ECON 43565
Health Economics

Department of Economics
University of Notre Dame

Fall 2020
MW 8:00am – 9:15pm
B001 Geddes
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Class web page: http://www3.nd.edu/~wevans1/health_econ.html

Class zoom web page:
https://notredame.zoom.us/j/99306274456?pwd=Z2c0eDdjaFN0UXorVzJ1Ly9jUm82QT09

Text and Readings:

There is no textbook for the course. Instead, the course will be focused around mandatory readings of academic articles that highlight important topics in health economics. The readings are available for download in PDF format from the class web page. For download, the readings require your netid. Students are expected to have read the papers in advance and be able to substantively discuss the work in class.

To assist you in thinking about the papers, on the class web page on the lower right is a tab for "questions to consider for the readings." There are questions for most of the readings through the first half of the semester that help you focus on some specific issues in the papers.

If you want to buy a textbook to assist you with the readings, I recommend Folland, Goodman and Stano, *The Economics of Health and Health Care,* Seventh Edition, Prentice Hall. It is available from Amazon http://www.amazon.com/Economics-Health-Care-7th/dp/0132773694/ref=sr_1_1?ie=UTF8&qid=1419888099&sr=8-1&keywords=folland+goodman+stano

Undergraduate econometrics is a requirement for the course. If you've taken econometrics from me you know that because economists mostly uses observational data and the primary goal of most of our statistical models is to reduce the omitted variables bias. Throughout the semester we will be utilizing a number of statistical models that do just this, such as

- random assignment experiments
- difference-in-difference models
- instrumental variables
- regression discontinuity design

If you need help understanding what these models do, please consider purchasing Angrist and Pischke, *Mastering Metrics: The Path from Cause to Effect.* This is a great paperback book, pitched at undergrads, that explains in basic terms what each of these models is hoping to achieve. The book is only $26 on Amazon and every undergrad econ major should own a copy.

Office Hours: Mondays, 3:30pm - 5:00pm, Tuesdays 2:00pm – 3:15pm, and by appointment. Given the small size of the class, we can arrange most meetings by email, which I am never far from. If you have a question, please feel free to contact me at wevans1@nd.edu.

Office hours will be virtual this year and during these times, we will use the zoom address above for class for office hours as well.

One caveat about office hours. I am also the department chair and have substantial responsibilities for a major research center on campus. As a result, I routinely have to move office hours around. I will try to give you advanced warning. In most cases, if you have a pressing issue, please set up an appointment.

Course Rationale:

Health care spending currently consumes over $3 trillion dollars which is 18 percent of gross domestic product. To give you some frame of reference, GDP in the manufacturing sector is about $1.8 trillion and $1.9 trillion in real estate. These numbers are expected to escalate as the baby boom generating retires. Health care spending is also a large fraction of federal and state spending and again, these numbers are expected to grow over time as well. We have also embarked on an ambitious federal reform of the health care sector which is expected to cost $1 trillion over a 10-year period. Given these costs, it is imperative to understand the structure, conduct and performance among actors in this industry.

Course Theme:

The course is designed to illustrate how *economists* analyze topics related to the production of health and the delivery of health care. In many cases, economists think very differently about topics than health care professionals and other social scientists. Economists have time and time again demonstrated the importance of incentives in decision making and throughout the semester, we will demonstrate how incentives play an important role in this sector.

Course Objective:

This is an advanced undergraduate course in economics and students are expected to have completed a course in intermediate micro economic theory and econometrics. The course will provide students with a broad overview of important topics in health care, indicate current gaps in research, and demonstrate successful research programs in the field. The bulk of the readings are empirical in nature and the material will stress how economists build and test models.

Expectations:

Students are expected to attend class, to read the assigned articles prior to class, to NOT be late to class, to participate in classroom discussions, to hand in assignments when due, to take tests when expected, to NOT engage in academic dishonesty, and to follow all university rules concerning classroom conduct associated with the COVID-19 virus.

Special COVID-19 Instructions:

As this is a discussion-based class, I expect students to be in-class so long as the university is offering face-to-face instruction. Students can be absent and online when they are quarantined or do not pass their daily health check.

Students will have assigned seats for the semester to assist in any contact tracing that may occur. This is a small class (25 students) in a very large classroom (154 seats) so students should fill in the middle of the class.

Evaluations:

Grades for the course will be based on a mid-term exam, (25 percent of the course grade), five précis about the assigned journal articles (5 percent each and 25 percent in total), grades on 10 5-minute quizzes (25 percent of the course grade), and an original research paper (25 percent of the course grade).

Class Participation/5-minute quizzes: I built the class around a series of readings from academic articles. I expect students to read the articles in advance of class and to be able to discuss the key points from the articles. To encourage reading of the articles, 12 times throughout the semester, you will be asked to take a short five-question, five-minute, multiple-choice exam about the readings. Each question is worth two points and you can keep the 10 highest scores, throw away the 2 lowest. I consider a missed quiz as a zero score. I will announce a week in advance what readings will be covered on the quizzes. The first quiz is Wednesday August 12 and it will cover the articles in Section IIb below by McKeown and Fogel. The other articles will not be on the quiz.

