates the results on the effects of cost sharing in this paper, that is, what is this paper's identification strategy? How do the authors generate their cost estimates? What is the methodological weakness with the cost estimates? http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa0904533

Benjamin D. Sommers, Sharon K. Long, and Katherine Baicker, "Changes in Mortality After Massachusetts Health Care Reform: A Quasi-Experimental Study," Annals of Internal Medicine, May 6, 2014, 160(9):585-93. Using methods very similar to the Sommers, et al. required paper, this paper finds an effect of the 2006 Massachusetts

reform, the model for the ACA, on mortality. Do not get bogged down in the details of the econometrics, but try to understand the basic design that generates their results. http://annals.org.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1867050&atab=10 But if you are up to speed on econometrics, you might note that although the authors carried out a standard correction for within-group clustering, their standard errors may be understated because of few clusters; see Peng Li and David T. Redden, "Small Sample Performance of Bias-Corrected Sandwich Estimators for Cluster-Randomized Trials with Binary Outcomes," Statistics in Medicine, 2015, 34:281-96. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1002/sim.6344/full This potential bias in the standard errors is less of a problem with their required NEJM paper because of a greater number of clusters.

Benjamin D. Sommers, Atul Gawande, and Katherine Baicker, "Health Insurance Coverage and Health — What the Recent Evidence Tells Us," New England Journal of Medicine, August 10, 2017, 377(6):586-93. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsb1706645 A review of several of the studies above along with some others. My reading of the literature is the same as that expressed by Sommers, et al. I have made this paper Optional because in this class I want you to focus more on the methods used in the various studies and the corresponding strength of the evidence than the substantive conclusions, which are the emphasis in this paper. Nonetheless, the conclusions are of first order importance to the policy debate over coverage. The issues this paper takes up are also of first order importance to Classes 9 and 10 on Medicaid and the ACA.

Benjamin D. Sommers, "State Medicaid Expansions and Mortality, Revisited: A Cost-Benefit Analysis," American Journal of Health Economics, Summer 2017, 3(3):392-421. Uses improved data to address the same question as the required Sommers, Epstein, and Baicker paper and reaches the same conclusions. http://www.mitpressjournals.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1162/ajhe_a_00080

Bernard Black, José-Antonio Espin-Sánchez, Eric French, and Kate Litvak, "The Long-Term Effect of Health Insurance on Near-Elderly Health and Mortality," American Journal of Health Economics, Summer 2017, 3(3):281-311. Unlike Sommers and his collaborators, Black et al. find little or no effect on a number of health outcomes nor on mortality when comparing the uninsured and the insured. http://www.mitpressjournals.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1162/ajhe_a_00076

This class has been about patient cost sharing, with a frequent finding that it affects both more and less valued services; indeed, that is the rationale for V-BID (see above). This finding calls into question the dominant view in economics that more choice is better. (In other classes we will see other evidence that more choice is not always better.) The following paper, however, evaluates an interesting experiment in the English National Health Service that mandated that patients be given a choice of five hospitals, whereas there was previously no mandate. The results show that demand elasticities substantially increased post-reform and that hospitals responded by improving quality. The general practitioner, of course, may have recommended a preferred hospital, but presumably he or

she would have done that prior to any mandate. In short, in this instance expanding choice by patients had positive effects on quality. Martin Gaynor, Carol Propper, and Stephan Seiler, "Free to Choose? Reform, Choice, and Consideration Sets in the English National Health Service," American Economic Review, November 2016, 106(11):3521-57.

Shifting from the empirical evidence on effects of cost sharing on use and health outcomes to empirical methods, there has been a long-running debate in economics about the value of program evaluation and experimentation more generally. Another way to say this is that in principle program evaluation is testing a treatment or treatments, which may be multi-dimensional, either against each other or against a control group or both. Much of the economics literature, especially the earlier literature, tested models that were said to derive from economic theory against data. Although the explanatory variables used did come from theory, theory almost never specified functional form. This debate is related to views about structural modeling in economics, which of necessity makes assumptions about functional form. Although those assumptions can greatly increase the ability to make predictions, especially out-of-sample predictions, the robustness of those predictions to the generally non-testable assumptions is frequently murky. This debate over "structural modelling" versus "reduced form modelling" is especially acute in the industrial organization literature.

If you want to read more about this, you can consult any or all of the following. The most recent papers are the Nobel Prize addresses by the husband and wife team of Abhijit Bannerjee and Esther Duflo, who are leaders in bringing randomized experiments into development economics and subsequently into other areas through J-PAL (Abdul Latif Jameel Poverty Action Lab) at MIT. Abhijit Vinayak Bannerjee, "Field Experiments and the Practice of Economics," American Economic Review, July 2020, 110(7):1937-51 https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.110.7.1937 and Esther Duflo, "Field Experiments and the Practice of Policy," American Economic Review, July 2020, 110(7):1952-73. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.110.7.1952. A related paper by Duflo is her Richard T. Ely address to the American Economics Association, Esther Duflo, "The Economist as Plumber," American Economic Review, 107(5):1-26. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.p20171153

The view that Bannerjee takes on in his Nobel Prize address is expressed in two reviews of the earlier book Poor Economics. Martin Ravallion, "Fighting Poverty One Experiment at a Time: *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*: Review Essay," Journal of Economic Literature, March 2012, 50(1):103-14 https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/issues/240 and Mark Rosenzweig, "Thinking Small: *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*: Review Essay," https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/jel.50.1.115

In addition, there is a collection of papers in the June 2010 Journal of Economic Literature, with articles by Deaton, Imbens, and Heckman (I advise reading these three papers in reverse order), as well as a lead article by Lee and Lemieux on regression discontinuity designs. The Summer 2011 Journal of Economic Perspectives has several articles on field

experiments (the Ludwig, et al. paper explicitly refers to the RAND Health Insurance Experiment, though it wrongly says it was the most expensive such experiment; the Housing Allowance Supply Experiment has that distinction). The Spring 2010 Journal of Economic Perspectives also has a relevant symposium on "taking the con out of econometrics" (if you only have time for one paper in this symposium, read the Angrist and Pischke paper).

Amy Finkelstein, Sarah Taubman, Bill Wright, Mira Bernstein, Jonathan Gruber, Joseph P. Newhouse, Heidi Allen, Katherine Baicker, and the Oregon Health Study Group, "The Oregon Health Insurance Experiment: Evidence from the First Year," Quarterly Journal of Economics, August 2012, 127(3):1057-1106. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/127/3/1057.full.pdf+html Results of Oregon at Year 1 with much more detail on the design of the Oregon Experiment than is in the Baicker, et al. required reading.

Amy N. Finkelstein, Sarah Taubman, Heidi L. Allen, Bill J. Wright, and Katherine Baicker, "Effect of Medicaid Coverage on ED Use — Further Evidence from Oregon's Experiment," New England Journal of Medicine, October 20, 2016, 375(16):1505-7. Shows results on emergency department use similar to those from the RAND Health Insurance Experiment and also from a natural experiment at Kaiser-Permanente; see O'Grady, et al. below or chapter 5 in Free for All? for the RAND results and Hsu, et al. below for the Kaiser results. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1609533

If you want to see someone else's take on the RAND results, see Jonathan Gruber, "The Role of Consumer Copayments for Health Care: Lessons from the RAND Health Insurance Experiment and Beyond," Menlo Park, The Henry J. Kaiser Family Foundation, October 2006. http://www.kff.org/insurance/7566.cfm. Still another take is Aviva Aron-Dine, Liran Einav, and Amy Finkelstein, "The RAND Health Insurance Experiment , Three Decades Later," Journal of Economic Perspectives, Winter 2013, 27(1):197-222. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/jep.27.1.197 Although clearly indicating RAND was a landmark study, Aron-Dine, et al. worry about potential bias from refusal and attrition. I mention the Aron-Dine paper here for balance, though I personally think it reflects an excessive concern with internal validity; I value internal validity too, but the method for calculating "Lee bounds" that they use in my view will almost always yield such loose bounds as to not be useful. Note also that the RAND health status results are less vulnerable to attrition than the spending results that Aron-Dine et al. are concerned with because the RAND group obtained end-of-experiment measures on 85% of those who left prematurely and did not die (77% including those who died). The issues around refusal and attrition are covered in chapter 2 of Free for All? – they are of obvious importance in assessing the results – and at greater length in a 2008 response to an earlier commentary by John Nyman that Aron-Dine, et al. cite.

Charles M. Kilo and Eric B. Larson, "Exploring the Harmful Effects of Health Care," JAMA, July 1, 2009, 302(1):89-91. Free for All? concluded that there may have been no observed effect on average health outcomes from the additional services on the free plan because among a relatively healthy group of non-elderly, the additional services may have done as much harm as good. Three decades later this commentary in JAMA concludes that

not much is known about harms. Although the authors' comment that "the benefits that US health care currently deliver [sic] may not outweigh the aggregate health harms it imparts" seems (to me) vastly overblown, if I amend that statement to apply it to health care services at the margin, the comment may well be true. Note also the US Preventive Services Task Force recommendation about mammography for women between 40 and 50 and its 2011 statement on PSA screening both took explicit account of harms. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/302/1/89.short

Robert Kaestner and Anthony T. LoSasso, "Does Seeing the Doctor More Often Keep You Out of the Hospital?" Journal of Health Economics, January 2015, 39:259-72. Exploits an exogenous change in the outpatient price for the non-elderly and finds that, similar to the RAND results (but not the California Chandra, et al. results nor the Trivedi results for the elderly), a lower price of outpatient care *increases* both outpatient and inpatient utilization. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S016762961400099X/1-s2.0-S016762961400099X-main.pdf?_tid=a4462858-bba2-11e4-a99c-00000aacb35d&acdnat=1424726974_9b87394aead1e8ca70494e6978f2e56b

Hitoshi Shigeoka, "The Effect of Patient Cost Sharing on Utilization, Health, and Risk Protection," American Economic Review, July 2014, 104(7):2152-84. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/atypon.php?return_to=/doi/pdfplus/10.1257%2Faer.104.7.2152 This paper exploits a sharp discontinuity in cost sharing at age 70 in Japan, when cost sharing falls 60-80 percent. The estimated effects on utilization are consistent with the RAND HIE; Shigeoka does not find effects on health outcomes. These results differ from those in Card, et al., below. That may be because Japanese patients were insured at age 69; insurance in Japan at age 70 simply became more generous, whereas in Card, et al. some of those becoming eligible for Medicare were uninsured before becoming eligible. Thus, this finding is consistent with the speculation in chapter 11 of Free for All? that making insurance more generous may not much affect health on average.

Evelyn Korkor Ansah, Solomon Narh-Bana, Sabina Asiamah, Vivian Dzordzordzi, Kingsley Biantey, Kakra Dickson, John Owusu Gyapong, Kwadwo Ansah Koram, Brian M. Greenwood, Anne Mills, Christopher J. M. Whitty, "Effect of Removing Direct Payment for Health Care on Utilisation and Health Outcomes in Ghanaian Children: A Randomised Controlled Trial," PLoS Medicine, January 6, 2009, 6(1):48-57. The HIE findings redux in a Ghanaian setting.
http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1000007

Timothy Powell-Jackson, Kara Hanson, Christopher J.M. Whitty, Evelyn K. Ansah, "Who Benefits from Free Healthcare? Evidence from a Randomized Experiment in Ghana," Journal of Development Economics, March 2014, 107:305-19. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0304387813001727/1-s2.0-S0304387813001727-main.pdf?_tid=92947436-6cb2-11e5-b169-00000aacb362&acdnat=1444195172_ed6463fdba81281b002842e203055c92 A follow on article to the previous one showing increased use among children and an outcome effect on anemia.

Michael Chernew, Mayur R. Shah, Arnold Wegh, Stephen N. Rosenberg, Iver A. Juster, Allison B. Rosen, Michael C. Sokol, Kristina Yu-Isenberg, and A. Mark Fendrick, "Impact of Decreasing Copayments on Medication Adherence Within a Disease Management Environment," Health Affairs, January/February 2008, 27(1):103-12. Decreasing cost sharing for drugs can improve adherence. See also Choudhry, et al. in the required list. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/27/1/103.full.pdf+html

Niteesh K. Choudhry, Katsiaryna Bykov, William H. Shrank, Michele Toscano, Wayne S. Rawlins, Lonny Reisman, Troyen A. Brennan, and Jessica J. Franklin, "Eliminating Medication Copayments Reduces Disparities in Cardiovascular Care," Health Affairs, May 2014, 33(5):863-70. A subgroup analysis of whites and non-whites in the Choudhry, et al. paper in the required reading finds no effects for whites but a 35% decrease in adverse events and a 70% (!) decrease in total spending for nonwhites. Although it is not completely clear from the paper, it sounds as if this subgroup analysis was not pre-specified; in particular, there was no randomization within racial group, which seems inconsistent with prespecifying a subgroup analysis. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/33/5/863.full.pdf+html

A mid-2013 review of Value Based Insurance Design (V-BID) studies found that V-BID usually improved quality but did not save money, similar to the finding in the Choudhry, et al. required reading. Joy L. Lee, Matthew Maciejewski, Shveta Raju, William H. Shrank, and Niteesh K. Choudhry , "Value-Based Insurance Design: Quality Improvement But No Cost Savings," Health Affairs, July 2013, 32(7):1251-7. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/32/7/1251.full.pdf+html

J. Michael McWilliams, Alan M. Zaslavsky, Ellen Meara, and John Z. Ayanian, "Impact of Medicare Coverage on Basic Clinical Services for Previously Uninsured Adults," JAMA, August 13, 2003, 290(6), pp. 757-64. When uninsured individuals turned 65 and became eligible for Medicare, they used more services compared with those who were insured when they turned 65. If you compare the increases for cholesterol testing, mammography, and prostate examination, they are pretty close the Oregon Experiment values. Note the subsequent study by these authors with similar findings in the Optional Class 10 reading. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/cgi/reprint/290/6/757.

David Card, Carlos Dobkin, and Nicole Maestas, "Does Medicare Save Lives?" Quarterly Journal of Economics, May 2009, Vol. 124, No. 2: 597–636. A paper with the same basic design as the preceding McWilliams, et al. study, but showing that for those admitted to the hospital through the emergency room (and therefore presumptively less vulnerable to selection concerns), those over 65 receive somewhat more services and have somewhat lower mortality rates; the mortality effect persists for at least 9 months. Their results appear on the slides. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/124/2/597.short

Thomas DeLeire, Laura Dague, Lindsey Leininger, Kristen Voskuil, and Donna Friedsam, "Wisconsin Experience Indicates That Expanding Public Insurance to Low-Income

Childless Adults Has Health Care Impacts," Health Affairs, June 2013, 32(6):1037-44. Results more dramatic that Oregon from insuring a previously uninsured adult population, using just a simple before-after design. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/32/6/1037.full.pdf+html

Nicole Lurie, Nancy B. Ward, Martin F. Shapiro, and Robert H. Brook., "Termination from Medi-Cal: Does It Affect Health?" New England Journal of Medicine, August 16, 1984, 311(7):480-4. An old study that shows large effects from terminating a group on Medicaid. I include it because it is consistent with the conclusion that the move from no insurance to some insurance may be more important than the move from some insurance to full insurance, which was what the RAND Experiment tested. The Oregon Experiment results, however, did test the move from no insurance to some insurance and are much less dramatic than Lurie, et al's. Why might methodology cause Lurie's effects be overstated as an estimate of what would happen to health status if all the uninsured were given Medicaid coverage? For the purpose of answering this question ignore the shift of the Medicaid population into managed care, which occurred subsequent to the Lurie, et al. article; I am after a methodological issue.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJM198408163110735

Richard Kronick, "Health Insurance Coverage and Mortality Revisited," Health Services Research, August 2009, 44(4):1211-31. Unlike the Lurie and Sommers, et al. studies, Kronick concludes that being uninsured probably does *not* raise the risk of mortality (though both Lurie and Sommers are concerned about the effect of the Medicaid expansion which is a somewhat different issue).
http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1475-6773.2009.00973.x/full

Judith R. Lave, Christopher R. Keane, Chyongchiou J. Lin, et al., "Impact of a Children's Health Insurance Program on Newly Enrolled Children," JAMA, June 10, 1998, 279(22):1820-25. This paper reaches a similar conclusion to Lurie, et al.; there are tangible benefits moving from no insurance to almost complete insurance in a managed care plan among children in families with incomes under 235% of the poverty level. http://jama.ama-assn.org.ezp1.harvard.edu/cgi/reprint/279/22/1820

Kevin F. O'Grady, Willard G. Manning, Joseph P. Newhouse, and Robert H. Brook, "The Impact of Cost Sharing on Emergency Department Use," New England Journal of Medicine, August 22, 1985, 313:484-90. Shows results on use of the ED consistent with the Finkelstein, et al paper from Oregon above. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/nejm198508223130806

John T. Hsu, Maggie Price, Richard Brand, Vicki Fung, Tom Ray, Bruce Fireman, Joseph P. Newhouse, and Joseph V. Selby, "Cost Sharing for Emergency Care: Findings on Adverse Clinical Events from the Safety and Financial Ramifications of ED Copayments Study (SAFE)," Health Services Research, October 2006, 41(5):1801-20.
http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1475-6773.2006.00562.x/abstract Findings consistent with Finkelstein, et al. and O'Grady, et al.

but not Mortensen (below).

Karoline Mortensen, "Copayments Did Not Reduce Medicaid Enrollees' Nonemergency Use of Emergency Departments," Health Affairs, September 2010, 29(9), 1643-50. If you read these papers on ED use, ask yourself why Mortensen got different results than Taubman, et al., O'Grady, et al., and Hsu, et al? I think the likely answer is covered in the methodological material for this class. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/29/9/1643.abstract

The first of the following two items takes up cost sharing in Medicare Parts A and B and the next one deals with cost sharing in the Medicare prescription drug benefit (Part D). The next three classes deal with Medicare reimbursement policies; I include these readings for this class because they relate to beneficiary cost sharing rather than reimbursement.

Medicare Payment Advisory Commission, Report to the Congress: Aligning Incentives in Medicare; June 2010, ch. 2 and ch. 1, June 2012. Can be skimmed. The main idea is that cost sharing in Medicare is wrong headed; the lack of a catastrophic cap induces demand for supplementary coverage, which in turn leads to greater on budget cost. See Cabral and Mahoney below. http://www.medpac.gov/documents/reports/Jun10_Ch02.pdf?sfvrsn=0 and http://www.medpac.gov/documents/reports/jun12_ch01.pdf?sfvrsn=0

Marika Cabral and Neale Mahoney, "Externalities and Taxation of Supplemental Insurance: A Study of Medicare and Medigap," American Economic Journal: Applied Economics, April 2019, 11(2):37-73. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/app.20160350 Estimates that Medigap increases a beneficiary's spending in Traditional Medicare 22%, which could be offset by a tax on supplementary insurance.

Congressional Budget Office, Issues in Designing a Prescription Drug Benefit for Medicare; Washington: CBO, October 2002, chapter 2. A review of several issues that had to be resolved as part of designing a Medicare drug benefit in the 2003-2005 period. At the beginning of chapter 2 the monograph discusses how cost sharing might be structured and at the beginning of chapter 4 the monograph discusses the assumption on demand elasticity relevant to the CBO cost estimates. Other parts of this document are relevant to later sections of the course; in particular, chapter 3 is relevant to the discussion of selection (Class 7), and the discussion of the possibility of price setting on page 29 is relevant to the next few classes on administered prices as well as to Class 15 on drugs. Available on the web at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/39xx/doc3960/10-30-prescriptiondrug.pdf

The change in insurance in the RAND Experiment did not stress the supply system in any local market; i.e., it estimated a partial equilibrium outcome. In the following paper Amy Finkelstein estimates that the long-run effects of insurance changes are much larger. On what is her identification of these effects based? Note also that the effects she observes are conditional on the (then) Medicare method of cost reimbursement of hospitals; I think with the current reimbursement system, namely the Prospective Payment System that is described in Class 4, the effects would likely have differed. Amy Finkelstein, "The Aggregate Effects

of Health Insurance: Evidence from the Introduction of Medicare," Quarterly Journal of Economics, February 2007, 122(1):1-37. Granting the validity of her identification for the sake of argument, would you say the estimated effects reflect induced new technology or greater investment in existing technology? http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/122/1/1.short

An issue in interpreting the empirical literature on cost sharing is whether physicians who face a variety of insurance policies in their practices, which is the usual case, tend toward uniformity in how they treat their patients (conditional on diagnosis or symptoms), irrespective of their insurance. Some evidence that they do tend toward uniformity is in Sherry Glied and Joshua Graff Zivin, "How Do Doctors Behave When Some (but not all) of Their Patients Are in Managed Care?" Journal of Health Economics, 2002, 21(3):337-53. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S016762960100131X From other literature it is known that Medicaid patients are an exception, but the mean % Medicaid patients in this study was only 8% so Medicaid would not have much effect on their results. Note also that as far as the literature's finding that Medicaid patients are treated differently, many Medicaid patients may be concentrated in Medicaid dominated practices, where the physician's modal patient may be a Medicaid patient. The Glied-Graff Zivin data are consistent with the RAND Experiment's finding that most of the effect of varying patient payment was on the patient's propensity to seek care; in the RAND data how physicians treated the patients once in the system seemed relatively little influenced by patient coinsurance. On this point see also Richard G. Frank and Richard J. Zeckhauser, "Custom Made Versus Ready to Wear Treatments: Behavioral Propensities in Physicians Choices," Journal of Health Economics December 2007, 26(6): 1101-27. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629607000562

## CLASSES 4-6 – REIMBURSEMENT POLICY: TRADITIONAL MEDICARE (TM), PARTS A AND B

### CLASSES 4 AND 5 – TRADITIONAL MEDICARE REIMBUERSEMENT OF INSTITUTIONAL PROVIDERS (MEDICARE PART A) AND POST-ACUTE CARE

**The prior two classes focused on the demand for care and especially how demand changes as a function of the demand price, or the price paid by the consumer/patient at the time of use. We now turn to the supply price, meaning the price received by providers. Supply prices differ from the demand prices by the amount of any insurance reimbursement to the provider of services. In many higher income countries supply prices are administered, meaning they are set by a public entity or negotiated on a country wide basis, rather than determined by a standard market mechanism. In standard markets, of course, supply and demand prices are equal in equilibrium.**

**We will spend the next three classes studying an example of administered supply prices, US Traditional Medicare (TM), sometimes called Original Medicare or fee-for-service (FFS) Medicare. It still enrolls the majority of Medicare beneficiaries. In the case**

**of TM, the Congress and the Centers for Medicare and Medicaid Services (CMS) set take-it-or-leave-it supply prices for hospitals and other institutional medical care providers. (Physicians, who are not institutional providers and are covered under Part B, have a bit of flexibility, but for practical purposes they face a take-it-or-leave it price as well.) If a provider accepts Medicare's prices for treating one Medicare patient, the provider must accept them for all Medicare patients. Because Medicare insures so many people, virtually all hospitals and the vast majority of physicians (though fewer psychiatrists) accept the Medicare price for their Medicare patients.**

**Traditional Medicare (TM) initially consisted of two parts, unimaginatively called Part A and Part B. Part A covers institutional providers such as hospitals and nursing homes and Part B covers outpatient services including physician services, drugs that are injected or infused in physician offices (but not pills), and durable medical equipment. Between 1966 when Medicare started and 1985, Parts A and B constituted the entire Medicare program, ignoring private supplementary Medicare insurance, sometimes called Medigap or Med Supp. In 1985 Medicare established Part C, in which a private entity, usually an insurance company, accepts a capitated payment, or a fixed sum per enrollee per month, to provide services that are covered by Medicare (sometimes called per member per month or pmpm). In 2006 Part D of Medicare went into effect, which covered orally administered drugs (pills). We will deal with Part C in Classes 8 and 18 and Part D in Class 15. These next three classes take up Parts A and B. I have put off Part D until later in the course because its supply prices are not determined administratively.**

**Some of you, especially international students, may feel that these next three sessions are overkill or too much "in the weeds" about Medicare, especially since over time many of the details we go over here will surely change. Indeed they have changed considerably in the past two decades. My rationale for immersing you in this level of detail is to have you appreciate the policy issues and difficulties that arise when operating a large administered price system – and of course a single payer or all-payer system in the US would be an even larger administered price system.**

**One large picture comment: In my view if health care costs continue to rise at rates above GDP growth, the United States is ultimately likely to face a choice between a single- or all-payer rate control approach and a voucher approach. Both methods have drawbacks, but I have chosen to illustrate the drawbacks of the rate control approach by working through some of the reimbursement issues that TM faces. Later in the course we come to the drawbacks of a voucher approach.**

***Description of Medicare's Administered Pricing Systems***

**The place to start is with the Medicare Payment Advisory Commission's "Payment System Basics," which are available on the web at http://www.medpac.gov/-documents-/payment-basics. When you go to this web site, you will see links to 20 primers on Medicare's various methods of reimbursement. You certainly don't need to read all of these primers (although the sheer quantity hints at the complexity of administering prices), but you should read the primers that cover the systems we take up over**

**the next three classes: the Hospital Acute Inpatient Services system; the Outpatient Hospital Services system; the four post-acute payment systems (Home Health, Skilled Nursing Facility, Inpatient Rehabilitation Facility, Long-term Care Hospital); and the Physician and Other Health Professional system. For Class 4 you need to read the Hospital Acute Inpatient system and the four post-acute systems. For Class 5 you need to read the Outpatient Hospital Services system, although much of the class deals with issues in the Inpatient system. We won't take up the Physician system until Class 6, so you can put off reading it for a bit. We will take up Part C, or the Medicare Advantage payment system, in Class 8 and the Part D payment system for drugs in Class 15, so you will ultimately need to read those primers as well, but they can be put off for now. If you want to keep up with Medicare payment changes in the future, these primers are updated each year, usually in October.**

**CLASS 4 - THE INPATIENT HOSPITAL PROSPECTIVE PAYMENT SYSTEM (IPPS) AND THE POST-ACUTE PAYMENT SYSTEMS (September 16)**

**Before we get into the minutiae of Medicare's administered pricing systems, it is important to set a standard against which to compare their performance. As a general principle almost all economists favor competitively set prices over administered prices because of the distortions that inevitably arise with administered prices. We will see several examples of those distortions in the next few classes.**

**Medicare does make some use of a standard method for eliciting competitive prices, namely bidding or auctions, but its use of bidding is limited for both political and substantive reasons. In particular, as the slides explain, it is difficult for Medicare to exclude suppliers who are not low bidders. In fact, it is difficult for Medicare to exclude any suppliers. Beneficiaries do not want "their doctor(s)" excluded, and in many markets, especially smaller geographic markets, all or almost all hospitals and doctors in certain specialties may need to be included to have sufficient capacity. If providers know they are not likely to be excluded, they have little incentive to bid low, which is the substantive reason Medicare mainly relies on administered prices.**

**The political difficulties of using bidding in Medicare are illustrated by Medicare's efforts to introduce bidding for the retail side of durable medical equipment, which would seem to be one of the easiest cases for using bidding since, if compared with hospitals and physicians, products are reasonably standardized (think wheel chairs or oxygen cylinders) and in any event only retail outlets are asked to bid (i.e., not manufacturers), and they bid on specific types of durable medical equipment. In 2017, after nearly two decades (!) of trying, Medicare finally succeeded in introducing bidding for about half the spending on durable medical equipment; see the material in the slides and on the course website for a description of some of the bumps along the road. But Medicare's method of introducing bidding in its initial relatively small demonstrations was very strange, as described by Ian Ayres and Peter Crampton, "Fix Medicare's Bizarre Auction Program," New York *Times*, September 30, 2010, which is available on one of the authors' web site http://freakonomics.com/2010/09/30/fix-medicares-bizarre-auction-program/. (A technical and much lengthier description of the problem, which is most definitely Optional, is Brian Merlob, Charles R. Plott, and Yuanjun Zhang, "The CMS Auction: Experimental Studies**

**of a Median-Bid Procurement Auction with Nonbinding Bids," Quarterly Journal of Economics, May 2012, 127(2):793-827.) This strange auction system is still in place. Although this strange auction example is not directly relevant to the main subject of these next classes, which is administered pricing, I have included it to point out that efforts to bring a competitive price mechanism to Medicare in an area where it should be straightforward to do so not only took years, but when implemented, the implementation was, in the words of the authors on the reading list, "bizarre."**

**Now on to the main Medicare payment systems. The slides for this class assume that you have already read the MedPAC primers on the Hospital Acute Inpatient Services Payment system, also known as the Inpatient Prospective Payment System (IPPS), as well as those on the four post-acute systems, Skilled Nursing Facilities, Home Health, Inpatient Rehabilitation Facilities, and Long-Term Care Hospitals. It may be a bit overwhelming at first to digest all this material, but all of them share a common method, which the slides describe in detail for the inpatient system. In particular, each system sets up a classification system for each patient (MS-DRG's in the case of the inpatient system), they attach weights to each classification in the system (e.g., MS-DRG 17 might be paid three times as much as MS-DRG 1), and they establish a conversion factor that translates each weight into dollars. For example, an MS-DRG with a weight of 1 might be paid $5,000, in which case one with a weight of 1.5 would be paid $7,500. There are also various adjustments in each system, e.g., for hospitals there are additional payments for: teaching hospitals; hospitals with above average ("disproportionate") shares of Medicaid patients and uncompensated care; and hospitals in labor markets with higher wages for the same kind of labor. I will cover several of these adjustments in the next class.**

**Joseph P. Newhouse, Pricing the Priceless: A Health Care Conundrum; Cambridge: MIT Press, 2002, chapter 1.**
**https://ebookcentral-proquest-com.ezp-prod1.hul.harvard.edu/lib/harvard-ebooks/detail.action?docID=5966094**
**The chapter describes several examples of issues around administered prices in Traditional Medicare (TM) that the slides also cover. Since the time the book was written, the IPPS system has introduced more categories by shifting from the DRG system to the MS-DRG system; the slides cover the newer MS-DRG system, but the economic principles underlying the two systems are the same. Note that the MS-DRG system used by the Inpatient Prospective Payment System (IPPS) is, in effect, "risk adjustment" for hospital admissions, with diagnoses and severity levels the main adjusters, meaning that hospitals that treat patients with more expensive diagnoses to treat are paid more.**

OPTIONAL:

> Robert A. Berenson, Divvy K. Upadhyay, Suzanne F. Delbanco, and Roslyn Murray, "Payment Methods: How They Work." A reasonably short (usually around 6 pages for each method) non-technical description of eight payment methods that we will touch on over the next several classes including fee schedules, primary care capitation, per diem payment to hospitals, DRG's, global budgets for hospitals, bundled episode payment, global capitation to an organization, and pay-for-performance. For each system the authors give key

objectives, strengths, weaknesses, design choices to mitigate weaknesses, compatibility with other payment methods, focus of performance measurement, and potential impact on provider prices. If this publication were shorter, I would likely have required it, but if you want more on any of the eight methods, feel free to dip in. http://www.urban.org/policy-centers/health-policy-center/projects/payment-methods-and-benefit-designs

Julian Pettengill and James Vertrees, "Reliability and Validity in Hospital Case Mix Measurement," Health Care Financing Review, December 1982, pp. 101-128. Only an abstract is available online, but I have posted a pdf of this paper on the course website for those who are interested. The paper describes the method used to construct the initial DRG system, a method that is similar to that used for the MS-DRG system. The paper provides a description of the original DRG system, but at a price in terms of more detail than you probably want to read.

Mark McClellan, "Hospital Reimbursement Incentives: An Empirical Analysis," Journal of Economics and Management Strategy, 6:1, Spring 1997, pp. 91-128. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1430-9134.1997.00091.x/pdf An effort to understand the incentives of the original IPPS and assess its power. McClellan debunks the notion that payment is independent of utilization under the PPS, which was a prevalent notion when the PPS was introduced. He later become CMS Administrator under President George W. Bush after serving as Commissioner of the Food and Drug Administration.

***Bundling or Global Payments: End-stage Renal Disease (ESRD) Payment***

**Moving away from disaggregated fee-for-service payments to more aggregated or global payment (reimbursement) means moving to a higher-powered reimbursement scheme. (See the slides for this class for material on the power of a reimbursement scheme.) Bundled payments are such a scheme. The following reading takes up this idea in the context of the Netherlands.**

**Jeroen N. Strujis and Caroline A. Baan, "Integrating Care through Bundled Payments – Lessons from the Netherlands," New England Journal of Medicine, March 17, 2011, 364(11):990-1. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/+full/10.1056/NEJMp1011849 The appropriate power of a reimbursement system involves tradeoffs. Although this short paper does not use this jargon, it illustrates some of those tradeoffs, as well as raising concerns about market power ("market power" is a different meaning of power than the slides discuss) from organizations capable of providing more integrated care (more on market power in Classes 11 and 18).**

**John K. Iglehart, "Bundled Payment for ESRD – Including ESA's in Medicare's Dialysis Package," New England Journal of Medicine, February 17, 2011, 364(7):593-5. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1014187 If a policy maker is going to pay for a bundle of services, there obviously must be a definition of what is and is not in the bundle. For example, the bundle for the MS-DRG system is defined as all**

**non-physician services provided during the hospital stay. This paper shows how critical the choice of the definition of the bundle is, not only for cost purposes but also clinically, since Medicare's initial payment policy for End-stage Renal Disease (ESRD) – in particular the decades long exclusion of most drugs and tests from the bundle of ESRD services that Medicare paid for - arguably induced poor clinical care. For four decades the drugs and tests were paid separately on a fee-for-service basis. The more services that are in the bundle, the higher powered is the contract, creating a greater potential incentive for underservice; note CMS' efforts to monitor this in ESRD. The exclusion of drugs from the bundled payment before 2011, however, appeared to induce overtreatment with erythropoiesis-stimulating agents (used to manage anemia), which may have induced cardiovascular events; in any event, the use of such agents has fallen since they were included in the bundled payment. (There are still some drugs not in the bundle.) There is another reading on ESRD below under the Technological Change section.**

**More generally, for those of you interested in single payer, the US has had an approximation to a single-payer system for patients with ESRD for almost five decades, which gives a test case for how it could work in the US. (My qualification of "an approximation" is meant to account for ESRD patients with employment-based insurance, who by statute are covered by that insurance for the first 33 months of their care; after that, Medicare takes over for the remainder of the person's life. This provision is in the law to reduce the budgetary cost of Medicare. As far as I know has no effect on clinical care, which is driven by the Medicare system, but it has a large effect on the earnings of the two firms that comprise almost the entire US dialysis market.) If you want more details on the Medicare ESRD reimbursement system, see "Outpatient Dialysis Services Payment System" in MedPAC's "Payment Basics," but that is not required.**

OPTIONAL:

> Richard A. Rettig, "Special Treatment – The Story of Medicare's ESRD Entitlement," New England Journal of Medicine, February 17, 2011, 364(7):596-8. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1014193 Gives the history of how ESRD beneficiaries came to be covered by Medicare. A few years ago Medicare also added coverage for Amyotrophic Lateral Sclerosis (ALS or Lou Gehrig's Disease); those are the only diseases covered by Medicare independent of age or disability status.

***Post-Acute Care***

**Post-acute care is one of the most difficult areas in the Medicare reimbursement system. A place to start is Medicare Payment Advisory Commission, "Report to the Congress: Medicare Payment Policy," June 2019, pp. 273-276. http://medpac.gov/docs/default-source/reports/jun19_medpac_reporttocongress_sec.pdf?sfvrsn=0 As this reading says, MedPAC has for many years been trying to move toward a unified post-acute reimbursement system that would be one payment for all post-acute services. They have now somewhat backed off this stance, concluding that it would overpay short episodes and underpay long ones. Note that a version of this problem is**

**present in the IPPS, which is the rationale for a separate LTCH reimbursement system. I include this short reading from MedPAC here for two reasons: It describes the current state of play on post-acute reimbursement, and it describes the problem of basing reimbursement on provider-reported information. This latter issue crops up in many places, especially around coding of diagnoses and comorbidities.**

**Moving to a unified post-acute reimbursement system (rather than separate systems for each site) or bundling post-acute reimbursement with acute care reimbursement is an idea that has led to numerous Center for Medicare and Medicaid Innovation (CMMI, which is part of CMS) demonstration projects. CMMI has launched two prominent demonstrations in the post-acute area, one in post-acute care generally, Bundled Payments for Care Improvement, or BPCI, and one specifically for joint replacement, Comprehensive Care for Joint Replacement, or CCJR. A description of these demonstrations (we are now into the second generation of BPCI) and some of their initial results are described in MedPAC Report to the Congress: Medicare and the Health Care Delivery System, June 2019, pp. 278-281. http://medpac.gov/docs/default- source/reports/jun19_medpac_reporttocongress_sec.pdf?sfvrsn=0 The BPCI demonstration was voluntary (why is that important?); the CCJR initiative was initially to be mandatory, but then DHHS Secretary Price, who was an orthopedic surgeon before he became a member of Congress and subsequently Secretary of DHHS, substantially scaled back the mandatory feature in 2017 before the demonstration began. The initial evaluations of these programs tended to show modest or no savings, but to induce providers to participate, CMS did not have them take downside risk (i.e., pay money back to CMS if their spending was over the target price for the bundle), a feature that undoubtedly dampened the degree of savings. Nonetheless, the quantity of post-acute care fell and shifted to lower cost sites, mostly from SNF to HH.**

**The rationale for bundling acute and post-acute payment together is to move to a higher powered system than the current system, but a problem is random variation in cost that cannot be adjusted for with standard measures of case mix such as diagnosis. One doesn't want penalize hospitals or other providers that randomly get a bad case mix draw, meaning sicker patients, nor reward those who randomly get a good draw. Remember from the slides that a risk averse agent must be compensated for bearing risk, although firms (as opposed to individual agents) are normally assumed to be risk neutral (but probably are not). The following paper takes up the issue of random variation at the provider level if acute and post-acute care is bundled. Robert Mechanic and Christopher Tompkins, "Lessons Learned Preparing for Medicare Bundled Payments," New England Journal of Medicine, November 15, 2012, 367(20):1873-5. One of the slides is from this paper. The paper points out that post-acute care is a large component of spending for treating one major diagnosis, congestive heart failure, so that bundling post-acute spending with inpatient spending for that disease poses issues for smaller hospitals because of random variation. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1210823**

OPTIONAL:

Michael L. Barnett, Andrew Wilcock, J. Michael McWilliams, Arnold M. Epstein, Karen E. Joynt Maddox, E. John Orav, David C. Grabowski, and Ateev Mehrotra, "Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement," New England Journal of Medicine, January 19, 2019, 380(3):252-62. There were modest savings overall, largely from reductions in the use of post acute services. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa1809010. A second paper by Amy Finkelstein, et al. gives largely consistent results from just year 1. It is in JAMA, September 4, 2018, but since it is results from the first year, the Barnett, et al. paper supersedes it.

Scott E. Regenbogen, Ann H. Cain-Nielsen, John D. Syrjamaki, Lena M. Chen, and Edward C. Norton, "Spending on Postacute Care After Hospitalization in Commercial Insurance and Medicare Around Age 65,"Health Affairs, September 2019, 38(9):1505-13. Using a regression discontinuity design for data from the state of Michigan, the authors find 68-230 percent greater post-acute spending in Medicare and conclude that there is excess post-acute spending in Medicare. https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.2018.05445

Melinda Beeuwkes Buntin, Carrie Hoverman Colla, and Jose J. Escarce, "Effects of Payment Changes on Trends in Postacute Care," Health Services Research, August 2009, 44(4): 1188-1210. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1475-6773.2009.00968.x/full The shift to a prospective (rather than cost up to a limit) post-acute payment system shifted patients among post-acute care sites. Shows the substitutability of post-acute sites.

***Contract Theory***

Section I of Jean Tirole's 2014 Nobel Prize acceptance speech contains an accessible exposition of power in contract theory. If you decide to read that part of the speech, you may want to read the remainder of the speech as well, since it is relevant to the antitrust issues of Class 11. Jean Tirole, "Market Failures and Public Policy," American Economic Review, June 2015, 105(6):1665-82. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.15000024

For those who have a strong economics background with a taste for theory, a classic article on regulating prices or quantities when the regulator only has a prior distribution on the true cost function and relies on the firm to report it – essentially the conditions that Medicare faces – is David Baron and Roger Myerson, "Regulating a Monopolist with Unknown Costs," Econometrica, July 1982, 50(4):911-30. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/pdfplus/1912769.pdf?acceptTC=true. Myerson shared the 2007 Nobel Prize in economics for his work on mechanism design, which is the domain of this article. The article shows that to induce the firm to report its costs truthfully, a regulator must pay it a surplus, the amount of which depends on a regulator's prior distribution about the firm's true cost function and the weight the regulator places on consumer surplus relative to producer surplus. Although the hospital's accounting costs are auditable (and Medicare does audit them), its cost function, which determines the economically optimal price, is not.

***Cost Shifting***

One of the ongoing debates in the health services literature is the how much, if at all, hospital prices for private insurers increase if Medicare cuts its reimbursement, a phenomenon that the literature terms "cost shifting." Probably the dominant view, at least among economists, is that hospitals face separable public insurance and private insurance markets and that hospitals set or negotiate margin or profit maximizing prices in the private insurance market; as a result, changes in Medicare prices do not affect private prices. A diametrically opposed view is Chapin White, "Contrary to Cost Shift Theory, Lower Medicare Hospital Payment Rates for Inpatient Care Lead to Lower Private Payment Rates," Health Affairs, May 2013, 32(5):935-43. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/32/5/935.full.pdf+html. A often cited paper on this side of the debate is a literature review by Austin Frakt, "How Much Do Hospitals Cost Shift? A Review of the Evidence," The Milbank Quarterly, March 2011, 89(1):90-130, http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1468-0009.2011.00621.x/epdf. The story White and Frakt tell is that if Medicare lowers rates, that puts pressure on hospitals to lower costs a story that MedPAC also echoes. Other papers that do not support cost shifting are Chapin White and Vivian Wu, "How Do Hospitals Cope with Sustained Slow Growth in Medicare Prices?" Health Services Research, February 2014, 49(1):11-31 http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/1475-6773.12101/pdf and the Clemens-Gottlieb 2017 paper that looks at the effect of changes in Medicare physician fees on private insurer physician fees that is Optional reading for Class 6. Both White and White and Wu look at actual private prices, which is better than looking at the accounting margins as I did in Pricing the Priceless, and whose behavior I took as suggestive evidence of cost shifting. (In his sole authored paper White instruments for Medicare prices, but you have to read the appendix to really understand what he did.) On the other hand, the argument made in Pricing the Priceless is that in competitive hospital markets (meaning hospitals are not making rents) hospitals have to recover their joint costs such as administration, so that if Medicare cuts reimbursement hospitals will reach different bargains with private payers. And there is evidence in addition to that in Pricing the Priceless for this view as well. Vivian Wu, "Hospital Cost Shifting Revisited: New Evidence from the Balanced Budget Act of 1997," International Journal of Health Care Finance and Economics, March 2010, 10(1):61-83 http://link.springer.com.ezp-prod1.hul.harvard.edu/article/10.1007/s10754-009-9071-5#page-1. Wu uses the cuts in Medicare reimbursement from the 1997 Balanced Budget Act and finds that hospitals prices to private payers in urban markets, which are more competitive than rural markets, rose about $0.20 for each $1 cut in Medicare reimbursement. Another paper on the pro cost-shifting side uses the Medicare Value Based Purchasing Program and the Hospital Readmission Reduction Program (Class 17) and finds that the reductions in Medicare reimbursement from these programs were associated with higher private prices, consistent with cost shifting, although the shift is larger at hospitals with *greater* shares of private patients, which is not what one would expect from the simple cost shifting story. Michael Darden, Ian McCarthy, and Eric Barrette, "Hospital Pricing and Public Payments," NBER Working Paper 24304, February 2018, http://www.nber.org/papers/w24304.pdf

This entire debate, however, is focused on unit price in the privately insured market. It is also possible that if Medicare fees fall relative to fees paid by private insurers that physicians or facilities/hospitals at the margin would shift their mix of patients away from Medicare toward commercial. For example, hospitals may invest in services that commercial patients use more intensively, such as sports medicine, and physicians may be more inclined to recommend a procedure for a commercially insured patient and less inclined to recommend one for a Medicare insured patient. Such an effect would at best be measured indirectly by the studies above.

***Effects of the IPPS on Quality of Care***

William H. Rogers, David Draper, Katherine L. Kahn, et al., "Quality of Care Before and After Implementation of the DRG-Based Prospective Payment System: A Summary of Effects," JAMA, 264:15, Oct. 17, 1990, 1989-97. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/264/15/1989.short The major empirical evaluation on this subject, but now mostly of historical interest. It was one of the three examples Brook used in his reading assigned for Class 3.

***Specialty Hospitals***

One could treat the emergence of specialty hospitals in some areas of medicine such as cardiac and orthopedic care as either technological change or as a response to flaws in the Medicare IPPS or both. Whatever their cause, specialty hospitals are highly contentious. The controversy led to a moratorium on new construction in the Medicare Modernization Act of 2003 that was continued in the ACA. The slides have material on specialty hospitals that treat their entry as a profitable opportunity in the hospital reimbursement system.

John K. Iglehart, "The Uncertain Future of Specialty Hospitals," New England Journal of Medicine, 352(14), April 7, 2005, pp. 1405-1407. http://content.nejm.org.ezp1.harvard.edu/cgi/reprint/352/14/1405.pdf

***Upcoding***

Bruce E. Landon and Robert E. Mechanic, "The Paradox of Coding — Policy Concerns Raised by Risk-Based Provider Contracts," New England Journal of Medicine, September 28, 2017, 377(13):1211-13. Upcoding is in principle a once-and-for-all adjustment that a payer such as Medicare can adjust for, but it nonetheless should be an expected response to classification systems that use diagnosis, whether in the IPPS, in Medicare Advantage (Class 8), or in risk-based contracts in commercial insurance. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1708084

Medicare Payment Advisory Commission, Report to the Congress: Medicare Payment Policy, March 2012, pp. 55-56. Shows the coding response to MS-DRGs that the slides for this class show. The coding issue will come up again in Classes 8 and 18 with respect to Medicare Advantage. http://medpac.gov/docs/default-source/reports/march-2012-report-

chapter-3-hospital-inpatient-and-outpatient-services.pdf?sfvrsn=0

**CLASS 5 –VARIOUS ISSUES THAT ILLUSTRATE THE DIFFICULTIES OF MANAGING ADMINISTERED PRICE REIMBURSEMENT SYSTEMS: HOSPITAL OUTPATIENT DEPARTMENTS; REIMBURSEMENT OF TEACHING HOSPITALS; GEOGRAPHIC ADJUSTMENT; TECHNOLOGICAL CHANGE (September 21)**

**The reading and slides for this class illustrate several of the issues that administered price systems in health care face. Any of you proposing to write testimony on Medicare reimbursement – or on reimbursement issues generally - would do well to look into the Optional reading for Classes 4-6 and to dip into relevant chapters of the annual March and June MedPAC reports.**

***Outpatient Facility Payment***

**You should have read the MedPAC Payment Basics on the outpatient hospital payment system. Outpatient hospital payment is covered in the slides, so other than the MedPAC primer, I have not assigned any further readings. Outpatient department payment needs to be considered in conjunction with both inpatient payment and physician office payment because of substitution possibilities for providing services in these various settings. The non-neutrality in the Medicare payment system between facility and office payment is in fact a major policy issue with consequences for the organization of care as described in the slides and the Optional reading. The issue was partially addressed in the 2015 MACRA Act, about which more in the next class.**

OPTIONAL:

Medicare Payment Advisory Commission, "Medicare Payment Differences Across Ambulatory Settings, Report to the Congress," June 2013, chapter 2. Proposes equalizing some fees between the office-based setting and the outpatient department but not others. http://medpac.gov/docs/default-source/reports/jun13_ch02.pdf?sfvrsn=0

Hannah Neprash, Michael E. Chernew, Andrew L. Hicks, Teresa Gibson, and J. Michael McWilliams, "Association of Financial Integration between Physicians and Hospitals with Commercial Health Care Prices," JAMA Internal Medicine, December 2015, 175(12):1932-9. Shows increases in physician-hospital integration led to increases in Medicare spending, exploiting the site of service differentials between hospital outpatient departments and physician offices. http://jamanetwork.com.ezp-prod1.hul.harvard.edu/searchresults?q=neprash&allJournals=1&SearchSourceType=1&exPrm_qqq={!payloadDisMaxQParser%20pf=Tags%20qf=Tags^0.0000001%20payloadFields=Tags%20bf=}%22neprash%22&exPrm_hl.q=neprash

David Dranove and Christopher Ody, "Employed for Higher Pay? How Medicare Payment Rules Affect Hospital Employment of Physicians," American Economic Journal: Economic Policy, November 2019, 11(4):249-71. Shows that a plausibly exogenous increase in Medicare payment for physicians employed by hospitals relative to other physicians led to a

20% increase in physician employment and explains 75% of the increase in outpatient department billings between 2009 and 2013. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/pol.20170020

***Payment to Teaching Hospitals***

**Teaching hospitals throughout the world have higher costs than non-teaching hospitals. How to reimburse teaching hospitals has therefore been a policy concern from the outset of the PPS, since there was obviously going to be a problem if teaching and non-teaching hospitals were paid the same amount for patients with the same observable characteristics. This issue is covered in Pricing the Priceless, ch. 1 and in the slides, so there is no additional required reading. How Medicare pays teaching hospitals, however, has affected the medical workforce, as shown in the slides. There is a reprise of this issue in Class 21 on workforce.**

OPTIONAL:

Gail R. Wilensky and Donald M. Berwick, "Reforming the Financing and Governance of GME," New England Journal of Medicine, August 28, 2014, 371(9):792-3. Summarizes a major Institute of Medicine report on Graduate Medical Education (GME). In my view the substance of this report reflects the political difficulties of reforming GME, although it did make some recommendations for change. If you are planning to write testimony on Medicare's payments for Graduate Medical Education, you can download the full report, "Graduate Medical Education that Meets the Nation's Health Needs," at www.nap.edu.

John K. Iglehart, "Institute of Medicine Report on GME — A Call for Reform," New England Journal of Medicine, January 22, 2015, 372(4):376-81. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMhpr1413236 This article describes the interest group reaction to the IOM report that Wilensky and Berwick describe in the foregoing. The report did not lead to any change in either Indirect or Direct Medical Education payments, undoubtedly reflecting the political sensitivity of the payments.

Alan Benson, "Firm-Sponsored General Education and Mobility Frictions: Evidence from Hospital Sponsorship of Nursing Schools and Faculty," Journal of Health Economics, January 2013, 32(1):149-59. Uses the same model of general training vs specific training as in Pricing the Priceless and the slides and applies it to hospital provided nursing education. Although nursing education is general training, Benson applies an earlier hypothesis of Acemoglu and Pischke to argue that it may be analytically more similar to specific training because of low geographic mobility of nurses. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S016762961200118X/1-s2.0-S016762961200118X-main.pdf?_tid=ccaf2b56-467f-11e5-b513-00000aacb35d&acdnat=1439995221_a83dc00a94c705053f9a89b17866adfb

***Geographic Adjustment and the Wage Index***

**Margaret Edmonds and Frank A. Sloan, "Geographic Adjustment in Medicare Payment: Phase I: Improving Accuracy," Washington: NAP, 2011, chapter 2, pages 37-46. This report**

**is copyrighted, but you can download a pdf for your personal use for free by registering at https://nam.edu/. (This report was done under a Congressional mandate to the Institute of Medicine, which changed its name in 2015 to the National Academy of Medicine.) Registering will also give you free web access to other Institute of Medicine/National Academy of Medicine reports. This report covers geographic adjustment for both the IPPS and the physician payment systems (Class 6) and recommends changes, mainly in the physician geographic adjustment system.**

**How Medicare adjusts for geographic differences in factor prices is a big deal, since the variation across the country is substantial, so at the individual provider level quite a lot of money turns on both the Hospital Wage Index and the Geographic Practice Cost Index (GPCI), the name for the analogous geographic adjuster in the physician system; see the values on the map on page 23 of the report. The Hospital Wage Index differs across the country by more than a factor of two, meaning a hospital in a high wage area gets much more for treating the same patient as an otherwise identical hospital in a low wage area. The amount of money at stake and the amount of variation has invited Congressional intervention, as described in the slides.**

**This report burrows into the technical details of how Medicare adjusts for variation in factor prices. It may seem too much in the weeds to you, but these indices illustrate both substantive and political issues around administered prices. Substantively the Hospital Wage Index in principle should only be applied to the labor portion of hospital factor costs plus any non-labor costs that vary geographically. When it began it was intended to be budget neutral, and in fact for many years it was; around 70% of the cost was adjusted by the wage index (30% of the inputs were bought in a national market), and 1.0 on the index was the national average. But then members of Congress from low wage (think rural) areas thought this was unfair. In 1997 the Congress set a floor on the index, which favored rural areas as well as certain states and localities (see the slides). As a result, the index is no longer neutral relative to geography. (In fact, rural Democratic members of the House asked for the report you are reading as the price of their vote for the ACA because they thought the index was unfair to their districts.) In a further move toward non-neutrality, the Congress has also arbitrarily altered labor market areas as the slides describe. (Substantively there is some inherent arbitrariness in defining labor market areas, but the changes the Congress has made have exacerbated that.) The changes that this report recommends seem well justified to me on a policy basis; to date, however, the Congress has not adopted them, undoubtedly reflecting their political sensitivity – any geographic redistribution of Medicare (and Medicaid) monies is highly contentious – or in Congressional speak a "food fight."**

OPTIONAL:

> Carol Propper and John van Reenen, "Can Pay Regulation Kill? Panel Data Evidence on the Effect of Labor Markets on Hospital Performance," Journal of Political Economy, 2010 118(2):222-73. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/10.1086/653137?ai=t6&mi=0&af=R Setting hospital wages in labor markets that vary geographically is not only an issue in the US. This is a study of wages in the UK National Health Service, which, like some other countries, including Canada, imposes the same nominal wage throughout

the system despite cost of living differences. (London and its surrounding area is a much more expensive place to live than the rest of England.) The authors find that a 10% increase in the outside wage (the wage that could be earned outside the hospital setting) is associated with a 7% increase in the hospital death rate, suggesting that a hospital in a high outside wage area (e.g., London) attracts lower quality workers to hospitals than in other areas.

Zack Cooper, Amanda Kowalski, Eleanor Powell, and Jennifer Wu, "Politics, Hospital Behavior, and Health Care Spending," NBER Working Paper 23748, August 2017. http://www.nber.org/papers/w23748.pdf. A waiver provision was put in the 2003 Medicare Modernization Act, the legislation that authorized Part D, to allow hospitals to appeal to change their wage index. The paper shows that hospitals in districts that voted yes on the legislation (the bill passed by one vote in the House) were more likely to receive the waiver and that the hospitals that received increased payments increased their services. This is a nice case study of how politics and economics interact to increase spending and medical services.

*Technological Change*

**An overarching issue is the amount of technological change we observe is almost certainly related to the incentives of the financing system. On this point see the classic Weisbrod paper on the Optional list. Managing administered prices in a system with technological change is a critical issue.**

**A first-order issue in dealing with technological change in the context of administered pricing is deciding what change or innovation justifies its cost (assuming the change is cost increasing) and is therefore worth paying for. As Class 1 pointed out, this is a critical issue if advances in precision or personalized medicine are both more effective and more costly relative to current therapy. The issue of technological change is partly a coverage decision and partly a decision on how much to pay conditional on a decision to cover, decisions that in the case of Medicare are made separately by two different parts of CMS. The issue of whether the benefits of an innovation exceed the costs is in the realm of willingness-to-pay or stated-preference studies, many of which employ Quality Adjusted Life Years (QALYs) or Disability Adjusted Life Years (DALYs). An critical complication is that something that is actually used to treat patients usually is worth it for some patients and not for others, so a decision to cover likely means some will receive the service who don't benefit and a decision not to cover likely means some who would have benefitted won't get the service. Sometimes who will benefit is unknown and so a decision to cover can generate knowledge about who benefits; see Class 19 on CER. In a standard market system a patented innovation with no close substitutes will have monopoly rents; these can be reduced with administered pricing. Many countries outside the US use an implicit cost per QALY or DALY threshold in coverage decisions. Lowering the rents, however, can affect the incentive to innovate, as we come to in Class 15.**

**With respect to reimbursement, technological change in the treatment of a disease should generally lead to some payment adjustment, since the existing reimbursement system is calibrated for the earlier technology. There are two related issues: how much to update**

**budgets in administered price systems in order to pay for cost-increasing change; and how to update reimbursement when costs fall; as something new scales up leading to falls in average cost and as learning-by-doing takes place. More concretely, these issues all have to do with how to incorporate new procedures, drugs, and devices into administered price systems, and the following two readings deal with that issue.**

**Medicare Payment Advisory Commission, Report to the Congress: Medicare Payment Policy, March 2001, chapter 3, http://www.medpac.gov/docs/default-source/contractor-reports/chapter-3-paying-for-new-technology-in-the-outpatient-prospective-payment-system-march-2001-report-.pdf?sfvrsn=0. How to incorporate new technology is an issue that plagues all administered price systems. In the Balanced Budget Reform Act (BBRA) the Congress authorized pass through payments for certain drugs, biologicals, and devices. Such payments potentially alter the nature of competition in the market for these products and give certain companies incentives to mark up prices. This issue also comes up in risk adjustment of capitated payment; see Carey in the Optional reading for Class 8, and in drug pricing (Class 15).**

**Medicare Payment Advisory Commission, "Improving Medicare's End-stage Renal Disease Prospective Payment System," Report to the Congress: Medicare and the Health Care Delivery System, June 2020, Summary to Chapter 7, pp. 181-4. http://medpac.gov/docs/default-source/reports/jun20_ch7_reporttocongress_sec.pdf?sfvrsn=0 Takes up two issues that apply to all of Medicare's prospective payment systems, not just the ESRD system. The first is the subject of this subhead, how to treat new products or procedures. In the case of ESRD CMS now follows a transition policy of paying an add-on payment for a new drug for two years and then folding it into the bundled price. This encourages the manufacturer to set a high initial price. The downside is that if the drug really is costly to produce and is an important advance (many drugs, however, are not costly to produce), it may never even get to market because the manufacturer doesn't expect to earn a profit. There are similar issues of how to treat new products and procedures in the Inpatient and Outpatient Prospective Payment systems that the reading above covers. The second is how to handle economies of scale or higher average cost at smaller facilities. Medicare's reimbursement systems have adopted different approaches to this issue; the inpatient hospital system, for example, uses Critical Access Hospitals.**

OPTIONAL:

> Nancy M. Kane and Paul D. Manoukian, "The Effect of the Medicare Prospective Payment System on the Adoption of New Technology -- The Case of Cochlear Implants," New England Journal of Medicine, 321:20, November 16, 1989, pp. 1378-1383. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJM198911163212006 An instructive case study from the very early days of the PPS, showing how administered pricing can have an important effect on technological change.
>
> Daron Acemoglu and Amy Finkelstein, "Input and Technology Choices in Regulated

Industries: Evidence from the Health Care Sector," Journal of Political Economy, October 2008, 116(5):837-80. http://economics.mit.edu/files/5678 Elaborates on a point made in chapter 1 of Pricing the Priceless, namely that hospitals substituted capital for labor with the introduction of the PPS because initially the PPS capped operating costs but not capital costs. Capital costs are now included in the DRG rate, however.

Burton A. Weisbrod, "The Health Care Quadrilemma," Journal of Economic Literature, June 1991, 29(2):523-52. A classic paper showing how more extensive insurance induces more technological change.
https://www-jstor-org.ezp-prod1.hul.harvard.edu/stable/2727522?Search=yes&resultItemClick=true&searchText=quadrilemma&searchUri=%2Faction%2FdoBasicSearch%3FQuery%3Dquadrilemma&ab_segments=0%2Fdefault-2%2Fcontrol&refreqid=search%3A366ffb2bdb6de0ac31531698f12659ac&seq=1#metadata_info_tab_contents

OTHER OPTIONAL READING ON VARIOUS TOPICS IN PART A IN CASE YOU WANT TO WRITE TESTIMONY ON THESE TOPICS:

***Outlier Payments***

Emmett B. Keeler, Grace M. Carter, and Sally Trude, "Insurance Aspects of DRG Outlier Payments," Journal of Health Economics, September 1988, pp. 193-214. This paper, from the first years of the IPPS, led to a substantial change in how Medicare paid for outliers in the early 1990s and is an excellent example of how analysis can change policy.
http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/0167629688900252

***Care at the End of Life and the Hospice Benefit***

This topic should perhaps be somewhere else in the course because it is certainly about more than reimbursement, but, given the course outline, it seems to fit best in the Medicare section, partly because over 75 percent of all deaths each year are among Medicare beneficiaries and partly because around a quarter of Medicare dollars in a year are spent on the 5-6 percent of beneficiaries who die (11 percent of annual Medicare dollars are spent on persons in their last month of life). Over 20 percent of these deaths occur in a hospice (60 percent of the cancer deaths do), and hospice by 2017 was a $18 billion a year benefit, increasing from just under $3 billion in the year 2000 (over 2 percent of the Medicare program). I have put the topic on the reading list, but because of the length of the required reading, I have made the entire subject optional. Some of you may wish to pursue it for your testimony.

The entire issue of the January 19, 2016 JAMA is devoted to the topic of care at the end of life. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/issue.aspx?journalid=67&issueid=934869&direction=P Note especially the cross-national study of Bekelman, et al., which shows the US does reasonably well on deaths in the hospital (a lower proportion is assumed to be better), and as a result the US does not have the highest

hospital spending per decedent over 65 in the last 180 days of life.

Indeed, US spending on care in the last 12 months of life is only 8.5% of total US health spending, the lowest percentage among nine industrialized countries examined by Eric French, et al., "End-of-Life Medical Spending in Last Twelve Months of Life Is Lower Than Previously Reported," Health Affairs, July 2017, 36(7):1211-7. (The Bekelman et al. paper just above places the US in the middle of the pack in percentage of all health spending that is at the end-of-life because Bekelman used purchasing power parity to adjust for price differences across countries, whereas French, et al. do not.)

Institute of Medicine, "Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life," Washington: National Academy Press, 2014. An excellent overview of the issues. http://nationalacademies.org/hmd/reports/2014/dying-in-america-improving-quality-and-honoring-individual-preferences-near-the-end-of-life.aspx. The 2014 report builds on an earlier IOM report on this topic, Approaching Death; Washington: National Academy Press, 1997.

Atul Gawande, Being Mortal, New York: Metropolitan Books, 2014. A plea for changes in how physicians and lay persons should think about frailty and the end of life. I found this short book a wonderful read.

Randall Krakauer, Claire M. Spettell, Lonny Reisman, and Marcia J. Wade, "Opportunities To Improve The Quality Of Care For Advanced Illness," Health Affairs, September/October 2009 , 28:5:1357-59. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/5/1357.short . Removing the requirement to not seek treatment for the terminal disease among the commercially insured both increased participation in hospice and overall saved money.

Amy S. Kelley, Partha Deb, Qingling Du, Melissa D. Aldridge Carlson, and R. Sean Morrison, "Hospice Enrollment Saves Money for Medicare and Improves Care Quality Across a Number Of Different Lengths-Of-Stay," Health Affairs, March 2013, 32(3):552-61. Hospice saves Medicare money. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/32/3/552.full.pdf+html

Daniel P. Kessler and Mark B. McClellan, "Advance Directives and Medical Treatment at the End of Life," Journal of Health Economics, 23(1), January 2004, pp. 111-127. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629603001036 Advance directives appear to improve care but do not save money.

Haiden A. Huskamp, David G. Stevenson, Michael E. Chernew, and Joseph P. Newhouse, "A New Medicare End-of-Life Benefit for Nursing Home Residents," Health Affairs, January/February 2010, 29(1):130-5. Takes up the issues around paying for hospice services for nursing home residents; the current hospice benefit doesn't work very well in the nursing home context. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/29/1/130.full.pdf+html

Lynn A. Flint, Daniel J. David, and Alexander K. Smith, "Rehabbed to Death," New England Journal of Medicine, January 31, 2019, 380(5):408-9. The current Medicare Part A benefit is not consistent with good end-of-life care. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1809354

SUPPORT Principal Investigators, "A Controlled Trial to Improve Care for Seriously Ill Hospitalized Patients: the Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments (SUPPORT)," JAMA, November 22/29, 1995, 274(20), pp. 1591-1598. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/274/20/1591.short. A classic study from a quarter century ago documenting shortcomings in end-of-life care. Alas, most of these shortcomings still exist.

Ezekiel J. Emanuel and Linda L. Emanuel, "The Economics of Dying: The Illusion of Cost Savings at the End of Life," New England Journal of Medicine, 331, February 24, 1994, pp. 540-544.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJM199402243300806
This paper is about end-of-life care rather than hospice and makes what in my view is a compelling case that, as a percentage of medical spending, waste at the end of life is rather small. I have kept this old study on the list because I suspect its conclusion is still true, but it is widely assumed not to be true. Remember that except for patients in the terminal stage of cancers, clinicians must make decisions under uncertainty about who is likely to die when.

**CLASS 6 – PHYSICIAN PAYMENT (MEDICARE PART B) (September 23)**

**An important point to take away from the readings for this class is that both how (e.g., salary vs fee-for service (FFS)) and how much physicians are paid alters the services they order or deliver to their patients. Both in instances of administered pricing, such as Traditional Medicare (TM), as well as with negotiated prices in commercial insurance and managed Medicaid plans, the details of physician prices matter for how patients are treated. Physician payment is a complicated example of principal-agent problems. As an agent of the patient, the physician has private incentives that include both patient welfare and earnings but the patient as principal often cannot generally monitor the physician's actions because of ignorance. The physician is also an agent of the insurer, whether public or private, because the insurer cannot also not perfectly monitor the physician but will pay the bulk of the cost. The insurer, however, may imperfectly monitor through such mechanisms as utilization management and network formation; we will take up those topics in Class 18.**

**It is important to realize that how an organization such as a delivery system or physician group is paid for the services of individual physicians who are part of the system or group is not necessarily the same as how the individual physician who is part of that organization is paid. For example, an organization such as Kaiser Permanente is paid a capitated amount per member per month but pays its physicians a salary. Furthermore, depending on the organization, a salaried physician may be paid a fixed amount (i.e., a true salary) or the "salary" may vary according to the quantity of services the physician delivers to patients, which is a form of FFS, or some combination of the two. In many cases both how the organization and the physician are paid may also be a function of other factors, such as**

**quality indicators or patient satisfaction. We take up such "pay-for-performance" in Class 17.**

**In terms of applying the theory of physician payment, this class is mostly about Traditional Medicare (TM), which for many years used pure fee-for-service reimbursement but has recently begun to edge away from that. Although the slides and reading are mostly about TM, TM exerts an important influence on how private insurers pay physicians. In part, this is because virtually all delivery systems and independent physicians (other than pediatricians) contract with Medicare because of its market share, so it saves administrative cost for physicians to use Medicare's coding and fee structure with other insurers, albeit generally with different conversion factors (higher for commercial, lower for Medicaid). Indeed, there is no other widely accepted FFS fee structure in the US other than the Medicare Relative Value Scale. But there is evidence that the markup over Medicare for private insurers' reimbursement is less for capital intensive services than for labor intensive services; see Clemens, et al. in the Optional reading. Because reimbursement/marginal cost is greater for capital intensive services (see Class 4 in the hospital context on this point), private insurers are negotiating the higher margins for capital intensive services down.**

**Over the past few years how Medicare and commercial insurers pay for physician services has been very slowly changing because of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). At the time MACRA was enacted it was a bipartisan effort to move TM away from a purely FFS reimbursement system toward a system with more emphasis on the cost and quality of the services delivered. Even before the Trump administration, however, the Obama administration had greatly slowed down the implementation timeline and the Trump administration has slowed it down further – but it has not completely abandoned it. Although largely under the radar, how these efforts evolve should have an important effect on the future of American medical care.**

**The place to start is the theory of physician payment.**

***The Theory of Physician Payment and Supplier Induced Demand***

**Thomas G. McGuire, "Physician Fees and Behavior," in Incentives and Choice in Health Care, eds. Frank A. Sloan and Hirschel Kasper, pp. 263-288; Cambridge: MIT Press, 2008. https://ebookcentral-proquest-com.ezp-prod1.hul.harvard.edu/lib/harvard-ebooks/detail.action?docID=3338864 This reading covers the economics of fee-based physician payment, and it concludes that the optimal payment is a base or lump sum payment plus a fee set at marginal cost. The context of the chapter is an independent physician, but increasingly physicians are working within organizations as employees rather than as self-employed professionals, and those organizations may take financial risk (see the slides). That development, however, anticipates material later in the course, especially the material in Class 18. The idea of a base payment and an additional fee at the margin that McGuire describes is an idea we encountered in Class 4 on post-acute care (what should payment be at the margin to avoid both stinting and overservicing?) and that we will encounter again in Medicare Part D with respect to drugs (Class 15). You can substitute the first Optional reading for this book chapter if you wish.**

**One of the policy applications of the economic theory in McGuire's chapter in the Medicare context is the so-called offset effect, or how much the budgetary cost of a general change in the level of fees such as Medicare's uniform annual update will be "offset" by changes in the quantity of services delivered by physicians in the opposite direction. I cover this point in the slides, but if you want more, the work CMS relies upon to estimate the offset effect is available on the CMS website http://www.cms.gov/actuarialstudies/downloads/physicianresponse.pdf. The CMS website material, however, is optional.**

OPTIONAL:

For those of you who want a more technical and more extensive treatment of physician payment than McGuire's chapter in the Sloan and Kasper book, read McGuire's chapter in the Handbook of Health Economics, Thomas G. McGuire, "Physician Agency," in Handbook of Health Economics, eds. Anthony J. Culyer and Joseph P. Newhouse; North-Holland, 2000. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S1574006400801687. If you have the economics background to absorb it and want to invest the time, this is an excellent synthesis plus you then won't have to buy the book.

The following should be read by anyone wanting to go on in health economics:

Thomas G. McGuire and Mark V. Pauly, "Physician Response to Fee Changes with Multiple Payers," Journal of Health Economics, 1991, 10(4): 385-410. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/016762969190022F A seminal paper for those wanting to go even further than the Handbook chapter.

Randall P. Ellis and Thomas G. McGuire, "Provider Behavior under Prospective Reimbursement," Journal of Health Economics, 1986, 5(2):129-51. This paper was written in the context of prospective payment for inpatient hospital services, but it is arguably more relevant to delivery systems or physician organizations that take risk. In any event, it, like the preceding paper, is a classic paper on the economics of provider risk sharing. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/0167629686900020

Jeffrey Clemens, Joshua D. Gottlieb, and Tímea Laura Molnár, "Do Health Insurers Innovate? Evidence from the Anatomy of Physician Payments," Journal of Health Economics, 2017, 55:153-67. https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/journal/journal-of-health-economics/vol/55/suppl/C
Using data from one insurer, Texas Blue Cross Blue Shield, they show that the insurer negotiated the relatively higher Medicare markups over marginal cost down. The MedPAC March 2020 report, however, suggests this may be anomalous; in a national insurer's PPO plans the fee for coronary artery bypass graft surgery was 169% of Medicare but for E&M office visits it was only 128%. Data in Class 16 on specialist and primary care commercial prices are also inconsistent with the data in this paper.

*Empirical Literature on the Effect of Fee Changes on Physician Behavior*

**Now that you have the theory under your belt, a clean empirical application of the theory McGuire outlines is:**

**Mireille Jacobson, Craig C. Earle, Mary Price, and Joseph P. Newhouse, "How Medicare's Payment Cuts for Cancer Chemotherapy Drugs Changed Patterns of Treatment," Health Affairs, July 2010, 29(7):1391-9. https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.2009.0563 As described in the slides, in 2005 Medicare drastically cut how much it paid oncologists for many of the chemotherapeutic agents they (or more accurately their nurses) administer to their cancer patients. The oncologists bought the drugs from a manufacturer or wholesaler and in effect "sold" them to Medicare for a higher price than they paid the manufacturer. This system, which is still in place, is sometimes called the "buy and bill" system and is common in East Asia for most drugs. The Jacobson, et al. paper examines how the treatment of lung cancer patients changed as a result of the reduction in reimbursement. On average, oncologists responded to the payment cut by increasing the proportion of patients receiving chemotherapy (an income effect) and substituted toward those drugs whose profitability had fallen least (a substitution effect). Furthermore, these effects were concentrated among oncologists in community practice, whose incomes were directly affected by the fee cut as opposed to oncologists working in clinics or at hospitals, whose income was not very likely not directly affected (because the Medicare reimbursement went to the clinic or hospital and the hospital oncologist's compensation was unlikely to have been tied to amount of chemotherapy administered).**

OPTIONAL READING:

Mireille Jacobson, Craig C. Earle, and Joseph P. Newhouse, "Geographic Variation in Physicians' Responses to a Reimbursement Change," New England Journal of Medicine, December 1, 2011, 365(22):2049-52. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1110117. A follow-on study to the article above by Jacobson, et al. This paper shows that there was a great deal of variability across states in the response to the payment change; while oncologists on balance increased the rate of chemotherapy, in a quarter of the states they decreased it. The number of patients is large, so the variation across the states is real rather than random. Jacobson, et al. have no explanation for the variation; it is one more example of seemingly idiosyncratic geographic variation in physician behavior that we take up in Class 16.

Mireille Jacobson, Tom Y. Chang, Joseph P. Newhouse, and Craig C. Earle, "Physician Agency and Patient Survival," Journal of Economic Behavior and Organization, February 2017, 134:27-47, http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167268116302670. Another paper in the sequence of Jacobson, et al. papers, which shows that the increased chemotherapy from the fee cut for drugs led to a *fall* in the lung cancer mortality rate! Not only was there a pre-post decline, the rate fell more in the states

that increased chemotherapy the most, and it fell more among the oldest old. It is unknowable whether this was because oncologists had earlier underestimated the beneficial effects of chemotherapy before being induced to give more by the change in reimbursement or whether it was because they (and possibly their patients) preferred not to put their patients, especially the oldest old, through the rigors of chemotherapy despite the gain in life expectancy. The gist of the paper is in Figures 2 and 3, which are also in the slides.

A similar result to that in the required Jacobson, et al. paper has been found for Chinese physicians; many of them share in profits in proportion to drug spending, and for those that do total drug spending is 43% higher than for those who do not. East Asian drug purchasing contrasts with the US and Europe; Americans generally buy orally administered drugs (pills) from a pharmacy, and American physicians typically have no financial stake in which (orally administered) drug they prescribe, although some are paid to promote certain drugs. In contrast, Chinese patients, like American cancer patients, generally buy drugs from their physician or hospital, who until 2009 charged a markup on those drugs. For the result on higher spending see Fangwen Lu, "Insurance Coverage and Agency Problems in Doctor Prescriptions: Evidence from a Field Experiment in China," Journal of Development Economics, 2014, 106:156-67, https://ac-els-cdn-com.ezp-prod1.hul.harvard.edu/S0304387813001272/1-s2.0-S0304387813001272-main.pdf?_tid=ccde0e14-f3d2-11e7-8e16-00000aab0f26&acdnat=1515347425_0ef159d597ad68bc863a66465b7a244d

An additional paper related to physician prescribing in a Chinese setting is Janet Currie, Wenchuan Lu, and Wei Zhang, "Patient Knowledge and Antibiotic Abuse: Evidence from an Audit Study in China," Journal of Health Economics, September 2011, 30(5):933-49. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629611000622 China, relative to many countries, exhibits a high rate of antibiotic use, which increases resistance to antibiotics (a worldwide externality) and may also adversely affect the microbiome. This paper, like the Lu paper and the Jacobson, et al. paper on chemotherapy, builds off the incentives Chinese physicians had to prescribe because they dispense the antibiotic and charge a markup. Currie, et al. had simulated patients visit physicians and describe symptoms that should not have led to antibiotic use. Nonetheless, the rate of antibiotic prescribing was around 60%. Furthermore, expensive (not first-line) antibiotics were frequently prescribed, exacerbating the resistance problem and burdening the patient with greater out-of-pocket cost. A subset of the simulated patients indicated to the physician that they had "learned from the internet" that antibiotics should not be prescribed for the flu or cold-like symptoms they described. This intervention markedly reduced antibiotic use.

Another paper that, like Jacobson, et al. demonstrates an agency issue, but in a different country and a different clinical context is Irene Papanicolas and Alistair McGuire, "Do Financial Incentives Trump Clinical Guidance? Hip Replacement in England and Scotland," Journal of Health Economics, December 2015, 44:25-36. Some background: There are two types of hip replacements, cemented and uncemented, with roughly equivalent clinical success rates, although the uncemented procedure is more costly because of longer operating time. Prior to 2003-2004 both English and Scottish hospitals had global budgets, but in

2003-2004 England introduced a case-based reimbursement with cemented replacements reimbursed at a lower rate than uncemented because of the shorter operating time. Using a diff-in-diff method with Scotland as a control, the paper shows this led to an increase in uncemented replacements, so the substitution effect was dominant. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629615000843/1-s2.0-S0167629615000843-main.pdf?_tid=06016f0c-c04e-11e5-87fd-00000aab0f01&acdnat=1453387884_501a8d02e5d7b8bc2ed2b5f1191e34a5

Rudy Douven, Minke Remmerswaal, and Ilaria Mosca, "Unintended Effects of Reimbursement Schedules in Mental Health Care," Journal of Health Economics, July 2015, 42:139-50. This is yet another paper showing agency problems. The main message of this paper is on one of the slides. Self-employed Dutch mental health providers are reimbursed on a fee schedule that is a function of minutes of therapy delivered to a given patient annually, but the schedule is a step function in the number of minutes. This paper shows that there are spikes in the distribution of the number of minutes just above the discontinuity at the step; in other words, providers will deliver a few more minutes of therapy to get the substantially higher payment, behavior that is similar to that of the LTCH's in Class 4 with respect to short-stay outliers. Non-self-employed Dutch mental health providers are not reimbursed with this schedule, and their minutes of therapy do not show such spikes. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629615000363/1-s2.0-S0167629615000363-main.pdf?_tid=091bf45e-8e68-11e5-b363-00000aacb35f&acdnat=1447901498_b0cb4467a86c660aaf7a00892e3ab123

In a subsequent very interesting paper Douven has shown that there is considerably heterogeneity in psychiatrists' and psychologists' willingness to engage in this behavior and that the patients of those who are less willing to engage in it seem to do better clinically. In terms of the model in the classic Ellis and McGuire 1986 paper (Optional reading above). this implies variation in the value placed on patient benefit relative to income. Rudy Douven, Minke Remmerswaal, and Robin Zoutenbier, "Do Altruistic Mental Health Providers Have Better Outcomes?" Journal of Human Resources, Spring 2019, 54(2)310-41. https://muse-jhu-edu.ezp-prod1.hul.harvard.edu/article/724355

Yet another paper demonstrating agency issues is David Howard, Jason Hockenberry, and Guy David, "Personalized Medicine When Physicians Can Induce Demand," NBER Working Paper 24054, http://www.nber.org/papers/w24054.pdf . The authors look at the rate of use of a procedure in free standing clinics owned by physicians vs the rate of the same procedure in hospitals where physicians are not the residual claimant. In the case of this procedure there is a test that distinguishes high and low benefit patients. The authors show increased use of the procedure in high benefit patients relative to low benefit patients in both settings, but the test is given more frequently to low benefit patients in the freestanding clinics; in fact, the rate of low-benefit patients who had the test in the freestanding clinics was even higher than the rate of high-benefit patients who had the test in the hospital setting.

There are studies in the literature on the direction of how changes in Medicare fees affect physician behavior have different findings, which may be attributable to whether the income

or substitution effect dominates in any particular setting. An often cited, early study that agrees with the Physician Payment Review Commission (PPRC) study shown in the slides is Thomas Rice, "The Impact of Changing Medicare Reimbursement Rates on Physician-Induced Demand," Medical Care, August 1983, 21(8):803-15. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/3764772?seq=1#page_scan_tab_contents Rice finds that an exogenous change in Medicare fees in Colorado in the late 1970's had a *negative* relationship with services delivered.

On the other hand (and covered in the slides), Jeffrey Clemens and Joshua Gottlieb find the opposite. They analyze a change in Medicare fees that resulted from a change in the definition of market areas (some physicians were assigned different market areas which changed reimbursement) and finds that an increase in fees was associated with an *increase* in services (the substitution effect dominated the income effect), but the size of the change they studied was smaller than in the other studies, so the substitution effect may have dominated. Jeffrey Clemens and Joshua Gottlieb, "Do Physicians' Financial Incentives Affect Medical Treatment and Patient Health?" American Economic Review, April 2014, 104(4):1320-49. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.104.4.1320

***Empirical Literature on the Basis of Payment***

**Relative to the literature on the effect of variation in the *level* of fee-for service pricing, there is less literature on the effect of the *basis* of payment (why do you think this is?), an issue that has come to the fore with the advent of greater bundling and various forms of risk-based payment to providers (but see Pricing the Priceless and remember that even if a bundled payment is made to an organization, the payment to the individual physician within the organization may be primarily or even completely fee-for-service). Krasnik, et al. show the effect of changing from full to partial capitation, which can be interpreted as a (partially) income-compensated fee change. Hickson, et al. show positive effects of fee-for-service relative to salary; that paper is unusual in this literature because the data come from a randomized trial, albeit a very, very small one.**

**Some delivery organizations, both in the US and in other countries, employ salaried physicians. Physician financial incentives in salaried systems obviously relate to how the salary is set. In many cases there is a large "productivity" component, which is effectively fee-for-service. In purer salary systems the criteria for promotion and any merit increases or bonuses will matter. These criteria are typically difficult for an external analyst to observe directly or even infer, but that does not mean the incentives aren't present. Just ask assistant professors. Don't spend a lot of time with the following two papers; read them for the main result. Also the results are covered in the supplementary slides.**

**Allan Krasnik, Peter P. Groenewegen, Poul A. Pedersen, Peter van Scholten, Gavin Mooney, Adam Gottschau, Henk A. Flierman, and Mogen T. Damsgaard, "Changing Remuneration Systems: Effects on Activity in General Practice," British Medical Journal, 300, June 30, 1990, 1698-1701. http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1663335&blobtype=pdf. Shows the effects of a change from full to partial capitation**

**and partial FFS for the Danish General Practitioner (GP). The change resulted in an increased number of services per visit, fewer referrals, and less hospitalization. The paper uses the concept of supplier-induced demand, but without the usual normative connotation. See also Jensen in the Optional reading, below.**

**Gerald B. Hickson, William A. Altmeier, and James M. Perrin, "Physician Reimbursement by Salary or Fee-for-Service: Effect on Physician Practice Behavior in a Randomized Prospective Study," Pediatrics, September, 1987, vol. 80(3), pp. 344-350. http://pediatrics.aappublications.org.ezp-prod1.hul.harvard.edu/content/80/3 A study in which 18 pediatric residents were randomly assigned to be paid by salary or fee-for-service. Those paid fee-for-service did more of things that were deemed good (e.g., continuity, fewer missed recommended visits).**

OPTIONAL:

Vibeke Myrup Jensen, "Happy Doctor Makes Happy Baby? Incentivizing Physicians Improves Quality of Prenatal Care," Review of Economics and Statistics, December 2014, 96(5):838-48. In Denmark general practitioner physicians provide prenatal care. Using the same change in Danish physician compensation studied by Krasnik, et al. (above), she finds younger pregnant women treated by the general practitioner physicians who changed from full capitation to partial capitation-partial FFS had better birth outcomes (higher birthweight, fewer preterm births, and better fetal growth). http://www.mitpressjournals.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1162/REST_a_00409

Heike Hennig-Schmidt, Reinhard Seltin, and Daniel Wiesen, "How Payment Systems Affect Physicians' Provision Behavior: An Experimental Investigation," Journal of Health Economics, July 2011, 30(4):637-46. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629611000452 Reports on laboratory experiments showing that medical students overprescribe in FFS and underprescribe in capitation, but that, consistent with McGuire, both patient benefit and profit matter.

Mark Dusheiko, Hugh Gravelle, Rowena Jacobs, and Peter Smith, "The Effect of Financial Incentives on Gatekeeping Doctors: Evidence from a Natural Experiment," Journal of Health Economics, 25(3), May 2006, pp. 449-478. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629605000792 In the 1990s the then Conservative government in the UK introduced higher powered physician reimbursement for General Practitioners in the National Health Service. GPs had long been capitated for their own services, but did not bear any financial consequences for decisions to hospitalize. In the new arrangement the government gave larger groups of GPs the option to receive a larger capitation and bear risk for (pay for) elective admissions from the capitation amount ("fundholding"). (This has some similarities with American Accountable Care Organizations, Class 18.) This method was abolished in 1999 by the Labor government, and GPs were no longer at risk (but it was reintroduced by Labor in 2005 and now there is yet another variant under a later Conservative government). The Dusheiko, et al. study shows that when fundholding was abolished, elective admissions increased 3.5 to 5.1 percent among GPs who had been fundholders relative to the increase among those who had not,

suggesting that the financial risk associated with fundholding had kept down elective admissions. See also a followup article that deals with patient satisfaction and process measures of care. Mark Dusheiko, Hugh Gravelle, Ning Yu, and Stephen Campbell, "The Impact of Budgets for Gatekeeping Physicians on Patient Satisfaction: Evidence from Fundholding," Journal of Health Economics, July 2007, 26(4): 742-762. This paper shows a decrease in overall satisfaction among patients of those physicians who are financially responsible, but an increase in process measures of quality. https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629606001408

Jason Barro and Nancy Beaulieu, "Selection and Improvement: Physician Responses to Financial Incentives," NBER Working paper 10017, October 2003 (http://www.nber.org.ezp-prod1.hul.harvard.edu/papers/w10017.pdf). Shows that Florida physicians who were switched from a salaried basis of payment to a fee-for-service like payment increased the profitability of their practices (i.e., increased their number of billable services).

Hendrik Schmitz, "Practice Budgets and the Patient Mix of Physicians – The Effect of a Remuneration System on Health Care Utilization," Journal of Health Economics, December 2013, 32(6)1240-9. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science?_ob=ArticleListURL&_method=list&_ArticleListID=-707813009&_sort=r&_st=13&view=c&md5=9ca28d15c847018616ba07a5e0e6bdbe&searchtype=a Shows that when Germany introduced both an individual budget cap for publicly insured patients and a global budget for physician expenditures, the number of visits by publicly insured patients fell and the number by the privately insured rose.

David Madden, Anne Nolan, and Brian Nolan, "GP Reimbursement and Visiting Behavior in Ireland," Health Economics, 14(10), October 2005, pp. 1047-1060. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1002/hec.995/pdf Switching from fee-for-service to capitation in Ireland did *not* seem to affect visit rates to GPs. At the patient level, however, the decision to initiate treatment may depend more on patient incentives than physician reimbursement (this was a result from the RAND HIE).

Jack Hadley and James D. Reschovsky, "Medicare Fees and Physicians' Medicare Service Volume: Beneficiaries Treated and Services per Beneficiary," International Journal of Health Care Finance and Economics, 6(2), June 2006, pp. 131-150. http://www.springerlink.com.ezp-prod1.hul.harvard.edu/content/5p80j52176701488/fulltext.pdf Finds that Medicare service volume is positively related to fees and that the income effect is important only at high Medicare shares. See also the paper by Hadley, Reschovsky, Catherine Corey, and Stephen Zuckerman, "Medicare Fees and the Volume of Physician Services," Inquiry, Winter 2009/2010, 46(4):372-90 for similar findings (http://www.inquiryjournalonline.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.5034/inquiryjrnl_46.4.372).

Uwe Dulleck and Rudolf Kershbamer, "On Doctors, Mechanics, and Computer Specialists: The Economics of Credence Goods," Journal of Economic Literature, March 2006, 44(1): 5-42. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/10.2307/30032295 A survey of

the literature on credence goods (goods with an information asymmetry between producer and consumer), with a theoretical model that ties together a rather diverse literature in economics; as the title indicates, the literature considered goes beyond physicians (also noted in the Optional reading for Class 2).

***Medicare Physician Payment: Where We Have Come From and Where We Are Now***

**Start by reviewing (or reading) the MedPAC Payment Basics primer on physician payment.**

**Then read Scott Findlay, "Implementing MACRA," http://healthaffairs.org/healthpolicybriefs/brief_pdfs/healthpolicybrief_166.pdf Written in March 2017, this nine page policy brief both summarizes MACRA and gives considerable background on the history of Medicare reimbursement policy toward physicians. It also briefly describes several key issues about MACRA's implementation. It was drafted by a health journalist and so is quite readable.**

**Then read pp. 126-127 of the March 2020 MedPAC Report, which is a box that describes what actually happened in the first and second years of MIPS. In brief, CMS lowered the bar so (almost) everyone who was not exempt or in an alternative payment arrangement (a third of clinicians are exempt; see the slides on the alternative payment arrangement) got a trophy, but by statute the bar needs to be raised by 2022. Of course, the law could be changed so the bar is not raised. http://medpac.gov/docs/default-source/reports/mar20_medpac_ch4_sec.pdf?sfvrsn=0**

**Also read:**

**Robert A. Berenson and John D. Goodson, "Finding Value in Unexpected Places – Fixing the Medicare Physician Fee Schedule," New England Journal of Medicine, April 7, 2016, 374(14):1306-9. Describes the flaws in the current Medicare fee schedule, including the problem of updating to account for improvements in productivity. This is the physician version of the technological change issue for hospitals described in Class 5. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1600999**

**Andrew Mulcahy, Katie Merrell, and Ateev Mehrotra, "Payment for Services Rendered – Updating Medicare's Valuation of Procedures," New England Journal of Medicine, January 23, 2020, 382(4):303-6. Describes another issue in Medicare fee setting. Medicare bundles payment for a post-operative visit with the surgical procedure, but it turns out that many post-operative visits that CMS assumes are provided are not. As a result, Medicare should reduce what it pays for the bundle, but the reduction in rates would be large (10-18% across 10 surgical specialties), and CMS has thus far put off doing anything about it. (Of course, there was lobbying to get them to do so.) Note that if the reduction in reimbursement were done in a budget neutral way, rates for primary care physicians would increase. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1908706**

OPTIONAL:

Medicare Payment Advisory Commission, "Report to the Congress: Medicare Payment Policy," March 2018, chapter 15. In 2018 MedPAC came out four square against the MIPS and sketched a replacement for it. Its views, however, did not gain much support, so the issue of whether MIPS should continue is still on the table. http://medpac.gov/docs/default-source/reports/mar18_medpac_ch15_sec.pdf?sfvrsn=0

Eric C. Schneider and Cornelia J. Hall, "Improve Quality, Control Spending, Maintain Access — Can the Merit-Based Incentive Payment System Deliver?" New England Journal of Medicine, February 23, 2017, 376(8):708-10. Foreshadowing MedPAC's 2018 blast against MIPS, this a skeptical view of MIPS, but for now MIPS is going ahead at a glacial pace. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1613876?query=featured_home

Zirui Song and John D. Goodson, "The CMS Proposal to Reform Office-Visit Payments," New England Journal of Medicine, September 20, 2018, 379(12):1102-4. Much of the literature treats the fee-for-service system as a single entity, but as this short piece makes clear, it is more complicated than that. The paper describes the five levels of Evaluation and Management office visits, which vary in time, complexity of patient, and documentation requirements. In an effort to reduce documentation burden, in July 2018 CMS proposed to collapse the five levels to two in a budget neutral way. The paper suggests that the change could be counterproductive and would result in shorter visits and even faster physician burnout. In November 2018 CMS published the final rule (https://www.cms.gov/newsroom/fact-sheets/final-policy-payment-and-quality-provisions-changes-medicare-physician-fee-schedule-calendar-year) which kept level 5 visits unchanged, but collapsed levels 2, 3, and 4 into a single code starting in CY2021. Much of the critique here of the proposed rule also applies to the Final Rule. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1809742

Paul B. Ginsburg, "Fee-for-Service Will Remain a Feature of Major Payment Reforms, Requiring More Changes in Medicare Physician Payment," Health Affairs, September 2012, 31(9): 1977-83. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/9/1977.full.pdf+html Ginsburg gives some of the history of Medicare physician payment policy that is also in the Findlay reading. He also points out that although many seem to believe that the shift to global or bundled payment eliminates the concern about fee schedules and relative value scales, this is not the case. Not only are Medicare relative value scales likely to be the initial basis for pricing bundles in a bundled payment system, but they are also likely to retain a considerable role in physician reimbursement within most larger entities that share risk with insurers or take full risk. For example, a Medicare Advantage plan (Class 8) often contracts with physicians on a fee-for-service basis. We will take up shared risk in Medicare Accountable Care Organizations (ACO's) in more detail in Class 18, but Medicare ACO's also are reimbursed using the Medicare fee schedule for physician services.

Jeffrey Clemens and Joshua D. Gottlieb, "In the Shadow of a Giant: Medicare's Influence on Private Physician Payments," Journal of Political Economy, January-February 2017, 125(1):1-39. http://www.journals.uchicago.edu.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1086/689772. Shows that when Medicare exogenously increases fees by $1, private fees rise by $1.16. Moreover, this effect is strongest in concentrated private insurer markets and competitive provider markets, consistent with (private) insurer-provider bargaining. Note that these findings, like the 2014 Clemens-Gottlieb paper (Optional reading above), challenge the cost shifting and offset findings in the slides.

***The Medicare Fee Schedule (the Resource-Based Relative Value Scale or RBRVS)***

OPTIONAL:

William C. Hsiao, Peter Braun, Daniel Dunn, et al., "Resource Based Relative Values: An Overview," JAMA, 260(16), October 28, 1988, 2347-53. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/260/16/2347.short An overview and basic description of the initial RBRVS, which became the basis of FFS reimbursement in the US. There are numerous other articles that go into detail on the RBRVS in the same issue of the JAMA as this article. The slides cover the methods Hsiao and his group used.

Medicare Payment Advisory Commission, Report to the Congress: Medicare Payment Policy, June 2006, chapter 4 (http://www.medpac.gov/documents/reports/Jun06_Ch04.pdf?sfvrsn=0). Should be read by anyone contemplating writing testimony on practice cost.

David C. Chan and Michael J. Dickstein, "Industry Input in Policy Making; Evidence from Medicare,: Quarterly Journal of Economics, August 2019, 134(3):1299-342. https://academic-oup-com.ezp-prod1.hul.harvard.edu/qje/article/134/3/1299/5299594 Analyzes decisions made by the RUC in terms of bias, where bias is defined as the degree to which a given revaluation of a procedure would benefit specialties represented on the RUC. The bias amounts to about 2% of Medicare spending, although because the RVS is used by commercial insurers as well, the bias has an effect there (but see the Clemens, Gottlieb, and Molnár paper above). The paper also addresses the tradeoff that arises when a committee relies on biased experts. Although there is bias, there can be greater accuracy because of the expertise. Interestingly, when the RUC decisions are more data-based, they are better correlated with private insurer prices, indicating that expertise on the committee has a social benefit.

David C. Chan, Johnny Huynh, and David M. Studdert, "Accuracy of Valuations of Surgical Procedures in the Medicare Fee Schedule," New England Journal of Medicine, April 18, 2019, 380 (16): 1546-54. Compares the RUC's estimates of skin-to-skin time (minutes from incision to closure) for various surgical procedures with a gold standard data base. The RUC estimates had non-trivial mean absolute error but were approximately unbiased. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa1807379

*Balance Billing*

Jacob Glazer and Thomas McGuire, "Should Physicians Be Permitted to 'Balance Bill' Patients?" Journal of Health Economics, 12(3):239-258, October 1993. A theoretical article on the subject.

**CLASSES 7-11 AND 15 – PUBLIC AND PRIVATE HEALTH INSURANCE MARKETS: SELECTION AND INDIVIDUAL AND SMALL GROUP INSURANCE MARKETS; AMERICAN HEALTH CARE REFORM AND THE AFFORDABLE CARE ACT (ACA); MEDICARE PART C AND RISK ADJUSTMENT, MEDICAID; ADMINISTRATIVE COST AND MINIMUM LOSS RATIOS; MEDICARE PART D**

**The next several classes are about both public and private health insurance markets, including Medicare Part C, Medicaid, the exchanges established under the ACA, and Medicare Part D. Medicare Parts C and D are (mostly) an individual market, as are the exchanges. Medicaid mostly is not, although the role of individual choice is expanding. The ACA's reforms were mostly to individual and small group commercial insurance markets; classes 10 and 11 take up the ACA's reforms to those markets as well as other ACA reforms. Class 7 begins by laying some theoretical groundwork on selection, because selection is a defining feature of unregulated as well as imperfectly regulated individual and small group insurance markets. Class 7 also touches on behavioral economics and health care. Classes 8 and 10 describe Medicare Part C and the ACA's reforms to commercial individual and small group markets, respectively. In between Class 9 takes up Medicaid. Class 11 follows on from Class 10 and takes up the ACA's introduction of Minimum Loss Ratios as well as the important distinction between economic costs and accounting costs. Finally, Class 15 covers pharmaceuticals and Medicare Part D.**

**CLASS 7 – THE THEORY AND CONSEQUENCES OF SELECTION IN HEALTH INSURANCE MARKETS WITH INDIVIDUAL CHOICE; BEHAVIORAL ECONOMICS AND HEALTH CARE – (September 28)**

**Although the number of slides for this class is somewhat less than for other classes, there is a lot of reading. The first three papers below are all classic papers and critical for understanding selection in insurance markets. They may well be slow going for those of you with a weaker economics background. The slides go over all three papers, especially the Rothschild-Stiglitz paper. If you read and understood the three papers first, those slides should be quick work.**

**All three papers demonstrate the importance of asymmetric information in how health insurance markets function. Asymmetric information, however, is important in many settings; recall the role it plays in contract theory, mechanism design, and the concept of power (Class 4).**

**The Rothschild-Stiglitz paper focuses on behavior by insurers. Although consumers are in the model, what drives the results is insurer behavior or the supply side of the market. Importantly, Rothschild and Stiglitz assume insurers can offer any insurance contract; that is**

**how the pooling equilibrium is broken, which is a key result for the purposes of this class.**

**There is another strand of the selection literature, exemplified by the Einav-Finkelstein and Cutler-Reber papers, that focuses on behavior by consumers or the demand side of the market. Einav-Finkelstein assume there is one insurance contract that is fixed and the consumer can choose between buying that contract or being uninsured. The context in the Cutler-Reber paper is an employer that offers its employees a subsidy to buy one of two insurance plans, but they are fixed types of plans and the focus is how alternative subsidy arrangements affect the choice between the two plans. A public marketplace such as the ACA established for the individual market is a similar situation for a given year. (Insurers in the public marketplaces can within limits modify their plans annually.) Einav-Finkelstein illustrate the welfare loss from being uninsured under standard welfare economic assumptions; Cutler and Reber illustrate the notion of a death spiral.**

**If you didn't read the Cutler-Zeckhauser chapter in the Handbook of Health Economics for Class 1, read it now.**

**Michael Rothschild and Joseph Stiglitz, "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information," Quarterly Journal of Economics, November 1976, 90(4): 629-50. https://www-jstor-org.ezp-prod1.hul.harvard.edu/stable/pdf/1885326.pdf?ab_segments=0%2Fbasic_search_SYC-5455%2Fcontrol&refreqid=fastly-default%3Adf41a065bbb0769e0964096e73f396b1Links to an external site.**
**A classic paper on asymmetric information and the insurance market, and one of the papers for which Stiglitz won the Nobel Prize in economics. Try to understand it on your own, but don't bog down if you are having trouble. Maybe the slides can help. Or you can go to a YouTube video that walks you through the paper: https://www.youtube.com/playlist?list=PLL6RiAl2WHXF8AxOf7UFr-cfHOAWGmhp0**

**Rothschild and Stiglitz make several key assumptions in deriving their results. First, they assume there is no regulator of the insurance market; insurers are free to offer any policy, and there is free entry and exit. As a corollary of there being no regulator, there is no risk adjustment (meaning a third party that makes dollar transfers from insurers with better risks to those with worse risks), an anti-selection tool that I take up in Class 8. Second, they assume the only thing that matters in the choice of insurance is the person's risk type (and furthermore there are only two types, which is not an innocuous assumption), but in reality other factors may matter as well. In particular, if risk aversion is greater among better risks, there could be favorable rather than adverse selection, meaning it is disproportionately better risks who choose more complete insurance. Third, consumers differ only in their probability of a loss, not the amount of the loss (this assumption is also not innocuous). Fourth, insurers do not anticipate how other insurers will react to the policies and premiums that they offer consumers. In other words, there is no strategic behavior among insurers. Some of the papers cited in the note to the slide entitled "The RS Model: Equilibrium Assumptions" modify this assumption and find the RS result that there may be no equilibrium is sensitive to this last assumption. You may wonder why you are reading a paper that makes such strong assumptions; the answer is that it by making many simplifications, it brings out a key feature of real world insurance markets.**

**Liran Einav and Amy Finkelstein, "Selection in Insurance Markets: Theory and Empirics in Pictures," Journal of Economic Perspectives, Winter 2011, 25(1):115-38. https://www.aeaweb.org/articles?id=10.1257/jep.25.1.115 This is of interest for two reasons. First, the paper shows how insurance markets differ from standard economics markets, namely with selection cost functions (the supply side of the market) are not independent of demand functions, whereas in standard markets cost functions do not depend on demand. Second, the authors derive a simple measure of welfare loss from adverse selection (using standard assumptions). They go on to apply the framework to selection in an employer group plan and find adverse selection with small welfare consequences. In their model there is only one insurance contract, which is fixed (unlike Rothschild-Stiglitz), and there is a continuum of risk types, unlike Rothschild-Stiglitz' two discrete types of risk. The Einav-Finkelstein result on deadweight loss, however, requires the strong assumption that consumers' demand for health insurance be perfectly (rank) correlated with their spending risk; in other words, the person with the highest willingness to pay for insurance has the highest expected medical spending, the person with the second highest willingness to pay has the second highest expected spending, and so forth. A longer and more technical version of this paper is Liran Einav, Amy Finkelstein, and Mark R. Cullen, "Estimating Welfare in Insurance Markets Using Variation in Prices," Quarterly Journal of Economics, August 2010, 125(3):877-922. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/125/3/877.full.pdf**

**David M. Cutler and Sarah J. Reber, "Paying for Health Insurance: The Tradeoff Between Competition and Adverse Selection," Quarterly Journal of Economics, 113(2), May 1998, pp. 433-66. https://academic-oup-com.ezp-prod1.hul.harvard.edu/qje/article/113/2/433/1915723. Although employment-based insurance mostly solves the selection problem for larger employment groups, Cutler and Reber show how changes in employer subsidies can induce selection within the employment group if employees have a choice of plans and how that can result in a death spiral with imperfect risk adjustment. In effect, in this context there is an individual market within the employment group. Like Einav-Finkelstein, Cutler-Reber fix the insurance plans (or "contracts" in Rothschild-Stiglitz jargon) that consumers buy, whereas they are not fixed in the Rothschild-Stiglitz model. Also like Einav-Finkelstein, there is a continuum of risk types and demand for health insurance is perfectly (rank) correlated with spending risk.**

**Cathleen D. Zick, Charles J. Mathews, J. Scott Roberts, Robert Cook-Deegan, Robert J. Pokorski, and Robert C. Green, "Genetic Testing For Alzheimer's Disease And Its Impact On Insurance Purchasing Behavior," Health Affairs, March/April 2005, 24(2):483-90. https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.24.2.483 This paper is a nice, short example of selection behavior, albeit on a small scale.** An Optional reading that is related to the Zick, et al. paper is a May 2017 New York *Times* article, which picks up on 23 and Me's offering a test for the ApoE4 gene and how this makes the supply of long-term care insurance problematic. https://www.nytimes.com/2017/05/12/health/new-gene-tests-pose-a-threat-to-insurers.html?emc=edit_tnt_20170512&nlid=32431973&tntemail0=y

**The last two required readings, Beshears, et al. and Loewenstein, et al., take up**

**behavioral economics applications to consumer choice, which the Class 2 slides touched on. At least two findings of behavioral economics are relevant to selection of insurance plans. The first is that because of the complexity of health insurance plans, consumers often do not make optimal choices for themselves and their families. Ironically, however, this non-optimizing behavior may improve the functioning of the market by reducing selection (see Handel in the Optional reading). Second, once having made a choice of plan, consumers tend not to revisit that choice in subsequent years when they renew their policy (called "inertia" or "status quo bias"). Like the finding with respect to complexity, inertia can reduce selection, but it also can increase plan markups, since consumers that don't comparison shop each year are relatively price inelastic. (Inertia is also why suppliers of subscription products like a default of "automatic renewal.") The Abaluck and Gruber 2016 paper in Class 15 (Optional) on the Medicare Part D drug benefit illustrates this behavior. Employers also exhibit inertia in their choice of insurer, because some employees may be worse off a new plan. For example, a new plan may well have a different network or formulary (Classes 15 and 18), so that some persons may see an increase in price to use their personal physician (this is especially a problem for mental health services) or to remain on a drug they are taking (though others could see a decrease and in any event an incumbent insurer's network can change from year to year).**

**Behavioral economics has numerous applications in health care, even explaining the public's response to the Covid-19 epidemic; the papers listed here are just a sampler.**

**John Beshears, James J. Choi, David Laibson, Brigitte C. Madrian, "How Are Preferences Revealed?" Journal of Public Economics, 2008, 92:1787-94. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0047272708000728. A short, relatively non-technical summary of the behavioral economics literature on when people seem to make "bad" (non-optimizing) choices. The characteristics of products where this behavior occurs seem to fit both medical care and health insurance. Recall here the discussion in Class 2 of the applicability of standard welfare economics to medical care and the usual treatment of moral hazard.**

**George Loewenstein, Kevin G. Volpp, and David A. Asch, "Incentives in Health: Different Prescriptions for Physicians and Patients," JAMA, April 4, 2012, 307(13):1375-6. Applications of behavioral economics principles to structuring demand and supply side incentives. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/Issue.aspx?journalid=67&issueID=23309&direction=P**

**Scott D. Halpern, Robert D. Truog, and Franklin G. Miller, "Cognitive Bias and Public Health Policy During the Covid-19 Pandemic," JAMA, published on line June 29, 2020, https://jamanetwork-com.ezp-prod1.hul.harvard.edu/searchresults?q=halpern&allSites=1&SearchSourceType=1&exPrm_qqq={!payloadDisMaxQParser%20pf=Tags%20qf=Tags^0.0000001%20payloadFields=Tags%20bf=}%22halpern%22&exPrm_hl.q=halpern A two pager showing how various behavioral biases shaped the response to Covid-19.**

**Finally, I put on the class website a short excerpt from TheHill.com from March 2007**

**that illustrates selection behavior well. The gist of the story is as follows. In 2006 Humana, a private insurer, offered an enhanced Medicare Part D drug plan that covered brand name drugs in the donut hole, a region of high out-of-pocket spending on drugs that standard Part D plans did not cover. No insurer other than Humana offered such a plan, although several insurers offered plans that covered generic drugs in the donut hole. This Humana plan was not surprisingly disproportionately selected by those who used a lot of brand name drugs and spent enough on drugs to reach the donut hole. Since those spending enough to reach the donut hole were by definition large spenders, Humana suffered substantial losses, so much so that Humana's stock price fell about 25% from January to May 2006 as it became apparent that it would lose an appreciable amount of money from this one Part D plan. (The stock price then rose for the rest of the year because Humana told investors it did not intend to offer the plan in 2007.) Inexplicably (to me), given Humana's experience, Sierra Health Plan, another, much smaller insurer (subsequently acquired by United Health Care) decided it would offer a similar plan in 2007. (It had not offered such a plan in 2006.) Sierra's experience in 2007 replicated that of Humana's in 2006. The excerpt on the web describes a complaint that Sierra filed with CMS in March 2007, essentially alleging that Humana was dumping high cost enrollees on them.**

OPTIONAL:

Nathaniel Hendren, Camille Landais, Johannes Spinnewijn, "Choice in Insurance Markets: A Pigouvian Approach to Social Insurance Design," September 2020, Cambridge, MA, National Bureau of Economic Research working paper WP 27842. Related to the Handel and Schwartzstein reading for Class 2. Shows that the value of offering choice is greater, the greater is the heterogeneity of preferences relative to risk, and is less the greater is moral hazard. https://www.nber.org/papers/w27842.pdf

George Akerlof, "The Market for Lemons," Quarterly Journal of Economics, August 1970, 84(3):488-500. The original asymmetric information paper, and the work for which Akerlof shared the Nobel Prize in Economics with Joseph Stiglitz and Michael Spence. Like the Einav-Finkelstein and Cutler-Reber papers above, in this paper the characteristics of the item being bought and sold (used cars) are fixed; there is not an analog to the Rothschild-Stiglitz insurer that modifies the contract. Although used cars are the main example in the paper, Akerlof does refer to selection in individual insurance markets as a rationale for Medicare. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/pdf/1879431.pdf?refreqid=excelsior%3Af498ceb83835de868a67a53b84868dc3

Matthew Panhans, "Adverse Selection in ACA Exchange Markets: Evidence from Colorado," American Economic Journal: Applied Economics, April 2019, 11(2):1-36. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/app.20170117 Finds adverse selection in the ACA marketplaces. He focuses on the welfare loss, which requires one to interpret the observed demand curve for insurance normatively, and not on what I think is the more policy relevant question of the distribution of the adverse selection between the unsubsidized (household income over 400% of the poverty limit) and the subsidized. More on this point in Class 10.

M. Kate Bundorf, Jonathan Levin, and Neale Mahoney, "Pricing and Welfare in Health Plan Choice," American Economic Review, December 2012, 102(7):3214-48. They use a data set from small employers to estimate a 2-11% welfare loss from non-optimal premium subsidies that employers in the small group market set for their employees. About a quarter of this loss is from a suboptimal level of premiums that employers set; the remainder is from a uniform premium within the firm despite heterogeneous preferences. The Glazer and McGuire paper on Medicare Advantage in Class 8 makes the same analytical point in the context of welfare losses from a "single premium" policy despite heterogeneous preferences. This paper is partially covered in the slides. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.102.7.3214

Benjamin R. Handel, "Adverse Selection and Inertia in Health Insurance Markets: When Nudging Hurts," American Economic Review, December 2013, 103(7):2643-82. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.103.7.2643 Makes the point that inertia and imperfect information in health plan choice reduces adverse selection; conversely, improving information and forcing choice can exacerbate selection in a context with ineffective risk adjustment. The adequacy of risk adjustment is a subject we take up in Class 8. On imperfect information see also McWilliams, Afendulis, et al. in the Optional reading for Class 8.

Benjamin R. Handel and Jonathan T. Kolstad, "Health Insurance for 'Humans': Information Frictions, Plan Choice, and Consumer Welfare," American Economic Review, August 2015, 105(8):2449-500. More on how standard welfare calculations from observed behavior may not be "experienced welfare" and thus related to the slides in Class 2 on how much normative meaning to ascribe to the observed demand curve for health insurance, which is central in the Einav-Finkelstein calculation of deadweight loss. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.20131126

Mark Pauly and Yuhui Zeng, "Adverse Selection and Challenges to Stand-Alone Prescription Drug Insurance," August 2003, NBER Working Paper 9919 (http://www.nber.org.ezp-prod1.hul.harvard.edu/chapters/c9869.pdf). Shows that drug spending is more persistent than other medical spending. In a simulation if unsubsidized drug insurance that renews annually is offered by itself, this persistence of spending potentially results in a death spiral, but this is not necessarily the case if it is offered as part of insurance for all medical services. I will return to this paper in Class 15.

Richard Frank, Jacob Glazer, and Thomas McGuire, "Measuring Adverse Selection in Managed Health Care," Journal of Health Economics, November 2000, 19(6): 829-854. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S016762960000059X A classic paper showing profits (and losses) to be made by differential coverage of selected services by plans that take full risk. Highly relevant to the discussion of selection in Class 8.

Liran Einav, Amy Finkelstein, and Paul Schrimpf, "The Welfare Cost of Asymmetric Information: Evidence from the U.K. Annuity Market," NBER Working Paper 13228, July 2007 (http://economics.sas.upenn.edu.ezp-prod1.hul.harvard.edu/~hfang/teaching/

socialinsurance/readings/fudan_hsbc/Finkelstein_einav_schrimpf07(2.14).pdf) Asymmetric information and adverse selection are also found in markets for annuities. This paper estimates the welfare cost of asymmetric information in the annuity market at about 2% of premiums (but about 25% of the relevant cost, which is the money at stake from varying the guarantee period), and notes that mandates to deal with the selection could either improve or decrease welfare.

Hanming Fang, Michael P. Keane, and Dan Silverman, "Sources of Advantageous Selection: Evidence from the Medigap Insurance Market," Journal of Political Economy, April 2008, 115(2):303-350. http://ideas.repec.org/a/ucp/jpolec/v116y2008i2p303-350.html Shows favorable selection in this market after conditioning on health status. Heterogeneous risk preferences, however, do not appear to play a large role. Maybe cognition does?

Mark Shepard, "Hospital Network Competition and Adverse Selection: Evidence from the Massachusetts Health Insurance Exchange," working paper. http://scholar.harvard.edu/files/mshepard/files/mshepard_jmp_hospital_networks_adverse_selection.pdf Shows that health insurance plans that include "star hospitals" (think Massachusetts General or Brigham and Women's) are selected against if consumers have a choice of plans with the star hospitals in-network for some plans and out-of-network for others. The intuition is that sicker persons want to use providers at these hospitals in ways that risk adjustment (Class 8) does not fully compensate for. Potentially relevant to why insurers with broader networks appeared to lose more money on the public exchanges despite higher premiums and risk adjustment (Class 10).

Benjamin Handel, Igal Hendel, and Michael D. Whinston, "Equilibria in Health Exchanges: Adverse Selection versus Reclassification Risk," Econometrica, July 2015, 83(4):1261-1313. Shows a tradeoff between community rating, meaning all pay the same premium for a given policy (leading to greater adverse selection), and allowing premiums to differ (price discrimination) based on health status (leading to reclassification risk, meaning a person who is striken with a chronic disease faces the risk of higher premiums). In their data the welfare loss from the latter outweighs the loss from the former. This paper should not be attempted without a strong economics background. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.3982/ECTA12480/epdf

Nathaniel Hendren, "Private Information and Insurance Rejections," Econometrica, September 2013, 81(5):1713-62. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.3982/ECTA10931/epdf Clarifies the intuition in the Rothschild-Stiglitz model that trade may not take place at any price if residual private information sufficiently dominates, and applies this insight to long-term-care, life, and disability insurance. Thus, allowing risk rating of premiums does not necessarily lead to an efficient outcome. (Risk rating means individual consumers can be charged different premiums depending on their risk; it is the opposite of community rating.) Like the prior paper, this paper should also not be attempted without a strong economics background.

E. Glen Weyl and Andre Veiga, "Pricing Institutions and the Welfare Cost of Adverse

Selection," American Economic Journal: Microeconomics, May 2017, 9(2):139-48. Poses the issue: Consider someone purchasing a supplementary policy such as Medigap or choosing between a low and high option plan. How is selection affected if, on the one hand, persons pay only the incremental cost of the better plan (e.g., the employer offers a fixed subsidy independent of the choice of plan) versus, on the other hand, paying the full premium for whatever plan is chosen (e.g., no subsidy)? They show for assumed parameter values of their model that deadweight loss is much less if the incremental cost is paid. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/mic.20150295

Gerry Oster and A. Mark Fendrick, "Is All 'Skin in the Game' Fair Game? The Problem with Non-Preferred Generics," American Journal of Managed Care, published on line September 17, 2014. Shows some insurers are imposing higher copays on generic drugs for certain classes of diseases, another response to selection behavior. http://www.ajmc.com/publications/issue/2014/2014-vol20-n9/Is-All-Skin-in-the-Game-Fair-Game-The-Problem-With-Non-Preferred-Generics You can get to this journal through the Harvard library system or by registering with the journal, which is free.

Jörg Spenkuch, "Moral Hazard and Selection Among the Poor," Journal of Health Economics, January 2012, 31(1):72-85. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629611001706/1-s2.0-S0167629611001706-main.pdf?_tid=df8bf155eefeab8cdb8c1af52bb2d609&acdnat=1339070890_6f6ba48618158ec5db192d6e48cd945c. Shows both moral hazard and (on average) adverse selection on observables, especially self-assessed health, in the Seguro Popular Experiment in Mexico. Interestingly there was no selection on Hba1C, blood pressure, BMI, or cholesterol levels.

Medicare Payment Advisory Commission, "Report to the Congress: Benefit Design and Cost Sharing in Medicare Advantage Plans," December 2004. http://www.medpac.gov/documents/reports/Dec04_CostSharing.pdf?sfvrsn=0 An example of a β contract in Rothschild-Stiglitz terms.

If after reading Cutler and Reber you want more on the employer's decision on how to subsidize plans, read Nolan Miller, "Pricing Health Benefits: A Cost-Minimization Approach," Journal of Health Economics, 2005, 24:931-49. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629605000342

If you want more on behavioral economics, you can consult any or all of the following:

Saurabh Bhargava and George Loewenstein, "Choosing a Health Insurance Plan: Complexity and Consequences," JAMA, December 15, 2015, 314(23)2505-6. A pithy summary of how poor consumers are at choosing insurance plans. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2475470

George Loewenstein, Joelle Y. Friedman, Barbara McGill, Sarah Ahmad, Suzanne Linck, Stacey Sinkula, John Beshears, James J. Choi, Jonathan Kolstad, David Laibson, Brigitte C.

Madrian, John A. List, and Kevin C. Volpp, "Consumers' Misunderstanding of Health Insurance," Journal of Health Economics, 2013, 32(5):850-62. Like the required Beshears, et al. paper, this one by manyof the same authors shows that consumers do not understand health insurance plans well and would better understand a simplified plan, e.g., copays and not deductibles. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629613000532

Tibor Besedes, Cary Deck, Sudipta Sarangi, and Mikhael Shor, "Age Effects and Heuristics in Decision Making," Review of Economics and Statistics, May 2012, 94(2):580-95. Like Loewenstein, et al., this paper shows that systematic departures from rational models increase with age. http://www.mitpressjournals.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1162/REST_a_00174

Dhruv Khullar, Dave A. Chokshi, Robert Kocher, Ashok Reddy, Karna Basu, Patrick H. Conway, and Rahul Rajkumar, "Behavioral Economics and Physician Compensation," New England Journal of Medicine, June 11, 2015, 372(24):2281-3. An article written for physicians on applications of behavioral economics to physician practice. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1502312

Finally, an excellent overview of how behavioral economics expands the economist's and the policymaker's toolkit and how it should not be seen as an either/or proposition vis-à-vis neoclassical economics but rather as augmenting neoclassical economics is Raj Chetty's Ely Lecture, "Behavioral Economics and Public Policy," American Economic Review, May 2015, 105(5):1-33. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.p20151108

***The Tax Treatment of Employer-Paid Premiums***

**E**mployer-paid health insurance premiums are exempt from income and payroll taxes. The resulting subsidy serves to encourage group insurance through the employer and is thus an anti-selection policy. Whether the premiums should be exempt in full or in part or at all is a long-standing policy issue, one that surfaced in a major way in the debate over the ACA with its "Cadillac tax" of 40% on health insurance premiums that is now permanently repealed. Economists of all political views were and are almost all in favor of taxing employer-paid premiums, at least in part, but such a tax has few other supporters.

The exclusion of employer-paid premiums from taxable income, which was the major spur to the development of the employment-based insurance system in the US, is the largest "tax expenditure" in the US tax code. (Tax expenditure means the foregone revenue from the exemption.) In addition to the foregone revenue, the current exemption is regressive. The slides cover some material on this subject, but I have only given Optional reading in order to keep the length of the reading list down.

OPTIONAL:

David Powell, "The Distortionary Effects of the Health Insurance Tax Exclusion,"

American Journal of Health Economics, Fall 2019, 5(4):428-64. Gives an estimate of $13 billion annually of deadweight loss from the tax exclusion. https://www-mitpressjournals-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1162/ajhe_a_00126

In 2010 the Bowles-Simpson Deficit Reduction Commission recommended capping the amount that could be excluded from capital income at the 75th percentile of premiums in 2014 and phasing the exclusion out entirely by 2038. What effect would phasing it out have? It also recommended reducing the then current 40 percent "Cadillac" tax rate to 12 percent. If you want to see their proposal, you can find it at http://www.fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/TheMomentofTruth12_1_2010.pdf, page 31.

**CLASS 8 - MEDICARE PART C, PAYMENT OF HEALTH PLANS, RISK ADJUSTMENT, AND A WRAPUP OF MEDICARE PARTS A, B, AND C (September 30)**
**Guest: Benjamin Chu, MD. Ben's bio is available at https://www.manatt.com/benjamin-k-chu,-md**

**Class 7 went over why selection can lead to poor performance or even market failure in unregulated individual and small group insurance markets, as well as in large group markets that offer a choice of insurers or multiple plans of a single insurer within the group. One of the largest individual insurance markets in the world is Medicare Part C, known as Medicare Advantage (MA), but it is a regulated market. There is also a group Medicare Advantage product for retirees of larger firms, including public sector retirees, but it is a relatively small part (~20%) of the Medicare Advantage market; it does, however, come up in a minor way in the slides.**

**After the last class, you won't be surprised to learn that a key policy issue in individual Medicare Advantage is how well Medicare's regulations and risk adjustment mitigate selection. In addition to that issue, the slides describe the program and take up the issue of geographic variation in the Medicare Advantage context, which in my view is an even larger issue in MA than in TM. The slide deck ends with a summary of issues around Medicare reimbursement policy from this class and Classes 4-6. These are important slides. In Class 18 we will come back to Medicare Advantage and its effects on quality of care and outcomes when compared with TM; this class focuses on how Medicare structures the market for competing plans. In Class 10 there is an Optional reading (Newhouse) that compares the performance of Medicare Advantage favorably with the performance of the ACA exchanges/ marketplaces; keep this material in mind if you read that paper.**

***The Structure of the Medicare Advantage Market and Risk Adjustment***

**A note at the outset: Several of the slides for this class go over material that is in the reading below. If you did the reading first and understood it, these slides will simply be a review and you should be able to move through them quickly.**

**Start by reading or reviewing the MedPAC Payment Basics on health plan payment. http://medpac.gov/docs/default-source/payment-basics/medpac_payment_basics_19_ma_fi**

**nal_sec.pdf?sfvrsn=0 If you want more of a description of the Medicare risk adjustment system, see the Optional Pope, et al. reading below.**

**Starting in 2006 Medicare reimbursement of health plans moved from a take-it-or-leave-it, per-member-per-month ("PMPM") price, which Medicare used for the first 20 years of the program, to something that more closely resembled a defined contribution or voucher approach, combined with health plan bidding. This had the effect of freeing up health plan supply prices in the sense that CMS no longer set a take-it-or-leave-it price. Nonetheless, important elements of the earlier administered pricing system remain in place even today. In particular, an important carryover from the earlier take-it-or-leave-it system is the method for setting the "benchmark," which is Medicare's name for what roughly approximates a defined contribution or voucher. A second carryover is a transition to a new method of risk adjustment (risk adjustment is part of the "managed" in the term "managed competition") that was completed in 2007. This class goes into both those carryovers.**

**Importantly, Traditional Medicare (TM) is excluded from the defined contribution approach that Part C utilizes. That is, a Medicare beneficiary first decides whether to enroll in TM or Medicare Advantage (MA); if the beneficiary chooses MA, the menu of plans to which the benchmark amount is applied does not include TM.**

**Former House Speaker Ryan's alternative to the administered pricing issues we studied in Classes 4-6 was to go to a full-blown defined contribution plan (sometimes called "premium support"), one version of which would include TM. In effect, this would make TM analogous to a "public option" in the ACA marketplaces, but only those currently eligible for Medicare would be eligible. There are numerous questions to be addressed in any premium support or defined contribution proposal, including the amount of the voucher and – especially – at what rate it would increase over time. If you are interested in premium support, you can find a discussion of those issues and others relevant to premium support in the CBO, Jacobson and Neuman, and the Fuchs and Potetz papers in the Optional reading. In the current system, as the slides describe, the amount of the benchmark is tied to (risk adjusted) county TM spending; that might not be viable if TM were included as an option in an premium support scheme and enrollment shrank.**

**One of the key issues in the debate over including TM in a defined contribution arrangement is the degree of possible selection and whether, if it were included as an option, TM would go into a death spiral from adverse selection or whether risk adjustment and other anti-selection tools are now good enough to preclude that. The degree to which risk adjustment can mitigate selection incentives, of course, is also a key issue in the marketplaces for the under 65 as we come to in Class 10. The reading and slides cover risk adjustment and selection in the context of Medicare, but risk adjustment is also important in a number of several other countries' medical care financing systems, including the Dutch and German systems.**

**After you have mastered the MedPAC material on how Medicare pays plans, read an overview of Part C, Joseph P. Newhouse and Thomas G. McGuire, "How Successful Is Medicare Advantage?" The Milbank Quarterly, June 2014, 92(2):351-94. The material on**

**selection that is relevant for this class is on pages 360-375. I will not cover the rest of the paper until Class 18, but it will probably be helpful to you to read the entire paper through now. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/1468-0009.12061/pdf . Alternatively, you can read Thomas G. McGuire and Joseph P. Newhouse, "Medicare Advantage: Regulated Competition in the Shadow of a Public Option," in Risk Adjustment, Risk Sharing, and Premium Regulation in Health Insurance Markets, eds. Thomas G. McGuire and Richard C. van Kleef, pp. 563-98, London: Elsevier, 2018. This chapter is more up to date than The Milbank Quarterly reading, but the book is expensive and is not available on line. There are 4 copies of the book on reserve in the HKS library, but as I write this, they are not accessible. In addition to theory chapters, the book has chapters on competitive insurance markets in 11 countries (Australia, Belgium, Chile, China, Columbia, Germany, Ireland, Israel, Netherlands, Russian Federation, Switzerland, and the US).**

**Michael Geruso and Timothy J. Layton, "Selection in Health Insurance Markets and Its Policy Remedies," Journal of Economic Perspectives, Fall 2017, 31(4):23-50. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/jep.31.4.23 Two key Part C policies are:**

1) **How public policy should structure the market for Part C so that it functions as efficiently as possible, which this class covers, and**

2) **How Medicare Advantage affects patient care relative to TM, which we cover in Class 18 after we have laid some groundwork on quality of care in Class 17.**

**The Geruso and Layton paper offers an introduction to structuring insurance markets, including the important feature of how risk adjustment functions to mitigate selection incentives. As the Newhouse and McGuire paper, the slides, and the McGuire, et al. 2011 paper in the Optional reading all show, risk adjustment in Part C pre-2004 (2004-2007 was a transition period) just used demographic variables and was weak. As a result, there was substantial favorable selection (after risk adjustment) into Part C and against TM, which had the effect of increasing government outlays. In addition to Geruso and Layton, the Newhouse and McGuire paper, the Optional Newhouse, et al. 2012 and 2015 papers and the McWilliams, et al. 2012 paper, and the slides all discuss research showing that the introduction of health-status-based risk adjustment into Medicare in the mid 2000's, along with a lock-in for those who chose a Medicare Advantage plan, greatly reduced favorable selection into MA. Although controversial, my own view is that at this point favorable selection into MA is sufficiently low that it is not a major policy issue.**

**The introduction of health-status-based risk adjustment in Medicare Advantage, however, raised two related issues around coding. The more serious policy issue of the two is similar to that raised by the introduction of the MS-DRG's in the Inpatient Prospective Payment System (Class 4); tying payment to diagnosis increased the intensity with which diagnoses were coded in MA, as Kronick and Welch in the slides and Optional reading show. The dominant interpretation is that MA plans both pushed physicians and used home visits by nurses to be more complete in their coding in order to increase reimbursement; an**

**alternative, and not mutually exclusive interpretation is that more active disease management by plans (Class 18) uncovered more disease and that doing so is in fact desirable for managing chronic diseases. But there were instances of diagnoses coded by nurses during a home visit with no subsequent indication of a physician visit or treatment, which simply represent rents to plans. In response to the increase in coding intensity, CMS has made non-trivial reductions in MA reimbursement. The Yunjie Song, et al. paper in the Optional reading deals with a second coding issue; the intensity of coding varies by region. This paper is not essential for this class, but it is required in the Class 16 reading on geographic variation, so you may want to read it now.**

**Zirui Song, Mary Beth Landrum, and Michael E. Chernew, "Competitive Bidding in Medicare Advantage: Effect of Benchmark Changes on Plan Bids, Journal of Health Economics, December 2013, 32(6):1301-2 (only the introduction is required although of course you are free to read further). https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/journal/journal-of-health-economics/vol/32/issue/6 As the slides and the MedPAC reading explain, benchmarks are now set by statute (except for regional PPO plans, which are a small part of the program), but there are now proposals to base some of the benchmark on bidding for the entire MA program. Song, et al. find that about half of exogenous changes in the benchmark are passed through to beneficiaries as additional benefits whereas in a perfectly competitive market all would be passed through. (There is some other literature that finds less than half is passed through.) But this is also a regulatory failure, since almost all of the difference is to be passed through. You should think about one possible reform: What do you think would happen if the benchmark were not set in statute but was, at least in part, a function of bids?**

OPTIONAL:

Timothy J. Layton, Randall P. Ellis, Thomas G. McGuire and Richard van Kleef, "Measuring Efficiency of Health Plan Payment Systems in Managed Competition Health Insurance Markets," Journal of Health Economics, December 2017, 56:237-55. The slides assess risk-adjustment systems using $R^2$, but this paper gives a full economic treatment of how to assess risk adjustment and points out that the use of $R^2$ is too simple. It does, however, require that one accept the normative significance of the insurance demand curve. https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/journal/journal-of-health-economics/vol/56/suppl/C

Joseph P. Newhouse, Mary Beth Landrum, Mary Price, J. Michael McWilliams, John Hsu, and Thomas G. McGuire, "The Comparative Advantage of Medicare Advantage," American Journal of Health Economics, Spring 2019, 5(2):281-301. As described in the slides, data from two national MA insurers show substantially different margins by HCC. Despite that, there is little across-HCC selection, but there certainly is more intensive coding generally in MA. The variation in margins, however, suggest MA may be more efficient in production of treatment for certain chronic diseases, but a definitive claim would require information on the quality of care.

Patricia Neuman and Gretchen A. Jacobson, "Medicare Advantage Checkup," New

England Journal of Medicine, November 29, 2018, 379(22): 2163-72. More recent but more basic than the required Newhouse and McGuire reading. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMhpr1804089

The next two readings used to be required because I wanted to give you a feel for the issue of reimbursement of health plans in the context of another country, the Netherlands, but to keep the amount of required reading down I have made them Optional. The van de Ven and Schut paper below is about issues in implementing managed competition in the Netherlands starting in 2006. Reflecting its EU provenance, it uses slightly different jargon like "risk equalization" instead of "risk adjustment," but you should have no difficulty understanding the paper. You can certainly profit by reading the full paper because it is an excellent exposition of the issues and because it may help American students to see similar issues outside the American context. I recommend skimming some of the details about the Dutch system, however, a system that I would characterize for Americans as something like Medicare Advantage for everyone. But for those of you who can't afford the time for the full paper, there is an abridged version: Wynand P.M.M. van de Ven and Frederik T. Schut, "Universal Mandatory Health Insurance in the Netherlands: A Model for the United States?" Health Affairs, May/June 2008; 27(3): 771-81. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/27/3/771.short. The full version is Wynand P.M.M. van de Ven and Frederik T. Schut, "Risk Equalization in an Individual Health Insurance Market: The Only Escape from the Tradeoff between Affordability, Efficiency and Selection, the Netherlands as a Case Study," http://www.policyarchive.org/handle/10207/21921 (click on the View Publication link)

If you want a counterpoint to van de Ven and Schut, you can read Kieke G.H. Ohkma, Theodore R. Marmor, and Jonathan Oberlander, "Managed Competition for Medicare? Sobering Lessons from the Netherlands," New England Journal of Medicine, July 28, 2011, 365(4):287-9. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1106090 At least two of these three authors have for many years been skeptical of a competitive system. If you read this paper, ask yourself what van de Ven and Schut might have said about Ohkma, et al.

Keith Marzilli Ericson and Justin Sydnor, "The Questionable Value of Having a Choice of Levels of Health Insurance Coverage," Journal of Economic Perspectives, Fall 2017, 31(4):51-72. This paper moves away from the standard welfare economics formulation in which the observed demand curve gives willingness to pay, which Layton, et al. use. It shows welfare changes with and without risk adjustment and with varying assumptions on the fraction of persons in the market who are rational choosers. (There is an error in the "Risk Adjustment Rational Choosers" row of Table 3 (top row of the bottom panel); the far right column should read "High actuarial value plan attracts the unhealthy types as well as…" instead of "Low actuarial value plan…") https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/jep.31.4.51

Michael Geruso and Thomas G. McGuire, "Tradeoffs in the Design of Health Plan Payment

Systems: Fit, Power, and Balance," Journal of Health Economics, May 2016, 47:1-19. Lays out three dimensions of payment for plan reimbursement systems. "Fit" refers to how much variation in use or spending a risk adjustment system explains; by far the most common measure in this domain is $R^2$. A second dimension, "power," was covered in Class 4. The third dimension, "balance," refers to the similarity of power across different patients with different diagnoses. The authors point out that balance importantly depends on whether the system is retrospective (it uses this year's diagnoses to risk adjust) or prospective (it uses last year's diagnoses). Like Layton, et al. above, they show that a prospective system with some reinsurance is better on these three dimensions than a purely prospective system (it is similar in fit and power and better in balance). http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629616000199/1-s2.0-S0167629616000199-main.pdf?_tid=abf198a0-2107-11e6-a2e4-00000aab0f6b&acdnat=1464022931_d3febb038f60b2034530748eaae8cdbf

Colleen Carey, "Technological Change and Risk Adjustment: Benefit Design Incentives in Medicare Part D," American Economic Journal: Economic Policy," February 2017, 9(1):39-68. The context is Part D, but I have included this reading here because it makes the general point that risk adjustment relative weights are set on historical data so that technological change creates windfall profit and loss. In the case of cost-increasing technology, the loss can persist if the technology is not fully adopted and there is no outside payment for new technology as in the IPPS and OPPS.
https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/pol.20140171

Medicare Payment Advisory Commission, "Improving Risk Adjustment in the Medicare Program," in Medicare and the Health Care Delivery System: Report to the Congress, June 2014, ch. 2. This chapter takes you into the weeds of risk adjustment, but if you are writing your testimony on that topic you should read it. http://www.medpac.gov/documents/reports/jun14_ch02.pdf?sfvrsn=0

Sherri Rose, "Robust Machine Learning Variable Importance Analyses of Medical Conditions for Health Care Spending," Health Services Research, October 2018, 53(5, Part 1):3836-54. Applies machine learning (or empirical specification of the risk adjustment equation) and finds the pre-specified regressions that have been used are biased for several diseases. http://web.a.ebscohost.com.ezp-prod1.hul.harvard.edu/ehost/detail/detail?vid=2&sid=7f37a5e9-cf45-4df3-80c7-e1d5c36ae649%40sdc-v-sessmgr03&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=131949467&db=her

Wynand P.M.M. van de Ven, Richard C. van Kleef, and Rene C.J.A. van Vliet, "Risk Selection Threatens Quality of Care for Certain Patients: Lessons from Europe's Health Insurance Exchanges," Health Affairs, October 2015, 34(10):1713-20.
http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/34/10/1713.full.pdf
I have made this Optional, since it largely covers ground that other readings cover, but it does point up the importance of regulations other than risk adjustment to hold down selection.

Vilsa Curto, Liran Einav, Jonathan Levin, and Jay Bhattacharya, "Health Care Spending in Public and Private Medicare," American Economic Journal: Applied Economics, April 2019, 11(2):302-32. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/app.20170295 Similar to the MedPAC table in the slides, they find that MA generates cost savings, but not surprisingly the savings are sensitive to estimates of selection effects and are markedly reduced if they also adjust for mortality differences conditional on risk score. Since risk scores are intended to correct for factors influencing cost rather than health outcomes, it is not clear that one should give a lot of weight to the additional adjustment for mortality, but it is also clear that MA plans code more intensively, so a person with the same risk score in TM could well be less healthy than the person in MA.

The next several papers are covered in the slides and reviewed in the Newhouse-McGuire Milbank paper, but if you want more detail, here are the papers.

Joseph P. Newhouse, Mary Price, J. Michael McWilliams, John Hsu, and Thomas G. McGuire, "How Much Selection Is Left in Medicare Advantage?" American Journal of Health Economics, February 2015, 1(1):1-26. http://www.mitpressjournals.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1162/AJHE_a_00001 This paper, which is partly a response to a comment on Brown, et al. below, shows that the introduction of the HCC's and the lock-in cut favorable selection into Medicare Advantage by a factor of 5 to 6.

Joseph P. Newhouse, Jie Huang, Mary Price, J. Michael McWilliams, and John Hsu, "Steps To Reduce Favorable Risk Selection In Medicare Advantage Largely Succeeded, Boding Well For Health Insurance Exchanges," Health Affairs, December 2012, 31(12), 2618-28. The slides have some results from this paper. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/12/2618.full.pdf+html

J. Michael McWilliams, John Hsu, and Joseph P. Newhouse "New Risk-Adjustment System Was Associated with Reduced Favorable Selection in Medicare Advantage," Health Affairs, December 2012, 31(12), 2630-40. One of the slides is from this study. The results are similar to the immediately preceding paper, although the methods are entirely different. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/12/2630.full.pdf+html

Jason Brown, Mark Duggan, Ilyana Kuziemko, and William Woolston, "How Does Risk Selection Respond to Risk Adjustment? New Evidence from the Medicare Advantage Program," American Economic Review, October 2014, 104(10):3333-64. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles.php?doi=10.1257/aer.104.10.3335 Uses the Medicare Current Beneficiary Survey (the same data as McWilliams, et al. above) and finds that after the implementation of the CMS-HCC risk adjuster, favorable selection net of risk adjustment increased. Unlike McWilliams, et al., they focus on reimbursement for those who switched from Traditional Medicare (TM) to Medicare Advantage (MA) relative to spending in the prior year when the beneficiary was in TM. They show that the difference between these two values increased with the introduction of the CMS-HCC system (see their Table 4, col. 6, row two), and they conclude that the introduction of the CMS-HCCs worsened selection. Using a much larger sample and adding additional years, the Newhouse, et al. 2015 paper above gets the opposite result,

as does the McWilliams, et al. paper above. One lesson I would take from the Brown, et al. paper for the aspiring analyst: If you have a result that is a priori improbable, which I personally consider the Brown, et al. finding of increased selection after the introduction of CMS-HCC's to be (though they seemingly did not), you need to be very sure about the result.

Thomas G. McGuire, Joseph P. Newhouse, and Anna D. Sinaiko, "An Economic History of Medicare Part C," The Milbank Quarterly, June 2011, 89(2):289-332. The history of Medicare Advantage up to 2008. The 2014 Newhouse and McGuire paper assigned for this class considers more recent literature and is considerably more upbeat on the current incarnation of Medicare Advantage than this paper, which covers the earlier history when most analysts regarded Medicare Advantage with considerable skepticism. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1468-0009.2011.00629.x/pdf

J. Michael McWilliams, Christopher C. Afendulis, Thomas G. McGuire, and Bruce E. Landon, "Complex Medicare Advantage Choices May Overwhelm Seniors -- Especially Those with Impaired Decision Making," Health Affairs, September 2011, 30(9), 1786-94. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/30/9/1786.short This paper uses Health and Retirement Survey data to look at those enrolling in Medicare Advantage (MA).There are three findings of note, two of which the authors discuss: a) More choices can deter enrollment in MA (there is an analogous finding about enrollment in 401(k) plans); and b) More generous benefits (because of higher reimbursement in a county) lead to greater MA enrollment, but this enrollment is disproportionately among beneficiaries with higher cognitive functioning (there is also an analogous result for 401(k) plans); c) There is finally the dog that did not bark; self-reported general health and self-reported specific conditions showed little difference between the Traditional Medicare (TM) group and the MA group, suggesting selection on observable health measures is modest, a finding that comes to the fore in the McWilliams, et al. reading above. This paper's findings on a dominated health plan are similar to those of Handel on the Optional list for Class 7.

Jacob Glazer and Thomas G. McGuire, "Making Medicare Advantage a Middle-Class Program," Journal of Health Economics, March 2013, 32(2):463-73. Raises the question of who belongs in MA vs TM and concludes that Medicare should use premium policy to influence that choice, meaning different types of people should be charged different premiums. See also the Bundorf, et al. reading from Class 7. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S016762961200183X/1-s2.0-S016762961200183X-main.pdf?_tid=c80024fc-d395-11e2-8793-00000aab0f6b&acdnat=1371065285_c6602a189ae8199dc8d0d812957fe3f9

Liran Einav, Amy Finkelstein, Raymond Kluender, and Paul Schrimpf, "Beyond Statistics: The Economic Content of Risk Scores," American Economic Journal: Applied Economics, April 2016, 8(2):195-224. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/app.20150131 Similar to the foregoing Glazer and McGuire paper; insurers can in principle exploit heterogeneous responses to risk

scores.

Friedrich Breyer, M. Kate Bundorf, and Mark V. Pauly, "Health Care Spending Risk, Health Insurance, and Payment to Health Plans," in Handbook of Health Economics, vol. 2., eds. Mark V. Pauly, Thomas G. McGuire, and Pedro Pita Barros; Amsterdam: North-Holland, 2012, pp. 691-762. Pages 728-743 discuss risk adjustment. An excellent review of the literature, but like many such reviews, it could be hard going unless you have already read the underlying papers.
http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/B9780444535924000116/1-s2.0-B9780444535924000116-main.pdf?_tid=58681ad8-1314-11e2-8de0-00000aab0f26&acdnat=1349899067_9361fea94815ea2ab7bbb0f33860324b

Richard Kronick and W. Pete Welch, "Measuring Coding Intensity in the Medicare Advantage Program," Medicare and Medicaid Research Review, 2014, 4(2):E1-E19. They calculate the increase in risk scores for continuous enrollees (as well as for decedents, new enrollees, and switchers) in MA between 2004 and 2011 and compare them with mortality and MCBS data; their analysis of MCBS data, although from a different period, conflicts somewhat with the McWilliams, et al. analysis of MCBS data above. Kronick and Welch conclude that increased coding increased MA payment 15-20% and that the coding "adjustments," which are reductions in plan reimbursement to compensate for more intensive coding, have to date been inadequate; in short, MA reimbursement should be further reduced. Since they time of this paper CMS, however, has continued to make downward adjustments, reducing risk scores 3.41% each year from 2010-2013, 4.91% in 2014, 5.16% in 2015, 5.41% in 2016, and 5.66% in 2017, and 5.91% in 2018 and 2019,or a cumulative 37.5% reduction since 2010. (The reductions in the later years were specified in the ACA.) CMS did not make a coding adjustment for 2020. Much of Kronick and Welch's inference is from a sample enrolled in two successive years in either MA or TM and the change in risk score for each sample. Their inference from their continuous enrollee sample makes the assumption that any additive differential incentive to code in MA should apply in both years and so should difference out. Kronick and Welch do not find a similar increase in mortality in MA. Whether the adjustments CMS has made for coding intensity have now been adequate is unknown, though MedPAC believes reimbursement is still 2-3% too high because of coding (see slides).
http://www.cms.gov/mmrr/Downloads/MMRR2014_004_02_a06.pdf

The next two readings are required for Class 16, but they bear on the key issue of coding intensity in MA vs TM, so you may want to read them now. Yunjie Song, Jonathan Skinner, Julie Bynum, Jason Sutherland, John E. Wennberg, and Elliott S. Fisher, "Regional Variations in Diagnostic Practices," New England Journal of Medicine, July 1, 2010, 363(1):45-53.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/nejmsa0910881 This paper shows that Medicare beneficiaries who moved to higher spending regions and who had similar baseline health status risk scores had risk scores that grew more than beneficiaries who moved to lower or similar spending regions and so resulted in greater reimbursement. In other words, these results imply that health status as measured by diagnoses coded on claims forms is endogenous. Although Song, et al. do not directly

suggest this, an implication is that the HCCs should not be used in risk adjustment as they are now (i.e., in the language of Stam, et al., Optional reading below. they have elements of an N-type adjuster). Ultimately whether one acts on this implication for policy purposes depends on how much of the observed variation in CMS-HCC scores reflects real health status variation versus differences in coding; the more it reflects coding, the weaker the case for using CMS-HCCs. Song, et al.'s work cannot shed light on this, but Finkelstein, et al., listed next, does propose an answer.

Amy Finkelstein, Matthew Gentzkow, Peter Hull, and Heidi Williams, "Adjusting Risk Adjustment — Accounting for Variation in Diagnostic Intensity," New England Journal of Medicine, February 16, 2017, 376(7):608-10. Derivative from the Finkelstein, et al. paper on geographic variation, which is Optional reading for Class 16. Uses changes in risk scores by movers from one region to another to propose how to adjust for differential coding; the key assumption is that the difference in coding intensity for movers is the same as for stayers. The adjustment varies by risk score, but at a risk score of 1.0 it appears to be about 2-3 percent, in line with the MedPAC estimate. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1613238

The following reading summarizes the Cameron government's efforts to move toward more bundling in the UK.

Martin Roland and Rebecca Rosen, "English NHS Embarks on Controversial and Risky Market-Style Reforms in Health Care," New England Journal of Medicine, April 7, 2011, 364(14):1360-6.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMhpr1009757

The next four readings are on premium support.

Congressional Budget Office, "A Premium Support System for Medicare: Updated Analysis of Illustrative Options," October 2017. Updates the publication below.
https://www.cbo.gov/system/files?file=115th-congress-2017-2018/reports/53077-premiumsupport.pdf

Congressional Budget Office, "A Premium Support System for Medicare: Analysis of Illustrative Options," September 2013. Analyzes a system with a voucher at the level of the average bid and the second lowest bid. http://www.cbo.gov/sites/default/files/09-18-PremiumSupport.pdf

Gretchen Jacobson and Tricia Neuman, "Turning Medicare into a Premium Support System: Frequently Asked Questions," July 19, 2016. http://kff.org/medicare/issue-brief/turning-medicare-into-a-premium-support-system-frequently-asked-questions/?utm_campaign=KFF-2016-July-Medicare-FAQs-Premium-Support&utm_source=hs_email&utm_medium=email&utm_content=31794444&_hsenc=p2ANqtz-9qT5A19FgEYO1Asoh0n3bxZy1j5sgSg8R0zJZwYeIU_Iy4QrF1gJ8MEQIWc2A4aOkXel_WYqbOWE9XwIoKVoyB5YI8SadxsLPfxUCstas74hnrhY4&_hsmi=31794444

Lisa Potetz and Beth C. Fuchs, "The Nuts and Bolts of Medicare Premium Support Proposals," Henry J. Kaiser Family Foundation, June 2011, http://www.kff.org/medicare/upload/8191.pdf.

Gregory Pope, John Kautter, Randall P. Ellis, et al., "Risk Adjustment of Medicare Capitation Payments Using the CMS-HCC Model," Health Care Financing Review, 25:4, Summer, 2004, pp. 119-141. This paper lays out the derivation of the CMS-HCCs. If you are interested in writing testimony about risk adjustment, you should at least skim this paper. http://escholarship.umassmed.edu/cgi/viewcontent.cgi?article=1723&context=qhs_pp

Centers for Medicare and Medicaid Services, "Report to Congress: Risk Adjustment in Medicare Advantage," December 2018. Look at this only if you want to get into the weeds on the current state of play on risk adjustment in MA. https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/RTC-Dec2018.pdf

Pieter J.A. Stam, Rene C.J.A. van Vliet, and Wynand P.M.M. van de Ven, "A Limited-Sample Benchmark Approach to Assess and Improve the Performance of Risk Equalization Models," Journal of Health Economics, May 2010, 29(3), pp. 426-37. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629610000147 Makes the point that risk adjusters should be on variables one wants to adjust for and exclude variables one does not want to pay for, especially price.

Joseph P. Newhouse, "Reimbursing Health Plans and Health Providers: Selection versus Efficiency in Production." Journal of Economic Literature, 34(3):1236-1263. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/10.2307/2729501 A frequently cited review of the literature, now very dated, but provides an analytical framework to think about the issue.

***A Wrap Up of Medicare , Parts A, B, and C***

OPTIONAL:

Some of both the support and the political opposition to the defined contribution proposals for Medicare revolve around the idea that it may well be a device for shifting more of the cost of financing the elderly's medical care from the non-elderly to the elderly. The following reading makes the important point that the division of burden between these groups should be seen in the larger context of financing pensions and long-term care, as well as the cost of medical services.

Victor R. Fuchs, "Health Care for the Elderly: How Much? Who Will Pay for It?" Health Affairs, January/February 1999, 18(1), pp. 11-21. http://content.healthaffairs.org/content/18/1/11.full.pdf+html Lays some groundwork for the debate over Medicare financing by pointing out that the Medicare and Social Security (and the elderly component of Medicaid) financing problems need to be considered

together. Related to the material in Class 1 on financing Medicare.

Robert F. Coulam, Roger D. Feldman, Bryan E. Dowd, "Competitive Pricing and the Challenge of Cost Control in Medicare," Journal of Health Politics, Policy, and Law, 2011.
http://jhppl.dukejournals.org.ezp-prod1.hul.harvard.edu/content/36/4/649.full.pdf+html
Reviews the history of attempts to introduce competitive pricing into the Medicare program and why most have failed.

**CLASS 9 – MEDICAID AND LONG-TERM CARE (October 5) Guest: Glenda Wrenn, MD. Glenda's bio is available at https://180healthpartners.com/team-member/dr-glenda-wrenn/**

**I have grouped Medicaid and long-term care together in this class because Medicaid dominates US long-term care financing. Medicaid, however, also plays a very different role as the insurer of most low-income persons for acute care services. In addition, it fills in most the cost sharing for low income Medicare beneficiaries enrolled in TM; in other words, it acts as their Medigap plan.**

***Medicaid: General Background***

**Medicaid was enacted along with Medicare in 1965. Unlike Medicare, however, it is a joint federal-state program, with take up a state option. It began in many states in 1966, but it took several years for all states to opt in. When I say Medicaid I usually include the Children's Health Insurance Program or CHIP (sometimes called S-CHIP) as well. The CHIP program, enacted in 1997, covers children in lower income households whose incomes are too high to be eligible for the original Medicaid program. In many states, however, children in CHIP are simply enrolled in the state's Medicaid program (that too is a state option). Like Medicaid, CHIP is financed jointly by the federal government and state governments but administered by the state.**

**There is less academic literature about Medicaid than Medicare for several reasons (though more recently there are many studies comparing outcomes in states that expanded Medicaid under the ACA with those that did not). First, whereas Medicare is a federal program, meaning for practical purposes it has uniform eligibility and benefits throughout the nation (there are some minor differences in benefits due to variation in local coverage determinations), Medicaid is a state administered program, financed with federal funds that match state funds, and the (federal) law offers states many options in structuring their Medicaid program, including in principle not having a Medicaid program at all. Although in fact all states have an original Medicaid and a CHIP program, not all states have chosen to expand Medicaid to those not eligible for Medicaid before the ACA; see the slides. Even in the original Medicaid program, states differed from the outset and continue to differ in who is eligible, what services are covered, and how much providers are reimbursed. In short, unlike Medicare, Medicaid differs from state to state, making it difficult to describe the program in a concise way. Furthermore, these differences have increased over time because, starting in the Clinton administration, the use of federal waivers allowing states to exempt their Medicaid programs from federal requirements greatly expanded. In fact, all states have now applied**

**for waivers from various federal requirements, and these waiver requests have mostly been granted. Especially under the Trump administration, however, it has become more common for various advocacy groups to challenge the granting of waivers in court; whether a state can require work of Medicaid beneficiaries is a well known example. But for the purposes of describing the program, since the states differ in what they have applied for and done, this has further increased the variation in the program across states.**

**Second, within each state Medicaid was historically three functionally somewhat different programs, one for low-income single mothers with children (covering low income two-parent families with children is the state's option; all states now cover that group, but many have very low income limits for eligibility), a second program for certain of the disabled (namely those not eligible for Medicare), and a third one for the low-income elderly.**

**To those three groups the ACA added a fourth, namely all other low-income American citizens, with the financing of the expansion to the fourth group mostly coming from the federal government. This fourth group of persons, who were previously not eligible for Medicaid, are primarily adults with no dependent children, the population sampled for the Oregon Health Insurance Experiment (Class 3). As is well known, however, the Supreme Court ruled that states did not have to expand their programs to this group and not all states have, despite the very strong economic case for doing so since the financing would be mostly federal dollars and thus not come at much expense to the individual state's taxpayers.**

**For the elderly most Medicaid dollars go to the coverage of chronic long-term care, although, as noted above, Medicaid also wraps around Medicare to cover cost sharing for acute services for low income Medicare beneficiaries; Medicaid thus serves as their supplementary insurance or Medigap plan. Importantly, before Medicare Part D was enacted in 2006 Medicaid provided a limited drug benefit for low income Medicare beneficiaries.**

**Third, outside analysts historically had a more difficult time obtaining Medicaid claims data than Medicare claims data, in part because each state controlled access to its own data whereas CMS controlled access to Medicare data. In recent years, however, data access for analysts has improved a lot (in particular, the T-MSIS or Transformed Medicaid Statistical Information System). Further complicating the analysis of Medicaid data (relative to Medicare), individuals move in and out of eligibility monthly, for example if they get a job with employment-based insurance and lose Medicaid eligibility, in which case there are no subsequent Medicaid claims data or other Medicaid administrative data on their behavior, and it is generally not possible to link the Medicaid claims to their commercial claims. By contrast, Medicare beneficiaries typically remain covered by Medicare for the rest of their lives so they can be continuously followed. There is also a caveat about Medicare data, however. Historically if a TM beneficiary joined MA, CMS had little information about the services received in MA; in other words, there was no analog to the TM claims data for MA enrollees. Thus, for purposes of analysis if a Medicare beneficiary left TM for MA it was a bit like a Medicaid enrollee losing Medicaid eligibility in terms of the information available to analysts. CMS has now started to collect encounter data for MA enrollees, however, so this should be less of an issue going forward.**

**Fourth, and related to the first point above, variation across the states in covered services and eligibility limits the possible analyses; for example, if one state covers chiropractic services and another doesn't, not only are there no claims data on chiropractic services in the state that doesn't cover them but it is hard to know whether differences in substitute services that might be affected by that variation in coverage (e.g., use of orthopedic surgeons) are attributable to the coverage difference, or some other difference such as differences in the generosity of physician reimbursement. Although Mr. Justice Brandeis famously said that states were the laboratories of democracy, an *n* of 50 (actually slightly more because the District of Columbia, Puerto Rico, and other American territories also have Medicaid programs) makes it hard to infer causality in many instances. Furthermore, managed care plans have come to dominate the Medicaid program (see slides), and less detail on services in those plans has been available, analogous to the TM-MA issue alluded to in the prior paragraph.**

**Because there is less literature on Medicaid than Medicare and because the issues pertaining to provider reimbursement in Medicaid are analytically similar to the Medicare issues covered in the earlier classes, I have given Medicaid less play than Medicare in the course, even though a large portion of both federal and state budgets go to Medicaid (see the slides). For those of you particularly interested in the Medicaid program, the reports of the Medicaid and CHIP Payment and Access Commission, or MACPAC (www.macpac.gov), which was established by the ACA, are an excellent source of information. Two other excellent sources of information about Medicaid are the Kaiser Family Foundation website (http://www.kff.org/medicaid/) and the Commonwealth Fund web site (www.cmwf.org). The CMS website (www.cms.hhs.gov) also has some summary Medicaid data.**

***Medicaid: General***

**John K. Iglehart and Benjamin D. Sommers, "Medicaid at 50 - From Welfare Program to Nation's Largest Health Insurer," New England Journal of Medicine, May 28, 2015, 372(22):2152-9. The history and a still reasonably current description of Medicaid. A somewhat similar overview is the Cunningham paper in the Optional reading, which focuses more on Medicaid's role in delivery system reform. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMhpr1500791**

OPTIONAL:

The following four readings are all descriptions of Medicaid if the slides and the Iglehart-Sommers paper are not enough.

The Medicaid and CHIP Payment and Access Commission (MACPAC), "Medicaid 101." https://www.macpac.gov/medicaid-101/ A primer.

Robin Rudowitz and Rachel Garfield, "10 Things to Know about Medicaid: Setting the Facts Straight," Kaiser Family Foundation, March 6, 2019. Basic descriptive data. https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-medicaid-setting-the-

facts-straight/

Robin Rudowitz, Kendal Orgera, and Elizabeth Hinton, "Medicaid Financing: the Basics," Kaiser Family Foundation, March 21, 2019. Also basic descriptive data. http://files.kff.org/attachment/Issue-Brief-Medicaid-Financing-The-Basics

Rob Cunningham, "Once a Welfare Add-On, Medicaid Takes Charge in Reinventing Care," Health Affairs, July 2015, 34(7):1080-3. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/34/7/1080.full.pdf+html Another descriptive paper that describes how Medicaid has evolved into a heavy reliance on managed care. For those of you that want even more detail on Medicaid, see Alan Weil's interview with Cindy Mann in the same issue of Health Affairs. Mann was the Deputy Administrator of CMS with responsibility for Medicaid from 2009-2015. Weil is the editor of Health Affairs and before assuming that job was the president of the National Academy of State Health Policy (and before that the Executive Director of the agency that administered the Colorado Medicaid program), and knows a lot about Medicaid (in addition to being an HKS alum) http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/34/7/1092.full.pdf+html

**Because of the ACA and Medicaid's relatively recent shift toward managed care, much of the historical literature on Medicaid and acute care is no longer relevant. Thus, I have only required a short paper on Medicaid and Covid-19 given that many who have lost their jobs in the pandemic have turned to Medicaid. I list a few Optional readings, however.**

***Medicaid: Acute Care***

**Jonathan Gruber and Benjamin D. Sommers, "Paying for Medicaid - State Budgets and the Case for Expansion in the Time of Coronavirus," New England Journal of Medicine, June 11, 2020, 382(24):2280-2. They show that the states that expanded Medicaid did not increase state spending on Medicaid, argue that the virus is a perfect example of why a block grant is poor policy (states cannot run a deficit, unlike the federal government), and generally urge greater funding for Medicaid while Covid-19 runs its course.**
**https://www.nejm.org/doi/pdf/10.1056/NEJMp2007124?articleTools=true**

OPTIONAL:

Benjamin D. Sommers and Arnold M. Epstein, "Why States Are So Miffed About Medicaid – Economics, Politics, and the 'Woodwork Effect'," New England Journal of Medicine, July 14, 2011, 365(2):100-2. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1104948 The differential geographic and fiscal impact of the ACA's Medicaid expansion. It was written before the Supreme Court's decision that made Medicaid expansion a state option, but the woodwork effect it describes was real.

The slide showing that higher Medicaid fees raise MD participation comes from Sandra Decker, "In 2011 Nearly One-Third Of Physicians Said They Would Not Accept New

Medicaid Patients, But Rising Fees May Help," Health Affairs, August 2012, 31(8):1673-9. This paper, however, also preceded the Supreme Court decision; the fees referred to are those in the state-administered fee-for-service Medicaid program. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/8/1673.full.pdf+html

Like Medicare, Medicaid includes a Disproportionate Share Hospital (DSH) program, the intent of which is to allocate funds to safety net hospitals. The Medicaid DSH program is considerably larger in dollar terms than the Medicare program. As the slides describe, however, from a federal point of view the states have abused this program. States would say they are just reacting to the incentives the feds have put before them. What follows are two older but still relevant papers that are critical of how the Medicaid Disproportionate Share Hospital program has been implemented.

Katherine Baicker and Douglas Staiger, "Fiscal Shenanigans, Targeted Federal Health Care Funds, and Patient Mortality," Quarterly Journal of Economics, February 2005, 120(1):345-86. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/120/1/345.full.pdf+html Shows variable state diversion of funds; where hospitals actually got more resources, mortality fell.

Mark G. Duggan, "Hospital Ownership and Public Medical Spending," Quarterly Journal of Economics, November 2000, 115(4):1343-73 http://www4.gsb.columbia.edu/filemgr?file_id=736649 Non-profit and for-profit hospitals skimmed low cost Medicaid eligibles; unlike Baicker and Staiger, Duggan finds no effect on mortality.

***Medicaid and Medicare: Issues Around Dual Eligibles***

**The slides deal with issues of financing and coordination of services for the dual eligible population, but if you want more read:**

OPTIONAL:

David Grabowski, "Medicare and Medicaid: Conflicting Incentives for Long-Term Care," Milbank Quarterly, December 2007, 85(4):579-610. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1468-0009.2007.00502.x/pdf An excellent summary of the problems caused by joint financing between the feds and the states.

Medicare Payment Advisory Commission, "Coordinating the Care of Dual Eligible Beneficiaries," chapter 5 of Report to the Congress: Aligning Incentives in Medicare, June 2010. http://www.medpac.gov/documents/reports/Jun10_Ch05.pdf?sfvrsn=0 Lays out the issues. A more specialized piece on this topic is Medicare Payment Advisory Commission, "Coordinating Care for Dual Eligible Beneficiaries," chapter 5 of Report to the Congress: Medicare and the Health Delivery System, June 2011. http://www.medpac.gov/documents/reports/Jun11_Ch05.pdf?sfvrsn=0 The MACPAC

has a considerably more positive view of the role of managed care plans in the care of the dual eligibles than does MedPAC. See https://www.macpac.gov/subtopic/managed-care/ and https://www.macpac.gov/wp-content/uploads/2015/01/MACPAC_June2011_web.pdf

***Long-Term Care***

**Long-term care insurance, whether public or private, differs from health insurance in several respects; for those with assets it is more oriented toward insuring an estate for the heirs (hence, it is arguably more like life insurance than health insurance) than ensuring the insured can maintain their living standard (since the individual may well spend the rest of his or her life in institutional care). Also compared with health insurance, a substantially greater component of the cost covers hotel services rather than medical services. Americans have been more willing to tolerate inequalities with respect to hotel services than with respect to medical care (though of course there are inequalities in medical care) and more willing to see the hotel services self-financed for those who can afford it. Even more than most of the topics that this course covers, the course just scratches the surface of this one. The slides touch on a few more "economic" points, but there are numerous potential topics for Testimony. A web based resource on long term care is http://ltcfocus.org/**

**Financing long-term care for the non-Medicaid eligible is an issue that the ACA addressed through the CLASS Act, but DHHS Secretary Sibelius announced in October 2011 that the Obama Administration would not implement the CLASS Act, and the 2013 "fiscal cliff" legislation permanently repealed it. With the aging of the baby boomers, however, financing long-term care has only become a more pressing issue.**

**Jeffrey R. Brown and Amy Finkelstein, "Insuring Long-Term Care in the United States," Journal of Economic Perspectives, Fall 2011, 25(4):119-42. A survey of the policy issues from an economics perspective, focusing on why there is such a small market for private long-term care insurance. The authors' fingers point squarely at Medicaid. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/jep.25.4.119**

OPTIONAL:

One of the economic issues in this domain is whether a government assistance program should be in-kind, meaning an insurance policy that provides certain services in certain states of the world, or instead in cash, which allows the beneficiary or the beneficiary's caregiver to buy services. There is a standard economic argument that cash is preferable because it allows the beneficiary to buy whatever most satisfies his or her preferences. A corollary to this argument is that if a specific good or service is subsidized, there is a moral hazard effect; a more than optimal quantity of the good is consumed. This line of reasoning, however, ignores the political economy argument that voters supporting a public in-kind program such as Medicaid may have preferences about what money should be spent on, e.g., health care services or food and not alcohol. In other words, voters may not support a cash program because they don't want tax money spent the way recipients would spend it. (This is the rationale for conditional cash transfers.) The argument for cash transfers also ignores a targeting issue; if there is queueing or other non-pecuniary

cost to getting the in-kind benefit, the persons that make use of the in-kind benefit are those for whom it has the greatest value. One feature of in-kind health benefits is that they are generally only taken up in instances where there is some kind of illness or injury, and are therefore targeted on those who most value the specific service. This kind of targeting is more valuable the greater the variation in person's valuation of the service. Most health care services have a lot of variation because healthy persons make little use of them, but sick persons may make a great deal of use (as reflected in the skewness of medical spending, Class 3). An article that takes up this tradeoff in the context of home health care services is Ethan M.J. Lieber and Lee M. Lockwood, "Targeting with In-Kind Transfers: Evidence from Medicaid Home Care," American Economic Review, April 2019, 109(4):1461-85. They estimate that the targeting benefit outweighs the moral hazard loss in the context of Medicaid home health services. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.20180325

Financing long-term care will almost certainly be a major policy issue going forward because of the modest assets of a substantial portion of the current and future elderly population, the low takeup of private long-term care insurance, and the aging of the baby boomers. This in turn will place large demands on both state and federal financing. It may be a personal issue for you as well; your grandparents or parents or both may well require long-term care at some point in your lifetime. The following reading is Optional, but if you want to see some data on what the financial demands at the individual level might be, see Anthony Webb and Natalia Zhivan, "How Much Is Enough? The Distribution of Lifetime Health Care Costs," CRR WP 2010, February 2010. http://crr.bc.edu/wp-content/uploads/2010/02/wp_2010-1-508.pdf Figures 3A and 3B show their estimates of remaining lifetime out-of-pocket costs for medical care and long-term care for a married couple with no chronic disease at various ages. In 2009 dollars they estimate at age 65 expected lifetime costs of $260,000 and $570,000 at the mean and 95$^{th}$ percentile, respectively. Because their estimates were done before the ACA, they do not account for the closing of the donut hole in Part D. Cutting the other way, they also do not account for costly new drugs that have come to market. In any event, the costs were and surely remain large relative to many families' savings.

Although this is now only of historical interest, for a summary of the ACA's provisions in long-term care see the Kaiser Family Foundation, "Medicaid Long-Term Services and Supports: Key Changes in the Health Reform Law," June 2010, http://www.kff.org/healthreform/upload/8079.pdf and for a summary of the CLASS Act see http://www.kff.org/healthreform/upload/8069.pdf

The following two articles are a pair of short papers from an entire issue of Health Services Research that was devoted to the Cash & Counseling Demonstration and Evaluation, an effort to move policy toward financing care of the disabled, some of whom are in institutional long term care, away from a policy of financing services directly (e.g., an LTC insurance policy) toward a policy of providing the disabled with cash and allowing them to buy services, including services of family members. Accompanying this demonstration was an evaluation that shows (in my view) largely favorable results, more or less in line with what a standard economic model would have predicted. My sense is that this type of

program has now become widespread, but I have seen no data. Other papers in the same issue of Health Services Research provide more detail.

A.E. Benjamin and Mary L. Fennell, "Putting the Consumer First: An Introduction and Overview," Health Services Research, 42(1), Part II, February 2007, 353-361. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1475-6773.2006.00694.x/pdf

Peter Kemper, "Commentary: Social Experimentation at its Best: The Cash and Counseling Demonstration and its Implications," Health Services Research, 42(1), Part II, February 2007, 577-586. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1475-6773.2006.00696.x/pdf

Another thrust of policy in this domain has been to try to keep people in their homes as long as possible (called "living in place" or "aging in place"). A classic demonstration in this domain is described in:

Peter Kemper, "The Evaluation of the National Long Term Care Demonstration: Overview of the Findings," Health Services Research, 23(1): 161-174, April 1988. http://www.ncbi.nlm.nih.gov.ezp-prod1.hul.harvard.edu/pmc/articles/PMC1065495/pdf/hsresearch00089-0167.pdf Showed that increasing community services did not save money but did have benefits for the group that received the services. For more on the study see Weissert and Kane in the supplementary readings, as well as the other papers in the special issue of Health Services Research in which this paper appears.

The following several papers are summarized in the Brown and Finkelstein paper that is required, but if you want to pursue them further, I list them here.

Amy Finkelstein and Kathleen McGarry, "Multiple Dimensions of Private Information: Evidence from the Long-Term Care Insurance Market," American Economic Review, September 2006, 96(4):938-58. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.96.4.938 Shows that there is some pooling of risks in the long-term-care insurance market because highly risk averse persons will pay higher loadings.

Jeffrey R. Brown, Norma B. Coe, and Amy Finkelstein, "Medicaid Crowdout of Private Long-Term Care Insurance Demand: Evidence from the Health and Retirement Survey," in Tax Policy and the Economy, vol. 21, ed. James Poterba; Cambridge: MIT Press, 2007. Available from Harvard websites as http://www.nber.org.ezp-prod1.hul.harvard.edu/papers/w12536. Attributes low demand for private long-term care insurance to Medicaid crowdout, but also estimates that if all states had as restrictive an asset test as the most restrictive state, penetration of private insurance would only rise from 9 percent to 12 percent. Think about why crowdout by Medicaid appears to be such a much larger factor in the demand for private long-term care insurance than for private health insurance.

Jeffrey R. Brown and Amy Finkelstein, "Why Is the Market for Long-Term Care Insurance So Small? "Journal of Public Economics, 2007, 91(10):1967-91. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0047272707000321 They find much lower loadings for women than for men and women for private long-term-care insurance, but no corresponding coverage differences; they then point to Medicaid crowdout as an explanation, since women are more likely to use Medicaid.

Jeffrey R. Brown and Amy Finkelstein, "The Interaction of Public and Private Insurance: Medicaid and the Long-Term Care Insurance Market," American Economic Review, June 2008, 98(3):1083-1102. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.98.3.1083 Estimates that Medicaid crowds out private insurance for about two-thirds of the population.

Edward C. Norton, "Incentive Regulation of Nursing Homes," Journal of Health Economics, 11(2), August 1992, 105-128. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/0167629692900305 Contrary to much of the literature for Class 17 on pay-for-performance in medical care, changing a nursing home's basis of payment to something approximating pay-for-performance appeared to have desirable effects.

Brant E. Fries, Don P. Schneider, William J. Foley, Marie Gavazzi, Robert Burke, and Elizabeth Cornelius, "Refining a Case-Mix Measure for Nursing Homes: Resource Utilization Groups (RUG-III)," Medical Care, 32(7), July 1994, pp. 668-685. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/10.2307/3766161 A basic descriptive article on RUGs, the basis for payment used by most state programs (and as we saw in class 5, before October 2019 for the Medicare SNF benefit as well).

Edward Norton, "Long-Term Care," in Handbook of Health Economics, vol. 1, eds. Anthony J. Culyer and Joseph P. Newhouse; North-Holland, 2000. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S157400640080030X A now dated survey of the literature from an economics perspective.

The Pepper Commission Report, available at: http://www.allhealth.org/publications/Uninsured/Pepper_Commission_Final_Report_73.pdf Before the ACA this report was the last serious effort at the federal level to deal with long-term care insurance. It is interesting and a bit depressing to look at the remainder of the report to see how many issues from the late 1980s are still on the policy agenda.

**CLASS 10 – THE AFFORDABLE CARE ACT AND REFORM OF COMMERCIAL HEALTH INSURANCE MARKETS, PART 1 (October 7) Guest: Elizabeth (Liz) Fowler. Liz's bio is available at https://www.commonwealthfund.org/person/elizabeth-fowler**

**A reminder: Testimony 1 is due before the October 14 class!**

**Although the required reading for this class is relatively modest, there are many slides.**

**Many of them simply describe the American health insurance market and various provisions of the ACA. Others describe several policy issues the Obama Administration faced in rulemaking to implement the ACA; the ACA is an excellent case study of issues in implementing a law. Some of the slides as well as some of the reading describe data on how well the law is working and the Trump Administration's efforts to modify it.**

**The slides begin with some detail on the various insurance submarkets. Much public discussion of health policy fails to distinguish these markets, but as long as these submarkets exist, that is as long as the US does not have a single public plan or, alternatively, everyone is not in an individual market or marketplace, policy must account for their differences. As Class 7 brought out, selection is mostly an issue in the individual and small group markets. In the mid-size and large employer market, which are roughly speaking those employers with more than 50-100 employees, the law of large numbers makes the mean risk less variable than at smaller firms. Furthermore, larger firms tend to self-insure, whereas smaller firms tend to shift the risk to an insurer. Because of their smaller size, they are more vulnerable to a random large shock, although firms that self-insure generally purchase reinsurance to cover all or most of losses above a certain amount, so self-insurance is a bit of a misnomer. In sum, it is the individual and small group markets that are more vulnerable to selection, and those are the markets where the ACA both focused and made the most difference.**

**The ACA has ten titles, although almost all of the controversy surrounding it comes from its first two titles. These titles, among other things, included:**

- **i) A mandate that individuals have a suitable insurance policy, as defined in the law and in regulation, or pay a financial penalty. The mandate, however, was repealed in 2017, effective in 2019. In addition, Title I specifies income-related subsidies for those without employer-provided insurance and with incomes below 400% of the Federal Poverty Limit (FPL) – and, to encourage larger employers to provide subsidized insurance, financial penalties for such employers if they do not insure a sufficiently high number of their employees;**

- **ii) Reforms in the market for individual insurance policies and non-self-insured employer plans, including the prohibition of pre-existing condition clauses (meaning that insurers must cover all medical conditions from the effective date of coverage), requiring guaranteed issue (insurers must cover all applicants who pay their premiums and cannot refuse any applicant) and guaranteed renewal (anyone with an existing policy can renew the policy provided the insurer continues to offer it, although the insurer can increase the premium and can make certain other policy changes as long as they apply uniformly), and constraining on the amount of the premium revenue that insurers can retain (called Minimum Loss Ratios, which we take up in Class 11). In addition, the ACA expanded dependent coverage to those under 26 years of age in all submarkets, including the large group market;**

- **iii) An expansion of Medicaid to adults without dependent children (Class 9).**

**Most of these reforms were directed at the problems caused by selection. They dramatically changed the American individual insurance market and to a lesser extent (to date) the small group market.**

**In addition to Titles I and II, there were eight other titles that have flown somewhat under-the-radar. One authorized a pathway for biosimilars (the analog to generic drugs in the case of biologics, Class 15) and another mandated caloric information on restaurant menus for chain restaurants, which took effect in May 2018 (note: 8 years after enactment).**

**The Gruber and Sommers reading summarizes the academic literature on the ACA. There is a shorter, less methodologic oriented review by Blumenthal et al. in the Optional reading that also focuses on what has happened since its enactment and what has been learned. There is a companion article to Blumenthal, et al. in this class by Blumenthal and Abrams on the ACA and delivery system reforms that is required reading for Class 18, but you may want to read it now to round out your understanding of the ACA. The Nikpay, et al. paper in the Optional reading is yet another shorter review of the literature on the ACA. Gruber and Sommers comment on methods and also make the important point (repeated from Classes 2 and 3) that the central function of insurance is financial protection, though many, especially in the public health community, focus on the role of insurance in increasing access to health care or improving health, which Gruber and Sommers cover and is also the subject of Soni, et al. in the Optional reading. Note the Goldin, et al. Optional reading which does find small favorable effects on middle-aged mortality from simply sending a a letter to a randomized group. Recall also the Sommers, et al. papers (Class 3) on Medicaid expansion and mortality.**

**Jonathan Gruber and Benjamin D. Sommers, "The Affordable Care Act's Effects on Patients, Providers, and the Economy: What We've Learned So Far," Journal of Policy Analysis and Management, July 2019, 38(4):1028-52. They not only review the literature on the ACA, but describe the different identification strategies that various studies have used. If you are shaky on methods, you may want to refer back to the material in Class 3.**

OPTIONAL:

Jacob Goldin, Ithai Z. Lurie, and Janet McCubbin, "Health Insurance and Mortality: Evidence from Experimental Outreach," NBER Working Paper 26533, https://www.nber.org/papers/w26533.pdf. These authors, two of whom work at the US Treasury Department, randomized a subsample of the 3.9 million taxpayers who paid a penalty under the ACA for not having health insurance to receiving an informational letter. Over the subsequent two years this intervention modestly increased coverage 1.3 percentage points and reduced middle-aged mortality by 0.06 percentage points among the randomized group relative to the control group.

David Blumenthal, Sara R. Collins, and Elizabeth J. Fowler, "The Affordable Care Act at 10 Years – Its Coverage and Access Provisions," New England Journal of Medicine, March 5, 2020, 382(10):963-9.

https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMhpr1916091

Aparna Soni, Laura R. Wherry, and Kosali I. Simon, "How Have ACA Insurance Expansions Affected Health Outcomes? Findings from the Literature," Health Affairs, March 2020, 39(3):371-8. Although this class focuses mostly on coverage expansion, financial protection, and implementation issues surrounding the ACA, there is a burgeoning literature on its effects on health. This paper looks mostly at effects on self-rated health and mortality, as well as chronic disease and maternal and neonatal health. It also touches on the effect on health disparities. The leading studies on mortality are the studies by Sommers in the Class 3 reading and the Goldin, et al. study immediately above. https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.2019.01436

Sayeh Nikpay, India Pungarcher, and Austin Frakt, "An Economic Perspective on the Affordable Care Act: Expectations and Reality," Journal of Health Politics, Policy, and Law, June 2020, 45(3):889-904. A review of the literature on the effects of the ACA, both what was expected and what happened. https://watermark.silverchair.com/8543340.pdf?token=AQECAHi208BE49Ooan9kkhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAAmwwggJoBgkqhkiG9w0BBwagggJZMIICVQIBADCCAk4GCSqGSIb3DQEHATAeBglghkgBZQMEAS4wEQQMKjyCQY_Y0zUR9f-lAgEQgIICHwnVMu_-1hz2FHFyJKwpOPvCvMq__Mk7oqHptSrracw_K7w-oTVQlvSo69otmQsX9KnGqa_0AiugYUK0hca3vNtV2S-sKy0hLzhamIollvFP8Zh36XgSIxMeUynBrv7ObbfMDgyE_252pcqqXR5DFm7OPIjuUxxvvY0OLc3rDEab_qJ06DpOJru0vQN6j___FxBWpyhqXTOehp-_UwROyGRDtEWpA0r9seBQdQ1OnUaCkdJd2pa837Ney42hMe_9VXhTwZBKPMdmrim04GyBw2M67515WTf-KIV_-dJpiwyrIrw9qoEBk18BD83IIoDjzQcUfLl6xpC6M3j1mjTTCLAU4XXZxD5S_Jjihbsy8mj3amGZOtTA5JvUpmdIwyU1wpIu-pkTsqpFvw9KGDRsUPXtLUx306ssT7-s6ffgdyAMWrgwHeN1aH6qAYYy2yEVwWng-Ozw8WQUPTU9sEfB5CjIhXVJfbh0t3J59Wszj4ydOAmiwr4Qkd5DeBLcudH2BHUtlyrApMCMUfPGg1JLwQQ8iwMjH8k_AHpVOB4Glqbv02NHsEG0muUJklRaq1gR79dVEQu0NsMYjChQ6aaXmO_zdqA3Y1yIQknoKb9DZGKcE38r216wvvxkWoaAVvQ-DC3fZLa9IFcefgsXPjPs3bwLDqexzT1sQ3FT7_JRKbu5uhiRJkQ9-mbvInqg-wORzFqON5nkLqzmQ9nxq5WNNw

John E. McDonough, Inside National Health Reform, Berkeley, University of California Press, pp. 109-139. McDonough's chapter is mainly descriptive, and is written from the point of view of a Democratic Senate staffer who was a key participant in the legislative process that led to the ACA. The book was written in the year after the passage of the ACA and hence does not consider the regulations the Obama Administration wrote to implement the law nor does it consider the subsequent Supreme Court decisions on the constitutionality of the law, in particular the holding that states that did not expand Medicaid would not lose all their federal Medicaid funding.

President Obama's views on the ACA as he was about to leave office, along with three commentaries/editorials on his paper follow:

Barack Obama, "United States Health Care Reform: Progress to Date and Next Steps," JAMA, August 2, 2016, 316(5):525-32. The first page is more his reflections on his Presidency, but the remainder are his thoughts on the ACA. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2533698

Jonathan Skinner and Amitabh Chandra, "The Past and Future of the Affordable Care Act," JAMA, August 2, 2016, 316(5):497-9. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2533697

Peter Orszag, "US Health Care Reform: Cost Containment and Improvement in Quality," JAMA, August 2, 2016, 316(5):493-5. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2533695

Stuart M. Butler, The Future of the Affordable Care Act," JAMA, August 2, 2016, 316(5):495-7. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2533696

***The Individual and Small Group Markets***

**These are the parts of the insurance market that functioned least well prior to the ACA, primarily because of selection (but also because of the role of brokers, about which there is more in Class 11), and they arguably remain the parts of the insurance market that function least well, though without question the individual market is now functioning better than before the ACA. As the slides and readings describe, the ACA made numerous reforms to the individual market, most notably the establishment of public exchanges or marketplaces (these terms mean the same thing) with associated subsidies for individuals with household incomes up to 400% of the FPL who purchased policies in this market. The subsidies are designed to draw good risks into the market and thereby reduce selection and are limited to persons in the individual market who are not covered by employer-provided insurance. In addition to selection, the slides take up several other policy issues the ACA addressed with respect to commercial insurance markets.**

**Mark Shepard's Optional paper below on hospital network competition is important in explaining what may well have gone on in many of the marketplaces. I have not required it because of its length, but we know that the successful insurers in the exchanges were mainly insurers that had previously been predominantly Medicaid plans, especially Centene. These insurers offered low cost, narrow network plans, whereas insurers that offered plans with broader networks mainly lost money in their marketplace business and withdrew, most notably United and Aetna. For more on why they may have lost money, see Shepard below. The Geruso, Layton, McCormack, and Shepard Optional paper explains what likely explains premium behavior in the marketplaces and puts the issue of affordability and comprehensiveness of benefits front and center.**

**Sabrina Corlette, Linda J. Blumberg, and Kevin Lucia, "The ACA's Effect on the Individual Insurance Market," Health Affairs, March 2020, 39(3):436-44. This describes the ACA's**

**reforms of the individual market. Those reforms have greatly improved the functioning of that market, despite decisions in both the Obama and Trump administrations that undermined that market. In a couple places Corlette, et al. remark that the risk corridor program encouraged both entry into the market and "aggressive" pricing. The latter could be interpreted either as a form of moral hazard on the part of insurers or, alternatively, as a way of stimulating entry. Should there have been a risk corridor program? As Corlette, et al. describe, it was not allowed to pay out in full. Should it have been?**

OPTIONAL:

Mark Shepard, "Hospital Network Competition and Adverse Selection: Evidence from the Massachusetts Health Insurance Exchange," mimeo, available at http://scholar.harvard.edu/files/mshepard/files/mshepard_hospitalnetworksselection_Aug2016.pdf Shepard shows that medically complicated patients buying on the Massachusetts exchange preferred plans where "star" hospitals (e.g., Partners) were in network. This may have, and in my view probably did, cause a selection problem that risk adjustment could not fully compensate for, because insurers that included these hospitals in their networks paid higher unit prices for hospitalizations. The phenomenon Shepard discusses may also explain why Blue Cross plans, with broader networks, tended to suffer losses on exchanges and plans with narrower networks like Centene did not, and why start up co-op plans like Minuteman Health in Massachusetts owed money into the risk adjustment pool that many of them could not pay and ultimately failed.

Michael Geruso, Timothy J. Layton, Grace McCormack, and Mark Shepard, "The Two Margin Problem in Insurance Markets," available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3385492 Using an Einav-Finkelstein setup, this paper points out that in a voluntary individual market with two or more risk types, there is both an intensive and extensive margin. Bringing more good risks into the market, for example by increasing subsidies, will lower premiums for the less generous plan that good risks prefer, but this will attract some of the better risks who were in the more generous plan, raising its premium. The paper traces through the welfare losses. This is an important generalization of Einav-Finkelstein, who only consider a market with one fixed insurance contract.

John Holahan, Laura Skopec, Eric Wengle, and Linda J. Blumberg, "Why Does Medicare Advantage Work Better than Marketplaces?" Washington: The Urban Institute, January 2018. I think their analysis of the difference between Medicare Advantage and the marketplaces/exchanges is on target; see my paper immediately below. The remedies they suggest to improve the functioning of the marketplaces/exchanges, however, would either cost providers or taxpayers money, both of which face political resistance. https://www.urban.org/sites/default/files/publication/96091/rwjf_moni_ma_marketplaces_8.pdf

Joseph P. Newhouse, "Risk Adjustment with an Outside Option," Journal of Health Economics, December 2017, 56:256-8. Highlights a key difference between risk adjustment in Medicare Advantage and in the public marketplaces. This difference has arguably led to

insurer exits in several marketplaces, whereas insurer participation in Medicare Advantage has continued to grow.
https://ac-els-cdn-com.ezp-prod1.hul.harvard.edu/S0167629617300267/1-s2.0-S0167629617300267-main.pdf?_tid=8aec5469-57ea-4162-b30f-8dbdc6c2a22c&acdnat=1524163785_56cdd7182a79dbffe0120d4237109ba9

Michael Geruso, Timothy Layton, and Daniel Prinz, "Screening in Contract Design: Evidence from the ACA Health Insurance Exchanges," American Economic Journal: Economic Policy, May 2019, 11(2):64-107. Although risk adjustment did reasonably well at blunting incentives to select in the exchages, it left open opportunities for insurers in the marketplaces to select based on drug coverage. In particular, in the cases in which risk adjustment did not neutralize incentives to adversely select, insurers were more likely to place the relevant drugs on a higher formulary tier or require pre-authorization.
https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/pol.20170014

***The Uninsured***

**The large amount of academic literature on the uninsured from before the ACA is now obsolete. Nonetheless, as the slides show and as you undoubtedly knew anyway, the United States certainly still has uninsured. One of the slides illustrates who is uninsured post-ACA; a quarter of the uninsured were eligible for a marketplace tax credit but did not enroll when the mandate was still in force, and another quarter were eligible for Medicaid but not enrolled.**

OPTIONAL:

Jennifer Tolbert, Kendal Orgera, Natalie Singer, and Anthony Damico, "Key Facts about the Uninsured Population," https://www.kff.org/uninsured/issue-brief/key-facts-about-the-uninsured-population/ A factual summary of the state of play as of December, 2019.

J. Michael McWilliams, Ellen Meara, Alan M. Zaslavsky, and John Z. Ayanian, "Use of Health Services by Previously Uninsured Medicare Beneficiaries," New England Journal of Medicine, July 12, 2007, 357(2):143-53. A followup to their study on the Class 3 Optional list. This study shows that those with hypertension, stroke, diabetes, and heart disease who were uninsured before age 65 had a larger increase in physician and hospital use after age 65 than those who were previously insured, suggesting there may be downstream cost offsets (and potentially improved outcomes) from covering persons before they become eligible for Medicare at age 65.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa067712

***Affordability***

**An important driver of federal cost of the ACA is the cost of subsidies to make insurance premiums "affordable" and hence attract the entire risk distribution into the market. The Optional reading by Glied focuses on how affordability can be improved.**

**A larger issue that is a companion of affordability is how much inequality in medical**

**care – and more generally in the society – the US is willing to tolerate. Solidarity is a frequently used term in the EU; it is much less used in the US. Think about that in the context of the next reading and in the context of the maps in the slides about the expansion of insurance coverage under the ACA.**

**Thomas H. Lee and Ezekiel Emanuel, "Tier 4 Drugs and the Fraying of the Social Compact," New England Journal of Medicine, July 24, 2008, 359(4), pp. 333-5. http://content.nejm.org.ezp-prod1.hul.harvard.edu/cgi/reprint/359/4/333.pdf. We will come to tiered formularies for drugs in Class 15 (though Lee and Emanuel explain the meaning), but the authors' general thrust leads to a somewhat dark view of the possibilities for reducing differences in health care use by income group in the US. There were also some slides on this point in Class 1.**

OPTIONAL:

The next reading gives some guidance on how to think about affordability and exemptions from a mandate; its author was the Assistant Secretary for Planning and Evaluation in DHHS from 2010-2012 and a key architect of the ACA.

Sherry A. Glied, "Mandates and the Affordability of Health Care," Inquiry, Summer 2009, 46(2):203-14. http://www.inquiryjournalonline.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.5034/inquiryjrnl_46.02.203 Glied takes up the issue of what is affordable and how large subsidies need to be by looking at policy toward subsidies in other policy domains. In particular, the US subsidizes food (e.g., food stamps, WIC) and housing (e.g., vouchers). Food and housing are like health care in that there are safety net providers, for food soup kitchens and for housing homeless shelters. How does health care differ from food and housing? What implications do those differences have for determining subsidy levels?

Thomas DeLeire, Amdre Chappel, Kenneth Finegold, and Emily Gee, "Do Individuals Respond to Cost-Sharing Subsidies in the Selections of Marketplace Health Insurance Plans?" Journal of Health Economics, December 2017, 56:71-86. This paper shows individuals in the ACA's marketplaces, who are almost all low income, responded to the cost-sharing subsidies as standard theory would predict. It is a counterpoint to the behavioral economics literature (Ericson and Sydnor reading for Class 8 as well as the Class 2 slides) on dominated choices as well as to Gruber-Abaluck and related literature on choice in Medicare Part D (Optional, Class 15). https://ac-els-cdn-com.ezp-prod1.hul.harvard.edu/S0167629617301005/1-s2.0-S0167629617301005-main.pdf?_tid=849851f1-718c-476f-bbeb-90dd9b54121e&acdnat=1549982295_d0b381dd68cdd19bd48f176dca71353a

Linda J. Blumberg and John Holahan, "After King v. Burwell: Next Steps for the Affordable Care Act," Washington: Urban Institute, August 2015, Executive Summary. http://www.urban.org/sites/default/files/alfresco/publication-pdfs/2000328-After-King-v.-Burwell-Next-Steps-for-the-Affordable-Care-Act.pdf I recommend that you go through the slides before you read this paper, since the authors assume familiarity with the basics of the ACA. Given the pressure on federal spending, or perhaps I should say resistance to tax

increases, the debate over subsidy levels and who can afford to pay what for health insurance is likely to continue, as we saw in the unsuccessful 2017 Republican efforts to cut subsidies. The slides cover the "family glitch" that Blumberg and Holahan refer to, but it means that the determination of whether employment-based insurance is affordable for dependents – and thus whether penalties apply for failure to obtain insurance for them - is based on the employee's premium for an individual policy - *not* the premium for a family policy if the employee has a family. Thus, even though in a common sense meaning of "affordable," insurance for a worker's dependents may be unaffordable, the mandate and penalties for failure to comply apply to dependents.

***Risk Adjustment in the Exchanges***

Except for the zero-sum nature of risk adjustment in the marketplaces (see the Blumberg, et al. and Newhouse papers above), the risk adjustment formulas in the marketplaces are similar to those in Medicare Advantage; they use demographics and diagnoses coded on claims forms, but for those interested in getting into the weeds, there are a few differences that are described in John Kautter, Gregory C. Pope, Melvin Ingber, Sara Freeman, Lindsey Patterson, Michael Cohen, and Patricia Keenan, "The HHS-HCC Risk Adjustment Model for Individual and Small Group Markets under the Affordable Care Act," Medicare and Medicaid Research Review, 2014, 4(3):E1-E46. https://www.cms.gov/mmrr/Articles/A2014/MMRR2014_004_03_a03.html

***Massachusetts***

The ACA was modeled on 2006 Massachusetts legislation, sometimes called "Romneycare." Some of the course material such as Kolstad and Kowalski (Class 2) has been based on the Massachusetts experience. And there are some important papers based on the Massachusetts experience.

OPTIONAL:

Martin B. Hackmann, Jonathan T. Kolstad, and Amanda E. Kowalski, "Adverse Selection and an Individual Mandate," American Economic Review, March 2015, 105(3):1030-66. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.20130758 Using an Einav-Finkelstein setup (Class 7), they show that the Massachusetts mandate succeeded in reducing selection by bringing healthier individuals into the individual market. They estimate a 4.1% gain in welfare, though this estimate treats the demand curve for insurance normatively.

Amy Finkelstein, Nathaniel Hendren, and Mark Shepard, "Subsidizing Health Insurance for Low-Income Adults: Evidence from Massachusetts," American Economic Review, April 2019, 109(4):1530-67. Using discontinuities in the subsidy schedule to estimate willingness to pay, the authors find low willingness to pay among the approximately the 70% least willing to pay. In fact, willingness to pay is always less than half the individual's expected health care cost. As a result, even with a 75% subsidy they estimate that at most half of individuals eligible for exchange coverage would buy insurance and with a 90% subsidy, 20% of persons would not buy. The authors attribute this to the availability of

uncompensated care and possibly behavioral biases. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.20171455

If you are specifically interested in Massachusetts, you might look at the following three relatively early papers on the Massachusetts experience.

Douglas Holtz-Eakin and Jonathan Gruber, "What Can Massachusetts Teach Us About National Health Insurance Reform?" Journal of Policy Analysis and Management, Winter 2011, 30(1):177-95. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1002/pam.20555/pdf If you read this exchange, I suggest starting with the Gruber essay rather than Holtz-Eakin's, because Gruber lays out the anatomy of the Massachusetts reform. Holtz-Eakin, a former CBO Director and Republican health analyst, focuses on the difficulties of cost control. Massachusetts deliberately started with an expand-insurance-first-and-worry-about-cost-second strategy (see the Kingsdale reading immediately following), as did the Obama Administration with the ACA. Gruber, who advised then Governor Romney during the formative period of the Massachusetts reform and subsequently advised the Obama Administration about the ACA and was a member of the Connector board in Massachusetts until 2015, focuses on the expansion of coverage/access. Do you think this debate over cost control foreshadows future debate on the ACA? Cost growth has fallen precipitously (see class 1), but how much this fall is attributable to the ACA, as well as how long it will continue, are hotly contested questions. Nonetheless, few expect the rate of cost growth to remain at its current low level indefinitely.

Jon Kingsdale, "Implementing Health Care Reform in Massachusetts: Strategic Lessons Learned," Health Affairs, published online 28 May 2009. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/4/w588.short Why both Massachusetts and the Obama Administration started with an expand-insurance-first strategy and implicitly why cost control is so hard. In July 2012 Massachusetts passed legislation aimed at reducing the rate of cost increase, but in my view the enforcement tools are weak, reflecting the political difficulty of cost control.

Robert Steinbrook, "Controlling Health Care Costs in Massachusetts with a Global Spending Target," JAMA, September 26, 2012, 308(12):1215-6. http://jama.jamanetwork.com/article.aspx?articleid=1352960 . Massachusetts, which is one of the highest cost states (in level of health cost per person) enacted what I would term light touch cost containment legislation in 2012. This article is a short summary of that legislation. Other states could emulate this legislation going forward. If you want more, see "Summary of Chapter 224 of The Acts of 2012," http://bluecrossmafoundation.org/publication/summary-chapter-224-acts-2012 and also "Chapter 224 of The Acts of 2012: Implications for MassHealth." (MassHealth is the name of Medicaid in Massachusetts.) https://bluecrossmafoundation.org/publication/chapter-224-acts-2012-implications-masshealth A key feature of the legislation was to set up a Health Policy Commission to advise the Legislature on cost control. You can view their website at http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/

**CLASS 11 - THE AFFORDABLE CARE ACT AND REFORM OF COMMERCIAL HEALTH INSURANCE MARKETS, PART 2: MEDICAL LOSS RATIO REGULATION AND ADMINISTRATIVE COST; COMPETITION IN HEALTH CARE MARKETS (October 14) (first testimony due before class)**

***Medical Loss Ratio Regulation, Administrative Costs, and Fraud***

**The ACA put in place Medical Loss Ratios (MLR's) of 80 percent for individual and small group insurance and 85 percent for large group insurance. This means insurers must pay out at least that percentage of premium revenue in benefits or give policyholders refunds to the degree they fall short of those percentages. The MLRs, however, apply only when insurers take financial risk; they do not apply to the self-insured market where the employer takes the financial risk. You should think about why the MLR provision was in the ACA and whether you would have supported it.**

**The following paper by Robinson is not only relevant to the MLR issue but also raises a number of points about the relationship between measures of accounting cost and economic cost (MLR's are based on accounting cost). This relationship is important for you to understand, both because the issue surfaces in other contexts and because of its relevance to the argument that there is a great deal of administrative waste in the American health care financing system. One policy proposal that flows from the argument of administrative waste is to limit insurers' administrative cost, one motivation for the MLR provisions. Similar accounting issues also arise around the profitability of pharmaceutical companies, especially the allocation of joint costs to product lines (i.e., different drugs in the case of pharma); we touch on this point in the context of pharma in Class 15. The slides also take up the issue of economic cost versus accounting cost.**

**James C. Robinson, "Use and Abuse of the Medical Loss Ratio to Measure Health Plan Performance," Health Affairs, 16(4), July/August 1997, pp. 176-187. http://content.healthaffairs.org/cgi/reprint/16/4/176 The MLR is often taken as a measure of administrative costs (the higher the loss ratio, the less the administrative costs as a percentage of premium). Robinson gives several reasons why the loss ratios of insurance companies and health plans don't provide useful information for policy (though stock market analysts take them seriously as a measure of the "quality" of a company's earnings), and hence why policy proposals to regulate that rate do not seem desirable. Why do we not see such regulations in other industries given that every firm in every industry has administrative costs and (at least for-profit) insurers presumably have the same incentive to reach an efficient level of administrative cost as firms in other industries?**

OPTIONAL:

The ACA also contains a provision for the Secretary to review rates or premiums, but with no enforcement powers; those remain at the state level with state insurance commissioners. The next reading gives you some pre-ACA background on premium setting. The paragraphs on medical underwriting are not of much relevance now, but the issues of

solvency and the material on premium review, which is part of the ACA, remain relevant.

American Academy of Actuaries, "Premium Setting in the Individual Market," web publication available at http://www.actuary.org/pdf/health/premiums_mar10.pdf

Some of the debate around the ACA, including the debate on the MLR, seemed motivated by a view that insurer profits are excessive. Insurance company (accounting) profit margins, however, are not abnormal among American industries. Nor are they a large portion of total health care costs. One slide makes this point, but you can also see Uwe E. Reinhardt, "The Baucus Plan: A Winner's Curse for Insurance Companies," http://economix.blogs.nytimes.com/2009/09/18/the-baucus-plan-a-winners-curse-for-insurance-companies/. If you want to pursue this topic further, see Reinhardt's subsequent post, "How Much Money Do Insurance Companies Make? A Primer," http://economix.blogs.nytimes.com/2009/09/25/how-much-money-do-insurance-companies-make-a-primer/. His post "What Portion of Premiums Should Insurers Pay Out in Benefits?" has a more positive view of medical loss ratio regulation than the slides do, although in my view his post is more a comment on the failings of the individual and small group markets. http://economix.blogs.nytimes.com/2009/10/02/what-portion-of-premiums-should-insurers-pay-out-in-benefits/.

American Academy of Actuaries, "Minimum Loss Ratios," web publication available at http://www.actuary.org/pdf/health/loss_feb10.pdf. The issues mentioned in this brief have now been settled by regulation, although they may at some point be reconsidered.

Randall D. Cebul, James B. Rebitzer, Lowell J. Taylor, and Mark E. Votruba, "Unhealthy Insurance Markets: Search Frictions and the Cost and Quality of Health Insurance," American Economic Review, August 2011, 101(5):1842-71. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.101.5.1842 A paper on the extent of market power in the insurance industry that looks to the public option as market perfecting. They focus on the issue of the insurer-consumer transaction, however, and do not deal with efficiency issues with respect to how a public insurer would contract with providers and the reimbursement issues we dealt with in Classes 4-6 around administered prices. That issue means the public option might not be market perfecting.

**Administrative costs are part of the debate over the desirability of a single-payer system since single-payer proponents emphasize savings in administrative cost. The next readings deal with issues around administrative cost in the US system. The debate around the level of administrative cost properly goes beyond administrative costs at insurers and also takes up administrative costs of hospitals, physicians, and other providers. After reading these papers, ask yourself: What is the question at issue? Is it the right question? If not, what is the right question and do these papers help you get the answer to that question?**

**Steffie Woolhandler, Terry Campbell, and David U. Himmelstein, "Costs of Health Care Administration in the United States and Canada," New England Journal of Medicine, 349(8), August 21, 2003, pp. 768-775.**

**http://content.nejm.org.ezp1.harvard.edu/cgi/reprint/349/8/768.pdf. A paper that is frequently cited by single payer advocates, prominent among whom are Woolhandler and Himmelstein. They show higher administrative costs in the US system than in the Canadian and argue that the difference could cover the medical costs of the (at that time) uninsured.**

**Henry J. Aaron, "The Costs of Health Care Administration in the United States and Canada," New England Journal of Medicine, 349(8), August 21, 2003, pp. 801-803. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMe030091 This is an editorial that accompanied the Woolhandler, et al. paper. Aaron argues that there are methodological issues with Woolhandler, et al.'s conclusion of higher administrative costs in the US. What are these methodological issues? How do you come out? How would you treat taxes that for-profit insurer's pay for this purpose? (The slides note that the treatment of taxes was an issue with the ACO's MLR regulations.)**

**William C. Hsiao, "State-Based Single-Payer Health Care — A Solution for the United States?" New England Journal of Medicine, March 31, 2011, 364(13):1188-90. http://sphweb.sph.harvard.edu/health-care-financing/files/hsiao_2011_-_state-based_single_payer.pdf You should start with this short general reading on Vermont's exploration of a single-payer plan, but then proceed to read http://www.leg.state.vt.us/jfo/healthcare/FINAL%20REPORT%20Hsiao%20Final%20Report%20-%2017%20February%202011_3.pdf, pp. 46-48. It is in the latter document that Hsiao gives the basis for his estimate of administrative saving from less fraud under a single payer. How much confidence do you have in his estimate of 5% savings from less fraud? In addition to his estimate of savings from less fraud, Hsiao estimates additional savings in administrative cost at insurers, hospitals, and physicians if the state of Vermont were to adopt a single payer system. Pages 34-46 of the final report show the derivation of savings in those domains. The administrative savings estimate relies on several studies, including a forerunner of the Morra, et al. in the Optional reading, but to keep the amount of required reading down, pp. 34-46 are Optional.**

**As several of you may know, in 2011 the Vermont legislature enacted legislation for a single payer plan that was to have gone into effect in 2017. The legislation, however, did not specify how the plan would be financed. In December 2014 the Democratic Governor of Vermont, who had initially run for office on a single-payer platform, announced that the state would no longer pursue such a plan. The plan that was envisioned would have added $2.5 billion to the state's budget; that number is certainly small in the context of national health care spending, but Vermont is a small state and the state's entire revenue from taxes at that time was only $2.7 billion (these figures are from Sarah Kliff, http://www.vox.com/2014/12/22/7427117/single-payer-vermont-shumlin). Another way to say this is that financing the plan would have required an 11.5 percentage point increase in the payroll tax and up to a 9 percentage point increase in the income tax, a tax increase the magnitude of which the Democratic governor considered politically undoable. This saga can also be construed as an example of the American political system - or more precisely the Vermont political system - resisting redistribution.**

OPTIONAL:

David U. Himmelstein, Terry Campbell, and Steffie Woolhandler, "Health Care Administrative Costs in the United States and Canada, 2017," Annals of Internal Medicine, published on line January 7, 2020, https://annals-org.ezp-prod1.hul.harvard.edu/aim/fullarticle/2758511/health-care-administrative-costs-united-states-canada-2017. Using methods similar to the required Himmelstein, et al. paper, this paper with newer data shows a widening gap between the US and Canada with respect to administrative cost. I left the earlier paper rather than this one on the required list because of the relevance of Aaron's editorial, which remains relevant to this more recent paper.

Dante Morra, Sean Nicholson, Wendy Levinson, David N. Gans, Terry Hammons, and Lawrence P. Casalino, "US Physician Practices Versus Canadians: Spending Nearly Four Times as Much Money Interacting With Payers," Health Affairs, August 2011, 30(8):1443-50. http://xa.yimg.com/kq/groups/19160869/272862993/name/US-+Canada.pdf Contrast their estimate with Woolhandler, et al.'s.

Robert A. Book, "Medicare Administrative Costs Are Higher, Not Lower, Than for Private Insurance," http://www.heritage.org/research/reports/2009/06/medicare-administrative-costs-are-higher-not-lower-than-for-private-insurance. A contrary view to the argument of single payer advocates that Medicare has lower administrative cost than commercial insurance.

Steffie Woolhandler and David U. Himmelstein, "Costs of Care and Administration at For-Profit and Other Hospitals in the United States, New England Journal of Medicine 336(11), March 13, 1997, pp. 769-774. http://www.nejm.org/doi/full/10.1056/NEJM199703133361106 This Woolhandler and Himmelstein paper argues that hospital administrative costs are also high in the US system.

Stuart H. Altman and David Shactman, "Should We Worry About Hospitals' High Administrative Costs?" New England Journal of Medicine, 336(11), March 13, 1997, pp. 798-799. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/nejm199703133361111 This is an editorial on the preceding Woolhandler and Himmelstein paper that comes out on the other side of the issue.

For a Washington *Post* Fact Checker analysis on this issue, see https://www.washingtonpost.com/news/fact-checker/wp/2017/09/19/medicare-private-insurance-and-administrative-costs-a-democratic-talking-point/?utm_term=.3df1d7607c49

In this context you should also note the Cutler and Ly paper in the Optional reading for Class 1.

***Antitrust (Competition Policy in EU nomenclature)***

**Although the 2009-2010 debate on the ACA emphasized insurer concentration, and the first reading below is supportive of that view, concentration on the provider side seems to be a far larger problem, especially given the MLR regulation which means 80 or 85% of any premium increase must be paid out in medical benefits and so limits insurer rents from concentration. The second and third readings take up provider concentration, and there is also a discussion of provider concentration in the slides.**

**Because of the technical nature of antitrust regulation, I have required little reading. I have, however, listed a substantial number of Optional readings on this topic because it is increasingly important. For example, we will see in Class 16 that most of the variation in spending across geographic areas by the commercially insured is attributable to differences in provider markups. Although it has not been shown, it seems likely that these varying markups are related to varying degrees of provider market power.**

**United States of America and the State of Michigan vs. Blue Cross Blue Shield of Michigan, which is posted on the course website. Read just the first four pages of the complaint as an example of market power in the insurance industry.**

**Christopher F. Koller and Dhruv Khullar, "The Commercial Differential for Hospital Prices: Responses from States and Employers," JAMA, August 27, 2019, 322(8):723-4. Documents the market power of hospitals in the commercial market and efforts of various states to regulate commercial hospital prices in relation to Medicare. https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2739290?resultClick=1**

**Bob Kocher and Ezekiel J. Emanuel, "Overcoming the Pricing Power of Hospitals," JAMA, September 26, 2012, 308(12):1213-4. Suggests three steps to counter hospital market power. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1362033**

OPTIONAL:

For those of you who want more - but not a lot more - on this important topic, especially if you do not have a background in the economics of industrial organization, you can browse among the following several papers:

Daria Pelech, "An Analysis of Private-Sector Prices for Physicians' Services," Washington: Congressional Budget Office, January 2018. A companion piece to the required Koller and Khullar reading, but focused on physicians rather than hospitals. She shows that commercial insurers pay much higher prices for the same service than Medicare pays. Moreover, the commercial prices relative to Medicare are higher for specialists, who presumptively have more market power (there are fewer of any given specialty in a local area than generalists) and the commercial prices vary by local market, likely in relation to market power. She cites a number of the studies in the literature on the market power of physicians. https://www.cbo.gov/system/files/115th-congress-2017-2018/workingpaper/53441-workingpaper.pdf

Paul B. Ginsburg and L. Gregory Pawlson, "Seeking Lower Prices Where Providers Are

Concentrated: An Examination of Market and Policy Strategies," Health Affairs, June 2014, 33(6):1067-75. Describes a variety of methods that could be used to address increased provider market power from consolidation. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/33/6/1067.full.pdf

Martin Gaynor and Robert Town, "The Impact of Hospital Consolidation – Update," July 2012. A non-technical summary of the literature on consolidation. http://www.rwjf.org/files/research/5973.74582.synthesisprojectupdate.hospitalconsolidation.pdf.

William M. Sage, "Getting the Product Right: How Competition Policy Can Improve Health Care Markets," Health Affairs, June 2014, 33(6):1076-82. As a predicate for meaningful competition, this paper advocates pricing the treatment for the patient's problem, potentially with a warranty. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/33/6/1076.full.pdf

Glenn Melnick and Katya Fonkych, "Hospital Prices Increase in California, Especially Among Hospitals in the Largest Multi-hospital Systems," Inquiry, 2016, 53:1-7. There are two large hospital systems in California; the larger accounts for 10% of the hospitals in the state and the smaller for 8%. This study examined Blue Cross' reimbursement at all California hospitals from 2004-2013. Whereas in 2004 reimbursement per admission to the hospitals in the two large systems was comparable to all other hospitals, by 2013 it was 25% higher after controlling for case mix, the wage index, and a variety of other factors.
http://inq.sagepub.com.ezp-prod1.hul.harvard.edu/content/53/0046958016651555.full.pdf

Leemore Dafny, "Hospital Industry Consolidation — Still More to Come?" New England Journal of Medicine, January 16, 2014, 370(3):198-9. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1313948 Some details on the difficulty of enforcing antitrust laws in the hospital sector. Dafny spent two years at the Federal Trade Commission as Deputy Director for Health Care and Antitrust and was at that time the point person for antitrust issues related to hospitals. (The Department of Justice handles antitrust issues with respect to insurers.)

Paul B. Ginsburg, "Wide Variation in Hospital and Physician Payment Rates Evidence of Provider Market Power," Center for Health System Change, Research Brief 16, November 2010. http://hschange.org/CONTENT/1162/1162.pdf A short descriptive paper.

The Attorney General of Massachusetts has issued two reports on provider concentration in Massachusetts and its relationship to price. http://www.mass.gov/ago/docs/healthcare/2011-hcctd-full.pdf http://www.mass.gov/ago/docs/healthcare/final-report-w-cover-appendices-glossary.pdf

David Dranove and Andrew Sfekas, "The Revolution in Health Care Antitrust: New Methods and Provocative Implications," The Milbank Quarterly, September 2009,

87(3):607-32. A non-technical but somewhat lengthy review on how economic analysis has changed judicial review of hospital merger cases. This paper goes over verbally what some of the Optional papers below do more formally. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1468-0009.2009.00573.x/epdf

Amitabh Chandra, Amy Finkelstein, Adam Sacarny, and Chad Syverson, "Health Care Exceptionalism: Performance and Allocation in the US Health Care Sector," American Economic Review, August 2016, 106(8):2110-44. This paper is about varying productivity across hospitals (so not the entire health care sector) and argues that, as in a standard market, higher quality hospitals have higher market shares and grow more over time. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.20151080

On the other hand, for those of you who do want a lot more on this topic and who have some background in the economics of industrial organization, there is a burgeoning literature. The following two chapters in the 2012 Handbook of Health Economics are excellent reviews. Both chapters are long; the Gaynor and Town chapter is particularly long.

Martin Gaynor and Robert J. Town, "Competition in Health Care Markets," and David Dranove, "Health Care Markets, Regulators, and Certifiers," both in the Handbook of Health Economics, vol. 2, eds. Thomas G. McGuire, Mark V. Pauly, and Pedro Pita Barros; Amsterdam: Elsevier, 2012. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/B9780444535924000098/1-s2.0-B9780444535924000098-main.pdf?_tid=e4e3f5e6-162e-11e2-91a0-00000aacb360&acdnat=1350240324_0f2d8e33257812c7786ad43b738b57c6 and http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/B9780444535924000104

A somewhat scaled down but still lengthy and updated version of the Gaynor and Town Handbook chapter is Martin Gaynor, Kate Ho, and Robert J. Town, "The Industrial Organization of Health-Care Markets," Journal of Economic Literature, June 2015, 53(2):235-84. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles.php?doi=10.1257/jel.53.2.235

Gautam Gowrisankaran, Aviv Nevo, and Robert Town, "Mergers When Prices Are Negotiated: Evidence from the Hospital Industry," American Economic Review, January 2015, 105(1):172-203. Sets up a formal model of hospital price determination and applies it to a proposed merger in northern Virginia. The model is a more general version of the model of formularies in the Berndt, et al. required reading for Class 15. This paper should not be attempted without a strong economics and econometrics background. It is summarized in the Gaynor, et al. Journal of Economic Literature paper above. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.20130223

Daniel P. Kessler and Mark B. McClellan, "Is Hospital Competition Socially Wasteful?" Quarterly Journal of Economics, May 2000, 115(2): 577-616. http://qje.oxfordjournals.org/

content/115/2/577.abstract Defines an at-the-time novel measure of competition among hospitals and shows that more competition is welfare improving, contrary to an earlier literature on the "medical arms race," which postulated that hospital competition led to excess cost without corresponding benefits to quality.

Martin Gaynor, "Health Care Industry Concentration: Testimony before the House Ways and Means Committee, September 2010. http://waysandmeans.house.gov/UploadedFiles/Gaynor_Testimony_9-9-11_Final.pdf An abridged version of his Handbook chapter.

Leemore Dafny, "Estimation and Identification of Merger Effects: An Application to Hospital Mergers," Journal of Law and Economics, August 2009, 52(3):523-50. Shows that competitor hospitals in areas where two hospitals merge can raise prices because of greater market concentration. http://www.journals.uchicago.edu.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1086/600079

The following three papers have conflicting findings on the effect of increased insurer concentration on medical prices. The first two find lower spending from increased insurer concentration using primarily a cross-section design; the third finds an increase in spending using what is effectively a difference-in-difference model.

Glenn A. Melnick, Yu-Chu Shen, and Vivian Yaling Wu, "The Increased Concentration of Health Plan Markets Can Benefit Consumers Through Lower Hospital Prices," Health Affairs, September 2011, 30(9):1728-33. Finds 64 percent of hospitals (revenue weighted) operate in health plan markets that are not concentrated (HHI ≤ 1800) and only 7 percent operate in markets that are (HHI > 3200). Also finds hospital prices in the most insurer concentrated markets are 12 percent lower than in the most insurer competitive markets. Emphasizes reducing hospital concentration. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/30/9/1728.full.pdf+html

Michael R. McKellar, Sivia Naimer, Mary B. Landrum, Teresa B. Gibson, Amitabh Chandra, and Michael E. Chernew, "Insurer Market Structure and Variation in Commercial Health Care Spending," Health Services Research, June 2014, 49(3):878-92. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/1475-6773.12131/epdf

Leemore Dafny, 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. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles.php?doi=10.1257/aer.102.2.1161

The literature in this domain is not confined to the US:

Carol Propper and Neil Söderlund, "Competition in the NHS Internal Market: An Overview of Its Effects on Hospital Prices and Costs," Health Economics, May 1998, 7, pp. 187-97. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1002/(SICI)1099-

1050(199805)7:3%3C187::AID-HEC349%3E3.0.CO;2-F/pdf Summarizes a small number of studies of the effects of attempting to introduce a modicum of price competition into the British National Health Service. My take is that effects of modest interventions are modest.

Julien Forder and Stephen Allan, "The Impact of Competition on Quality and Prices in the English Care Homes Market," Journal of Health Economics, March 2014, 34:73-83. Finds lower prices and lower quality in more competitive areas. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629613001677/1-s2.0-S0167629613001677-main.pdf?_tid=08e5a3e8-928f-11e4-94ab-00000aab0f6b&acdnat=1420210555_e351a6d1175b49ff237124244505bacc

A related issue to antitrust, suggested by Kocher and Emanuel in the required reading, is whether there should be a mandate for price transparency to consumers. Although frequently advocated, and somewhat bipartisan relative to many health policy issues, the evidence on the whole is not supportive of its efficacy. If you are interested in this issue, here are five papers to get you started:

Sunita Desai, Laura A. Hatfield, Andrew L. Hicks, Anna D. Sinaiko, Michael E. Chernew, David Cowling, Santosh Gautam, Sze-jung Wu, and Ateev Mehrotra, "Offering a Price Transparency Tool Did Not Reduce Overall Spending Among California Public Employees and Retirees," Health Affairs, August 2017, 36(8):1401-7. The title tells the tale. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/36/8/1392.full.pdf

Ateev Mehrotra, Katie M. Dean, Anna D. Sinaiko, and Neeraj Sood, "Americans Support Price Shopping, But Few Actually Seek Out Price Information," Health Affairs, 36(8): 1392-400. The title tells the tale here too. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/36/8/1392.full.pdf

Christopher M. Whaley, "Provider Responses to Online Price Transparency," Journal of Health Economics, July 2019, 66:241-59. A similar story as the two articles above. https://pdf.sciencedirectassets.com/271672/1-s2.0-S0167629619X00041/1-s2.0-S0167629618310476/main.pdf?X-Amz-Security-Token=IQoJb3JpZ2luX2VjEOr%2F%2F%2F%2F%2F%2F%2F%2F%2FwEaCXVzLWVhc3QtMSJHMEUCIHWEuOXtKmE6Hzcw84GNs26LbDh7VKjwnOQIMiJLBpliAiEAwhSqe1V2vZO3MrId6LW5ZgK0Q06EYX3lDC48WBMMFFUq2AII8v%2F%2F%2F%2F%2F%2F%2F%2F%2F%2FARACGgwwNTkwMDM1NDY4NjUiDPDwOoEa%2BKCOb%2BpMwiqsAtgqtQ41IVZ470G%2BgDxKaWRf3Y2LCVwVbDOq1RzutgaEwXCd74j%2FB2Gc14tWiW55pabX9ZceU5SWKcRxKeBmuAqcfYJeMVnCRwJ%2BWdrxL8f75crEFKGGvEri97QUSr1eIBlC8KHyQraQIlUctbwregkR2iNbw%2BCa3uWLo7TKk829%2FX3VF0NY6R6GhYImrAupWrnVMBzANHVsjtkGXlw8SUhklmBs%2BuAXd6PLhGb3emC7H1xi7xtY1M6PVFIeoN%2F6R8EiomhZrRC%2FmUB3ThAgdCbtQnK%2BdkDPAI9%2BLGxt42SXicpwu9ck9fQsYUR%2FeMotMw5wjlrTn8lVe5X5flWfYlUgdYQbimA7ZjaGM3PDwKU%2FPUFTZLBYjLDNmfWS2j3JFV99ipNwpJxsHCSOgjDly

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Anna D. Sinaiko and Meredith B. Rosenthal, "Increased Price Transparency in Health Care – Challenges and Potential Effects," New England Journal of Medicine, March 10, 2011, 364(10):891-4. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1100041

David Cutler and Leemore Dafny, "Designing Transparency Systems for Medical Care Prices," New England Journal of Medicine, March 10, 2011, 364(10):894-5. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1100540

And a paper from the ready-mix concrete industry in Denmark showing that price transparency may actually drive prices up. Svend Albæk, Peter Møllgaard, and Per B. Overgaard, "Government-Assisted Oligopoly Coordination: A *Concrete* Case," Journal of Industrial Economics, December 1997, 45(4):429-43. https://onlinelibrary-wiley-com.ezp-prod1.hul.harvard.edu/toc/14676451/1997/45/4

**TESTIMONY 1 (CLASSES 12, 13 and 14; October 19, 21, and 26)**

**CLASS 15–THE ECONOMICS OF PHARMACEUTICALS AND MEDICARE PART D (October 28)**

**This class covers both the economics of pharmaceuticals and the Medicare drug benefit, Part D. The economics of pharmaceuticals are covered in the next two readings as well as the slides. In addition, there are many Optional readings on that subject, including two accessible chapters from the Handbook of Health Economics.**

**Dhruv Khullar, Jennifer A. Ohn, Mark Trusheim, and Peter B. Bach, "Understanding the Rewards of Successful Drug Development – Thinking Inside the Box," New England Journal of Medicine, January 30, 2020, 382(5):473-80. Describes the economics of pharmaceuticals by looking at how various public policies affect pharmaceutical firms' rate of return on investment in research to develop new drugs. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMhpr1911004**

**Robert Kocher and Bryan Roberts, "The Calculus of Cures," New England Journal of Medicine, April 17, 2014, 370(16):1473-5. This paper by two venture capitalists lays out the investment calculus of venture capitalists with respect to drugs. (Much biotech is venture capital funded.) Their implications for policy are to reduce the threshold for initial approval in terms of efficacy and fundamental safety and to compensate by increasing post-marketing surveillance. Needless to say, this is a controversial position, but it does raise the issue of what the tradeoff would be from reducing the fixed costs of R&D. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1400868**

**Turning to the financing side, insurance for pharmaceuticals varies by type of insurance. Starting with Medicare, TM beneficiaries buy a stand-alone insurance plan from a private insurer, but it is voluntary like Part B. Medicare beneficiaries with incomes below 135% of the FPL do not have pay a premium for a Part D plan if they elect a below benchmark plan, which almost all do. Medicare Advantage beneficiaries buy a Part D plan from their MA plan. Although it is voluntary, 88% of Medicare beneficiaries have a Part D plan. Some Medicare beneficiaries have part or all of their premiums paid by their prior employer (retiree health insurance, Class 2). Dual eligibles have Medicare drug insurance. States administer the drug benefit for Medicaid-only persons, i.e., those eligible for Medicaid but not Medicare, and state Medicaid programs obtain lower drug prices than insurers or PBM's pay for Medicare beneficiaries (see the slides). The Veterans Administration gets even lower prices than Medicaid but has a much more restrictive formulary.**

**Those with employment-based or individual insurance, the majority of the population, have a commercial insurance policy that covers drugs (Class 10). Commercial insurers may administer the drug benefit themselves or they may contract out negotiations with pharmaceutical companies over price to pharmacy benefit managers (PBM's). The PBM market is dominated by three firms, all of which are now vertically integrated with insurers - Express Scripts, which in 2019 was bought by Cigna, CVS-Caremark, which in 2018 bought Aetna, and Optum, which is part of United Health Group. Employers may bundle drug insurance with their medical insurance, or they may carve it out (separately contract) drug coverage to a PBM (Class 11). Harvard, for example, currently uses Blue Cross Blue Shield of Massachusetts for its medical insurance but Express Scripts for its drug benefit. To keep the complexity and the amount of institutional detail down, I focus more on the Medicare drug benefit rather than drug coverage for those with Medicaid or commercial insurance.**

**To physically get drugs from the manufacturer to the consumer/patient requires a distribution network. Almost certainly the part of this network that you are most familiar**

**with are retail pharmacies. There are both national chains (e.g., CVS, Walgreens, Walmart, Costco, and RiteAid) as well as many small independent pharmacies (sometimes called mom and pops). Between the retail pharmacies and the drug manufacturers in the distribution network are wholesalers, as the slides illustrate. Yet another part of this distribution network are mail order pharmacies, which will typically mail chronic drug users a three-month supply of the drug they are on, whereas the typical purchase at the retail pharmacy is a one-month supply. Generally mail order products are cheaper for the consumer than buying at the pharmacy, e.g., a three-month supply of the drug for a copayment equivalent to a two-month copayment at the retail pharmacy. All the PBM's also operate mail order pharmacies. Drug insurers also have preferred retail pharmacies or networks of pharmacies.**

**The distribution system is illustrated in the slide entitled "How the Money Flows Through the System," which has a graphic entitled "Pipeline to Profits" from Kaiser Health News. The numbers for the hypothetical drug in the graphic show about 15 percent going to the distribution network (0.15 = 1- 175/(182+25)). The 175 is the net amount to the manufacturer shown at the bottom of the pipeline, the 182 is the amount paid by the insurer or employer near the top of the pipeline, and the 25 is the consumer copay. These amounts will vary by drug, by insurance policy, and by type of distribution (retail pharmacy or mail order). The proportion going to the distribution system is typically higher outside the US, which is why generic drugs are higher priced outside the US.**

**Much more recently specialty pharmacies have arisen. You can regard them as a specific type of PBM, and in fact most of them are now subsidiaries of the large PBM's. They distribute very expensive drugs, often biologics that require special handling. Many of the drugs that they handle are sold directly to physicians, who administer them to patients in offices or hospitals and bill the insurer, e.g., cancer drugs that are infused (Class 6). These drugs are often financed by the medical benefit rather than the drug benefit, e.g., in the Medicare context Part B rather than Part D. Because cost sharing will typically differ between the medical and drug benefit, demand functions for oral (a pill) and infused drugs differ, which can affect a manufacturer's decision on whether to formulate the drug to be administered orally, which is covered under the drug benefit, or to be injected or infused, which is covered by the medical benefit.**

**Ernst R. Berndt, Thomas G. McGuire, and Joseph P. Newhouse, "A Primer on the Economics of Pharmaceutical Pricing in Health Insurance Markets," Forum for Health Economics & Policy, 2011, 14(2), (Prescription Drug Insurance), Article 10 http://www.degruyter.com.ezp-prod1.hul.harvard.edu/view/j/fhep.2011.14.issue-2/1558-9544.1301/1558-9544.1301.xml?format=INT. This reading is an economic analysis of the role of pharmaceutical benefit managers and how they add value.**

**If you haven't already read it, you should next read with the MedPAC document on Part D Payment Basics. In fact, it wouldn't be a bad idea to reread it. http://medpac.gov/docs/default-source/payment-basics/medpac_payment_basics_19_partd_final_sec.pdf?sfvrsn=0**

**Richard G. Frank and Len M. Nichols, "Medicare Drug-Price Negotiation – Why Now… and How," New England Journal of Medicine, October 10, 2019, 381(15):1404-6. Advocates selective (drugs with little or no competition and high cost to Medicare) major-league baseball type arbitration for both Part B and Part D drugs. This proposal was seriously considered by House Democrats in 2019 but they ultimately opted for a more regulatory proposal (see the slides on H.R. 3). That proposal was "dead on arrival" in the Senate, but both arbitration and price regulation remain on the table for future administrations and Congresses.**
**https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1909798?query=main_nav_lg**

**Amitabh Chandra and Craig Garthwaite, "The Economics of Indication-Based Drug Pricing," New England Journal of Medicine, July 13, 2017, 377(2):103-6. Recently some drug pricing has started to move toward paying according to diagnosis, so called indication-based pricing. These authors show that this approximates a discriminating monopoly price, which increases the manufacturer's profit relative to a uniform price. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1705035**

**A similar concept to indication-based pricing is value-based pricing in which the payer only pays for those who respond clinically to the drug. This is touched on by Brennan and Shrank and Garber and McClellan in the Optional reading. To take a simple example, suppose the drug is only used for one condition and two-thirds of patients respond in a uniform way and one-third do not respond at all. Under value-based pricing the payer would only pay for the two-thirds who respond. In this case, however, the manufacturer could be expected to raise the price for those who respond to 1.5 times (=1/(2/3)) the earlier uniform price for the entire group taking the drug on the assumption is that if patients (or physicians or PBM's as their agents) were willing to pay $X for a two-thirds chance of a response, they will pay (at least) $1.5X for a 100% chance of a response. Now suppose there is a diagnostic test that is developed and patented that could distinguish those who would respond. What would happen to the price of the drug?**

OPTIONAL:

Fiona Scott Morton and Margaret Kyle, "Markets for Pharmaceutical Products," in Handbook of Health Economics, vol. 2; eds. Thomas G. McGuire, Mark V. Pauly, and Pedro Pita Barros; Amsterdam: Elsevier, 2012. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/B9780444535924000128. A reference work covering just about everything one would want to know about the pharmaceutical industry, both in the US and worldwide.

Dana Goldman and Darius Lakdawalla, "Intellectual Property, Information Technology, Biomedical Research, and Marketing of Patented Products," in Handbook of Health Economics, vol. 2; eds. Thomas G. McGuire, Mark V. Pauly, and Pedro Pita Barros; Amsterdam: Elsevier, 2012. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/B978044453592400013X Intellectual property protection is very important in the

pharmaceutical industry; this chapter surveys the topic.

Darius N. Lakdawalla, "Economics of the Pharmaceutical Industry," Journal of Economic Literature, June 2018, 56(2):397-449. A review of the economics literature, organized around incentives to innovate (R&D spending and dynamic efficiency), pricing, and marketing. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/jel.20161327

Patricia M. Danzon and Sean Nicholson, eds., The Oxford Handbook of the Economics of the Pharmaceutical Industry, New York: Oxford University Press, 2012. Another reference work with several chapters on various aspects of the industry. http://www.oxfordhandbooks.com.ezp-prod1.hul.harvard.edu/view/10.1093/oxfordhb/9780199742998.001.0001/oxfordhb-9780199742998

F. M. Scherer, "The Pharmaceutical Industry," in Handbook of Health Economics, eds. Anthony J. Culyer and Joseph P. Newhouse; Amsterdam: North Holland, 2000, pp. 1297-1336. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S1574006400800384 An overall description of the economics of the pharmaceutical industry by a distinguished economist of industrial organization. Less technical than the readings immediately above.

David M. Cutler, "Are Pharmaceutical Companies Earning Too Much?" JAMA, March 3, 2020, 323(9):829-30. The answer is not a simple yes or no.

Joseph E. Stiglitz and Arjun Jayadev, "Medicine for Tomorrow: Some Alternative Proposals to Promote Socially Beneficial Research and Development in Pharmaceuticals," Journal of Generic Medicines, 7(3):217-226. The current market structure for pharmaceuticals relies on the patent system to provide an incentive to innovate. This paper is critical of that system on several grounds, including the lack of incentives to develop small market drugs, the development of me-too drugs, and impediments to other researchers. The authors advocate prizes, but an issue with prizes is specifying ex ante the conditions under which the prize would be awarded (e.g., if I specify a prize for a drug that cures a disease, what happens if a drug comes along that only cures a certain portion of persons with that disease? And what does cure mean? Suppose the drug slows down the progression of a disease such a Parkinson's but doesn't cure it?) If the prize is publicly funded, I can also readily imagine litigation over whether prizes were properly awarded (of course there is a good deal of litigation now about whether a patent is valid). A second issue that prizes share with the patent system is that the risk of failure is borne by the researcher (relative to the NIH grant system). The authors advocate public funding of trials; greater public funding of trials is probably a good idea, but if public funding is to mostly replace private funding, which seems to be what the authors have in mind, there is the question of deciding which trials would be publicly funded. NIH is often criticized for insufficient risk taking, but suppose it did fund some risky trials that mostly failed. Would public support continue? Alternatively, if it were conservative in its risk taking with respect to choosing trials to fund, would it not find the high payoff drug? In terms of its criticisms of the patent system, me-too drugs are often drugs that lost the race to be first to market, meaning many of the R&D costs may

have already been sunk, and ex ante (when two firms both launched similar R&D projects) it was not clear which drug would be better or by how much.
https://www8.gsb.columbia.edu/faculty/jstiglitz/sites/jstiglitz/files/2010_Medicine_For_Tomorrow_pub.pdf

The Council of Economic Advisers, "Reforming Biopharmaceutical Pricing at Home and Abroad," February 2018. https://www.whitehouse.gov/wp-content/uploads/2017/11/CEA-Rx-White-Paper-Final2.pdf This reasonably short report has numerous suggestions on how to lessen the burden of drug prices for American consumers, and is a relatively short summary of potential policy changes from the viewpoint of the Trump administration. In July 2020, the President issued an Executive Order endorsing many of these proposals. I doubt, however, if anything can be implemented before a President takes office in January 2021. If you are going to write your testimony on drug pricing, you should read this Report.

Norman Augustine, Guru Madhavan, and Sharyl J. Nass, eds., Making Medicines Affordable: A National Imperative, Washington: National Academy Press, 2017. https://www.nap.edu/download/24946 A National Academy of Medicine committee report that recommended the federal government negotiate drug prices (although there was a dissent). This report has a great deal of background information on drug pricing.

Troyen Brennan and William Shrank, "New Expensive Treatments for Hepatitis C Infection," JAMA, August 13, 2014, 312(6):593-4. Although this short paper is now several years old, it returns to a theme of Class 1; drug spending could increase rapidly as newer drugs come on the market that are much more effective than prior treatment, especially those with high unit prices for diseases that are not rare. The particular example here is Hepatitis C.
http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/issue.aspx?journalid=67&issueid=930643&direction=P

Julie M. Donohue and Haiden A. Huskamp, "Doughnuts and Discounts – Changes to Medicare Part D under the Bipartisan Budget Act of 2018," New England Journal of Medicine, May 24, 2018, 378(21):1957-60. The MedPAC Payment Basics Document gives a description of Part D, but this paper adds some analysis that is also covered in the slides.
https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1802159

John Hsu, Vicki Fung, Jie Huang, Mary Price, Richard Brand, Rita Hui, Bruce Fireman, William H. Dow, John Bertko, and Joseph P. Newhouse, "Fixing Flaws in Medicare Drug Coverage That Prompt Insurers To Avoid Low-Income Patients," Health Affairs, December 2010, 29(12):2335-43. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/29/12/2335.short The slides cover the material in this paper, which illustrates how administered pricing can go awry in what has often been touted as a model for how to introduce more price competition into Medicare. The particular problem discussed in this article is risk adjustment for the Low Income Subsidy (LIS) group. The problem should have been easily fixed a year or two after the program began because much better data to estimate the adjustment were readily available at that

point, but CMS did not re-estimate risk adjustment weights until the sixth year of the program (2011). That re-estimation did fix the problem described in this paper; see the Kautter, et al. paper below if you want to know about the fix. I don't know why it took so long; although CMS was (and remains) strapped for administrative funds, this adjustment is straightforward to estimate; it just involves rerunning a regression on data that CMS had in house. The initial misestimation forced many low income beneficiaries to change Part D plans, which meant their formulary changed. In turn, that sometimes entailed changing the drugs that they were taking. As a result, I would have thought fixing the problem would have been a much higher priority for CMS than was the case.

Mark Duggan and Fiona Scott Morton, "The Effect of Medicare Part D on Pharmaceutical Prices and Utilization," American Economic Review, March 2010, 100(1):590–607. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.100.1.590 Shows that the basic architecture of Part D – increase the price elasticity facing manufacturers for Medicare beneficiaries without prior drug insurance – worked in the sense that prices fell at least 24 percent. Also their Table 5 supports the notion that there is a potential problem for drugs facing little or no price competition because price declines did not appear in the categories in which there were few substitutes. This is the rationale behind the arbitration proposal in the Frank and Nichols paper in the required reading as well as in the Frank and Newhouse paper below.

Yuting Zhang, Julie M. Donohue, Judith R. Lave, Gerald O'Donnell, and Joseph P. Newhouse, "The Effect of Medicare Part D on Drug and Medical Spending," New England Journal of Medicine, July 2, 2009, 361(1):52-61. This paper looks at spillovers from Part D to medical spending. The introduction of Part D lowered spending for services covered by Parts A and B for Medicare Advantage participants who were previously uninsured for drugs, presumably from better compliance, but raised spending for Parts A and B services for those who were reasonably well insured before Part D, perhaps from polypharmacy. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa0807998

Jason Abaluck and Jonathan Gruber, "Heterogeneity in Choice Inconsistencies among the Elderly: Evidence from Prescription Drug Plan Choice," American Economic Review, May 2011, 101(3):377-81. Only 12 percent of beneficiaries chose plans that minimized their cost, and the expected value of the excess payment was about $300. In choosing plans beneficiaries overweighted premiums relative to expected cost sharing. Presumably this is because the amount of the premium is certain, but the amount of cost sharing is uncertain at the time of the choice. In other words, beneficiaries didn't process probabilities well (see the material on choice under uncertainty in Class 2). Moreover, even if there were no uncertainty about the drugs the beneficiary would take in the next year, determining the amount of money for copays would require some effort to make the calculation (albeit CMS tries to help by making a calculator available on line) whereas the premium requires no calculation. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.101.3.377. A longer version of this paper is available as "Choice Inconsistencies Among the Elderly: Evidence From Plan Choice in the Medicare Part D Program," American Economic Review, 101(4), June 2011, pp. 1180-1210, http://pubs.aeaweb.org.ezp-

prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.101.4.1180

Florian Heiss, Adam Leive, Daniel McFadden, and Joachim Winter, "Plan Selection in Part D: Evidence from Administrative Data," Journal of Health Economics, December 2013, 32:1325-44. A paper similar to and consistent with Gruber and Abaluck (above); only about a quarter of consumers appear to choose the plan that minimizes their ex ante cost according to the CMS PlanFinder. Like Abaluck and Gruber, Heiss, et al. find that on average consumers appear to spend about $300 too much. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629613000921/1-s2.0-S0167629613000921-main.pdf?_tid=d091ce6e-a179-11e4-92f0-00000aacb35e&acdnat=1421850709_99e1376c6270f9a57a48838d56d958b8

Jeffrey R. Kling, Sendhil Mullainathan, Eldar Shafir, Lee C. Vermeulen, and Marian V. Wrobel, "Comparison Friction: Experimental Evidence from Medicare Drug Plans," Quarterly Journal of Economics, February 2012, 127(1):199-236. This paper describes an intervention that was a letter sent to a random group of Medicare Part D beneficiaries with personalized cost information on the cost of alternative plans. The intervention group had an 11 percentage point increased rate of plan switching, which saved the beneficiaries on average $100. Even if the CMS website makes comparison of Part D plans reasonably straightforward (in my view), encouraging persons to use it seems to make a difference.
http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/127/1/199.full.pdf+html

Jonathan D. Ketcham, Claudio Lucarelli, and Christopher A. Powers, "Paying Attention or Paying Too Much in Medicare Part D," American Economic Review, January 2015, 105(1):204-33. Contrary to the choice overload hypothesis from behavioral economics, which says that too many options freeze the consumer, these authors find the Part D market functions as standard theory predicts. For example, in 2010 half the enrollees were not in the plans they chose in 2006, and larger choice sets increased plan switching unless the additional choices were relatively expensive. Neither switching overall nor price responsiveness declined over time. Moreover, on net there was no substantial effect on price from switching friction. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.20120651

Jason Abaluck and Jonathan Gruber, "Evolving Choice Inconsistencies in Choice of Prescription Drug Insurance," American Economic Review, August 2016, 106(8):2145-84. Contrary to Ketcham, et al., this later paper from Abaluck and Gruber find that the welfare loss from suboptimal plan choice grew over time from consumer inertia. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.20130778

Francesco Decarolis, "Medicare Part D: Are Insurers Gaming the Low Income Subsidy Design?" American Economic Review, April 2015, 105(4):1547-80. The benchmark premium for the low-income subsidy is a weighted average of all bids. The paper shows how a large insurer can manipulate the subsidy to its advantage because CMS uses the weight from the prior year enrollment. Hence, if the insurer raises the premium but

introduces a new lower cost plan, it can raise the benchmark and transition many of its enrollees to the new plan.

Francesco Decarolis, Maria Polyakova, and Stephen P. Ryan, "Subsidy Design in Privately Provided Social Insurance: Lessons from Medicare Part D," Journal of Political Economy, published on line March 2020, https://www-journals-uchicago-edu.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1086/705550. Estimates a structural model of the Part D market and uses it to test counterfactual subsidy schemes. It finds that the current scheme is close in welfare to an optimal flat voucher, but that a non-uniform and probably not implementable subsidy scheme could do still better. Should only be attempted by students with a strong industrial organization background.

Keith M. Marzilli Ericson, "Consumer Inertia and Firm Pricing in the Medicare Part D Prescription Drug Insurance Exchange," American Economic Journal: Economic Policy, February 2014, 6(1):38-64. Given switching costs, economic theory predicts that firms would respond by raising prices for existing consumers while introducing cheaper new plans for new entrants in the market. Ericson finds that older plans have roughly 10 percent higher premiums than comparable new plans. Like Abaluck and Gruber, this result also somewhat conflicts with the results in Ketcham, et al. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/pol.6.1.38

Joseph P. Newhouse, "How Much Should Medicare Pay for Drugs?" Health Affairs, 23:1, January/February 2004, pp. 89-102. http://search.epnet.com.ezp1.harvard.edu/login.aspx?direct=true&db=aph&an=12017104&loginpage=Login.asp&scope=site. Covers some basic economics of the drug industry. As is well known, the December 2003 legislation establishing the Medicare drug benefit precluded price controls. For reasons explained in the following paper I do not think this design has worked altogether satisfactorily.

Richard G. Frank, "Medicare Drug Prices and the Deficit," New England Journal of Medicine, November 3, 2011, 365(18):1657-9. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1109926 The design of Part D assumes competition among drug manufacturers will be effective, but it also designates six protected therapeutic classes, which effectively eliminates competition in those classes of drugs. CMS proposed rules in January 2014 that would have cut the number of protected classes from 6 to 3, but chose not to go forward with a final rule in part because of pushback from disease advocacy organizations.

If you are interested in the policy proposal that the government should negotiate prices in Medicare Part D rather than outsource that function to PBM's, you may want to look at the exchange ("Point-Counterpoint") between Geoffrey Joyce and Neeraj Sood on the one hand and Rena Conti on the other in the 2016 Journal of Policy Analysis and Management. Rather than list all four titles separately, here is the link to the table of contents where you can download the pdf's. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1002/pam.2016.35.issue-4/issuetoc

Richard G. Frank and Joseph P. Newhouse, "Is There a Reason to Negotiate Drug Prices Under Part D of Medicare? And If So How?" Health Affairs, January/February 2008, 27(1), pp.33-43. Similar to Frank and Nichols in the required reading, this paper suggests major league baseball type arbitration for price for drugs with little or no competition. As noted above, this suggestion was in play in the House of Representatives in 2019 and remains a possible compromise. The Duggan and Scott Morton paper above gives some empirical support.
https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/full/10.1377/hlthaff.27.1.33

David H. Howard, Peter B. Bach, Ernst R. Berndt, and Rena M. Conti, "Pricing in the Market for Anticancer Drugs," Journal of Economic Perspectives, Winter 2015, 29(1):139-62. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/jep.29.1.139 Shows a high correlation (0.9) between drug pricing and incremental patient survival benefits suggesting a rational model of pricing by manufacturers with market power. In other words, better drugs command higher prices. Controlling for survival benefits, however, there has been about a 10 percent annual increase in the launch price of cancer drugs per life year gained even if drugs were not clinical substitutes, meaning they were indicated for different types of cancers. The authors infer from this finding that launch prices may not be profit maximizing but rather set somewhat above the launch prices of recently introduced cancer drugs for other cancer sites with different market sizes. The authors call this a reference price model of demand, with consumers taking the price of observed past price as a reference point. (This notion comes from behavioral economics.) To me, however, this behavior is more likely attributable to pricing so as to not attract a lot of negative publicity and/or regulatory attention, since the out-of-pocket price for many consumers will be unaffected, in particular for Medicare beneficiaries who have supplementary insurance for the Part B coinsurance. The slides have two figures from this paper.

The 340B program is touched on in the slides, but if you want more, here are two papers:

Sunita Desai and J. Michael McWilliams, "Consequences of the 340B Drug Pricing Program," New England Journal of Medicine, February 8, 2018, 378(6):539-48.
https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa1706475

Rena M. Conti and Peter B. Bach, "The 340B Drug Discount Program: Hospitals Generate Profits by Expanding to Reach More Affluent Communities," Health Affairs, October 2014, 33(10)1786-92. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/33/10/1786.full.pdf+html

The slides also cover patient-assistance or coupon programs, but if you would like to read something about them, I list four papers next.

Leemore Dafny, Christopher Ody, and Matt Schmitt, "When Discounts Raise Costs: The Effect of Copay Coupons on Generic Utilization," American Economic Journal: Economic Policy, May 2017, 9(2):91-123. Finds that the coupon schemes touched on in the slides raise the use of branded drugs 60+%, entirely at the expense of generics. https://pubs-

aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/pol.20150588

David H. Howard, "Drug Companies' Patient-Assistance Programs – Helping Patients or Profits?" New England Journal of Medicine, July 10, 2014, 371(2):97-9. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1401658

David Grande, "The Cost of Drug Coupons," JAMA, June 13, 2012, 307(22):2375-6. A two-page economic analysis of the coupons. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/Issue.aspx?journalid=67&issueID=24193&direction=P

Joseph Ross and Aaron Kesselheim, "Prescription-Drug Coupons – No Such Thing as a Free Lunch," New England Journal of Medicine, September 26, 2013, 369(13):1188-9. Another, similar (to Grande) two-page analysis of coupons with more data than Grande. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1301993

Thomas H. Lee, "Me-Too" Products: Friend or Foe?" New England Journal of Medicine, January 15, 2004, 350:3, pp. 211-212. http://content.nejm.org.ezp1.harvard.edu/cgi/reprint/350/3/211.pdf A short paper making the point that me-too products are the mechanism that price or product competition can work for improving welfare (though Lee eschews this piece of economic jargon).

The slides touch on biosimilars; if you want to read more here are three short papers:

Richard G. Frank, "Friction in the Path to Use Biosimilar Drugs," New England Journal of Medicine, March 1, 2018, 378(9):791-3. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1714908

Armeet Sarpatwari, Jerry Avorn, and Aaron S. Kessleheim, "Progress and Hurdles for Followon Biologics," New England Journal of Medicine, June 18, 2015, 372(25):2380-2. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1504672

Amitabh Chandra and Jacquilene Vanderpuye-Oregle, "Competition in the Age of Biosimilars," JAMA, July 21, 2015, 314(3):225-6. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2397842

There is current antitrust litigation in the pharmaceutical industry that alleges abusive practices by certain manufacturers. A short piece on that subject is Michael S. Sinha, Gregory D. Curfman, and Michael A. Carrier, "Antitrust, Market Exclusivity, and Transparency in the Pharmaceutical Industry, JAMA, published on line May 7, 2018, https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2681082

Rebecca Haffajee and Richard G. Frank, "Abuses of FDA Regulatory Procedures: The Case of Suboxone," New England Journal of Medicine, February 6, 2020, 382(6):496-8. Documents potentially illegal efforts by a manufacturer to extend market exclusivity for an important drug in treating opioid use disorder and suggests legislative actions that could be taken to address the manufacturer's efforts to extend exclusivity. This short paper touches

on a number of strategies manufacturers use to extend patent life or market exclusivity. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1906680?query=main_nav_lg

Alan M. Garber and Mark B. McClellan, "Satisfaction Guaranteed – 'Payment by Results' for Biologic Agents," New England Journal of Medicine, October 18, 2007, 357(16): 1575-1577. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/nejmp078204 Describes an early effort at value-based pricing. Johnson and Johnson and the British National Health Service agreed that J&J would only be reimbursed for a biotech agent to treat multiple myeloma if the treatment was successful.

Daron Acemoglu and Joshua Linn, "Market Size in Innovation: Theory and Evidence from the Pharmaceutical Industry," Quarterly Journal of Economics, August 2004, 119(3):1049-90. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/119/3/1049.full.pdf Using the aging of the population as an exogenous change in market size for various drugs and exploiting the differential use of various classes of drugs by different age classes, they find a large response of innovation to market size.

Pierre Dubois, Olivier de Mouzon, Fiona Scott Morton, and Paul Seabright, "Market Size and Pharmaceutical Innovation," RAND Journal of Economics, Winter 2015, 46(4):844-71. Like Acemoglu and Linn, they also find a response of innovation to market size but a considerably smaller one than Acemoglu and Linn. Moreover, they estimate that there was a threshold of an expected $2.5 billion in revenue to bring a drug to market, roughly consistent with a widely cited but controversial estimate by DiMasi, et al. referred to in the slides.

Amy Finkelstein, "Static and Dynamic Effects of Health Policy," Quarterly Journal of Economics, May 2004, 119(2): 527-64. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/119/2/527.full.pdf Ingenious use of clinical trial data to show effects of increased demand for better results on research (see her Table 1). Uses three case studies to show potentially large dynamic effects in one case, negative but small effects in the two others.

Iain Cockburn, Jean O. Lanjouw, and Mark Schankerman, "Patents and the Global Diffusion of New Drugs," American Economic Review, January 2016, 106(1):136-64. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.20141482 Shows that diffusion of drugs is faster (launch dates are earlier) in countries with less price regulation and stronger patent regimes.

Mark Duggan, Craig Garthwaite, and Aparajita Goyal, "The Market Impacts of Pharmaceutical Product Patents in Developing Countries: Evidence from India," American Economic Review, January 2016, 106(1):99-135. A companion paper to the one above, which looked cross-sectionally across countries; this paper looks at India's tightening its patent regime. Prices increased 3-6%, so there was little effect on quantities sold.

Richard G. Frank, "Prescription Drug Prices: Why Do Some Pay More Than Others Do?" Health Affairs, March/April 2001, 20(2): 115-128. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/20/2/115.full.pdf+html Explains in greater detail the price discrimination point made in the slides.

Congressional Budget Office, "Prescription Drug Pricing in the Private Sector," January 2007, http://www.cbo.gov/ftpdocs/77xx/doc7715/01-03-PrescriptionDrug.pdf. More background on drug pricing; more descriptive than the Scott Morton-Kyle or the chapters in the Danzon-Nicholson book listed above.

Julie M. Donohue, Marisa Cevasco, and Meredith B. Rosenthal, "A Decade of Direct-to-Consumer Advertising to Consumers," New England Journal of Medicine, August 16, 2007, 357(7):673-681. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa070502 Some basic facts about Direct-to-Consumer Advertising, including that such advertising is a minor percentage of pharmaceutical marketing expense.

John Kautter, Melvin Ingber, Gregory C. Pope, and Sara Freeman, "Improvements in Medicare Part D Risk Adjustment Beneficiary Access and Payment Accuracy," Medical Care, December 2012, 50(12):1102-8. http://ovidsp.tx.ovid.com.ezp-prod1.hul.harvard.edu/sp-3.13.1a/ovidweb.cgi?&S=ACFLFPDEDHDDFFKBNCLKFEOBGBOPAA00&Link+Set=S.sh.22.23.27.31%7c13%7csl_10 Describes the improvements made in the Part D risk adjustment scheme that corrected the flaw noted in the Hsu, et al. required reading by estimating five different risk adjustment formulas. Four of them were for the non-institutionalized: the elderly non-LIS; the elderly LIS; the non-elderly non-LIS; and the non-elderly LIS. The fifth was for the institutionalized.

John Robst, Jesse Levy, and Melvin Ingber, "Diagnosis-Based Risk Adjustment for Medicare Prescription Drug Plan Payments," Health Care Financing Review, Summer 2007, 28(4): 15-30. http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/downloads/07summerpg15.pdf Describes the original risk adjustment method for Part D plan payments.

Fiona Scott Morton, "The Strategic Response by Pharmaceutical Firms to the Medicaid Most-Favored-Customer Rules," RAND Journal of Economics, Summer 1997, 28(2): 269-290. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/2555805 Shows that legislation that required Medicaid get a best price raised prices for drugs with high Medicaid shares.

Others aspects of pharmacy benefit management in addition to formularies are step therapy, sometimes referred to as fail first, and prior authorization. If you are interested in these topics, here are a few papers; they are mostly studies of Medicaid populations, because of the availability of data.

Tami L. Mark, Teresa M. Gibson, Kimberly McGuigan, and B.C. Chu, "The Effects of Antidepressant Step Therapy Protocols on Pharmaceutical and Medical Utilization and

Expenditures," American Journal of Psychiatry, October 2010;167(10):1202-9. http://ajp.psychiatryonline.org.ezp-prod1.hul.harvard.edu/data/Journals/AJP/1817/appi.ajp.2010.09060877.pdf Step therapy for antidepressants reduced antidepressant use but raised overall cost. Note that antidepressants are a protected class in Part D.

Michael A. Fischer, Niteesh K. Choudhry, and William C. Winkelmayer, "Impact of Medicaid Prior Authorization on Angiotensin-Receptor Blockers: Can Policy Promote Rational Prescribing?" Health Affairs, May/June 2007, 26(3):800-7. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/26/3/800.short Step therapy reduced use of ARBs (used for hypertension and heart failure) moderately. The authors worry about the need to switch drugs if formularies change or if an MD is confronted with multiple formularies.

Michael A. Fischer, Steven Schneeweiss, Jerry Avorn, and Daniel H. Solomon, "Medicaid Prior-authorization Programs and the Use of Cyclooxygenase-2 Inhibitors," New England Journal of Medicine, November 18,2004, 351(21):2187-94. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa042770 Cyclooxygenase-2 (Cox-2) inhibitors are a type of non-steroidal anti-inflammatory drug, the best known of which are Vioxx and Celebrex. Prior authorization reduced use. The welfare effects are unknown.

Stephen B. Soumerai, Fang Zhang, Dennis Ross-Degnan, Daniel E. Ball, Robert F. LeCates, Michael R. Law, Tom E. Hughes, Daniel Chapman, and Alyce S. Adams, "Use of Atypical Antipsychotic Drugs for Schizophrenia in Maine Medicaid Following a Policy Change," Health Affairs.May-June, 2008, 27(3):w185-95. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/27/3/w185.short Prior authorization substantially reduced use among schizophrenics, very likely with adverse health and cost consequences.

Yuting Zhang, Alyce S. Adams, Dennis Ross-Degnan, Fang Zhang, and Stephen B. Soumerai, "Effects of Prior Authorization on Medication Discontinuation among Medicaid Beneficiaries with Bipolar Disorder," Psychiatric Services.April 2009, 60(4):520-7. http://ps.psychiatryonline.org.ezp-prod1.hul.harvard.edu/data/Journals/PSS/3876/09ps520.pdf Prior authorization reduced use of non-preferred agents, but also appeared to increase the risk of discontinuing therapy. Similar results in Christine Y. Lu, et al. Medical Care. January 2010, 48(1):4-9.

**CLASSES 16 - 20 - QUALITY OF CARE**

**I start with an overall view of the next five classes. Historically, the public debate in the US over health policy has focused more on access and cost than on quality. "Access" is a term with several meanings, including financial, geographic, racial/ethnic, and cultural, but in the American context it probably most often refers to financial access, commonly measured by rates of uninsured and underinsured. In other countries, such as the UK, access often refers to shorter waiting times for elective procedures, a meaning that is almost wholly absent in the American context.**

**The debate over the ACA, however, was almost entirely about access, meaning insurance coverage, with little focus on access to what? In recent years the view among health policy experts - but I think much less among the general public - is that there are important problems with the quality of care in the US (and in other countries as well). Moreover, expert opinion is now somewhat more nuanced about cost (see Class 1). Behind the change of expert opinion on quality lies a vast literature that both documents problems with quality of care and proposes remedies.**

**Class 16 covers geographic variation in the use and cost of services. The fact of large variation suggests quality issues. Class 17 covers a potpourri of subjects related to quality: a) the Institute of Medicine's (now the National Academy of Medicine) definition of quality (see slides); b) the entities that affect quality (no reading assigned on this topic; see slides); c) the RAND definition of appropriateness of care and its application; d) the findings of the literature on the effects of public reporting of provider quality; e) the business case for quality or lack of it; f) the role of information technology (IT) and the electronic medical record; its rate of adoption has a lot to do with economics; and g) reimbursement based on quality measures or so called pay for performance (P4P). Class 18 goes over managed care and the change in reimbursement to "value-based care" and its effect on quality. By value-based care I mean capitation or partial capitation with some payment based on quality measures. Class 19 covers comparative effectiveness research or improved knowledge of "what works for whom," and Class 20 deals with malpractice and its effects – for good or ill – on quality.**

**CLASS 16 – GEOGRAPHIC VARIATION (November 2)**

**In keeping with the spirit of teaching you something about methods and distinguishing higher quality research, I begin this set of classes on quality with the debate over geographic variation in the use of services and what it signifies. Although this class is primarily focused on methods, the variation in use and quality likely implies that all areas of the US do not have optimal quality. I put "likely" in the prior sentence because some believe most of the geographic variation in spending can be explained by health status differences. How much can be explained by variation in health status is an issue the assigned reading takes up, but the bulk of the literature shows considerable variation even after accounting for measured health status. (The Sheiner Optional reading is something of an exception.)**

**As you will see, however, there is controversy about both methods and substance in this domain; you should think about where you come out in the debates between the Dartmouth researchers who started the variation literature and their critics. In order to keep this introductory discussion in this syllabus coherent, there are a number of readings included in it that are NOT required. So you are clear on what I expect you to read, I have left the optional reading in ordinary (not bold) font.**

**The vast literature about geographic variation within the United States began with studies of variation in *use* and *cost* (quality variation was only implicit), much of it coming from John ("Jack") Wennberg, Elliott Fisher, and others at Dartmouth over the past almost five decades. Much of the Dartmouth work can be found in the Dartmouth Atlas in the**

**Optional reading; the slide from Class 1 on variation in Medicare spending, which is repeated in the slides for this class, is from the Atlas. In explaining variation the Dartmouth group has emphasized the role of the physician and the physician's discretion in gray areas of medicine, although why physician decision making should cluster geographically was (and I would say remains) somewhat murky.**

**Geographic variation relates to quality because if areas that are otherwise homogeneous, or, more realistically, vary only modestly in factors that affect use such as the age distribution, many of the areas must not have the optimal rate of use. Many of the later writings of the Dartmouth group go further, however, and interpret the data as saying that high spending areas buy very little if anything of value for their incremental spending, which given rise to the expression of "flat-of-the-curve" medicine; see, for example, the Fisher, et al. Part 2 paper in the Optional reading. This leads the Dartmouth group to the conclusion that the US could save a lot of money if all of the US looked like the low spending areas. Atul Gawande, in a well-known 2009 *New Yorker* article that was picked up by the *New York Times* and featured on page 1 in the Sunday paper, furthered this line of thinking.** (Neither the *New Yorker* article nor the *Times* article is required, but if you want to read the Gawande article it is at http://www.newyorker.com/reporting/2009/06/01/090601fa_fact_gawande. If you have access to the *Times*, you can get the *Times* article at http://www.nytimes.com/2009/06/09/us/politics/09health.html?scp=37&sq=medicare&st=nyt.) **I have excerpted the beginning of the *Times* article about the Gawande article on two slides.**

**A representative Dartmouth paper is Elliott S. Fisher, David E. Wennberg, Therese A. Stukel, Daniel J. Gottlieb, F. L. Lucas, Etoile L. Pinder, "The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care," Annals of Internal Medicine, 138(4), February 18, 2003, pp. 273-287. http://search.epnet.com.ezp1.harvard.edu/login.aspx?direct=true&db=aph&an=9116419&loginpage=Login.asp&scope=site**

**The Dartmouth work on geographic variation, which started in the early 1970's, precipitated a very delayed counter reaction. I have relegated some of the challenges to the Dartmouth view of the world to the Optional reading list, not because I think they are unimportant but because the reading for this class is already long! If you delve into the Optional reading, I suggest especially Romley, et al. (the slides for this class have one chart from this paper), Doyle on Florida, and Franzini, et al. on McAllen and El Paso. The first two both challenge the Dartmouth view that the additional spending doesn't buy much of value. Franzini, et al. showed that commercial data for McAllen and El Paso, the two Texas cities that Gawande had described in his New Yorker article, look very different using commercial insurance data rather than the Medicare data Gawande used. The 2013 Institute of Medicine (IOM) monograph in the Optional reading and the Newhouse and Garber papers below, which are based on that monograph, show why this was.**

**On the political front, the variation in Medicare spending so amply documented by Dartmouth arguably led to the floors in Medicare hospital wage adjusters and in Medicare Advantage reimbursement (recall Classes 5 and 8). These changes in Medicare, however, may simply have come from members of Congress in low spending districts becoming aware**

**of more supplementary benefits in Medicare Advantage plans in high spending districts rather than from the Dartmouth work. In any event, as part of the debate over the ACA, the geographic variation in Medicare spending led the Congress to support two Institute of Medicine (IOM, which is now called the National Academy of Medicine) studies of the issue, one of which I chaired (the other was chaired by Frank Sloan and produced the report on the wage index assigned for Class 5). The following are two short papers that summarize the IOM committee's report; the full report is in the Optional reading. As already noted, IOM reports are copyrighted, but you can download a pdf for your personal use for free by going to https://nam.edu/, searching for the report you want, and registering. Some of the slides are taken from the committee's report. What do the IOM committee's findings say about the Dartmouth view of the world?**

**Joseph P. Newhouse and Alan M. Garber, "Geographic Variation in Medicare Services," New England Journal of Medicine, April 18, 2013, 368(16):1465-8. This paper summarizes the IOM committee's findings on geographic variation in Medicare. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1302981**

**Dartmouth focused on geographic variation in spending in Traditional Medicare Parts A and B because Traditional Medicare claims data allowed estimation of spending at a fairly granular level of geographic detail. The IOM work, however, attempted to go beyond Medicare data to get an all-in or total measure of spending in a geographic area; the following paper summarizes the IOM committee's conclusions in that domain.**

**Joseph P. Newhouse and Alan M. Garber, "Geographic Variation in Health Care Spending in the United States," JAMA, September 25, 2013, 310(12):1227-8. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1735200**

**Turning to some of the methods issues that have arisen in the literature and that are taken up in the reading below, the Zuckerman, et al. paper below as well as the MedPAC report in the Optional reading argue that the map you saw in Class 1 showing Medicare spending per beneficiary by Hospital Referral Region (HRR) looks considerably different after adjusting for various covariates; Dartmouth has fired back at MedPAC. Bach challenges Dartmouth's methods for dealing with endogeneity, and Dartmouth has responded to that as well. Cooper has gotten into a debate with Baicker and Chandra, who at one time were both at Dartmouth; that debate also bears on the issue of workforce which we come to in Class 21.**

**The Dartmouth map you saw in the Class 1 slides and that is repeated in the slides for this class shows variation in input-price adjusted Parts A and B Traditional Medicare spending across the Dartmouth defined 306 HRR's, which are intended to approximate market areas. (Input-price adjustment, sometimes called factor-price adjustment, means adjustment for the wage index and the Geographic Practice Cost Index (GPCI); see Classes 5 and 6. The Dartmouth publications sometimes adjust the data for input prices and sometimes not. The map you saw on the slide is adjusted.) After adjusting for factor prices and taking out Graduate Medical Education and Disproportionate Share Hospital payments and other payment adjustments (see MedPAC Payment Basics and Class 5), the remaining variation in**

**Parts A and B is essentially a quantity index because Medicare sets prices that are uniform nationally except for these adjustments. Note that since the Dartmouth data are just TM Parts A and B, they exclude Medicare spending on Medicare Advantage (Part C, Class 8) and on drugs (Part D, Class 15).**

**The Fisher, et al. article above (as well as the companion Fisher, et al. article in the Optional reading) carried the Dartmouth group past many of their earlier studies that simply documented geographic variation in use. Fisher, et al. try to show that the high use areas do not buy much for their additional spending, i.e., their findings are consistent with "flat-of-the-curve" medicine (Class 1). In particular, Fisher, et al. relate variation in Medicare spending on end-of-life care across regions, which they treat as exogenous, to variation in five-year mortality rates, functional outcomes, and satisfaction for Medicare patients with hip fracture, AMI, or colorectal cancer. They find no relationship, which they interpret as support for their view that the high spending areas buy little for their extra spending. Much of this material is in the companion article that is Optional, although there are also two slides from Elliott Fisher on this point. Bach (below), however, challenges them on whether their method using end-of-life spending to correct for endogeneity yields interpretable findings, as does Cooper (also below).**

**The first five of the next six readings starting with Cooper can all be found at http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/webexclusives/index.dtl?year=2008. Go to the December 4 date when you get to the web site. The sixth reading (Sutherland, et al.) continues the exchange between Dartmouth and Cooper, but it is in the New England Journal of Medicine. Focus on the methodological questions at issue.** In order to keep the amount of reading for this class down, I have not assigned the original Baicker-Chandra paper that set off the exchange with Cooper, but if you want to see it, it is Katherine Baicker and Amitabh Chandra, "Medicare Spending, The Physician Workforce, And Beneficiaries' Quality Of Care," Health Affairs, 2004, Web Exclusive: W4-184-197. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/early/2004/04/07/hlthaff.w4.184.full.pdf+html.

**Richard A. Cooper, "States with More Physicians Have Better-Quality Health Care," Health Affairs, web exclusive, 28(1):w91-102.http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/1/w91.abstract**

**Katherine Baicker and Amitabh Chandra, "Cooper's Analysis is Incorrect," Health Affairs, 2009, web exclusive, 28(1):w117-118.http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/1/w116.abstract**

**Richard A. Cooper, "States with More Health Care Spending Have Better-Quality Health Care: Lessons About Medicare," Health Affairs, web exclusive, 28(1):w103-115.http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/1/w103.abstract**

**Jonathan Skinner, Amitabh Chandra, David Goodman, and Elliott S. Fisher, "The Elusive Connection Between Health Care Spending and Quality," Health Affairs, web exclusive, 28(1):w119-123. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/1/**

**w119.full.pdf+html?sid=ef321a59-c6a6-4cf1-96c5-b678612b5738**

**Richard A. Cooper, "More Is More and Less Is Less: The Case of Mississippi," Health Affairs, web exclusive, 28(1):w124.http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/28/1/w124.extract**

**Jason M. Sutherland, Elliott S. Fisher, and Jonathan S. Skinner, "Getting Past Denial – The High Cost of Health Care in the United States," New England Journal of Medicine, September 24, 2009, 361(13):1227-30. Sutherland, et al. ("Dartmouth") take up Cooper's objection that some of the variation across regions is due to variation in factor prices (Dartmouth: true, but only some of it), health status (Dartmouth asserts very little is due to health status, but this is disputed; see Zuckerman, et al. below as well as the MedPAC reading, both of which take a different view), and poverty (Dartmouth: very little). Dartmouth believes the latter two factors mostly balance out across Hospital Referral Regions (though I would note that they do not mostly balance out across the smaller Dartmouth defined Hospital Service Areas, which are nested within Hospital Referral Regions and are about 10 times as numerous). The two Fisher, et al. Annals of Internal Medicine papers, one of which is required, are representative in this respect. The Sutherland, et al. paper is at http://content.nejm.org.ezp-prod1.hul.harvard.edu/cgi/reprint/361/13/1227.pdf**

As a side note, two New York *Times* reporters also decided to take on Dartmouth in articles that were run on the front page of the newspaper. If you have access to the *Times*, you can download these articles for free at http://www.nytimes.com/2010/06/03/business/03dartmouth.html. This reading, however, is optional.

**Others besides Cooper and the New York *Times* have climbed into the ring with Dartmouth:**

**Stephen Zuckerman, Timothy Waidmann, Robert Berenson, and Jack Hadley, "Clarifying Sources of Geographic Differences in Medicare Spending," New England Journal of Medicine, July 1, 2010, 363(1):54-62. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa0909253 Contrary to Sutherland, et al., above, Zuckerman, et al. argue that adjusting for health status matters importantly to the amount of variation.** MedPAC analysts reached roughly similar results as Zuckerman, et al. Medicare Payment Advisory Commission, "Regional Variation in Medicare Service Use," January 2011. http://www.medpac.gov/docs/default-source/reports/Jan11_RegionalVariation_report.pdf?sfvrsn=0 The MedPAC report is not required reading, but I listed it here because Cooper comments on it also. Cooper's comment on MedPAC is not required either, but if you haven't had enough of Cooper, you can see Richard A. Cooper, "Response to MedPAC Report," http://buzcooper.com/2011/01/07/medpac-poverty-and-geographic-variation-in-health-care/. MedPAC later updated its earlier report, but its findings are similar to the 2011 report, Medicare Payment Advisory Commission, "Regional Variation in Medicare Part A, Part B, and Part D Spending and Service Use," September 2017, http://medpac.gov/docs/default-source/reports/sept17_regionalvariation_report_final_sec.pdf?sfvrsn=0

**Dartmouth, however, argues that adjusting for health status in the manner that Zuckerman and MedPAC do (and also Zhang, et al. in the slides) is illegitimate because the health status adjustment is based on diagnoses on claims forms and the intensity of coding diagnoses varies by region. In particular, they show the likelihood of recording diagnoses on claims forms varies by region. Given the Dartmouth result, can one adjust the observed amount of variation for the differential coding propensity from the data they present? That is, can one get a figure that reflects the amount of variation net of any differences in coding intensity across region? The following reading was Optional for Class 8, but if you didn't read it, you should do so now since it is a key article in the argument about whether the data should be adjusted for health status when health status is defined as diagnoses on claims forms. Yunjie Song, Jonathan Skinner, Julie Bynum, Jason Sutherland, John E. Wennberg, and Elliott S. Fisher, "Regional Variations in Diagnostic Practices," New England Journal of Medicine," July 1, 2010, 363(1):45-53. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/nejmsa0910881**

**Amy Finkelstein, Matthew Gentzkow, Peter B. Hull,and Heidi Williams, "Adjusting Risk Adjustment — Accounting for Variation in Diagnostic Intensity," New England Journal of Medicine, February 16, 2017, 376(7):608-10. Read also the first paragraph of Supplementary Appendix 1 to get the intuition of what they are doing. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1613238?articleTools=true This paper is a much shorter version of their Optional Quarterly Journal of Economics paper below that focuses on an adjustment for the variation in coding intensity based on movers vs stayers across HRR's. They show that about half of the variation can be attributed to "demand," demand in this context includes health status variation. Cutler, et al. (Optional reading), using a survey of physicians with vignettes has findings largely consistent with Finkelstein, et al., and also find a substantial amount of variation attributable to differences in physician beliefs in alternative modes of treatment, even when there is substantial evidence favoring one treatment modality.**

**Another focus of debate around Dartmouth's claim that high spending regions don't get much benefit has been how Dartmouth treated the potential endogeneity of use, meaning regions that were sicker in unobserved ways would both use more services and have worse outcomes, thus biasing Dartmouth toward finding a less positive relationship between use and outcomes. A flavor of this debate is in: Peter B. Bach, "A Map to Bad Policy — Hospital Efficiency Measures in the Dartmouth Atlas," http://www.nejm.org/doi/full/10.1056/NEJMp0909947 and Jonathan Skinner, Douglas Staiger, and Elliott S. Fisher, "Looking Back, Moving Forward," http://www.nejm.org/doi/full/10.1056/NEJMp1000448 and their responses to each other. New England Journal of Medicine, February 18, 2010, 362(7):569-74.**

OPTIONAL:

> The Dartmouth Atlas of Health Care. This justly famous publication presents all sorts of variation in care in great and colorful detail. You can see it for free at http://www.dartmouthatlas.org/

Jonathan Skinner, "Causes and Consequences of Regional Variations in Health Care," in Handbook of Health Economics, vol. 2; eds. Thomas G. McGuire, Mark V. Pauly, and Pedro Pita Barros; Amsterdam: Elsevier, 2012. An excellent summary of the literature by an eminent Dartmouth economist. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/B9780444535924000025/1-s2.0-B9780444535924000025-main.pdf?_tid=eeb5ac1a-8fa1-11e4-9ac7-00000aacb35e&acdnat=1419888818_3627da9fb98d05aaa3ef5427357211cd

Elliott S. Fisher, David E. Wennberg, Therese A. Stukel, Daniel J. Gottlieb, F. L. Lucas, Etoile L. Pinder, "The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care," Annals of Internal Medicine, 138(4), February 18, 2003, pp. 288-298. The companion article to Part 1 in the required reading. http://search.epnet.com.ezp1.harvard.edu/login.aspx?direct=true&db=aph&an=9116425&loginpage=Login.asp&scope=site

Elliott S. Fisher, Julie Bynum, and Jonathan S. Skinner, "Slowing the Growth of Health Care Costs – Lessons from Regional Variation," February 26, 2009, New England Journal of Medicine, 360(9):849-52. Goes beyond the Sutherland, et al. paper on the required list, which in effect argued that money could be saved on a one-time basis, to argue that emulating low growth rate areas would reduce the steady-state growth rate. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp0809794

Institute of Medicine, "Pursuing Value in Health Care: Target Decision Making, Not Geography," eds. Joseph P. Newhouse, Alan M. Garber, Robin P. Graham, Margaret A. McCoy, Michelle Mancher, Ashna Kibria, July 2013, http://nationalacademies.org/hmd/reports/2013/variation-in-health-care-spending-target-decision-making-not-geography.aspx. In case you want to dip into the report that the two required Newhouse and Garber papers above are based on. The title gives the policy punch line.

John A. Romley, Anupam B. Jena, and Dana P. Goldman, "Hospital Spending and Inpatient Mortality: Evidence from California," Annals of Internal Medicine, February 1, 2011, 154(3):160-7.http://www.annals.org.ezp-prod1.hul.harvard.edu/content/154/3/160.short Shows gains from additional spending at the hospital level. How do you reconcile this finding with Fisher, et al.'s conclusions?

Joseph J. Doyle, Jr., "Returns to Local-Area Healthcare Spending: Using Health Shocks to Patients far from Home," American Economic Journal: Applied Economics, July 2011, 3(3):221-243. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/app.3.3.221 Shows, contrary to the Fisher, et al. papers above, that areas of high spending may have some positive returns. Despite Doyle's example, however, there is a lot of evidence behind the conventional Dartmouth conclusion that the high Medicare spending areas get little for their extra spending; much of that evidence is in the Dartmouth Atlas.

Michael E. Chernew, Lindsay Sabik, Amitabh Chandra, Teresa E. Gibson, and Joseph P.

Newhouse, "Geographic Correlation between Large Firm, Commercial Spending and Medicare Spending," American Journal of Managed Care, February 2010, 16(2):131-8.http://www.ajmc.com/media/pdf/AJMC_2010febChernew_131to138.pdf. An early exploration of the relationship, or lack of it, between Medicare and commercial spending, which the IOM report above goes into much more fully.

Dartmouth seems to agree with the IOM and with Chernew, et al. that variation in commercial insurance looks different than in Medicare. In the following paper, which is co-authored by Jonathan Skinner, they find the (in)famous difference between McAllen and El Paso, Texas that Atul Gawande highlighted in his New Yorker article does not hold up in commercial data. Luisa Franzini, Osama I. Mikhail, and Jonathan S. Skinner "McAllen and El Paso Revisited: Medicare Variations Not Always Reflected in the Under-Sixty-Five Population," Health Affairs, December 2010, 29(12): 2302-9. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/29/12/2302.short Given the role of post-acute care in the Medicare differences (see the IOM report) and that post-acute care is a much smaller share of spending among the under 65, this lack of a relationship is perhaps not surprising, but at the time the IOM result surprised many people because there had been so little done with data from commercial insurance and because the usual Dartmouth interpretation had been that the variation came from doctor discretion, which most assumed carried over to the treatment of the under 65.

Louise Sheiner, "Why the Geographic Variation in Health Care Spending Can't Tell Us Much About the Efficiency or Quality of Our Health Care System," Brookings Papers on Economic Activity, Fall 2014, pp. 1-72. Takes on the Dartmouth view that geographic differences in Medicare spending can be mostly accounted for by individual physician practice style and suggests that state-level socioeconomic differences are important rather than the conclusion of the Sutherland, et al. paper in the required reading that individual level health variation is unimportant when trying to explain variation across large areas. http://www.brookings.edu/~/media/projects/bpea/fall-2014/fall2014bpea_sheiner.pdf

Amy Finkelstein, Matthew Gentzkow, and Heidi Williams, "Sources of Geographic Variation in Health Care: Evidence from Patient Migration," Quarterly Journal of Economics, November 2016, 131(4):1681-1726. The fulsome version of the required Finkelstein et al. reading. Finkelstein, et al. use Medicare data on those who move to show that 40-50% of the geographic variation in Medicare is attributable to demand factors, which can be summarized as health status and preferences, rather than supply factors, whereas the Dartmouth view of the world has focused on supply factors and historically was rather dismissive of demand factors. In particular, the Dartmouth group implicitly assumed that health status and preferences balanced out across HRR's, but this paper shows this is not the case. The methods of this paper are also used by the authors to propose an adjustment to the Medicare Advantage risk adjustment factors at the HRR level (covered in shorter fashion in the Finkelstein, et al. required reading). That conflicts with the IOM committee's recommendation not to adjust for geography but instead adjust at the provider level. The adjustments Finkelstein, et al. propose at the HRR level probably are necessarily at that level for reasons of power; thus, these adjustments would still arbitrarily reward or penalize individual physicians or groups of physicians within HRR since Medicare Advantage rates

are set at the county level, not the HRR level. Adjusting rates at the HRR level is also flawed policy to the degree the variation in HRR spending is from variation in the amount of fraud. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/early/2016/10/06/qje.qjw023.full.pdf+html?sid=ec29a879-e00a-432e-94b5-8c4c6e22db02 .

David Cutler, Jonathan S. Skinner, Ariel Dora Stern, and David Wennberg, "Physician Beliefs and Patient Preferences: A New Look at Regional Variation in Health Care Spending," American Economic Journal: Economic Policy," February 2019, 11(1):192-221. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/pol.20150421 They survey PCP's and cardiologists, as well as patients across 74 large HRR's regions with vignettes and find considerable treatment variation attributable to physician decisions, especially for end of life care. This variation seems attributable simply to differences in beliefs across physicians about efficacy of treatment. Many physicians hold beliefs conflict with standard guidelines. How these beliefs arise is unclear, but unlike the models of physician decision making in the economics literature, some of which we touched on in Class 6, the beliefs do not seem to depend on financial considerations, type of practice, or demographics.

Amitabh Chandra and Douglas Staiger, "Productivity Spillovers in Health Care: Evidence from the Treatment of Heart Attacks," Journal of Political Economy, February 2007, 115(2):103-40. Argues that physicians in various regions may specialize in one type of treatment and therefore may not be able to obtain the same results as another region if spending were to change. Thus, contrary to what some of the Dartmouth group have written, if high spending regions were to have their Medicare reimbursement cut, outcomes could suffer. The preceding Cutler, et al. paper, however, does not support this model. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/pdf/10.1086/512249.pdf?acceptTC=true&jpdConfirm=true

**CLASS 17 – QUALITY, ITS MEASUREMENT AND IMPROVEMENT: APPROPRIATENESS, GUIDELINES, PUBLIC REPORTING AND PAYING/PENALIZING USING MEASURES OF QUALITY (November 4) Guest: Donald Berwick, whose name you will recognize from the reading for this class. You can find his bio at https://hcp.hms.harvard.edu/people/donald-berwick**

**This class has a lot of reading and slides, but a good bit of the material is descriptive, and you should be able to get through that material relatively quickly.**

*Overviews*

**Donald M. Berwick and Christine K. Cassel, "The NAM and Quality – Inflecting a Field," New England Journal of Medicine, August 6, 2020, 383(6):505-7. A summary of progress or the lack of it on quality issues over the past two decades. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp2005126**

OPTIONAL:

Institute of Medicine, Crossing the Quality Chasm; Washington: National Academy Press, 2001, Executive Summary, pp. 1-22. This call-to-action report, though now almost two decades old, is still often cited and is a good starting point for this topic. It is such a good starting point that I used to have it on the required list, but took it off to lighten the required load and because the Berwick and Cassel reading touches on it. Although much of the monograph does not deal with the economics of quality directly, note the text about payment policies around recommendations 10 and 11. The push for financial incentives for quality performance subsequently went forward under the banner of pay for performance (P4P); more on that below. http://www.nap.edu/catalog.php?record_id=10027

Institute of Medicine, To Err Is Human; Washington, DC: National Academy Press, 1999, Executive Summary. This IOM report put the issue of patient safety and error in medicine on the public agenda. It made the point, which is made even more strongly in the Quality Chasm report, that improving quality is a systems problem. The report makes a dubious (in my view) extrapolation to the entire US from studies of deaths from error rates in New York, Colorado, and Utah in the 1980's, and this extrapolation now seems to have made it into urban legend. (Even Berwick and Cassel refer to 44,000 to 98,000 annual deaths from medical error, which is the extrapolation in this report.) Nonetheless, whatever the number of deaths medical error actually causes is, there can be little doubt that it is a large number. This IOM report was the subject of a Presidential news conference when it was released, and it sufficiently impressed President Clinton that he returned to the subject in his general press conference the following day. http://iom.nationalacademies.org/Reports/1999/To-Err-is-Human-Building-A-Safer-Health-System.aspx

*Especially if you are a physician or a medical student*, I suggest you read Atul Gawande's 2011 Harvard Medical School commencement address, which emphasizes the need for physicians to change the traditional views they have had of themselves in order to make delivery system reform successful in terms of both improving quality and lowering cost. You can find this at http://www.newyorker.com/news/news-desk/cowboys-and-pit-crews If you are a Gawande fan (I am), another Gawande New Yorker article whose theme is related to the Cowboys and Pit Bulls article is "Big Med," http://archives.newyorker.com.ezp-prod1.hul.harvard.edu/?i=2012-08-13#folio=052

***Quality of Care Measurement***

**As per the slides and the Berwick-Cassel paper, the traditional measures of quality are classified into structure, process, and outcome. The first reading gives a now much dated but still frequently cited assessment of the state of quality in the US using process measures, and the next reading takes up the relationship or the lack of it between process and outcome measures.**

**Elizabeth A. McGlynn, Steven M. Asch, John Adams, et al., "The Quality of Health Care Delivered to Adults in the United States," New England Journal of Medicine, 348(26), June 26, 2003, pp. 2635-2645.**
**http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa022615 This classic paper gave a rather dismal overall assessment of the quality of care in the US at the time.**

**Only 55 percent of patients whose charts were sampled received guideline level care, although if the medical record were incomplete, the results would understate the quality actually being delivered (but failure to document is itself a quality problem).** You may also want to read the editorial on this subject by Earl Steinberg in the same issue, but that is Optional. Two follow-on papers from this study are in the Optional reading; one shows little variation in quality across demographic groups, the other shows little variation in quality across geographic regions. In short, the poor performance seemed to extend across the board. **The slides document improvement in several of the measures since the time these data were collected, but there is still scope for substantial improvement.**

**Although process measures are widely used to assess quality, outcome measures are almost universally conceded to be more desirable if only they were more feasible. The following paper is about the weak relationship between process and outcome measures.**

**Ashish Jha, "Measuring Hospital Quality," JAMA, July 5, 2006, 296(1):95-97. A short, clear exposition of the relationship - or the lack of it - between process and outcome measures. To keep the amount of required reading down, I have not assigned the two articles that Jha is discussing in this editorial, but of course you are welcome to pursue those. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/296/1/95.short**

OPTIONAL:

For several years the federal government issued a National Health Quality and Disparities Report annually, with data over time on many measures of quality; the most recent report, however, was in 2017. It can be found at https://www.ahrq.gov/research/findings/nhqrdr/nhqdr17/index.html

Rodney A. Hayward, "Performance Measurement in Search of a Path," New England Journal of Medicine, 356(9), March 1, 2007, pp. 951-953. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMe068285 Similar to the Jha, et al. paper on the required list, an editorial commenting on an article in which improvement in process measures did not translate into outcome improvement.

Eve A. Kerr, Elizabeth A. McGlynn, John Adams, Joan Keesey, and Steven M. Asch, "Profiling the Quality of Care in Twelve Communities: Results from the CQI Study," Health Affairs, May/June 2004, 23(3), pp. 247-256. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/23/3/247.abstract. Follow on from the McGlynn 2003 New England Journal of Medicine paper on the required list. Shows relatively little variation across 12 cities in overall quality measures.

Steven M. Asch, Eve A. Kerr, Joan Keesey, John L. Adams, Claude M. Setodji, Shaista Malik, and Elizabeth A. McGlynn, "Who Is at Greatest Risk for Receiving Poor-Quality Health Care?" New England Journal of Medicine, March 16, 2006, 354(11):1147-1156. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa044464 Another follow-on paper from the McGlynn paper showing that the variation across demographic subgroups is low.

Peter S. Hussey, et al., "How Does the Quality of Care Compare in Five Countries?" Health Affairs, May/June 2004, 23(3), pp. 89-99. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/23/3/89.full Quality of care is variable across countries and there is relatively little correlation among measures. That is, if a country looks good on one measure, it does not necessarily look good on another.

And if you want to read an anecdotal account around quality that brings to mind Ralph Nader's famous title, *Unsafe at any Speed*, see Ashish Jha's blog post at http://cognoscenti.wbur.org/2013/04/05/medical-errors-ashish-jha.

***(In)Appropriateness and Guidelines***

**Mark R. Chassin, Jacqueline Kosecoff, R.E. Park, Constance M. Winslow, Katherine L. Kahn, Nancy J. Merrick, Joan Keesey, Arleen Fink, David H. Solomon, and Robert H. Brook, "Does Inappropriate Use Explain Geographic Variations in the Use of Health Care Services? A Study of Three Procedures," JAMA, 258(18): November 13, 1987, 2533-2537. This paper follows from their 1986 paper, the results from which are in the slides for Class 16. This classic study formulated a definition of appropriateness that was a main contributor to the guidelines movement of the 1990s, which is now termed evidence-based medicine. That is, various groups formulated guidelines to support efforts to increase the proportion of appropriate procedures. How does the RAND group's definition of appropriateness compare with an economist's definition? Notice that the results of this paper conflict with the general view of the Dartmouth group (Class 16) that the low-rate regions have the optimal rate. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/cgi/reprint/258/18/2533.**

OPTIONAL

Mary Beth Landrum, Ellen R. Meara, Amitabh Chandra, Edward Guadagnoli, and Nancy L. Keating, "Is Spending More Always Wasteful? The Appropriateness of Care and Outcomes among Colorectal Cancer Patients," Health Affairs, January 2008, 27(1):159-68. Shows that high Medicare spending regions for colorectal cancer patients do more of both appropriate and inappropriate care, similar to Chassin, et al.'s findings. Outcomes across regions are similar, suggesting the negative effects of the inappropriate care diluted the beneficial effects of the appropriate care, similar to my interpretation of the RAND Experiment results in Class 3. Like Chassin, et al., this paper conflicts with the Dartmouth view that the low rate regions have it right. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/27/1/159.full.pdf+html

Aaron L. Schwartz, Anupam B. Jena, Alan M. Zaslavsky, and J. Michael McWilliams, "Analysis of Physician Variation in Provision of Low-Value Services," JAMA Internal Medicine, January 2019, 179(1):16-25. Low value services, or services that provide minimal benefits to patients, are prevalent in Medicare; there are 33 such services per 100 beneficiaries. There is also considerable physician heterogeneity in the provision of such services that is unexplained by observable characteristics. https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jamainternalmedicine/fullarticle/2717501

Carrie H. Colla, Nancy E. Morden, Thomas D. Sequist, William L. Schpero, and Meredith B. Rosenthal, "Choosing Wisely: Prevalence and Correlates of Low-Value Health Care Services in the United States," Journal of General Internal Medicine, February 2015, 30(2):221-8. https://link-springer-com.ezp-prod1.hul.harvard.edu/content/pdf/10.1007%2Fs11606-014-3070-z.pdf Many American specialty societies have established guidelines for avoiding low-value services, which they have named Choosing Wisely. This paper looks at the national prevalence and regional variation in 11 of those services. The range of prevalence is from 1% for upper urinary tract imaging in men with benign prostatic hyperplasia to 46.5% for preoperative cardiac testing for low-risk, non-cardiac procedures. The estimated annual waste from these 11 procedures is around $1.2 billion using 2006-2011 data. (They don't give this number, but one can calculate it from the data in their Table 2.) $1.2 billion is obviously a tiny fraction of the Institute of Medicine's estimated 30% waste in American health care spending and of the $2+ trillion in total spending in those years. How much that difference is attributable to specialty societies' choosing services that did not account for much of their members' revenue and how much it is attributable to the IOM's 30% being too large a number is an open question.

Harlan M. Krumholz and Thomas H. Lee, "Redefining Quality – Implications of Recent Clinical Trials," New England Journal of Medicine, June 12, 2008, 358(24): 2537-9. Discusses two well-known trials, the results of which imply that the simple targets of many guidelines such as Hba1c < 7 for Type 2 diabetics – and the associated public reporting, pay-for-performance, and network tiering efforts that have been built around these guidelines – are not sufficient, and that the existing guidelines specifying a target such as Hba1c < 7 also need to account for how the target was reached. Right now they do not. http://content.nejm.org.ezp-prod1.hul.harvard.edu/cgi/reprint/358/24/2537.pdf

Karla J. Lipska and Harlan Krumholz, "Is Hemoglobin HbA1c the Right Outcome for Studies of Diabetes" JAMA, March 14, 2017, 317(10):1017-8. Expanding on the theme of the prior article with more recent data. http://jamanetwork.com.ezp-prod1.hul.harvard.edu/journals/jama/issue/317/10

Robert H. Brook, "Assessing the Appropriateness of Care – Its Time Has Come," JAMA, September 2, 2009, 302(9):997-9. Advocating the RAND group's definition of appropriateness as an explicit method for rationing services. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/cgi/reprint/302/9/997

Lisa Rosenbaum and Daniela Lamas, "Cents and Sensitivity – Teaching Physicians to Think

About Costs," New England Journal of Medicine, July 12, 2012, 367(2):99-101. Two physicians point out how medical education and culture militate against consideration of cost in treatment decisions.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1205634

You may also want to refer back to the Garber and Skinner paper assigned for Class 1.

If you would like to read a journalistic account of why additional services at the margin may have negative value, read Atul Gawande, "Overkill," The New Yorker, May 11, 2015.
http://archives.newyorker.com.ezp-prod1.hul.harvard.edu/#folio=C1

***What Are We Trying to Accomplish?***

**Michael E. Chernew and Mary Beth Landrum, "Targeted Supplemental Data Collection: Addressing the Quality-Measurement Conundrum," New England Journal of Medicine, March 15, 2018, 378(11):979-81. Points out that the optimal quality data collection system differs depending whether one is more interested in quality assurance (weeding out low performers), quality improvement (shifting all providers toward higher quality), or directing patients to the optimal providers for their care. The authors are interested in weeding out low performers and argue that a modest set of measures could identify a set of potential low performers from whom more data would be sought (though they do not provide data on this point). Do you agree with them that the proper focus is weeding out (or improving performance among) the lowest performers? https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1713834**

***Coordination Failures***

**Thomas Bodenheimer, "Coordinating Care — A Perilous Journey through the Health Care System," New England Journal of Medicine, March 6, 2008, 358(10):1064-71. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMhpr0706165. The American delivery system, when compared with other industrialized countries, has a high proportion of specialists treating the same patient, which raises the problem of coordination among the physicians. This is especially true among the elderly, who more frequently have multiple comorbidities and are therefore treated by different specialists for their various diagnoses. The coordination issue will also surface in Class 21 when we take up the health care workforce. This article describes the coordination issue and some possible remedies.**

**Laura L. Sessums, Sarah J. McHugh, and Rahul Rajkumar, "Medicare's Vision for Advanced Primary Care: New Directions for Care Delivery and Payment," JAMA, June 28, 2016, 315(24):2665-6. A policy response to coordination problems.
http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2513625**

OPTIONAL:

Deborah Peikes, Arnold Chen, Jennifer Schore, and Randall Brown, "Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among

Medicare Beneficiaries: 15 Randomized Trials," JAMA, February 11, 2009, 301(6):603-18. Despite the evidence that coordination issues are rife, e.g., Bodenheimer in the required reading, trials show little or no effect of care coordination programs on cost. Of course, that could be because the programs tested aren't very effective. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=183370

Andrew B. Bindman, Jonathan D. Blum, and Richard Kronick, "Medicare's Transitional Care Payment – A Step Toward the Medical Home," New England Journal of Medicine, February 21, 2013, 368(8):692-4. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1214122 A policy response to coordination problems. For a followup to this paper see the following paper by the same authors. This policy can also be seen as trying to redirect payment toward PCP's and away from proceduralists (Class 6).

Andrew B. Bindman, Jonathan D. Blum, and Richard Kronick, "Medicare Payment for Chronic Care Delivered in a Patient-Centered Medical Home," JAMA, September 18, 2013, 310(11):1125-6. A follow up paper to the one above describing the rule implementing the proposal described in the required reading above. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1725744

Physician work to coordinate care is not well rewarded by the FFS system. For a short, readable description by a primary care physician in one patient's case, see Matthew J. Press, "Instant Replay – A Quarterback's View of Care Coordination," New England Journal of Medicine, August 7, 2014, 371(6):489-91. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1406033

For a prominent health care journalist's account of her personal problems in this domain, see Sarah Kliff, "Unpaid, Stressed, and Confused: Patients Are the Health Care System's Free Labor," Vox blog, June 1, 2016. This may bring to mind the Medical Maze slide. http://www.vox.com/2016/6/1/11712776/healthcare-footprint?_hsenc=p2ANqtz-9uNlYLecEdJbI2QoC5TgA2zRD9EYL4q17AzakTSWZG1aldU7PZ8xQJ3gmtP5JFmMHyd3xB0aTJXNvq_574UJMZB5Yj6oIw6RWtSQ9X0I8TvPJcimQ&_hsmi=30188607

**There are a number of not mutually exclusive policy instruments that a policy maker can use to improve quality. The remainder of this class takes up three of them, public reporting, paying on quality measures, and greater use of health IT.**

***Public Reporting***

**Giving consumers better information about the quality of care delivered by various providers (think Yelp or Trip Advisor for health care providers) is one often proposed instrument to improve quality. Lee shows the upside of quality reporting, but Dranove, et al. show that public reporting may induce selection, which is analytically similar to selection from greater transparency in insurance plans (Class 7). Hofer, et al. show that we may never have good quality measures at the level of the individual primary care physician, though this is a contested view.**

**Thomas H. Lee, "Eulogy for a Quality Measure," New England Journal of Medicine, September 20, 2007, 357(12): 1175-7. A short piece demonstrating (in my view) the upside of measurement and public reporting. Administration of beta blockading drugs, a treatment that should have been routine following heart attacks but was far from routine in the early 1990s, was one of the first measures of process quality developed by the National Committee for Quality Assurance (NCQA). The original measure was whether the patient got the drug within 7 days of discharge, but use got so close to 100% after several years of measurement that the NCQA changed the measure to whether the patient was on a beta-blocker 6 months after the heart attack; see the notes to the slides on improvement.**
**http://content.nejm.org.ezp-prod1.hul.harvard.edu/cgi/reprint/357/12/1175.pdf**

**David Dranove, Daniel P. Kessler, Mark McClellan, and Mark Satterthwaite, "Is More Information Better? The Effects of 'Report Cards' on Health Care Providers," Journal of Political Economy, June 2003, 111(3), pp. 555-588. This paper, which provides evidence of discrimination against severely ill patients after NY and PA established reporting systems on mortality rates of individual cardiac surgeons, shows (what to me is) convincing evidence that the New York and Pennsylvania public reporting schemes induced selection against higher risk patients and possibly raised mortality among AMI (heart attack) patients. The selection described in this paper is a discouraging result for reporting outcome-based measures, let alone paying on them, because risk adjustment for cardiac surgery was at the time of the study, and probably still is, the most advanced system of risk adjustment for health outcomes, and the results here suggest that the cardiac surgeons did not believe it was good enough. Nonetheless, the welfare gains from the provider actions in New York described in Marshall, et al. in the Optional reading may still have outweighed the welfare losses from the selection that Dranove, et al. describe, so the net effect on welfare of public reporting is ambiguous. (See also the Optional Chassin, et al. paper.) Several more recent studies of public reporting in this domain are in the Optional reading; they generally accord with the Dranove, et al. findings.**
**http://www.journals.uchicago.edu.ezp-prod1.hul.harvard.edu/doi/pdf/10.1086/374180**

**Timothy P. Hofer, Rodney A. Hayward, Sheldon Greenfield, Edward H. Wagner, Sherrie H. Kaplan, and Willard G. Manning, "The Unreliability of Individual Physician 'Report Cards' for Assessing the Costs and Quality of Care of a Chronic Disease," JAMA, 281(22), June 9, 1999, pp. 2098-2105. This paper shows the difficulty of assessing the quality of care at the individual physician level even for a common disease (diabetes). Although there is a division of opinion on whether individual providers can be meaningfully profiled, this paper is rather discouraging about the prospects.** See Dimick, et al. and Nyweide, et al. in the Optional reading for more on the issue of sample size at the individual provider level. There is some material from Dimick, et al. in the slides. **http://jama.ama-assn.org.ezp1.harvard.edu/cgi/content/abstract/281/22/2098**

OPTIONAL:

Stephen W. Waldo, James M. McCabe, Cashel O'Brien, Kevin F. Kennedy, Karen E. Joynt, Robert W. Yeh, "Association Between Public Reporting of Outcomes With

Procedural Management and Mortality for Patients With Acute Myocardial Infarction," Journal of the American College of Cardiology, 2015, 65(11):1119-26. A later study with similar findings to Dranove, et al., although interestingly the authors seem unaware of the Dranove, et al. study. By 2015 primary percutaneous coronary intervention (PCI) had become the standard treatment for acute myocardial infarction (AMI). This study compares rates of PCI in two public reporting states (New York and Massachusetts) with six control states (Connecticut, Rhode Island, Maine, New Hampshire, Vermont, Maryland). The authors not only find less PCI among sicker patients but also higher in-hospital mortality.
http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0735109715001412/1-s2.0-S0735109715001412-main.pdf?_tid=336add8c-8a0e-11e5-891b-00000aab0f01&acdnat=1447423110_cb185496599af7eb5f811bae4fe49e9d

Karen E. Joynt, Daniel M. Blumenthal, E. John Orav, Frederic S. Resnic, and Ashish K. Jha, "Association of Public Reporting for Percutaneous Coronary Intervention With Utilization and Outcomes Among Medicare Beneficiaries With Acute Myocardial Infarction," JAMA, October 10, 2012, 308(14):1460-8. Another study with similar findings to Dranove, et al. and Waldo, et al. This study compares the rate of Percutaneous Coronary Intervention (PCI) and mortality among heart attack patients in three public reporting states, New York, Pennsylvania, and Massachusetts, with seven control states. (Waldo, et al. above excluded data from Pennsylvania because of potential inconsistent data reporting.) As in the Dranove, et al. and Waldo, et al. studies, there is less PCI in the public reporting states and the reduction occurs among the sickest patients, although in this study the authors find no effect either way on 30-day mortality rates. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/Issue.aspx?journalid=67&issueID=25308&direction=P

Mark R. Chassin, Edward L. Hannan, and Barbara A. DeBuono, "Benefits and Hazards of Reporting Medical Information Publicly" New England Journal of Medicine, February 8, 1996, 334:394-398.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJM199602083340611
This paper argues that public reporting had beneficial effects; raw mortality from CABG fell and risk adjusted mortality fell even more after publicizing hospital and surgeon-specific mortality rates in New York State.

Jesse Green and Neil Wintfeld, "Report Cards on Cardiac Surgeons: Assessing New York State's Approach," New England Journal of Medicine, 332, May 4, 1995, 1229-1232.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJM199505043321812
Argues that the risk adjusted effect on mortality among cardiac surgeons in New York may have been largely coding rather than real. We have already encountered coding issues several times in this course.

R. Tamara Konetzka, Daniel Polsky, and Rachel M. Werner, "Shipping Out Instead of Shaping Up: Rehospitalizations from Nursing Homes as an Unintended Effect of Public Reporting," Journal of Health Economics, March 2013, 32(2):341-52. Public reporting induced nursing homes to rehospitalize high risk patients so the nursing homes would

look better. Readmission penalties on hospitals, however, give hospitals an incentive to push back to keep such behavior in check. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629612001816/1-s2.0-S0167629612001816-main.pdf?_tid=92bf5120-d393-11e2-8793-00000aab0f6b&acdnat=1371064335_d04611e9716ac255f76f0931ae339a02

Martin N. Marshall, Paul G. Shekelle, Sheila Leatherman, and Robert H. Brook, "The Public Release of Performance Data: What Do We Expect to Gain? A Review of the Evidence," JAMA, 283(14), April 12, 2000, pp. 1866-1874, http://jama.ama-assn.org.ezp1.harvard.edu/cgi/reprint/281/22/2098 and the editorial "Public Release of Performance Data" by Arnold M. Epstein in the same issue, pp. 1884-1886. http://jama.ama-assn.org.ezp1.harvard.edu/cgi/reprint/283/14/1884
Consumers do not appear to respond to information on quality, although providers do; note especially the results on page 1872 with respect to the exodus of low-volume surgeons in NY. Although the literature reviewed in this paper is now quite dated, the results could still hold.

Karl Y. Bilmoria and Cynthia Barnard, "The New CMS Hospital Quality Star Ratings: The Stars Are Not Aligned," JAMA, November 1, 2016, 316(17):1761-2. Highly critical of the methods behind the 2016 release by CMS of Hospital star ratings. http://jamanetwork.com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2576618

Rachel M. Werner and Eric T. Bradlow, "Relationship Between Medicare's Hospital Compare Performance Measures and Mortality Rates," JAMA, December 13, 2006, 296(22):2694-2702. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/cgi/reprint/296/22/2694. Shows that hospitals that rank higher on the CMS Hospital Compare process measures have marginally lower risk-adjusted mortality rates for AMI, CHF, and pneumonia, another demonstration of the weak association between process and outcome measures.

Rachel M. Werner, Edward C. Norton, R. Tamara Konetzka, and Daniel Polsky, "Do Consumers Respond to Publicly Reported Quality Information? Evidence from Nursing Homes," Journal of Health Economics, January 2012, 31(1):50-61. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629612000021/1-s2.0-S0167629612000021-main.pdf?_tid=819b75dfb07ea27b306429362092a53f&acdnat=1339070594_84bb2c0635c32df661658bdea2189c42. The answer in this study is yes, but minimally.

Matthew P. Muller and Allan S. Detsky, "Public Reporting of Hospital Hand Hygiene Compliance – Helpful or Harmful?" JAMA, September 8, 2010, 304(10): 1116-7. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/304/10/1116.extract The authors believe the reported improvement was not real but an artifact of measurement.

Shin-Yi Chou, Mary E. Deily, Suhui Li, Yi Lu, "Competition and the Impact of Online Hospital Report Cards," Journal of Health Economics, March 2014, 34:42-58. After report cards went online, hospitals in more competitive local markets used more resources per

patient and achieved lower in-hospital mortality rates for patients undergoing CABG. Similar result to Romley, et al. in the Class 16 Optional reading with respect to resources used and inpatient mortality, though Romley, et al. do not study CABG. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629613001719/1-s2.0-S0167629613001719-main.pdf?_tid=7761d44a-8fa1-11e4-8a99-00000aacb35e&acdnat=1419888618_07ad9bb5929d23c8933afcd9876c243a

Gautam Gowrisankaran, "Competition, Information Provision, and Hospital Quality," in Incentives and Choice in Health Care, eds. Frank A. Sloan and Hirschel Kasper; Cambridge: MIT Press, 2008. A review written from the perspective of an economist.

Justin B. Dimick, H. Gilbert Welch, and John D. Birkmeyer, "Surgical Mortality as an Indicator of Hospital Quality: The Problem with Small Sample Size," JAMA, August 18, 2004, 292(7): 847-851. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/292/7/847.short Showing that even at the hospital level obtaining adequate sample sizes to detect differences in surgical mortality across individual hospitals is a problem. A few slides are from this paper.

John L. Adams, Ateev Mehrotra, J. William Thomas, and Elizabeth A. McGlynn, "Physician Cost Profiling — Reliability and Risk of Misclassification, New England Journal of Medicine, March 18, 2010, 362(11):1014-21. A paper similar to the Hofer, et al. and Dimick, et al. papers showing varying reliability in the measurement of a physician's costliness (using allowed charges) across physicians (and also across specialties). The authors used two years of data from four Massachusetts insurers on the 1.1 million persons who had been continuously enrolled for the two years. Their summary number is that 22% of physicians would be misclassified if, arbitrarily, the lowest 25% of physicians on cost for the two years were classified into a lower cost or preferred tier by the insurers. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa0906323

David J. Nyweide, William B. Weeks, Daniel J. Gottlieb, Lawrence P. Casalino, and Elliott S. Fisher, "Relationship of Primary Care Physicians' Patient Caseload With Measurement of Quality and Cost Performance," JAMA, December 9, 2009, 306(22):2444-50. Like Hofer et al., Dimick, et al., and Adams, et al., an article making the point that sample size is a problem. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/302/22/2444.abstract

***Paying/Penalizing for Quality/Performance***

**Whereas public reporting or the provision of information about providers is a demand-side intervention to improve quality, "pay for performance" or "P4P" is a supply-side intervention. Many, especially non-economists, believe demand-side interventions to improve quality are ineffectual because patients cannot judge quality, but see Redelmeier, et al. and Brekke, et al. in the Optional reading for evidence that there is a demand response (though especially in the Redelmeier et al. case almost certainly not a socially optimal one). The UK has put much more P4P money on the table than the US and saw what perhaps was a once-and-for-all improvement that degraded when payment was taken away for some**

**measures; see the slides and the Michen, et al. paper below. If you want more on the UK, see several papers in the Optional reading: Roland and Campbell; Kristensen, et al.; Doran and Roland, and Campbell, et al. The Optional Norton 1992 paper in Class 9 treats this topic in the nursing home context.**

**One concern about existing P4P measures is that they reward being above or below a given threshold, for example systolic blood pressure below 140 mmHg, whereas patient welfare may be improved to a much greater degree by changes in therapy that leave the patient still above the threshold (e.g., reducing systolic blood pressure from 170 to 150) and so go unrewarded in the threshold method; see Eddy, et al. in the Optional reading if you want to pursue this. Unfortunately, almost all P4P schemes including Medicare's use the threshold method.**

**Another concern is the measurement burden on physicians. This takes the form of both demands on physician time to record measures and the dilution of the effect of any single measure if there are many of them. A short piece by Gail Wilensky on this topic is in the Optional reading.**

**David Blumenthal and Melinda Abrams, "The Affordable Care Act at 10 Years – Payment and Delivery System Reforms," New England Journal of Medicine, March 12, 2020, 382(11):1057-63. A companion article to the Blumenthal, et al. paper you read for Class 10 on the ACA and coverage and access. The paper also goes over some material we come to in the next class (Accountable Care Organizations), but it seemed to fit better in this class.**
**https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMhpr1916092?articleTools=true**

**Mark Minchin, Martin Roland, Judith Richardson, Shaun Rowark, and Bruce Guthrie, "Quality of Care in the United Kingdom after Removal of Financial Incentives," New England Journal of Medicine, September 6, 2018, 379(10):948-57. After taking away a financial incentive for some quality measures, quality degraded for those measures, but not for measures where the incentive remained in place. This is more evidence that physicians, UK physicians in this case, respond to financial incentives in case the evidence in Class 6 was unconvincing.**

**Robert A. Berenson and Deborah R. Kaye, "Grading a Physician's Value – The Misapplication of Performance Measurement," New England Journal of Medicine, November 28, 2013, 369(22):2079-81.**
**http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1312287. Why Medicare's implementation of paying for quality may not succeed.**

OPTIONAL:

Jordan M. VanLare and Patrick H. Conway, "Value-Based Purchasing — National Programs to Move from Volume to Value," New England Journal of Medicine, July 26, 2012, 367(4):292-5. A thumbnail description of Medicare's value-based purchasing initiatives. While value-based purchasing involves provider groups taking financial risk,

there is also an element of quality bonuses, which may take the form of no shared savings or other type of reward if quality is not above a certain level. This reading and the next one are also relevant to the next class.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1204939

Jordan M. VanLare, Jonathan D. Blum, and Patrick H. Conway, "Linking Performance with Payment: Implementing the Physician Value-Based Payment Modifier," JAMA, November 28, 2012, 308(20):2089-90.
http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1389756&resultClick=1 A short description of Medicare's first foray into P4P for physicians.

Following on the two VanLare, et al. papers just above, Secretary Burwell in 2015 announced a goal of 50% of Medicare reimbursement being value-based by the end of 2018. With 36% of the beneficiaries in MA and additional ACO enrollment (Class 18), this has been achieved. http://www.hhs.gov/news/press/2015pres/01/20150126a.html.

The following four papers discuss the Medicare penalties for readmissions, which the slides also discuss.

Michael L. Barnett, John Hsu, and J. Michael McWilliams, "Patient Characteristics and Differences in Hospital Readmission Rates," JAMA Internal Medicine, November, 2015, 175(11)1803-12. Patient related characteristics that are omitted from the risk adjustment model explain much of the difference in the readmission rate across hospitals. From the abstract: "Participants admitted to hospitals in the highest quintile [of readmissions]had higher HCC scores, more chronic conditions, less education, fewer assets, worse self-reported health status, more depressive symptoms, worse cognition, worse physical functioning, and more difficulties with ADLs and IADLs than participants admitted to hospitals in the lowest quintile." http://archinte.jamanetwork.com.ezp-prod1.hul.harvard.edu/solr/searchresults.aspx?q=barnett&fd_JournalID=71&f_JournalDisplayName=JAMA%20Internal%20Medicine&SearchSourceType=3

Rishi K. Wadhera, Robert W. Yeh, and Karen E. Joynt Maddox, "The Hospital Readmission Reduction Program – Time for a Reboot," New England Journal of Medicine, June 13, 2019, 380(24):2289-91. The authors describe flaws in how CMS computes readmissions for the purpose of assessing penalties, two of which are in the 2013 paper below (change happens slowly). They also put in a plea for evaluating the program using a control group of hospitals (unclear what penalties, if any, the control group would be subject to). https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1901225?articleTools=true

Karen E. Joynt and Ashish K. Jha, "A Path Forward on Medicare Readmissions," New England Journal of Medicine, March 28, 2013, 368(13):1175-7. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1300122 The authors argue that readmission measures used for financial reimbursement should account for socio-economic status (see

also the slides), should be weighted for days since discharge, and should account for mortality (competing risks).

Karen E. Joynt and Ashish K. Jha, "Thirty Day Readmissions – Truth and Consequences," New England Journal of Medicine, April 12, 2012, 366(15):1366-9. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1201598 Suggests not penalizing hospitals for readmissions because relatively few are preventable by the hospital. Note that the MedPAC data on the slide on potentially preventable readmissions disagree with Joynt and Jha.

Atul Gupta, "Impacts of Performance Pay for Hospitals: The Readmissions Reduction Program," mimeo, available on the course website. Finds that readmission penalties decreased readmissions and reduced mortality 3%, but that nearly half the effect came from not admitting patients who would be subject to the penalty and for that group there was some suggestive evidence of harm. In particular, patients who came back to the ED at the same hospital after being discharged were readmitted at a lower rate than patients who went to an ED at a different hospital.

P4P is a supply side incentive, but normal economic markets rely on demand-side incentives. Thus, if a higher quality widget can command a higher price, it is because consumers are willing to pay more for it, not because an administered price system deems it to be worthy of higher payment. Thus, one issue around P4P is the power of demand-side incentives in medical care versus supply-side incentives with respect to quality. A paper that bears on this – and finds a demand response, albeit a socially undesirable one – is a study of demand for Ontario physicians after the province introduced a $36.25 payment for physicians who provided a medical warning to patients that they were unfit to drive. Although total physician visits did not much change, visits by the patients to the physicians who warned patients that they were unfit to drive decreased 23 percent. This is not the main point of the paper; the main point is a 45 percent reduction in road crashes and an increase in emergency department visits for depression, but some patients clearly did not want to return to physicians who gave them bad news and sought care elsewhere. The paper is Donald A. Redelmeier, Christopher J. Yarnell, Deva Thiruchelvam, and Robert J. Tibshirani, "Physicians' Warnings for Unfit Drivers and the Risk of Trauma from Road Crashes," New England Journal of Medicine, September 27, 2012, 376(13):1228-36. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa1114310 There is a similar finding on Norwegian physician certification of sick leave in Kurt R. Brekke, Tor Helge Holmas, Karin Monstad, and Odd Rune Straume, " Competition and Physician Behavior: Does the Competitive Environment Affect the Propensity to Issue Sickness Certificates," Journal of Health Economics, July 2019, 66:117-35. https://www-sciencedirect-com.ezp-prod1.hul.harvard.edu/science/article/pii/S016762961830835X

The next two papers are on the Premier demonstration, which the slides also cover:

Ashish K. Jha, Karen E. Joynt, E. John Orav, and Arnold M. Epstein, "The Long Term Effect of Premier Pay for Performance on Patient Outcomes," New England Journal of Medicine, April 26, 2012, 366(17):1606-15. http://www.nejm.org.ezp-

prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa1112351 Jha et al.'s results are in the slides; they find no effects on mortality from a large P4P project in the US when compared with simple public reporting. The P4P was based on process measures. An earlier evaluation of this demonstration, which is the next reading (Lindenauer, et al.), had shown modest improvement in process measures, and based in part on those results, the ACA mandated Value Based Purchasing for Medicare. The Jha, et al. results are consistent with the tenuous connection between process and outcome measures.

Peter K. Lindenauer, Denise Remus, Sheila Roman, Michael Rothberg, Evan M. Benjamin, Allen Ma, and Dale W. Bratzler, "Public Reporting and Pay for Performance in Hospital Quality Improvement," New England Journal of Medicine, 356(5), February 1, 2007, pp. 486-496. Gains in quality at a set of hospitals with pay for performance and public reporting relative to a set with only public reporting. The P4P scheme was a 1 or 2 percent bonus for hospitals in the top two deciles of hospitals that applied; note that the group of applicants were *not* randomly selected. Underperforming hospitals, however, were subject to penalties in the third year.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa064964

David M. Eddy, Joshua Adler, and Macdonald Morris, "The 'Global Outcomes Score': A Quality Measure, Based on Health Outcomes, That Compares Current Care to a Target Level of Care," Health Affairs, November 2012, 31(11):2441-50. Describes an improvement in how to administer P4P that uses a continuous and well validated measure of outcome rather than being above or below a cut point on a given measure, as in the Medicare Advantage Star system (Class 8) and also in commercial insurance P4P programs.
https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.2011.1274

Meredith B. Rosenthal, Richard G. Frank, Zhonghe Li, and Arnold M. Epstein, "Early Experience with Pay-for-Performance: From Concept to Practice," JAMA, 294(14), October 12, 2005, pp. 1788-1793.
http://jama.ama-assn.org.ezp1.harvard.edu/cgi/reprint/294/14/1788 Evaluates a program that rewarded physicians who met targets on cervical cancer screening, mammography, and hemoglobin A1c testing. Finds little effect on quality; the rewards went to those who were already doing well. This paper was very influential in dampening some of the early enthusiasm for P4P. What does this paper tell you about the most appropriate design of a P4P program? If you would rather read an economics journal article that uses more complete data from the same P4P program (but reaches the conclusion that there is a positive but quite modest effect), read Kathleen J. Mullen, Richard G. Frank, and Meredith B. Rosenthal, "Can You Get What You Pay For? Pay-for-Performance and the Quality of Healthcare Providers," RAND Journal of Economics, Spring 2010, 41(1):64-91.
http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1756-2171.2009.00090.x/abstract

Meredith B. Rosenthal and R. Adams Dudley, "Pay-for-Performance: Will the Latest Payment Trend Improve Care? JAMA, February 21, 2007, 297(7):740-4. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/297/7/740 Their table gives a concise summary of key dimensions of a P4P plan and points to literature on evidence.

For a summary of a large scale US effort to pay for performance in California, go to http://www.iha.org/pdfs_documents/p4p_california/P4PWhitePaper2_June2009_FullReport.pdf

If you want more on the UK, several readings follow.

I suggest starting with the Department of Health, "A Simple Guide to Payment by Results, November 2012, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/156241/PbR-Simple-Guide-FINAL.pdf.pdf

Martin Roland and Stephen Campbell, "Successes and Failures of Pay for Performance in the United Kingdom," New England Journal of Medicine, May 15, 2014, 370(20):1944-49. If you are going to write your testimony on this topic, the text and the citations give you both a review of the literature and an assessment of how pay for performance has worked out in the UK through an earlier period. Maybe the UK put more than an optimal amount of money into P4P?
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMhpr1316051

Soren Rud Kristensen, Rachel Meacock, Alex J. Turner, Ruth Boaden, Ruth McDonald, Martin Roland, and Matthew Sutton, "Long-Term Effect of Hospital Pay for Performance on Mortality in England," New England Journal of Medicine, August 7, 2014, 371(6):540-8. Largely negative results; mortality in control hospitals fell more than in hospitals participating in the P4P program.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMoa1400962

Tim Doran and Martin Roland, "Lessons From Major Initiatives To Improve Primary Care In The United Kingdom," Health Affairs, May 2010, 29(5):1023-9.
http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/29/5/1023.abstract A mixed but on the whole upbeat assessment of various British reforms starting in 1998, including the P4P initiative.

Stephen Campbell, David Reeves, Evangelos Kontopantelis, Bonnie Sibbald, and Martin Roland, "Effects of Pay for Performance on the Quality of Primary Care in England," New England Journal of Medicine, July 23, 2009, 361(4):368-78 http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa0807651 This article shows modest gains in two of three quality indicators (with the third indicator trending in the right direction) used to compensate British GPs, albeit there was a prior favorable trend so it is not clear the P4P was causal. The improvement, however, came at considerable cost to Her Majesty's Treasury, and the improvement appeared to be a one-off event.

Stephen Campbell, David Reeves, Evangelos Kontopantelis, Bonnie Sibbald, and Martin Roland, "Quality of Primary Care in England with the Introduction of Pay for Performance," New England Journal of Medicine, July 12, 2007, 357(2):181-90. Finds modest improvement.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsr065990

Ruth McDonald and Martin Roland, "Pay for Performance in Primary Care in England and California: Comparison of Unintended Consequences," Annals of Family Medicine, March/ April 2009, 7(2):121-7. http://annfammed.org/content/7/2/121.full Interviews of 20 PCPs in England and California. California MDs report forced disenrollment of noncompliant patients.

Clemens S. Hong, Steven J. Atlas, Yuchiao Chang, S.V. Subramanian, Jeffrey M. Ashburner, Michael J. Barry, et al., "Relationship Between Patient Panel Characteristics and Primary Care Physician Clinical Performance Rankings," JAMA, September 8, 2010, 304(10):1107-13. Using HEDIS measures to pay providers appears to discriminate against MDs with more low SES patients.
http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/304/10/1107.short

Institute of Medicine, Rewarding Provider Performance: Aligning Incentives in Medicare, Washington: National Academies Press, 2007. See especially chapter 4 on structuring the P4P scheme, as well as chapter 5, pp. 118-130 on the accountable unit, IT, and statistical issues. Also Appendix B has an annotated bibliography as of 2006. For a summary, see Elliott S. Fisher, "Paying for Performance – Risks and Recommendations," New England Journal of Medicine, November 2, 2006, 355(18), pp. 1845-1847.
http://content.nejm.org.ezp1.harvard.edu/cgi/reprint/355/18/1845.pdf

J. William Thomas and Kathleen Ward, "Economic Profiling of Physician Specialists: Use of Outlier Treatment and Episode Attribution Rules," Inquiry, Fall 2006, 43(3):271-282.
http://www.inquiryjournalonline.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.5034/inquiryjrnl_43.3.271 There has been and remains pressure from purchasers to drive accountability to the level of the individual physician. This article uses a simulation to derive best rules for treating outliers and attributing services to an individual physician. The best methods differ by specialty, and the authors say they were unsuccessful in identifying cost-inefficient physicians.

Gail Wilensky, "The Need to Simplify Measuring Quality in Health Care," JAMA, June 19, 2018, 319(23):2369-70. A short paper on excessive measurement.
https://jamanetwork.com/journals/jama/fullarticle/2685141

Sheila Leatherman, Donald M. Berwick, Debra Iles, et al., "Making the Business Case for Quality," Health Affairs, 22(2), March/April, 2003, pp. 17-30. Some early case studies of what happened, or perhaps more accurately what did not happen, when various delivery organizations tried to improve quality through payment reforms.http://search.epnet.com.ezp1.harvard.edu/login.aspx?direct=true&db=aph&an=9332346&loginpage=Login.asp&scope=site

***Health Information Technology (Health IT or HIT)***

**John Glaser, "It's Time for a New Kind of Electronic Health Record," Harvard Business Review, June 12, 2020. Makes the point that the Electronic Health Record (EHR) needs to**

**transition from a system that maximizes billing in a FFS system to one that promotes the management of individual and population health in a value-based (full or partial capitation) system. The next class takes up a value-based reimbursement system. Glaser was both the former Chief Information Officer at Partners (now Mass General Brigham) and a senior executive at Cerner.** https://hbr.org/2020/06/its-time-for-a-new-kind-of-electronic-health-record

OPTIONAL:

One of the hopes for increasing the quality of health care is greater use of IT, and "meaningful use" of IT is one of the quality measures in the MIPS (Class 6), though the Trump Administration has kept the bar low on that measure. As described in the required Glaser article above, I personally think one of the more likely places to look for gains from more widespread HIT is greater use of clinical decision support software, but the meaningful use regulations do not (as yet) require it. The reason I think that clinical decision support will help is summarized in the title of a 2010 paper in PLoS Medicine entitled "Seventy-five Trials and Eleven Systematic Reviews a Day: How Will We Ever Keep Up" (Hilda Bastian, Paul Glasziou, and Iain Chalmers, September 2010, 7(9):e1000326). (This paper is not on the Optional list; I just list the title here as a "factoid.") Interestingly, however, the author's conclusion is that the number of clinical trials and systematic reviews need to be reduced, which is not the conclusion I would draw. See also Hussey, et al., below.

John Glaser, "What Banking Can Teach Health Care About Handling Customer Data," Harvard Business Review, online https://hbr.org/2019/10/what-banking-can-teach-health-care-about-handling-customer-data. Another short paper by John Glaser on steps to make health care IT more useful to patients and providers.

Peter S. Hussey, Justin W. Timbie, Lane F. Burgette, Neil S. Wenger, David J. Nyweide, and Katherine L. Kahn, "Appropriateness of Advanced Diagnostic Imaging Ordering Before and After Implementation of Clinical Decision Support Systems," JAMA, June 2, 2015, 313(21):2181-2. Shows improvement in imaging orders rated appropriate and decrease in those rated inappropriate after implementation of clinical decision support. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=2300591

Atul Gawande, "The Upgrade," The New Yorker, November 12, 2018, 94(36). The author's experience with the introduction of a new EMR (Epic) at his delivery system (Mass General Brigham), or why physicians are unhappy. http://web.a.ebscohost.com.ezp-prod1.hul.harvard.edu/ehost/detail/detail?vid=9&sid=b89b14a6-5ea7-40a2-8644-61a7a0cba0d8%40sdc-v-sessmgr02&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=132795608&db=aph

Julia Adler-Milstein, Claudia Salzberg, Calvin Franz, E. John Orav, Joseph P. Newhouse, and David W. Bates, "Do Electronic Health Records Save Money? Evidence from Community Practices," Annals of Internal Medicine, July 16, 2013, 159(2):97-104. The

authors found negligible savings with community wide adoption of health IT in three communities compared with three control communities. http://annals.org.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1709804

Leila Agha, "The Effects of Health Information Technology on the Cost and Quality of Medicare Care," Journal of Health Economics, March 2014, 34:19-30. Finds no relationship between hospital adoption of IT and cost savings (even 5 years after introduction), although there is an effect on billed charges (coding). She also finds no effect on one year mortality, adverse drug events, or readmissions. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629613001720/1-s2.0-S0167629613001720-main.pdf?_tid=3ec315d8-c407-11e3-904d-00000aacb361&acdnat=1397502294_ae5520d559547a37c2ad2d19a5d4cb3b

Melinda Beeuwkes Buntin, Matthew F. Burke, Michael C. Hoaglin, and David Blumenthal, "The Benefits of Health Information Technology: A Review of the Recent Literature Shows Predominantly Positive Results," Health Affairs, March 2011, 30(3):464-71. Note the contrast with the conclusions of the papers above. In my view this difference could reflect at least two weaknesses of the earlier literature that they review, namely that results are often either confined to one institution or that the data used are cross-sectional. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/30/3/464.full.pdf+html

Mary Reed, Jie Huang, Ilana Graetz, Richard Brand, John Hsu, Bruce Fireman, Marc Jaffe, "Outpatient Electronic Health Records and the Clinical Care and Outcomes of Patients With Diabetes Mellitus," Annals of Internal Medicine, October 2, 2012, 157(7):482-9. Some encouraging results on blood sugar and cholesterol control from implementation of HIT at Kaiser Northern California. http://annals.org.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1363513

Jonathan C. Javitt, James Rebitzer, and Lonny Reisman, "Information Technology and Medical Missteps: Evidence from a Randomized Trial," Journal of Health Economics, May 2008, 27(3): 585-602. Shows a 6% savings from the use of decision support delivered electronically. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S016762960700077X

David Blumenthal, "Wiring the Health Care System: Origins and Provisions of a New Federal Program," and "Implementation of the Federal Health Information Technology Initiative," New England Journal of Medicine, December 15 and 22, 2011, 365(22 and 23):2323-9 and 2426-31. The rationale and early implementation of the federal Health IT initiative of 2009 by the person who was at that time in charge of it, looking back on the first two years. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsr1110507 and http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsr1112158

David Blumenthal, "Stimulating the Adoption of Health Information Technology," New England Journal of Medicine, April 9, 2009, 360(15):1477-9. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp0901592 A summary of the Stimulus Act of

2009's (aka ARRA) provisions to spur the adoption of Health IT.

*Guideline Development and Antitrust*

John D. Kraemer and Lawrence O. Gostin, "Science, Politics, and Values," JAMA, February 11, 2009, 301(6):665-7. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/301/6/665.full An editorial excoriating the Connecticut Attorney General, Richard Blumenthal (now Senator Blumenthal), for bringing an antitrust case against the Infectious Diseases Society of America for its guidelines in treating Lyme Disease. This is an example of tension between the law and professionalism.

**CLASS 18 –RESTRUCTURING THE AMERICAN HEALTH CARE DELIVERY SYSTEM (November 9) Guest: Jeffrey Kang, MD. You can find his bio at https://www.wellbeseniormedical.com/who-we-are/**

**Remember to submit your proposed topic for Testimony 2 by today.**

**In the 20th century the American delivery system was predominantly organized around independent physicians, either practicing alone (solo practice, self-employed), or in small groups (often a partnership of some sort), with admitting privileges at one or sometimes more hospitals. In effect, most physicians were small businessmen (and they were mostly men through much of the 20th century). Physicians operated largely autonomously, essentially ordering for their insured patients any service they thought was likely to benefit them. As we saw in the last class, however, the resulting quality left a lot to be desired for several reasons. Physicians often did not coordinate with each other. Seeking preventive care was largely left to the patient's initiative. Hospitals recognized that physicians brought patients, which is to say revenue, and therefore generally catered to what physicians wanted in decisions on capital spending, especially in the case of physicians who were in more lucrative specialties for the hospital, such as the surgical specialties, anesthesiology, radiology, and invasive cardiology (Class 4), which may have distorted care. The hospital administrator's mindset was typically "heads in beds," since a hospital that was operating near its capacity likely had a healthy margin.**

**Until about 1990 the financing of care, meaning insurance, and the delivery of care were two distinct industries with little integration. Insurers were largely passive, essentially reimbursing any service a physician ordered provided the insurance contract or policy covered the service and subject to any cost sharing in the insurance policy (it was called "indemnity insurance" because it indemnified the patient against monetary loss).**

**Parts A and B of Traditional Medicare (TM) were designed for this type of financing and delivery system. When Medicare was enacted in 1965, commercially insured patients essentially had "freedom of choice" of physician, meaning a patient paid about the same amount out-of-pocket for a given service irrespective of which physician or hospital he or she chose. Organized medicine zealously protected freedom of choice. TM largely continued in that vein for decades; a hospitalized TM patient, for example, still pays a fixed deductible that**

**is independent of the hospital the patient uses, and TM generally reimburses any covered service a physician orders. Likewise, the patient's payment is in Part B is mostly independent of the physician chosen, assuming the physician accepts any Medicare patients, which almost all do except in a few wealthy zip codes.**

**This description of the historical US delivery system also applies to delivery systems of some other countries such as Canada and Australia, where public insurance, like Parts A and B of Medicare, functions largely as a passive fee-for-service reimburser of services, and there are numerous small scale physician practices.**

**The ACA took steps to push TM away from its historical passivity; as we saw in Class 17, it now pays marginally more for better quality, e.g., the Value Based Purchasing program for hospitals, and marginally less for lower quality, e.g., readmission penalties, and, as we take up in the class, it is starting to seek ways to shift financial risk away from it as purchaser and toward provider groups by encouraging Accountable Care Organizations (ACO's) and initiating bundled payment demonstrations, sometimes referred to as value-based care. The Blumenthal and Abrams paper that you read for Class 17 covers these steps.**

***The ACA and the Delivery System***

**In contrast to insurance that passively reimburses whatever covered services a physician orders or delivers, managed care, which is now the dominant model in American commercial insurance, in Medicaid, and in Medicare Advantage, tries to integrate, at least partially, insurance/financing with the delivery of care. In other words, insurers other than TM now actively attempt to affect the quantity and quality of services in contrast to a passive indemnity insurer. In a favorable interpretation such integration or care management would reduce moral hazard and improve quality, but whether it does so is an empirical question. Supporters think the effect is positive; many single-payer advocates, who often have a Traditional-Medicare-for-all scheme in mind, think it is negative. Many physicians are also negative, feeling that managed care challenges their professional autonomy, though my sense is that the opposition has faded as managed care has become more established and more sophisticated in how it operates – and also as more physicians are employees and/or in medical groups that are themselves taking at least some financial risk.**

**Most patients like the passive insurer, at least until they are faced with the cost that it generates. (Of course, the great bulk of TM's cost falls on current taxpayers.) Physicians and hospitals have more mixed views about TM; although most like the autonomy it offers relative to a managed care insurer, they are less enamored of its lower reimbursement rates compared to those of commercial insurance and the cost of compliance with its various regulations.**

**Although managed care has evolved in some settings into a semi-cooperative relationship between insurers and physicians or delivery systems, especially in commercial Accountable Care Organizations, bargaining between providers and managed care plans over prices in the conventional fee-for-service context is zero sum and thus frequently contentious. The distortions in TM's fee-for-service reimbursement (Classes 4-6) also affect the delivery of services in Medicare Part C and in Accountable Care Organizations, since even if a delivery**

**system is taking financial risk, individual physicians at the point of care are still likely to be reimbursed in some fashion on a fee-for-service basis (see the Ginsburg reading in Class 6). The intent of MACRA is to push physicians away from TM's pure-FFS-no-financial-risk world (see the slides from Class 6), albeit slowly and gingerly.**

**This class takes up the effect of the active or non-passive insurer on quality and cost, as well as Medicare's efforts to encourage Accountable Care Organizations (ACO's) and bundled payment initiatives. It builds on Class 8, which covered the reimbursement of managed care plans in Medicare Part C or Medicare Advantage. Whereas Class 8 focused on selection and risk adjustment, or structuring the insurance market, this class focuses on how shifting financial risk toward providers affects the cost, use, and the quality of care at the point of service. You should keep in mind, however, that it should be less costly for an integrated insurer and provider to select good risks within an HCC category than non-integrated insurers and providers (remember the Hofer, et al. reading from Class 17 on the effect of shifting a single non-compliant diabetic patient on quality ratings).**

**Empirically, efforts to ascertain how managed care, or an active insurer, affects quality and cost face many methodological difficulties, starting with the dominance of active insurers other than TM, which makes it impossible to find a credible contemporaneous comparison group among the under 65. For that reason almost all the reading for this class compares Medicare Advantage and TM. Furthermore, the effects of managed care presumably depend upon the specific techniques the insurer uses to affect utilization. Those techniques have changed over time, in particular the early command-and-control techniques have diminished in their intensity, and now tend to be less intrusive at the point of service. For a review of the older literature on these issues, see the Glied Handbook chapter in the Optional reading.**

**Outside the US, other developed countries have developed somewhat analogous methods to deal with moral hazard, though those arrangements are not generally termed managed care. For example, certain drugs may not be on the formulary, or the physician may ration care because certain facilities are not available or are fully booked for the relevant time frame.**

**Much of the American quality improvement literature (e.g., the IOM Quality Chasm report, Optional reading for Class 17) argues that there must be an organized system of care to improve quality. Is an organized system possible in the US context without a group of medical providers taking at least some financial risk? How will the public respond to providers taking risk? The rest of the world varies in the degree of "organization" of its system, from national health services on one hand (e.g., the UK, although outpatient care is often delivered by small scale general practitioners) to decentralized, often small scale, office practices on the other (e.g., Canada, Australia).**

**When active insurers started to grow rapidly in the US in the 1990s there was a backlash from both physicians and patients. Physicians resented both the reduction in fees that the insurers demanded if the physician was to be in network as well as the intrusions on their autonomy in clinical decisions that "utilization management" entailed. Patients resented**

**insurers' refusals to cover services that their physician but not their insurer deemed medically necessary. On the policy front the backlash took the form of legislators introducing "Patient Protection Acts," the intent of which was to preserve the traditional financing and delivery systems, meaning passive reimbursement of whatever covered service a physician ordered. The McDonough book on the ACA (Optional reading, Class 10) has a flavor of that; see his discussion on pages 29 and 30, which notes that some of the patient protections that failed legislatively in the 1990's are part of Title I of the ACA. Recall also that although most people, including me, either use the shorthand of the ACA or call it Obamacare, the legislation passed by both the House and Senate in 2010 was actually entitled the *Patient Protection* and Affordable Care Act (italics added). Title I of the ACA contains its patient protection language, which included the provisions on guaranteed issue and guaranteed renewal that ended medical underwriting. These were major changes and very important, but they are of a different nature than policy directed to services at the point of care or what insurers call utilization management. My judgment at this point is that the provisions in Title I around approvals of coverage for a service, coverage denials for uncovered services, and appeals of denied claims have had little real effect either way, but I have not seen systematic data. The number of appeals has grown, but the absolute number is still not large (those data are not public).**

**As noted above, managed care and active insurers are now dominant in both commercial insurance and Medicaid and growing in Medicare. Many American commercially insured are in Preferred Provider Organizations (PPO's), where the insurer has a lighter touch than in Health Maintenance Organizations (HMO's); for example, PPO patients can generally self-refer to specialists while HMO patients cannot, although obtaining referrals from primary care physician offices for HMO patients is often perfunctory. The broad provider choice that PPO's and many HMO's offer, however, is starting to change with the advent of narrow network plans in the marketplaces and to some extent in the small group market. Medicaid networks have always been narrow, and relative to managed care in commercial insurance, Medicaid managed care tends to be "high touch." A potentially important and relatively recent change in the US delivery system is the increasing number of employed rather than self-employed physicians (Classes 6 and 21), which suggests less physician autonomy than historically was the case. The site-of-service differentials that we talked about in Class 5 are an important reason for the shift toward employment, but so are the scale demands of information technology and compliance (Class 17).**

**The key innovation in shifting from the passive insurer toward managed care, as the slides say, was ending the so called freedom-of-choice of provider provisions in insurance, although a variant of freedom-of-choice lives on in the debate over any-willing-provider legislation and in the advocacy of Medicare-for-all. Freedom of choice meant the insurer was neutral with respect to the price the patient paid to see different providers; that is, patients would not pay less to see certain providers and more to see others. The formation of provider networks by managed care insurers, however, meant patients faced different prices at different providers. The benign view of this development is that the insurer is acting as a purchasing agent for the consumer. The problem is that consumers are heterogeneous in their preferences for various providers, and in a group insurance plan some consumers may have high valuations for providers who are out-of-network. The resulting tensions are**

**implicit in the letter from the Platt Institute faculty to Ronald Williams that I posted on the course website. What the letter does not say - and I am guessing that the signatories did not know - was that the hospital in question was seeking a 40% (!) increase in rates. Shortly after the letter was sent, the 40% figure was negotiated downward, and the hospital became an in-network provider, so the issue the signatories raised became moot. Nonetheless, the tension about out-of-network providers – and to a lesser degree providers in a non-preferred tier - is inherent in the role of the insurer's acting as a purchasing agent for a heterogeneous group of consumers, since in economic terms the network is a local public good. In the current debate this tension has surfaced in controversy over narrow network plans and network adequacy regulation, the subject of the first two readings, which emphasize that pro-provider is not necessarily pro-consumer.**

**David H. Howard, "Adverse Effects of Prohibiting Narrow Provider Networks," New England Journal of Medicine, August 14, 2014, 371(7):591-3. Suggests a light touch with respect to network regulation.**
**http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1402705**

**David Dranove and Craig Garthwaite, "Narrow Networking,"**
**http://thehealthcareblog.com/blog/2014/07/29/narrow-networking/**

**Mark A. Hall, Loren Adler, Paul B. Ginsburg, and Erin Trish, "Reducing Unfair Out-of-Network Billing," New England Journal of Medicine, February 14, 2019, 380(7):610-2. Links the issue of surprise bills and network adequacy and describes a policy proposal, major league baseball type binding arbitration, to address the issue. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1815031**

OPTIONAL:

***Narrow Networks and Surprise Billing***

Jonathan Gruber and Robin McKnight, "Controlling Health Care Costs through Limited Network Insurance Plans: Evidence from Massachusetts State Employees," American Economic Journal: Economic Policy, May 2016, 8(2)219-50. They find a very large (40%) reduction in spending from a narrow network plan, but interestingly spending on primary care increased. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/pol.20140335

Zack Cooper, Fiona Scott Morton, and Nathan Shekita, "Surprise! Out-of-Network Billing for Emergency Care in the United States," Journal of Political Economy, published on line, February 2020. Shows how emergency room doctors, by staying out-of-network, increase their leverage in negotiating rates with insurers. Estimates that New York's policy of binding arbitration in such cases reduced out-of-network billing 88%. https://www-journals-uchicago-edu.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1086/708819.

***Network Formation and Tiering***

The slides refer to tiering physicians based on cost and quality. If you want to see how

Aetna did this in 2020, go to https://www.aetna.com/content/dam/aetna/pdfs/health-care-professionals/Aexcel-Methodology-2020.pdf

What follows are three papers in economics journals about the economics of network formation. See also the Gaynor, et al. Journal of Economic Literature paper and/or the Gaynor and Town Handbook of Health Economics chapter in the Class 11 Optional reading.

Keith Marzilli Ericson and Amanda Starc, "Measuring Consumer Valuation of Limited Provider Networks," American Economic Review, May 2015, 105(5):115-9. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/aer.p20151082. Using data from the Massachusetts public marketplace, the authors show that consumers value broader networks, that older persons value broader networks more than younger persons, presumably because they use more physicians on average, and that consumers value networks with "star" hospitals in them more highly, in this case Massachusetts General Hospital. In conjunction with the latter finding, recall Mark Shepard's paper (Class 7), showing that sicker patients value "star" hospitals more than healthier patients, posing a selection problem.

Katherine Ho, "Insurer-Provider Networks in the Medical Care Market," American Economic Review, March 2009, 99(1): 393-430. Presents a model of insurer-hospital bargaining over price in the context of whether the hospital will be preferred. Hospitals in systems (as opposed to single unaffiliated hospitals) have more market power and so can command higher prices and hospitals that are more attractive to patients get higher prices. http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.99.1.393

Katherine Ho and Ariel Pakes, "Hospital Choices, Hospital Prices and Financial Incentives to Physicians," American Economic Review, December 2014, 104(12):3841–84. Looks at network formation in California for births. Ho and Pakes find insurers with more capitated physicians are more responsive to hospital prices. In particular, capitated plans send patients further distances to utilize similar quality, lower-priced hospitals; the cost-quality tradeoff does not vary with capitation rates.
http://pubs.aeaweb.org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.104.12.3841

Katherine Ho and Robin S. Lee, "Insurer Competition in Health Care Markets," Econometrica, March 2017, 85(2):379-417. Although their main focus is on insurer competition (less competition raises premiums), this paper sets out a discrete choice model of network formation and implements it with data from California hospitals; this method gives estimates of willingness-to-pay for various hospitals to be in network.
https://onlinelibrary-wiley-com.ezp-prod1.hul.harvard.edu/doi/epdf/10.3982/ECTA13570

Katherine Ho and Robin S. Lee, "Equilibrium Provider Networks: Bargaining and Exclusion in Health Care Markets," American Economic Review, February 2019, 109(2):473-522. Carries the theory and model of the preceding paper a step further and implements the new model with data from the California marketplace. https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/aer.20171288

***Managed Care and Spending***

David Dranove, Christopher Ody, and Amanda Starc, "A Dose of Managed Care: Controlling Drug Spending in Medicaid," NBER Working Paper 23956, http://www.nber.org/papers/w23956 The high-touch nature of Medicaid managed care provides a good setting for showing effects of managed care; these authors look at Medicaid drug spending in managed care organizations relative to direct administration of the drug benefit by government agencies. They find no effect on prescribing, but more than a 20% drop in spending, partly from greater use of generic drugs, partly from shifting to lower priced branded drugs in the same therapeutic class, and partly from shifting consumers to lower priced national chain drug stores such as CVS, Walgreens, and Rite-Aid and away from independent pharmacies. In short, the entire effect is on unit price rather than drug quantities.

David M. Cutler, Mark McClellan, and Joseph P. Newhouse "How Does Managed Care Do It?" RAND Journal of Economics, 31:3, August 2000, pp. 526-48. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/10.2307/2600999 A similar finding to Dranove, Ody, and Starc, showing that the main effect of managed care for heart attack patients in Massachusetts was on unit prices paid to hospitals and physicians.

The next two readings discuss spillovers from MA to TM; the basic idea is that having some patients subject to management can affect how TM patients are treated.

Laurence C. Baker, "Association of Managed Care Market Share and Health Expenditures for Fee-for-Service Medicare Patients," JAMA, February 3, 1999, 281:432-37. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/281/5/432.short Increases in HMO market shares in the local market (Medicare and non-Medicare) are associated with lower growth of Medicare fee-for-service spending (a "spillover").

Katherine Baicker, Michael E. Chernew, and Jacob Robbins, "The Spillover Effects of Medicare Managed Care: Medicare Advantage and Hospital Utilization," Journal of Health Economics, December 2013, 32:1289-1300. Like Baker, increases in Medicare Advantage shares in the local market are associated with shorter hospital stays in TM. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629613001124/1-s2.0-S0167629613001124-main.pdf?_tid=dbb2998a-49ea-11e5-a43d-00000aacb35f&acdnat=1440371056_c55f7926f2c7c15e86bda30bc8e06478

Sherry Glied, "Managed Care," in Handbook of Health Economics; eds. Anthony J. Culyer and Joseph P. Newhouse; North-Holland, 2000. A review of all the literature on managed care as of the late 1990's. Both the techniques of managed care and anti-selection methods have changed in the ensuing two decades, however. http://www.sciencedirect.com.ezp1.harvard.edu/science?_ob=PublicationURL&_tockey=%23TOC%2324609%232000%23999989999.7998%23584858%23FLP%23&_cdi=24609&_pubType=HS&_auth=y&_acct=C000014438&_version=1&_urlVersion=0&_userid=209690&md5=a27d303a142408c7e6fe06be6bdd9bca.

*Managed Care and Quality*

**A place to start with the effect of managed care on quality is pages 375-382 of the Newhouse and McGuire paper that you read for Class 8. If you want to review those seven pages, the reference is Joseph P. Newhouse and Thomas G. McGuire, "How Successful Is Medicare Advantage?" The Milbank Quarterly, June 2014, 92(2):351-94. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/1468-0009.12061/pdf Those 8 pages summarize some results on use and quality of care in Medicare Advantage, which I define as Part C excluding the Private Fee-for-Service option compared with "unmanaged" Traditional Medicare (Parts A and B). (The Private Fee-for-Service option is touched on in the slides, but unless you are interested in history, you can ignore it, both because it is not managed care at all and because it is now a trivial part of Medicare, though that was not the case in the 2003-2010 period.) On the whole, Part C comes out looking relatively good with respect to quality when compared with TM, although one can only make a limited number of comparisons.**

OPTIONAL:

Mark Duggan, Jonathan Gruber, and Boris Vabson, "The Efficiency Consequences of Health Care Privatization: Evidence from Medicare Advantage Exits," American Economic Journal: Economic Policy, February 2018, 10(1):153-86. Studies effects on MA beneficiaries in New York who switched to TM because all MA plans in their county exited the market so the switch was exogenous to the individual. They find hospital use went up about 60 percent, consistent with MA plans restricting elective admissions. The increase in hospital use did not die out over time, suggesting it was not from pent up demand. Moreover, the chance of having a readmission and a preventable hospitalization rose after the MA plans left the market.
https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/pol.20160068

Peter J. Huckfeldt, José J. Escarce, Brendan Rabideau, Pinar Karaca-Mandic, and Neeraj Sood, "Less Intense Postacute Care, Better Outcomes For Enrollees In Medicare Advantage Than Those In Fee-For-Service," Health Affairs, January 2017, 36(1):91-100. The title gives the punch line. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/36/1/91.full.pdf

Christopher Afendulis, Michael E. Chernew, and Daniel P. Kessler, "The Effect of Medicare Advantage on Hospital Admissions and Mortality," American Journal of Health Economics, Spring 2017, 3(2):254-79. Using a regression discontinuity design (higher payments to plans operating in urban floor counties, see Class 8, which led to greater MA penetration in those counties), the authors find greater penetration of MA is associated with fewer hospital admissions and a lower 12 month mortality rate for all Medicare beneficiaries in a county, thus accounting for any spillover effects. http://www.mitpressjournals.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1162/AJHE_a_00074

In case you want to go deeper, the following are three of the papers that are summarized in the Newhouse and McGuire paper showing gains from managed care:

Bruce Landon, Alan M. Zaslavsky, Robert Saunders, L. Gregory Pawlson, Joseph P. Newhouse, and John Z. Ayanian, "Analysis Of Medicare Advantage HMOs Compared With Traditional Medicare Shows Lower Use Of Many Services, 2003-9," Health Affairs, December 2012, 31(12), 2609-17. Shows some benefits of integration in Medicare Advantage vs Traditional Medicare. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/12/2609.full.pdf+html

John Z. Ayanian, Bruce E. Landon, Alan M. Zaslavsky, Robert Saunders, L. Gregory Pawlson, and Joseph P. Newhouse, "Quality of Care in Medicare Advantage and Traditional Medicare," Health Affairs, July 2013, 32(7):1228-35. Like the Landon, et al. study, Medicare Advantage on the whole looks as good or better than Traditional Medicare, although the ability to compare is limited to a few dimensions. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/32/7/1228.full.pdf+html

David Stevenson, John Z. Ayanian, Alan M. Zaslavsky, Joseph P. Newhouse, and Bruce E. Landon, "Service Use at the End of Life in Medicare Advantage versus Traditional Medicare," Medical Care, 2013, 931-7. Shows greater use of hospice, lesser use of the hospital, and markedly less use of the Emergency Department among decedents in MA compared with matched decedents in TM. http://ovidsp.tx.ovid.com.ezp-prod1.hul.harvard.edu/sp-3.12.0b/ovidweb.cgi?QS2=434f4e1a73d37e8c1d085c12c2e0a0e4dd9f69663859b31fe073ded8f22700f3be968c8ec16862825c9c256a6cbe1049396f0c4bd744cb902b14413e12f388086bb53ede133a753933b18cb2e0db8042e2027d6d7bd9944e2ddcb5bb988c8e55ef6428d31693ab5aa4b96f09741869646bbbce2ec1be03e103cdd7dd582cfeeac8100a053cc2aedf13bcb31cb25da614aaa3ee3545077a4e5fb83180ad21e0656f26efa7ba3f82c992bc5337bec20593c4d87ffb76ede453e606834e393f48c618dda753d96334a7b48923bb2fa2eb73b3bb09fca4a40d62b434b39086b3c2878f482e1d35953cf4e5fb2f289b9abf164989e5a9d20e03a64163c985d36d16eb9393985720b39f53444759a46f82b89c36366ad4703b73737d99126f8f608f7d5d94e136ab1246d9e7ff384b67456dab46501806821dfce0d59c9fb43c3ce158f7649593c9fb90883afa386771243d591ffdefc02fa235a4f310eb0cc82d180f898563e5eb14de3d294c243808ea432c3826f069bc935ce4b1579c879ffe7f704296126111ff5f3a65a03cceb2dcd38141ecdc7be133d87d2fcdc02a6ae73bbc767caef65e77a1baf77194d6a09cecffb4f63692e4e9bb84d75c5f08d590f8cfb7bc31c297bdf1c2186b90cee766802fe00da96e50b0138e5fd2734bbfb6d86875012e7eb043b4092f79551167f8f3c14ad6c22ac47f0904729270fc5e89711cdd129f6be1266e23b8c35e9214f9ab31d9a0f4fcb17f72ca

The following is an additional paper from our group that came out after the Newhouse and McGuire summary:

Bruce E. Landon, Alan M. Zaslavsky, Robert Saunders, L. Gregory Pawlson, Joseph P. Newhouse, and John Z. Ayanian, "A Comparison of Relative Resource Use and Quality in Medicare Advantage Health Plans Versus Traditional Medicare," American Journal of Managed Care, August 2015, 21(8):559-66. For diabetics and those with cardiovascular disease resource use is less and quality measures are better in MA than in TM. http://www.ajmc.com/journals/issue/2015/2015-vol21-n8/A-Comparison-of-Relative-

Resource-Use-and-Quality-in-Medicare-Advantage-Health-Plans-Versus-Traditional-Medicare

One claim of managed care organizations is that their disease management programs can reduce health care costs. This claim is supported in the first paper below but not the second. The third paper contains a critique of the design of the trial reported by McCall and Cromwell.

David E. Wennberg, Amy Marr, Lance Lang, Stephen O'Malley, and George Bennett, "A Randomized Trial of a Telephone Care-Management Strategy," New England Journal of Medicine, September 23, 2010, 363(13):1245-55. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa0902321

Nancy McCall and Jerry Cromwell, "Results of the Medicare Health Support Disease-Management Pilot Program," New England Journal of Medicine, November 3, 2011, 365(18):1704-12. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa1011785

Michael S. Barr, Sandra M. Foote, Randall Krakauer, and Patrick H. Mattingly, "Lessons for the New CMS Innovation Center from the Medicare Health Support Program," Health Affairs, July 2010, 29(7):1305-9. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/29/7/1305.short Excluding the introduction and the concluding section, which you don't need to read, this is a commentary on the Medicare Health Support Demonstration described in the prior reading. Does it make an effective critique?

What follows are several additional papers on managed care and quality.

Jayasree Basu and Lee Mobley, "Do HMOs Reduce Preventable Hospital Admissions for Medicare Beneficiaries?" Medical Care Research and Review, October 2007, 64:544-67. http://mcr.sagepub.com.ezp-prod1.hul.harvard.edu/content/64/5/544.full.pdf+html The answer to the question in the title is yes for the sickest. The slides for the class have two figures from this paper.

Ateev Mehrotra, Arnold M. Epstein, and Meredith Rosenthal, "Do Integrated Medical Groups Provide Higher-Quality Medical Care than Individual Practice Associations," Annals of Internal Medicine, December 5, 2006, 145(11):826-33. The authors' answer is yes. http://annals.org.ezp-prod1.hul.harvard.edu/issue.aspx?journalid=90&issueID=20127&direction=P

Dana B. Mukamel, David L. Weimer, Jack Zwanziger, and Alvin I. Mushlin, "Quality of Cardiac Surgeons and Managed Care Contracting Processes," Health Services Research, October 2002, 37(5):1129-43. Shows some tendency for managed care plans in New York State to contract with higher quality cardiac surgeons. This is one of the few papers in the literature on how - or even whether - managed care plans weigh quality in their network contracting decisions. Although most of this rather small literature finds either favorable or

no effects for managed care contracting decisions with respect to quality, the next study finds a negative effect.
http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/1475-6773.10212/pdf

Lars C. Erickson, David F. Torchiana, Eric C. Schneider, Jane W. Newburger, and Edward L. Hannan, "The Relationship between Managed Care Insurance and Use of Lower Mortality Hospitals for CABG Surgery," JAMA, April 29, 2000, 283(15):1976-83. Finds that those insured with managed care plans use hospitals with higher mortality for CABG surgery than those with unmanaged plans, the opposite of Mukamel, et al. above, though this study concerns hospitals rather than surgeons. Both Mukamel, et al. and this study, as well as other studies in the literature, use data that are now rather old.
http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=192605

Andrew Bindman, Arpita Chattopadhyay, Dennis H. Osmand, William Huen, and Peter Bacchetti, "The Impact of Medicaid Managed Care on Hospitalizations for Ambulatory Care Sensitive Conditions," Health Services Research, February 2005, 40(1): 19-37. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1475-6773.2005.00340.x/full Ambulatory care sensitive conditions are those for which proper ambulatory care can reduce hospitalization and are a widely used measure of quality. Results show a 29 percent reduction in ambulatory care sensitive hospitalizations in mandatory managed care compared with traditional fee-for-service Medicaid. This result is on one of the slides for the class.

Anna Aizer, Janet Currie, and Enrico Moretti, "Does Managed Care Hurt Health? Evidence from Medicaid Mothers," Review of Economics and Statistics, August 2007, 89(3):385-99. http://www.mitpressjournals.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1162/rest.89.3.385 Shows that a change to Medicaid managed care in certain California counties lowered prenatal use and increased low birth weight. This is one of the few papers that finds adverse effects of managed care on outcomes.

The following paper is a Milliman summary of the business case for the patient centered medical home, which I regard as a first step toward active management of care. Susan Philip, Diana Govier, and Susan Pantely, "Patient-Centered Medical Home: Developing the Business Case from a Practice Perspective," June 2019. This white paper, which was sponsored by NCQA, cites quite a bit of literature on the PCMH. https://www.ncqa.org/wp-content/uploads/2019/06/06142019_WhitePaper_Milliman_BusinessCasePCMH.pdf

John K. Iglehart, "The National Committee for Quality Assurance," New England Journal of Medicine, 335, September 26, 1996, 995-999. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJM199609263351322 Describes the NCQA, a private organization that accredits health plans and the organization that introduced the medical home. You should think about the extent to which regulation of health plans should remain a private activity.

***Devolving Financing Risk Toward Providers: Bundled, and Global Payment and Accountable Care Organizations (ACO's)***

**My take at this point is that much of the American health policy world (but not necessarily the general American public) has accepted that a decentralized delivery system with purely fee-for-service reimbursement from a passive insurer is inefficient – or at least that any give up in quality and outcomes from moving toward greater centralization of the delivery system and shifting at least some financial risk toward larger provider groups and away from pure fee-for-service reimbursement is worth the saving in cost (but note: decentralized small practices can handle very little, if any financial risk). As a result, there is now a policy push, both from the ACA and from MACRA, toward reorganizing the delivery system into larger groups and devolving some financial risk toward providers. In particular, the ACA established the Center for Medicare and Medicaid Innovation (CMMI), which has established numerous bundled payment initiatives, for example in post-acute care, joint replacement, and oncology care, as well as Accountable Care Organizations (ACO's).**

**How rapidly those who actually have to carry out this reorganization, meaning physicians and hospitals, act and how successful they will be at actually reducing cost and/or improving quality are still somewhat open questions. Almost surely, however, the reorganization of the delivery system that seems to be underway will take many years to come to fruition with some failures along the way. In the short run most of the savings are likely to accrue to providers – not to purchasers or consumers. Indeed, if they don't accrue to providers, there is not likely to be much reorganization of the delivery system since providers have to lead the reorganization effort and the effort is going to require them to make upfront investments.**

**The traditional managed care arrangements in the US, with a few notable exceptions such as Kaiser Permanente, had arms-length contracts between insurers who took financial risk and providers who did not take financial risk and were paid fee-for-service by the insurer. Recall the slide from Class 6 that fee-for-service is how physicians prefer to be paid. Despite the current push toward reorganizing and devolving financial risk toward larger provider groups, fee-for-service continues to play an important role. To begin with, individual physicians, even if they are in groups taking some financial risk, are still paid largely or entirely on a fee-for-service basis. Furthermore, for now - and probably for several more years - delivery systems or groups that take some financial risk have to be somewhat schizophrenic because a good part of their business is still reimbursed on a pure fee-for-service basis, including non-attributed TM beneficiaries and commercial insurers who are paying fee-for-service. (Kaiser Permanente is a well known exception.) In the fee-for-service part of their business, their financial incentive is to deliver more services than in the part of the business where they take risk. This makes the transition difficult, since capital investments that would be sensible in a fee-for-service world may not make sense in a world in which the provider is at risk and conversely. For example, as the proportion of fee-for-service reimbursement declines, the organization has an incentive to invest in tools to integrate and coordinate care among various providers by adding care managers, disease management, and other services that are underprovided in the dominant fee-for-service system (see the Bodenheimer reading in Class 17). Likewise, the volume of some services that are highly profitable in the fee-for-service system may need to be reduced to generate savings in a risk-based world.**

**Medicare ACO's are delivery systems or physician organizations that are reimbursed at Traditional Medicare rates for all services for an attributed population but share in any decreases from a spending target and in a few cases share in overages. The attributed patients are those receiving the plurality of their primary care from physicians participating in the ACO. In the first three year period of the ACO, the target is based on an estimate of what spending would have been if the group had not taken risk and were simply reimbursed by Traditional Medicare at its usual rates for the set of patients attributed to it. Subsequently, the target is moved toward a regional average. There are also quality adjustments.** (I do not expect anyone to look at these documents, but the gory details are available on the CMS website: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Shared-Savings-Losses-Assignment-Spec-V7.pdf and https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/program-guidance-and-specifications.) **One key issue is whether the ACO takes "one-sided" risk (upside only, the ACO does not share in losses) vs "two-sided" risk (the delivery system owes the government money if spending goes over the target). Commercial ACO's are analogous, although they have more control over patients seeking care outside the group, since many if not most such providers can be made out-of-network (see below). The great majority of ACO's have only accepted one-sided risk, although CMS is trying hard to push toward two-sided risk, but that of course may reduce the number of willing ACO's.**

**ACO's are something of a halfway house between an episode-based bundled payment that includes MDs, for example, a lump sum paid to the hospital for all the care involved in a given surgical procedure, and full-blown capitation, a fixed per member per month payment for all medical services with full sharing by the entity taking the capitation in both upside and downside financial risk; this latter is the Kaiser model.**

**ACO's arose in part because some policy analysts, especially Elliott Fisher at Dartmouth and Mark McClellan, then at Brookings, were seeking ways to improve quality of care and to lower cost. They came to the realization that not only were cost reduction and quality improvement probably not going to come about without the delivery system's evolving toward more organized forms of practice and less individual physician autonomy, but that trying to move from the present financing and delivery systems to organizations that would accept full financial risk (or more accurately having a large proportion of patients in such organizations) was a bridge too far in the short run. Hence, they began a movement for what they named Accountable Care Organizations (ACO's), which the ACA embraced. In principle, successful ACO's can opt to become Medicare Advantage plans, which take full risk (Class 8), although Medicare reimbursement is currently not neutral between ACO's and Medicare Advantage plans, nor between either of those two programs and Traditional Medicare. As a result, it may or may not be in the financial interest of a successful ACO to transition to MA. Importantly, for political reasons Medicare does not require patients to enroll in or otherwise select an ACO, which complicates care management for a delivery system that takes risk through the ACO program.**

**Of course, it does not make much sense for an organized delivery system to invest in the infrastructure required to manage care when taking financial risk and then limit its**

**patient population only to Medicare patients in an ACO. Thus, many of the delivery systems that opted into the Medicare ACO program also have or plan to have commercially insured patients and in some cases Medicaid patients for whom they share risk with private insurers. Commercial ACO's, however, differ from Medicare ACO's because they can use networks with lower cost sharing for within-ACO providers to reduce "leakage" of patients to non-ACO providers; in that sense, they are like standard commercial insurance plans with the key exception that the risk is shared between a delivery system and the insurer rather than being solely with the insurer (or the employer in a self-insured plan). Unlike Medicare ACO's, commercial ACO's require an active choice by the consumer (or sometimes the employer). Importantly, in commercial ACO's but not in TM, drug coverage is integrated with the ACO. By contrast TM beneficiaries still select a Part D PDP (Class 15), which is independent of the ACO, whereas in MA drug coverage is integrated with the coverage of medical services, similar to commercial insurance.**

**Governance of provider organizations that take financial risk is in my view a large issue. In my mind it is still an open question whether the governance will ultimately be dominated by: a) hospitals with largely employed physicians; b) independent physician groups that contract with hospitals and other providers such as home health agencies for services; or c) will be genuinely joint ventures among hospitals and physicians; or d) some joint entity that sits above both (the last is essentially the Kaiser Permanente model). The slide on hospital market power (near the end of the slides) makes it look as if the hospital or the "fully integrated" model is winning, although the McWilliams, et al. reading below finds smaller primary care physician-organized ACO's perform better. Initially, a lot of hope – undoubtedly too much hope – for cost reduction was placed in these efforts. As the initial evaluation results have come in, it has become clear that ACO's may well be a favorable development but are far from a silver bullet, at least in the short run.**

**And there are downsides. The general assumption among the advocates of more assumption of risk by providers is that whatever entity is taking financial risk can successfully manage it, but in the 1990's there were some spectacular failures to do so in California, which the Burns and Pauly article in the Optional reading describes. ACO's also raise antitrust issues, which the slides touch on, and whether exempting them from anti-kickback legislation is good policy (the Kanter and Pauly paper).**

**The slides cover some key design issues that CMS faced in the Medicare ACO demonstration. (The original demonstration was called the Pioneer program; that program has been discontinued and most Medicare ACO's are now called Medicare Shared Savings Plans, but there are also Next Gen Medicare ACO's as described in the slides.) One design issue is whether the assignment or attribution of patients to ACO's is retrospective (based on PCP use in the current year) or prospective (based on PCP use in the prior year). This seemingly minute detail turns out to have important consequences. A second design issue is whether the assignment of patients to providers is made based on the PCP who accounts for majority of a patient's use or just the plurality of use. The proportion assigned, of course, is considerably higher if a plurality rule is used, which is how Medicare chose to do it.**

**J. Michael McWilliams, Laura A. Hatfield, Bruce E. Landon, Pasha Hamed, and Michael E.**

**Chernew, "Medicare Spending After 3 Years of the Medicare Shared Savings Program," New England Journal of Medicine, September 20, 2018, 379(12):1139-49. Analyzes results from the first three years of operation of the Medicare Shared Savings Program, and finds that it generated very modest savings, in fact less than 0.1%. An earlier analysis (Optional reading) of the first two years also found modest savings along with improvement on a few measures of quality, but most quality measures did not differ from those of a control group. Both this analysis and the earlier one find the improvement in spending concentrated in ACO's that are based in independent primary care practices rather than among vertically integrated multispecialty physician groups or hospital-based ACO's. Note that any spillovers would bias savings estimates downward.**
**https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa1803388**

**J. Michael McWilliams, Bruce E. Landon, Vinay K. Rathi, and Michael E. Chernew, "Getting More Savings from ACO's – Can the Pace Be Pushed?" New England Journal of Medicine, June 6, 2019, 380(23):2190-2. The authors are sympathetic to the general concept of ACO's, but argue that CMS is being counterproductive by pushing too fast for downside risk and for using either national or regional average spending for benchmarks rather than historical baseline spending of the attributed patients with a predetermined annual increase. The authors point out that 44% of ACO's that have entered the program have dropped out, presumptively because there was not a business case for them to stay in. The rate of exit also interacts with the attractiveness of not establishing or joining an ACO and simply remaining in TM, and by dampening the pace of the MACRA reforms CMS has also that less onerous.**
**https://www-nejm-org.ezp-dev.hul.harvard.edu/doi/full/10.1056/NEJMp1900537**

**The next reading describes the Alternative Quality Contract (AQC), an early and influential innovation of Blue Cross Blue Shield of Massachusetts that shifted risk toward provider organizations. When you read it, focus on the differences between the AQC and Medicare ACO's and why the AQC appears to have been somewhat more successful.**

**Zirui Song, Yunan Ji, Dana G. Safran, and Michael E. Chernew, "Health Care Spending, Utilization, and Quality 8 Years into Global Payment," New England Journal of Medicine, July 18, 2019, 381(3):252-63. Reports on a large scale effort to shift provider groups from pure fee-for-service reimbursement to taking risk. Importantly, the effort was voluntary (why is that important?), though ultimately all the major delivery systems that were in the local markets participated. (Each had a somewhat different contract.) Cost reduction grew over time. It was achieved initially in part by shifting referrals away from high-cost outpatient facilities to lower cost facilities, but later years showed reductions in utilization as well. Who was the beneficiary of these cost reductions? 10% of revenues were at stake for achievement of quality standards, and measured quality did improve. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMsa1813621**

OPTIONAL:

Jon B. Christianson and Douglas Conrad, "Provider Payment and Incentives," in The Oxford Handbook of Health Economics, Sherry A. Glied and Peter C. Smith, eds., Oxford: Oxford University Press, 2011, pp. 624-48. A now rather old review of provider

response to taking financial risk.

Genevieve P. Kanter and Mark V. Pauly, "Coordination of Care or Conflict of Interest? Exempting ACO's from the Stark Law," New England Journal of Medicine, January 31, 2019, 380(5):410-1. Possible conflicts from coordinating care through vertical integration. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1811304

Katherine Baicker and Michael E. Chernew, "Alternative Alternative Payment Systems," JAMA Internal Medicine, February 2017, 177(2):222-3. A comparison of bundling, full or partial capitation, and FFS. http://jamanetwork.com.ezp-prod1.hul.harvard.edu/journals/jamainternalmedicine/fullarticle/2594801

Robert E. Mechanic, "When New Medicare Payment Systems Collide," New England Journal of Medicine, May 5, 2016, 374(18):1706-9. The Center for Medicare and Medicaid Innovation (CMMI) has been busily rolling out various demonstrations that shift risk toward providers. This paper points out that these various demonstration projects may work at cross purposes to each other. It is a different form of an issue we have encountered before – the difficulty of administered price systems. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1601464

Lawton R. Burns and Mark V. Pauly, "Accountable Care Organizations May Have Difficulty Avoiding the Failures of Integrated Delivery Networks of the 1990's," Health Affairs, November 2012, 31(11):2407-16. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/11/2407.full.pdf A skeptical view of the enthusiasm for ACO's and a reminder that delivery system reform is not easy. Although this paper was written several years ago, the subsequent McWilliams, et al. papers appear to justify their skepticism. The appendix to the online version is an excellent bibliography on several different techniques of medical management and other topics bearing on the organization of the delivery system, including care coordination, disease management, patient centered medical homes, health IT, clinical decision support, computerized order entry, electronic health records, PCP's, physician practice organizations, providers' experience with strategic and organizational change, retail clinics, specialty hospitals (Class 5), ambulatory surgery centers (Class 5), transitional care programs, and the triple aim. It's a lengthy list!

J. Michael McWilliams, Bruce E. Landon, Michael E. Chernew, and Alan M. Zaslavsky, "Changes in Patients' Experiences in Medicare Accountable Care Organizations," New England Journal of Medicine, October 30, 2014, 371(18):1715-24. Using differences-in-differences, this paper shows improvements in the patient-reported measures of timely access to care and their PCP being informed about their specialty care before and after attribution to an ACO. Other consumer-reported measures were unchanged. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa1406552

Hoangmai H. Pham, John Pilotte, Rahul Rajkumar, Elizabeth Richter, Sean Cavanaugh, and Patrick H. Conway, "Medicare's Vision for Delivery-System Reform," New England Journal of Medicine, September 10, 2015, 373(11):987-90. A statement of the Obama

Administration's CMS's principles for the ACO program. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1507319

J. Michael McWilliams, Bruce E. Landon, and Michael E. Chernew, "Changes in Health Care Spending and Quality for Medicare Beneficiaries Associated with a Commercial ACO Contract," JAMA, August 28, 2013, 310(8):829-36. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1733718 Similar in spirit to the Baker and Baicker, et al papers above on spillovers from MA to TM, this paper shows positive spillovers from the Alternative Quality Contract onto Medicare beneficiaries.

Paul Markovich, "A Global Budget Pilot Project Among Provider Partners and Blue Shield of California Led to Savings in the First Two Years," Health Affairs, September 2012, 31(9):1969-76. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/9/1969.full.pdf+html Describes a project similar to the Alternative Quality Contract (Song, et al., above) involving an insurer, a physician group, and a hospital chain in the Sacramento area. Results showed savings, roughly of the same magnitude as the Alternative Quality Contract.

The slides allude to the tension between the potential for greater efficiency and better outcomes from increased vertical and horizontal integration in health care on the one hand, and the potential for pricing abuses in the commercial market from the accumulation of market power. If you want to read more on this, read:

Robert Berenson, Paul B. Ginsburg, and Nicole Kemper, "Unchecked Provider Clout in California Foreshadows Challenges to Health Reform," Health Affairs, April 2010, 29(4):699-705. They raise concern about ACO's market power raising prices to private payers, and, based on what they see as the recent ineffectiveness of antitrust policy, they propose regulatory approaches such as price caps or all-payer rate setting. I view the antitrust experience as more mixed than Berenson, et al., e.g., the Evanston Hospital case http://www.ftc.gov/opa/2007/08/evanston.shtm and also the Michigan Blue Cross case (Class 11), which resulted in settlements for the government and for private plaintiffs.

Katherine Baicker and Helen Levy, "Coordination versus Competition in Health Care Reform," New England Journal of Medicine, August 29, 2013, 369(9):789-91. Describes the tension between the policy goals of greater coordination of patient care and greater price competition.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1306268?query=featured_home

Gary E. Bacher, Michael E. Chernew, Daniel P. Kessler, and Stephen M. Weiner, "Regulatory Neutrality Is Essential to Establishing a Level Playing Field for Accountable Care Organizations," Health Affairs, August 2013, 32(8): 1426-32.
http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/32/8/1426.full.pdf+html
Points out need for neutrality between Medicare Advantage and Accountable Care Organizations in antitrust, solvency, governance, and reimbursement. Although some envision that successful ACO's taking partial risk would evolve into Medicare Advantage

plans that take full risk, the current non-neutral regulatory environment may inhibit this.

Sara Singer and Stephen M. Shortell, "Implementing Accountable Care Organizations: Ten Potential Mistakes and How to Learn from Them," JAMA, August 17, 2011, 306(7):758-9. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/306/7/758.short Some cautionary notes.

Francois deBrantes, Meredith B. Rosenthal, and Michael Painter, "Building a Bridge from Fragmentation to Accountability – The Prometheus Payment Model," New England Journal of Medicine, September 10, 2009, 361(11):1033-6. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp0906121 Describes a model for episode based payment.

**CLASS 19 – COMPARATIVE EFFECTIVENESS RESEARCH (November 11)**

**Reminder! Second testimony due before next class.**

**In the late 1980s and early 1990s "outcomes research," meaning how alternative treatment methods affected outcomes, was widely touted as a silver bullet to improve quality and/or lower cost. Outcomes research has now been renamed "comparative effectiveness research," which in principle is to lead to greater knowledge of what is effective treatment for whom and thereby enhance "evidence-based medicine" and "value for money" in health care. ARRA, the stimulus bill of 2009, substantially increased the funding for comparative effectiveness research, and the ACA established the Patient-Centered Outcomes Research Institute (PCORI, see slides) to continue this work.**

**The McClellan, et al. paper nicely illustrates what I think is the main methodological hurdle that comparative effectiveness or outcomes research faces, namely selection or the non-random allocation of treatments in observational data, together with a way to address it in some cases – but most assuredly not in all. The pervasiveness of selection in observational data has limited progress in comparative effectiveness research. I think progress likely will continue to be slow, although slow does not mean no progress; see for example Sanghavi, et al. in the Optional reading. The instrumental variable methods McClellan, et al. use illustrate how one can make causal inferences with observational data if certain conditions are satisfied. This part of the class thus relates back to Class 3 on methods used to study demand for medical care. Many of the slides for this class go over the McClellan, et al. article, focusing on its methodology, as well as problems in the alternative to the use of observational data, the randomized controlled trial.**

**Mark McClellan, Barbara J. McNeil, and Joseph P. Newhouse, "Does More Intensive Treatment of Acute Myocardial Infarction Reduce Mortality?" JAMA, 272(11), September 21, 1994, 859-866. This was the first attempt to take the econometric technique of instrumental variables and apply it in a health services research context. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/272/11/859**

**Randall S. Stafford, Todd H. Wagner, and Philip W. Lavori, "New But Not Improved?**

**Incorporating Comparative-Effectiveness Information into FDA Labeling," New England Journal of Medicine, September 24, 2009, 361(13):1230-3. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp0906490 Advocates for active comparator versus placebo-controlled trials; see the slides.**

**Ruth R. Faden and Kalipso Chalkidou, "Determining the Value of Drugs – The Evolving British Experience," New England Journal of Medicine, April 7, 2011, 364(14):1289-91. Whatever cost-effectiveness means in theory, in practice it turns out not to be formulaic. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1101047**

OPTIONAL:

A standard textbook treatment of Instrumental Variables is in James H. Stock and Mark W. Watson, Introduction to Econometrics, Boston: Addison-Wesley, 2012, chapter 12. One of their examples is the McClellan, et al. paper. Another description is in Joshua D. Angrist and Jörn-Steffen Pischke, Mostly Harmless Econometrics: An Empiricist's Companion, chapter 4. http://www.development.wne.uw.edu.pl/uploads/Main/recrut_econometrics.pdf. Angrist and Pischke is an excellent book, but should be read after one has a basic understanding of econometrics. A journal length introduction to instrumental variables is Michael P. Murray, "Avoiding Invalid Instruments and Coping with Weak Instruments," Journal of Economic Perspectives, Fall 2006, 20(4):111-32. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/jep.20.4.111

Prachi Sanghavi, Anupam B. Jena, Joseph P. Newhouse, and Alan M. Zaslavsky, "Outcomes of Basic versus Advanced Life Support for Out-of-Hospital Medical Emergencies," Annals of Internal Medicine, November 3, 2015, 163(9):681-90. Like McClellan, et al., this paper illustrates the application of instrumental variables (IV) in comparative effectiveness analysis, in this case outcomes with basic versus advanced life support ambulances. Interestingly in this application IV is probably not necessary because there appears to be little selection in the observational data; an advanced life support ambulance would typically be dispatched for the specific medical problems this paper studied if such an ambulance is available, and availability should be independent of any unobserved severity of the individual case conditional on the medical problem such as cardiac arrest. In addition to a propensity score analysis, the paper shows results from using as an instrumental variable the proportion of other types of serious cases treated by advanced life support ambulances in the county to infer that basic life support ambulances get better results than advanced life support ambulances. (The results from the propensity score analyses are qualitatively similar to the IV analyses for all diagnoses except AMI.) The main idea is to use the proportion of advance life support ambulances serving other types of medical problems than the problem the individual person has (this is strongly related to the proportion of advanced life support ambulances in the county's stock of ambulances), so that any unobserved severity of the individual's case is not associated with the likelihood of using advanced life support for his or her case. If you read this paper, it is important for you to understand why the quantitative results are not the same with the propensity score methods as with the IV methods. http://annals.org.ezp-prod1.hul.harvard.edu/issue.aspx?journalid=90&issueid=934638&direction=P

Laura Faden Garabedian, Paula Chu, Sengwee Toh, Alan M. Zaslavsky, and Stephen B. Soumerai, "Potential Bias of Instrumental Variable Analyses for Observational Comparative Effectiveness Research," Annals of Internal Medicine, July 15, 2014, 161(2):131-8. These authors make the point that IV has been overused, or more precisely used in situations where the assumptions are unlikely to hold. Moreover, although they are critical of the use of distance as an IV because of potential confounding, I am not much concerned about that criticism in the context of McClellan, et al. since heart attack patients are generally rushed to a nearby hospital and treated there, and the distribution of severity of heart attacks, the principal determinant of a fatal outcome, is probably not strongly associated with socio-economic variables. Nor am I concerned about the criticism in the case of Sanghavi, et al. But the paper should serve as a reminder that every methodological approach has potential weaknesses and needs to be evaluated on the degree to which those weaknesses apply to any specific study. http://annals.org.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1887030&resultClick=3

David Cutler, "The Lifetime Costs and Benefits of Medical Technology," Journal of Health Economics, December 2007, 26(6): 1081-1100. Cutler updates the McClellan, et al. 1994 paper using 17 years of followup. After 17 years, revascularization and/or its associated treatments with circa 1987 technology look like a good deal. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629607000586

Mary E. Tinetti and Stephanie A. Studenski, "Comparative Effectiveness Research and Patients with Multiple Chronic Conditions," New England Journal of Medicine, June 30, 2011, 364(26):2478-81. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1100535 Read this paper if you want to focus on the difficulties of handling comorbidities in CER.

The next several papers take up the relationship of the clinical trial literature and comparative effectiveness research.

Justin Timbie, Eric C. Schneider, Kristin van Busum, and D. Steven Fox, "Five Reasons that Many Comparative Effectiveness Studies Fail to Change Patient Care and Clinical Practice," Health Affairs, October 2012, 31(10):2168-75. Deals with why clinical trials frequently do not change practice; their first reason is economic incentives. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/31/10/2168.full.pdf+html

David Howard and Yu-Chu Shen, "Comparative Effectiveness Research, COURAGE, and Technological Abandonment," National Bureau of Economic Research Working Paper WP17371, August 2011. http://www.nber.org.ezp-prod1.hul.harvard.edu/papers/w17371 A natural follow on to Timbie, et al. above. Although many have touted the expected benefits of CER, Howard and Shen find little effect in one example.

Katharine Cooper Wulff, Franklin G. Miller, and Steven D. Pearson, "The Ongoing Saga of Vertebroplasty: Can Coverage Be Rescinded When Negative Trial Results Threaten A

Popular Procedure?" Health Affairs, December 2011, 30(12):2269-76. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/30/12/2269.full.pdf+html A rather dark view of the possibilities for benefit from CER.

Adam Elshaug and Alan M. Garber, "How CER Could Pay for Itself – Insights from Vertebral Fracture Treatments," New England Journal of Medicine, April 14, 2011, 364(15):1390-3. http://www.nejm.org/doi/pdf/10.1056/NEJMp1101475 A sunnier view of the same set of facts as in the prior paper.

David M. Kent and Rodney A. Hayward, "Limitations of Applying Summary Results of Clinical Trials to Individual Patients: The Need for Risk Stratification," JAMA, September 12, 2007, 298(10):1209-12. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/298/10/1209.short Emphasizes that an estimate of the average treatment effect may not be useful to the clinician.

Daniel F. Martin, Maureen G. McGuire, and Stuart L. Fine, "Identifying and Eliminating Roadblocks to Comparative-Effectiveness-Research," New England Journal of Medicine, July 8, 2010, 363(2):105-7. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1001201 Passing a law and appropriating funds is hardly the end of the story when it comes to getting comparative effectiveness research actually carried out. This short paper comes from a group carrying out a high priority CER trial and describes the roadblocks they encountered from the government.

**CLASS 20 –THE LAW OF TORTS AND PROFESSIONAL LIABILITY/MALPRACTICE (even the terminology here is loaded!) (November 16). (Second testimony due before class)**

**The American plaintiff's bar believes they are an agent for quality improvement. Much of the public seems to agree, although virtually all physicians feel otherwise. Whichever view one takes, I believe it is important to understand the role that the law of torts plays in US health care. The law of torts is part of American civil law, which derives from English common law, and similar law applies in the UK and British Commonwealth countries such as Canada.**

**Daniel Kessler, "Evaluating the Medical Malpractice System and Options for Reform," Journal of Economic Perspectives, Spring 2011, 25(2):93-110. http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.2.93 A good introduction to this topic.**

**David M. Studdert, Michele M. Mello, Atul Gawande, Tejal K. Ghandi, Allen Kachalia, Catherine Yoon, Ann Louise Puopolo, and Troyen A. Brennan, "Claims, Errors, and Compensation Payments in Medical Malpractice Litigation," New England Journal of Medicine, 354:19, May 11, 2006, pp. 2024-2033. The legal system does a reasonable, albeit expensive job of distinguishing negligent and non-negligent cases, once cases are filed, and filing is often the only way for a plaintiff's attorney to determine if there is negligence or not. http://content.nejm.org.ezp1.harvard.edu/cgi/reprint/354/19/2024.pdf**

**Thomas L. Schwenk, "The Moment of Truth," JAMA, February 12, 2014, 311(6):573-4. A short note describing the stress of a physician who is a defendant in a malpractice suit. The stress is undoubtedly a main reason why tort reform is a high priority of organized medicine. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1829688**

OPTIONAL:

If you want some empirical evidence on state dependent utility beyond what is in the slides, read one or both of the following:

Amy N. Finkelstein, Erzo Luttmer, and Matthew Notowidigdo, "Approaches to Estimating the Health State Dependence of the Utility Function." American Economic Review, May 2009, 99(2):116-21. http://search.proquest.com.ezp-prod1.hul.harvard.edu/docview/855744318/fulltextPDF/698433E1EB4843CAPQ/18?accountid=11311 There is a longer discussion of the issue by the same authors with the title "What Good Is Wealth Without Health? The Effect of Health on the Marginal Utility of Consumption," NBER Working Paper 14089 (http://www.nber.org/papers/w14089).

Moshe Levy and Adi Rizansky Nir, "The Utility of Health and Wealth," Journal of Health Economics, March 2012, 31(2):379-92. This paper shows that data from cancer and diabetes patients support a utility function of the form U = health * log(wealth), which is consistent with the Finkelstein, et al. finding that better health increases the marginal utility of wealth. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629612000100/1-s2.0-S0167629612000100-main.pdf?_tid=a6613d2c-2222-11e4-a684-00000aacb361&acdnat=1407849474_66fac669b1718c75d43333004e6bf301

The next two readings are books that go into malpractice in much greater depth than the required reading. I used to require one of the two books, but the length of the reading list together with the availability of the Kessler survey has led me to make them Optional. Even though the books are now many years old, tort law in the area of medical malpractice has not much changed, and for any of you writing testimony on malpractice/professional liability, it would be a good idea to at least dip into one of these books, as well as into some of the articles that follow.

Paul C. Weiler, Medical Malpractice on Trial, Cambridge: Harvard University Press, 1991. A non-technical book that covers the subject.

Patricia Danzon, Medical Malpractice, Cambridge: Harvard University Press, 1985, Chapters 1-4, 7, 8, 12, 13. Those who want a more formal economic approach will prefer this book to Weiler's (Weiler is a lawyer, Danzon is an economist), but be warned, Danzon's writing style is considerably denser than Weiler's. A more distilled version is Danzon's chapter in the Handbook of Health Economics, vol. 1. The slides make some use of Danzon's exposition.

David M. Studdert, Marie M. Bismark, Michelle M. Mello, Harnam Singh, and Matthew J. Spittal, "Prevalence and Characteristics of Physicians Prone to Malpractice Claims," New England Journal of Medicine, January 28, 2016, 374(4):354-62. Some evidence for the "bad apple" theory; about 1% of physicians account for 32% of paid claims. Over a 10-year period 84% of physicians with a claim had only one claim; 4% had at least 3 claims. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa1506137

Michelle Mello, Michael Frakes, Erik Blumenkranz, and David M. Studdert, "Malpractice Liability and Health Care Quality: A Review," JAMA, January 28, 2020, 323(4)352-66. A qualitative review of 37 studies, many of which do not find an effect of the malpractice system on quality. The authors conclude that "collectively this body of evidence is enough to support a conclusion that higher tort liability risk is not systematically associated with safer or high-quality care in the hospital setting." I judge that to be a strong conclusion given that studies with the physician as the unit of observation will miss those who have exited because of claims against them and those with the hospital or area as the unit of observation may lack power.

Paul C. Weiler, Howard H. Hiatt, Joseph P. Newhouse, Troyen A. Brennan, Lucian L. Leape, and William G. Johnson, A Measure of Malpractice: A Study of Medical Injury, Malpractice Litigation, and Patient Compensation; Cambridge: Harvard University Press, 1993. This book summarizes the methods and results from the Harvard Medical Practice Study to which Kessler refers and from which many of the following papers are derived.

A. Russell Localio, et al., "Relation Between Malpractice Claims and Adverse Events Due to Negligence," New England Journal of Medicine, 325:4, July 25, 1991, 245-251. http://www.nejm.org/doi/full/10.1056/NEJM199107253250405 The tort system is noisy, though the later evidence from Studdert, et al. in the required reading (and reproduced in the slides) is that it is less noisy than this paper suggests, probably because Localio, et al., is based on a much smaller sample than Studdert, et al. Not surprisingly, the risk of any claim and of multiple claims is strongly related to specialty.

Troyen A. Brennan, Carol M. Sox, and Helen R. Burstin, "Relation between Negligent Adverse Events and the Outcomes of Medical-Malpractice Litigation," New England Journal of Medicine, 335, December 26, 1996, 1963-7. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJM199612263352606 Based on a small sample, outcome at tort appears in practice to depend upon the severity of disability rather than negligence on the part of the physician.

H. Benjamin Harvey and I. Glenn Cohen, "The Looming Threat of Liability for Accountable Care Organizations and What to Do About It," JAMA, July 10, 2013, 310(2):141-2. Lays out issues of potential liability for ACO's. As best I can tell, these concerns have mostly not materialized. http://jama.jamanetwork.com.ezp-prod1.hul.harvard.edu/article.aspx?articleid=1697985

Allen Kachalia and Michelle M. Mello, "New Directions in Medical Liability Reform,"

New England Journal of Medicine, April 21, 2011, 364(16):1564-72. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMhpr1012821 A summary of the empirical literature as of early 2011.

Michelle Mello, Amitabh Chandra, Atul Gawande, and David Studdert, "National Costs of the Medical Liability System," Health Affairs, September 2010, 29(9):1569-77. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/29/9/1569.full.pdf+html Reaches an estimate that malpractice system accounts for 2.4% of total health spending. Several cites to relevant literature. Note that both this study and Kessler say there is no evidence on the deterrence effect (but see Currie and MacLeod below).

The next five papers are some of the stronger empirical papers in the literature on defensive medicine.

Daniel Kessler and Mark McClellan, "Do Doctors Practice Defensive Medicine?" Quarterly Journal of Economics, May 1996, 111(2): 353-90. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/111/2/353.full.pdf+html The cost of defensive medicine is notoriously hard to pin down. This paper finds that changes in liability law appear to affect the cost of treating AMI without measurable effects on outcomes, thus offering some evidence of the cost, but in a limited area.

Daniel Kessler and Mark B. McClellan, "How Liability Law Affects Medical Productivity," Journal of Health Economics, 21(6), November 2002, pp. 931-955. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0167629602000760 Stronger evidence of defensive medicine than in the preceding paper.

Katherine Baicker, Elliott S. Fisher, and Amitabh Chandra, "Malpractice Liability Costs and the Practice of Medicine in the Medicare Program," Health Affairs, May/June 2007, 26(3):841-52. Another paper on defensive medicine, using a fixed-effects model with states as the unit of observation to explain growth in Medicare spending as a function of growth in malpractice premiums. They estimate an elasticity of total Medicare spending with respect to malpractice premiums of 0.1. On the basis of their estimate, they conclude that the 60% growth in malpractice premiums between 2000 and 2003 might have caused total health care spending to rise 6%. This three-year period, however, was a period of very rapid growth in malpractice premiums; from 1993-2001 real premiums only rose about 1% per year. They also find imaging and evaluation and management services are the most responsive to variation in malpractice premiums. Although they don't note it, the results on imaging and to a lesser degree on evaluation and management are helpful because they strengthen a defensive medicine interpretation. Because areas with higher rates of procedures will have more patient injuries and likely more claims, causality could go from procedures to malpractice premiums, but this will mostly not be the case for imaging (there can be claims for failure to diagnose) and mostly not for evaluation and management (also with the exception of claims for failure to diagnose).http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/26/3/841.abstract

Ronen Avraham and Max Schanzenbach, "The Impact of Tort Reform on Intensity of Treatment: Evidence from Heart Patients," Journal of Health Economics, January 2015, 39:273-88. Finds that caps on non-economic damages decrease the frequency of angioplasty or CABG, which the authors interpret as a reduction in defensive medicine, and shift the mix of the two toward CABG, which is the riskier procedure and hence more likely to lead a malpractice claim. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629614000988/1-s2.0-S0167629614000988-main.pdf?_tid=6870eeb6-bba3-11e4-973e-00000aab0f6b&acdnat=1424727303_8c4cdd43ce7ea68a520405fb6247e36e

Michael Frakes and Jonathan Gruber, "Defensive Medicine: Evidence from Military Immunity," American Economic Journal: Economic Policy, August 2019, 11()3):197-231. https://www-aeaweb-org.ezp-prod1.hul.harvard.edu/articles?id=10.1257/pol.20180167 Exploits the fact that active duty military treated in military facilities do not have the right to sue, but when treated in civilian facilities they do have the right to sue, as do their dependents irrespective of treatment site. They find about a 5% decrease in length of stay for active duty military treated in military facilities, compared with comparable patients who have the right to sue. They also find similar results looking at changes after the closure of a hospital on a military base.

Janet Currie and W. Bentley MacLeod, "First Do No Harm? Tort Reform and Birth Outcomes," Quarterly Journal of Economics, May 2008, 123(2):795-830. Shows deterrence appears to work for obstetrics. Reform of the joint and several liability rule to say that a defendant must be responsible for some minimum share of the harm to be liable (this is modeled as an increased share of the liability the obstetrician faces) leads obstetricians to perform fewer Cesarean sections and fewer inductions, which results in fewer complications, whereas damage caps cause the opposite. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/123/2/795.short

Laurence R. Tancredi and Randall R. Bovbjerg, "Creating Outcomes-Based Systems for Quality and Malpractice Reform: Methodology of Accelerated Compensation Events(ACEs)," Milbank Memorial Fund Quarterly, 1992;70(1):183-216. http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/3350089. One type of no-fault alternative to tort.

Michelle M. Mello and Thomas H. Gallagher, "Malpractice Reform – Opportunities for Leadership by Health Care Institutions and Liability Insurers," New England Journal of Medicine, April 15, 2010, 362(15):1353-6. Sketches three versions of "disclose-and-offer" models, in which the health care institution admits error, apologizes, offers compensation, and uses the results to improve safety going forward. This approach has the virtue that it can be implemented by health care institutions without legislation and may be a way around the legislative impasse over tort reform. Kessler in the required reading comments on this reform. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1001603

Allen Kachalia, Samuel R. Kaufman, Richard Boothman, Susan Anderson, Kathleen Welch, Sanjay Saint, and Mary A.M. Rogers, "Liability Claims and Costs Before and After

Implementation of a Medical Error Disclosure Program," Annals of Internal Medicine, August 17, 2010, 153(4):213-21. Both claims and compensation fell from a disclose-and-offer program. http://annals.org.ezp-prod1.hul.harvard.edu/article.aspx?articleid=745972

David M. Studdert, Matthew J. Spittal, Michelle M. Mello, A. James O'Malley, and David G. Stevenson, "Relationship between Quality of Care and Negligence Litigation in Nursing Homes," New England Journal of Medicine, March 31, 2011; 364, 1243-50. http://www.nejm.org/doi/pdf/10.1056/NEJMsa1009336 Poorly performing nursing homes are more likely to be sued, but not much more likely than well performing homes.

Aaron Kesselheim, "Safety, Supply, and Suits – Litigation and the Vaccine Industry," New England Journal of Medicine, April 21, 2011, 364(16):1485-7. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1102182 Describes the no-fault system in place for vaccine-related injuries.

***The Profession versus the Market***

**Thomas H. Lee and Troyen A. Brennan, "Direct-to-Consumer Marketing of High-Technology Screening Tests," New England Journal of Medicine, 346(7), February 14, 2002, 529-531. http://content.nejm.org.ezp1.harvard.edu/cgi/reprint/346/7/529.pdf**
**I have put this article, which raises issues around quality of care, on the reading list for you to think about, although it is a departure from the other reading in the past several classes on quality of care and is unrelated to tort law. Lee and Brennan argue that medical care should not be like any other consumer good and specifically that consumers should not be allowed to spend their own money on the tests that they discuss in the paper. Setting aside issues of enforceability, the case that the consumer should not be allowed to make a mistake is clearly strengthened by the argument that in the specific cases they take up there is really no advantage to the consumer (and several disadvantages) to buying the good in question. The authors, however, go on to argue that the profession of medicine is different than other suppliers of goods and services and that it "should act in a unified fashion when faced with critical choices," which I interpret to mean consumer sovereignty can be trumped by professionalism. How would this argument be applied (or should it apply?) if there were some small, but real benefit to these tests? Also, does "acting in a unified fashion" mean medicine should be exempt from antitrust laws? (On my reading of American law, it is now settled law that professions are not exempt, so this last question is very much a hypothetical.) Even if medicine should be exempt, is it at all realistic to think that 800,000+ American physicians in patient care would act in a unified fashion on decisions to administer a non-invasive test where the likelihood of a malpractice claim is much lower than the likelihood of a false positive? More generally, how does a profession with its own norms and ethics fit into a market system?**

OPTIONAL:

Donald M. Berwick, "The Epitaph of Profession," British Journal of General Practice, e-publication. This short essay is something of a counterpoint to Lee and Brennan and is **strongly recommended** for mid-career MDs. Berwick, an international leader in quality

improvement efforts, was Acting Administrator of CMS in the first Obama administration and was knighted by the Queen for his efforts to improve care in the British National Health Service (one of four Americans ever to have been knighted at the time he was knighted).
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2629825/pdf/bjgp59-128.pdf/?tool=pmcentrez

Troyen A. Brennan, "Luxury Primary Care – Market Innovation or Threat to Access?" New England Journal of Medicine, April 11, 2002, 346(15), 1165-1168.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/nejm200204113461513
Another paper taking up the tension between professional ethics and the market. Read this if you are interested in the issues raised by the Lee and Brennan paper.

Those interested in this topic may also enjoy reading a famous exchange of letters between Arnold S. (Bud) Relman, at that time the editor of the New England Journal of Medicine, and Uwe Reinhardt, "Debating For-Profit Health Care and the Ethics of Physicians," Health Affairs, Summer 1986, 5(2):5-31. http://www.healthaffairs.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.5.2.5

**CLASS 21 - PHYSICIAN WORKFORCE ISSUES AND SOME CLOSING THOUGHTS (November 18) (second testimony due before class)**

***Physician Workforce***

**The slides present an economic framework for thinking about physician workforce issues. From this framework I conclude that workforce planning as usually conceived is virtually an impossible problem in practice, a view I think is consistent with the experience in this domain, which I sketch below.**

**One part of the economic framework emphasizes the possibility of substituting allied health personnel such as physician assistants and nurses for physicians in producing medical services, an idea first developed by the late Uwe Reinhardt in his PhD dissertation in the 1960s. (See Reinhardt's paper on the Optional list.) Although there has certainly been some substitution (the number advanced practice nurses, including nurse midwives and nurse anesthetists, has grown substantially over the past decade; see the slides), in several states the medical profession has been able to maintain entry barriers by lobbying at the state level for practice restrictions through scope-of-practice laws that preclude or severely limit independent practice by allied health personnel, an example of government failure. See Frogner, et al. on the Optional reading list. Surprisingly, much of the academic literature on workforce policy has ignored substitution possibilities and simply focused on physician/population ratios, although substitution is now receiving more mentions as a means to address the presumed shortage of primary care physicians (PCP's).**

**In addition to an economic framework about total numbers of physicians, the slides also present an economic framework for analyzing the geographic and specialty distribution of physicians. Current US (and many other countries as well) policy is based on the view that**

**the market fails in both domains; I do not believe the market fails in the geographic domain, as is made clear in the reading below. As for the specialty domain, we may not like the results the market produces, but those results seem to stem from a combination of administered prices and the market power of various specialties. The slides also cover why the view developed that the market fails for geographic distribution; I think that view has persisted largely for reasons of political economy.**

**The slides also give one person's view (mine ☺) of the history of the physician workforce issue in the US. In 1968, based in part on an analysis by the 1967 National Health Manpower Commission that declared there was a shortage of physicians, the US began to subsidize the construction of new medical schools and to offer financial incentives to existing medical schools to increase the number of students enrolled (PL 90-490, the Health Manpower Act of 1968). (An earlier 1963 Act was the first federal aid for medical schools, but the amount of aid was modest by the standards of the 1968 Act.) Medical schools responded to these incentives, with the result that the number of US medical school graduates *doubled* over a period of about eight years, with consequences that remain to this day.**

**Only a few years later, in the early 1970s, the focus of the workforce debate changed from a presumption of a general shortage to a view that total numbers were now adequate, even though the actual stock of physicians had little changed. Although total numbers were now perceived as adequate, the new view was that physicians were maldistributed by specialty and geography, specifically not enough primary care physicians (this argument can also be found in the 1967 Health Manpower Commission Report) and too many physicians in metropolitan areas and too few in rural areas. The two issues of specialty and geographic maldistribution have echoed through the debate ever since. The Council on Graduate Medical Education (COGME), a federally appointed group, for many years recommended in its annual reports that 50 percent of American physicians should be generalists (the actual number has been under 40 percent for many years; see the slides), although starting in its 2005 report COGME backed away from this view. In response to the concerns about geographic distribution, the federal government has implemented relatively small scale interventions (small by comparison with federal payments for physician services in Medicare and Medicaid), such as the National Health Service Corps and modestly higher Medicare payments in "shortage" areas.**

**The generalist-specialist debate surfaced in the ACA debate (as it did in the failed 1993 Clinton reform) as a concern over whether there would be enough primary care physicians if insurance coverage were substantially expanded. There were echoes of this controversy in the Cooper-Dartmouth controversy in the Class 16 reading.**

**Returning to the issue of the adequacy of the total number of physicians, by the late 1970s the debate took another turn. Even though the doubling of the flow of medical school output had not yet much affected the total stock of physicians (the initial larger cohorts were just coming out of residency, although a substantial number of international medical school graduates were starting to appear on the scene, giving rise to yet another controversy in the workforce domain about international medical graduates and the "brain drain"), the Graduate Medical Education National Advisory Committee (GMENAC), using very different analytical methods from the 1967 National Commission, concluded there would be a growing**

**physician surplus that would become very large by the year 2000. Talk of physicians having to drive taxicabs to earn a living was bandied about in health policy cocktail party conversations in the early 1980s. The future surplus view propounded by GMENAC dominated policy thinking until sometime in the 1990s, although there were a few dissenting voices in the 1980s that did not much affect policy. (Cooper, et al., below, attribute the ending of federal subsidies for undergraduate medical education to the GMENAC analysis predicting a surplus of MDs, but I think it is fairer to attribute the ending of those subsidies to the general hostile attitude of the Reagan administration to discretionary domestic spending.) Starting in the mid-1990s, with no sign of a physician surplus on the horizon, some started talking again about a physician shortage, and even a shortage of specialists. That view has now become widespread, especially with the ACA's expansion of insurance, and, as you can see in the slides, both allopathic and osteopathic school enrollments have started to rise in recent years and new schools have opened.**

**The aficionado and historian in this area might want to read the reports of the 1967 Commission and the GMENAC, mostly to see what passed for policy analysis in an earlier era, but I have not found them on the web and so assume they are not readily accessible today. The slides reiterate some of this extended history in part to give you a flavor of methods in past policy analysis studies and how they can influence conclusions and policy.**

**Although this class is on the physician workforce, there is also a large literature on nurses and nursing labor markets, some of which is pertinent to minimum nurse staffing requirements in some jurisdictions, most notably California. Limitations of time have led me to leave that important topic out of the course. For those interested, I included two readings in the Optional reading.**

**There is also the controversy around Medicare Graduate Medical Education (GME) payments, which is relevant for policy toward workforce, but because Class 5 covered that issue, I do not revisit it here.**

**David Blumenthal, "New Steam from an Old Cauldron – The Physician Supply Debate," New England Journal of Medicine, 350(17), April 22, 2004, pp. 1780-1787. http://content.nejm.org.ezp1.harvard.edu/cgi/reprint/350/17/1780.pdf An excellent historical overview and analysis, although in my view it gives too short shrift to the role of the 1967 National Health Manpower Commission in actually influencing policy. Blumenthal, a former MD-MPP, is now the President of the Commonwealth Fund.**

**The following two papers bring the debate more up to date; where do you come out?**

**Emily Gudbranson, Aaron Glickman, and Ezekiel J. Emanuel, "Reassessing the Data on Whether a Physician Shortage Exists," JAMA, May 16, 2017, 317(19):1945-6. http://jamanetwork.com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2613209**

**Darrell G. Kirch and Kate Petelle, "Addressing the Physician Shortage: The Peril of Ignoring Demography," JAMA, May 16, 2017, 317(19)1947-8. http://jamanetwork.com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2613210**

**Richard A. Cooper, Thomas E. Getzen, Heather J. McKee, and Prakash Laud, "Economic and Demographic Trends Signal an Impending Physician Shortage," Health Affairs, January/ February 2002, 22(1): 140-154. http://search.epnet.com.ezp1.harvard.edu/login.aspx?direct=true&db=aph&an=6115974&loginpage=Login.asp&scope=site For several years before this paper Cooper was a leading proponent of the view that there was no physician surplus. If you want to get a flavor of some of the "steam" of Blumenthal's title, read some of the "Perspectives" that immediately follow Cooper et al. in the same issue as the assigned paper. Cooper, et al.'s methods are in the same spirit as the 1967 Commission in projecting historical trends in demand forward.**

OPTIONAL:

A review of the economic literature on workforce is Carol Propper and Sean Nicholson, "Medical Workforce," in Handbook of Health Economics, vol. 2; eds. Thomas G. McGuire, Mark V. Pauly, and Pedro Pita Barros; Amsterdam: Elsevier, 2012. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/B978044453592400013X.

A short paper on scope-of-practice laws is Bianca K. Frogner, Erin P. Fraher, Joanne Spetz, Patricia Pittman, Jean Moore, Angela J. Beck, David Armstrong, and Peter I. Buerhaus, "Modernizing Scope-of-Practice Regulations – Time to Prioritize Patients," New England Journal of Medicine, February 13, 2020, 382(7):591-3. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1911077

The next two articles highlight a debate on whether there should be workforce policy or attempts to intervene in the market at all.

Kevin Grumbach, "Fighting Hand-to-Hand Over Physician Workforce Policy," Health Affairs, September/October 2002, 21(5), pp. 13-27. http://search.epnet.com.ezp1.harvard.edu/login.aspx?direct=true&db=aph&an=9580856&loginpage=Login.asp&scope=site Grumbach advocates workforce planning and recounts the history of this issue in the 20th century. He does predict that the US is headed back to what he terms a "retail" market for physician labor; almost two decades later I'm not sure how many would agree with him on that point, especially in light of the increased proportion of employed physicians. Note also that he asserts teaching hospitals are "utterly dependent" on Medicare GME dollars to fund residencies (see Class 5).

Uwe Reinhardt, "Dreaming the American Dream: Once More Around on Physician Workforce Policy," Health Affairs, September/October 2002, 21(5), pp. 28-32. http://search.epnet.com.ezp1.harvard.edu/login.aspx?direct=true&db=aph&an=9580857&loginpage=Login.asp&scope=site A response to Grumbach; Reinhardt argues that with no overall policy control of demand in the US (but is that now on the horizon?) that workforce control is undesirable.

Eva M. Aagaard and Mona Abaza, "The Residency Application Process – Burden and Consequences," New England Journal of Medicine, January 28, 2016, 374(4):303-5. This isn't about total numbers, but rather the inefficiency of the medical education process and specifically the fourth year of medical school. It may be of particular interest to medical students and residents.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1510394

**Specialty Distribution:**

**Robert Kocher and Anuraag Chigurupati, "The Coming Battle Over Shared Savings – Primary Care Physicians versus Specialists," New England Journal of Medicine, July 14, 2016, 375(2):104-6. This paper makes the basic point that the shift toward risk- or value-based reimbursement will favor primary care physicians at the expense of specialists since the literature (e.g., the Song paper in Class 18) shows that type of reimbursement reduces use of specialists. Specialist income may well fall, but a) there isn't a lot of evidence of it yet; and b) it is more likely in larger markets where there is a possibility of competition among specialists.**

OPTIONAL:

Sean Nicholson, "Medical Career Choices and Rates of Return," in Incentives and Choice in Health Care, eds. Frank A. Sloan and Hirschel Kasper; Cambridge: MIT Press, 2008. Frames the issue in a standard labor economics framework.

Thomas Bodenheimer and Laurie Bauer, "Rethinking the Primary Care Workforce – An Expanded Role for Nurses," New England Journal of Medicine, September 15, 2016, 375(11):1015-7. Argues that with the absolute number of PCP's being constant to down going forward, nurses can and will increasingly take over primary care roles.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1606869

Gary S. Becker and Kevin M. Murphy, "The Division of Labor, Co-ordination Costs, and Knowledge," Quarterly Journal of Economics, 107(4), November 1992, pp. 1137-1160. http://qje.oxfordjournals.org.ezp-prod1.hul.harvard.edu/content/107/4/1137.short I put this paper here because the primary care physician has the role of coordination, and the difficulty and cost of that role clearly increases with the stock of knowledge. The logic of this paper is that there is an optimal degree of specialization, although how one would determine that empirically is not addressed.

David A. Kindig, James M. Cultice, and Fitzhugh Mullan, "The Elusive Generalist Physician: Can We Reach a 50% Goal?" JAMA, September 1, 1993, 270, pp. 1069-1073. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/270/9/1069.short A view, written during the earlier Clinton reform debate, that there are too few generalists. A quarter of a century later I think this remains the dominant view.

Richard A. Cooper, "Seeking a Balanced Physician Workforce for the 21st Century," JAMA, 272, September 7, 1994, 680-687. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/272/9/680.short A more skeptical view than Kindig, also

from the Clinton era, on specialty distribution.

Actual empirical work on the value of specialization is conflicting:

John Z. Ayanian, Mary Beth Landrum, Edward Guadagnoli, and Peter Gaccione, "Specialty of Ambulatory Care Physicians and Mortality among Elderly Patients after Myocardial Infarction," New England Journal of Medicine, 2002, 347(21):1678-86. Shows ambulatory treatment by cardiologists following a heart attack reduced mortality; i.e., in this case treatment by a specialist was better care. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMsa020080

Peter J. Pronovost, Derek C. Angus, Todd Dorman, Karen A. Robinson, Tony T. Dremsizov, Tammy L. Young, "Physician Staffing Patterns and Clinical Outcomes in Critically Ill Patients: A Systematic Review," JAMA, November 6, 2002, 288(17):2151-62. Specialists (intensivists) in ICU's reduce mortality 30-40%. http://jama.ama-assn.org.ezp-prod1.hul.harvard.edu/content/288/17/2151

Mitchell M. Levy, John Rapoport, Stanley Lemeshow, Donald B. Chalfin, Gary Phillips, and Marion Danis, "Association between Critical Care Physician Management and Patient Mortality in the Intensive Care Unit," Annals of Internal Medicine, June 3, 2008, 148(11):801-9. Specialists in ICU's increase mortality, contrary to Provonost, et al. http://www.annals.org.ezp-prod1.hul.harvard.edu/content/148/11/801.full

The following two papers are on nurse staffing mandates:

Andrew Cook, Martin Gaynor, Melvin Stephens Jr., and Lowell Taylor, "The Effect of a Hospital Nurse Staffing Mandate on Patient Health Outcomes: Evidence form California's Minimum Staffing Regulation," Journal of Health Economics, March 2012, 31(2):340-8. Minimum staffing legislation was binding but had no effect on the two patient outcomes studied. http://ac.els-cdn.com.ezp-prod1.hul.harvard.edu/S0167629612000069/1-s2.0-S0167629612000069-main.pdf?_tid=94442642-2738-11e5-92d2-00000aacb361&acdnat=1436556146_025b06c8c3da9cf491e0d47e939404ff

David I. Auerbach, Douglas O. Staiger, Ulrike Muench, and Peter I. Buerhaus, "The Nursing Workforce in an Era of Health Care Reform," New England Journal of Medicine, April 18, 2013, 368(16):1470-2. Predictions of nursing shortages do not seem to be coming true. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1301694

**Geographic Distribution:**

**Meredith Rosenthal, Alan Zaslavsky, and Joseph P. Newhouse, "The Geographic Distribution of Physicians Revisited," Health Services Research, December 2005, 40(6, Part I):1931-52. http://onlinelibrary.wiley.com.ezp-prod1.hul.harvard.edu/doi/10.1111/j.1475-6773.2005.00440.x/pdf This paper gives my views on the geographic distribution issue, which are contrary to almost all of the policy (but not the economics) literature, which favors the maldistribution and market failure notions. The papers in the policy literature generally rely**

**upon physician/population ratios by county or groupings of counties to demonstrate geographic maldistribution. As shown in this paper, such indicators are seriously flawed as measures of access to physician services. Interestingly, Grumbach's paper on the reading list above, which clearly is unsympathetic to a market-based approach to workforce policy generally, argues that the market does, and within reasonably broad limits should, determine geographic distribution.**

OPTIONAL:

David A. Wise and Christopher Zook, "Physician Shortage Areas and Policies to Influence Practice Location," Health Services Research, Summer 1983, 18(2), Part II, pp. 251-69. Finds little correlation between areas designated as physician shortage areas and more direct measures such as waiting times for an appointment, casting doubt on the rationale for designating shortage areas. Although they don't say so, the survey data they use came from the RAND Health Insurance Experiment, where the data were used to choose sites. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1068724/pdf/hsresearch00523-0006.pdf

Miron Stano, "An Analysis of the Evidence on Competition in the Physician Services Markets," Journal of Health Economics, September 1985, 4:197-211. http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/0167629685900293 Physicians seem to distribute themselves more widely as the number of physicians increases, consistent with standard location theory.

Catherine Dower and Edward O'Neill, "Primary Health Care Workforce in the United States," Princeton: Robert Wood Johnson Foundation, 2011. https://folio.iupui.edu/bitstream/handle/10244/983/070811.policysynthesis.workforce.rpt.pdf A statement of what I was and remains the mainstream policy view on this issue. Their main conclusion (the bold is in the original) is: "**Many individuals in the United States—particularly those in rural, frontier or underserved communities—experience challenges to obtaining primary health care.** Indeed, the maldistribution of primary care providers is a well-documented challenge for some regions and some populations, including children. …" If one reads through their report, however, the few cites they have that support this point are in fact consistent with standard location theory.

Kathleen C. Thomas, Alan R. Ellis, Thomas R. Konrad, Charles E. Holzer, and Joseph P. Morrissey, "County-Level Estimates of Mental Health Professional Shortage in the United States," Psychiatric Services, October 2009, 60(10):1323-8. An example of a paper that uses the county-level definitions from HRSA to infer shortages. http://ps.psychiatryonline.org.ezp-prod1.hul.harvard.edu/doi/full/10.1176/ps.2009.60.10.1323

**Closing Thoughts:**

**Meredith B. Rosenthal, "What Works in Market-Oriented Health Policy?" New England Journal of Medicine, May 21, 2009;360(21):2157-60. http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp0903166 Summarizes demand-side cost and**

**information strategies as well as reimbursement strategies. I think she underplays the potential for cost sharing to reduce iatrogenic services, especially among the employed population, but otherwise an overview of much of the course.**

**Caron Jacobson, Amy Emmert, and Meredith B. Rosenthal, "CAR-T Cell Therapy: A Microcosm for the Challenges Ahead in Medicare," JAMA, September 10, 2019, 322(10):923-4. I put this short paper at the end of the course to reprise the theme from Class 1 of cost as the most intractable problem in health care policy. As the authors say, if future advancements in CAR-T therapy, which is now effective for a relatively small number of cancer types and very costly, make the therapy effective for other types of cancers – and many expect that to happen –cost may force explicit rationing of care. This assumes unit costs don't markedly decrease with scale. https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2744409**

**Katherine Baicker and Amitabh Chandra, "Myths And Misconceptions About U.S. Health Insurance," Health Affairs, November/December 2008, 27(6):w533-43. http://content.healthaffairs.org.ezp-prod1.hul.harvard.edu/content/27/6/w533.full.pdf+html If you absorbed the course material, this should be mostly familiar territory. If it isn't, you get a second bite at the apple.**

**Linda J. Blumberg, et al., "Comparing Health Insurance Reform Options: From 'Building on the ACA' to Single Payer," A webpage that describes eight reform packages from modest to large, with estimates of the reduction in the number of uninsured along with estimated impacts on the federal budget and total health care spending. If you want to get into more detail, there is a link to their longer document. https://www.commonwealthfund.org/publications/issue-briefs/2019/oct/comparing-health-insurance-reform-options-building-on-aca-to-single-payer**

**Another theme of the course was that health policy in the US has focused much more on access – think of the ACA's expansion of Medicaid and reforms of the individual insurance market – than on cost or on quality. Moreover, the appeal to voters of the Sanders and Jayapal versions of Medicare for All is in the first instance about access, meaning insurance will be universal, at least for citizens, and cost sharing will be reduced, potentially to zero. This is in part because access is easier to address politically, especially if the cost of expanding access is deferred to future taxpayers. But both the overall affordability of American health care in terms of opportunity cost and quality are problems that remain. A short "story" highlighting these issues, especially quality, is Brendan K. Reilly, "On Suboptimization – Cadillac Care at the Mecca," New England Journal of Medicine, February 13, 2020, 382(7):593-5. https://www-nejm-org.ezp-prod1.hul.harvard.edu/doi/full/10.1056/NEJMp1914363. I put this at the end of the course because it highlights how just the reform of insurance – especially a reform that expands Traditional Medicare – leaves much unaddressed. But that means there will be issues for you to work on going forward, and I wish you luck!**

OPTIONAL:

One aim of the class, though not stated in precisely this way, is to prepare you for future debates on health care policy. In that light you may want to read two papers that look forward to positions in 2020 of Republican and Democratic candidates, authored by individuals who are actively advising candidates. The Glied and Lambrew paper also has a thoughtful discussion of what Medicare-for-all might mean in practice. Of course, the prospects for various proposals will depend in part on whether divided government continues or not.

Lanhee Chen, "Getting Ready for Health Reform 2020: Republicans' Options for Improving Upon the State Innovation Approach," Health Affairs, December 2018, 37(12):2076-83. https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.2018.05119

Sherry A. Glied and Jeanne M. Lambrew, "How Democratic Candidates for the Presidency in 2020 Could Choose Among Public Health Insurance Plans," Health Affairs, December 2018, 37(12):2084-91. https://www-healthaffairs-org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1377/hlthaff.2018.05082

Robert Kocher and Donald M. Berwick, "While Considering Medicare For All: Policies For Making Health Care In The United States Better," Health Affairs blog post, June 6, 2019. A potpourri of proposals from two veterans of the Obama administration, one of whom strongly favors single payer. I personally agree with much of what they have to say. https://www.healthaffairs.org/do/10.1377/hblog20190530.216896/full/?utm_source=Newsletter&utm_medium=email&utm_content=Kocher+and+Berwick%3A+What+To+Do+While+Considering+Medicare+for+All%3B+Wisconsin+Medicaid+Expansion%3B+The+Specialty+Palliative+Care+Workforce&utm_campaign=HAT

If you want to read more on single-payer, I list here an overview from the Congressional Budget Office, along with four opinion pieces, although the arguments in the opinion pieces are more political than economic:

Congressional Budget Office, "Key Design Components and Considerations for Establishing a Single-Payer Health System," May 2019. https://www.cbo.gov/system/files/2019-05/55150-singlepayer.pdf

Victor R. Fuchs, "Is Single Payer the Answer for the US Health Care System?" JAMA, January 2, 2018, 319(1):15-6. https://jamanetwork-com.ezp-prod1.hul.harvard.edu/journals/jama/fullarticle/2666630 Emphasizes potential savings in rents from single payer, but advocates a mix of competing health plans, which is not what most single-payer advocates have in mind. He also notes that a substantial portion of the US excess spending is from a more intensive mix of services, although disentangling how much is from that and how much is from higher unit prices (Class 1) is unknown.

C. David Naylor, "Canada as Single-Payer Exemplar for the United States: A Borderline Option," JAMA, published online December 18, 2017, https://jamanetwork-com.ezp-

prod1.hul.harvard.edu/journals/jama/fullarticle/2666631 Suggests US health policy experts stop focusing on Canada as a model for US health care financing and emphasizes the difficulty of transplanting the Canadian system to the US.

Henry J. Aaron, "Which Road to Universal Coverage?" New England Journal of Medicine, December 7, 2017, 377(23):2207-9. Advocates what is essentially a public option as an incremental approach.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1713346

James A. Morone, "How to Think About 'Medicare for All'?" New England Journal of Medicine, December 7, 2017. Morone, a political scientist, is an advocate for the Sanders and Jayapal versions of single-payer.
http://www.nejm.org.ezp-prod1.hul.harvard.edu/doi/pdf/10.1056/NEJMp1713510

**CLASSES 22, 23, AND 24 - TESTIMONY 2 (November 23, 30, and December 2)**

**CLASS 25 - IN CLASS EXAMINATION (December 4)**