To take the quizzes, you should have received an invitation to join gradescope. Log in and take the quiz. You can log in 10 minutes before class starts and the quiz will close at 8:05am. It will be graded automatically by gradescope. You can take the quiz on your phone or laptop.

Examinations: The mid-term examination will be held Wednesday, September 30th, in the regular class room. We will discuss the format of the exam closer to test time.

Makeup exams will only be given for students who have a valid University excuse, applied for in writing and adequately documented. I must receive documentation within 48 hours of the missed exam. Please familiarize yourself with student responsibilities concerning missed exams, missed assignments, etc.

Précis: A précis is a short synopsis. The key source of information for this class will be a series of academic articles on health economics. An important skill for the job market is being able to distill a large block of information into its key components so that is understandable for another person. During the semester, you will be required to write five précis (two pages, double spaced, 12 point type, one-inch margins) that summarize one of the academic readings in class. The précis will be assigned one to three weeks ahead of time. Once assigned, you must turn them in or you will get a zero for the assignment. A complete description of the assignment is on the class web page under assignments and I have included a sample précis. The first précis is due Wednesday (August 12) and some people have already signed up for the first round of assignments after the first day of class. You hopefully received an invitation from a Google Drive for the signup sheet.

You are required to complete at least two preces before the midterm exam.

Paper: This class is restricted in enrollment because it satisfies the college's requirement for a writing-intensive course. Because undergraduate econometrics is required, I am requiring that students write an original empirical research paper. This is something that will take a considerable amount of time and it may not be what you had in mind for your senior year, but in the end, it is a lot more rewarding than taking another exam. This semester the task is that much harder in that without a fall and Thanksgiving break, the semester is really compressed. That means you really need to start working on the project ASAP.

Time line: By Friday, August 21, you should have met with me about a potential topic. By Friday September 14, you should have had a second meeting with me that finalized the topic. During this first meeting, we can do one of two things. If you want to float some trial balloons, I can respond to your ideas and point you to some data. Alternatively, we can chat about what areas of health interest you and I can suggest where you might look for paper ideas.

A draft of the paper introduction and review of the literature is due by Friday October 23. This draft should be 5-7 pages, doubled-spaced, plus references. The introduction should outline why this is an important topic, what the literature is missing, and an outline of how you plan to answer the

question. This draft is 5 percent of the course grade.

The final paper is due by 5pm, Friday November 13. Grades will be a function of the soundness of your econometric model and the quality of the exposition. The paper will be a minimum of 20 pages (including title page, text, figures, tables and references), double spaced, 12-point type, 1 inch margins. The final paper is worth 20 percent of the course grade.

An amazing resource you may want to consider using is ipums.org. This is an academic outfit out of the University of Minnesota that has digitized individual responses to the US Census dating back to 1850 (IPUMS USA) and the data has been harmonized over time. With this data, you can easily graph the fraction of adults 18-35 that are working from 1850 to 1990. They also have aggregate data for smaller geographic areas for all censuses dating back to 1790. (IPUMS NHGIS). They also have IPUMS International which has harmonized Census data from 98 countries from 443 different censuses and surveys, representing over 1 billion individual records.

The hardest part of any paper is finding a topic and you need to do that soon. Look for a topic in a subject area of interest to you. As you only have 14 weeks to write the paper, the more narrow the topic, the more manageable the subject. Before every class, I will give a couple of very broad paper topic ideas. I am NOT looking for a paper like "Devising a Fair, Just, and Efficient Health Care System." To be honest, no one in his or her right mind would ask a 21 year old to answer that question. Instead, look for questions that are more precise such as "Did Health Care Reform Lead to More Part Time Work?" or "Has Marijuana Legalization Increase Traffic Fatalities in Colorado" or "Has the Opioid Crisis Caused an Increase in Idleness." I have collected a lot of resources on COVID-19 so you can chat with me about a paper in this area. Please look on the NBER web page (www.nber.org) and look at their COVID working papers.

Please familiarize yourself with the Undergraduate Academic Code of Honor: http://www.nd.edu/~hnrcode/docs/handbook.htm.

Problem sets:

I have a number of problem sets on the class web page. These problem sets are designed to gauge your understanding of the concepts discussed in class and they center around the material that will be on the first midterm.

Reading List
Health Economics/Evans/Fall 2020

All readings are required. Articles with a (#) are articles you can use for a precis.

I. Introduction – How do economists think about health issues

II. The production of health

a. Statistics detour – difference-in-difference models

b. An historical perspective

Folland, Goodman and Stano, Chapter 5.

Cutler, David, Angus Deaton, and Adriana Lleras-Muney, 2006. "The Determinants of Mortality." *Journal of Economic Perspectives*, 20(3), 97-120.

#McKeown, Thomas, *The Role of Medicine: Dream, Mirage or Nemesis*, London, England+: Nuffield Provincial Hospitals Trust; 1976, Chapters 3 and 4, pages 29-65. (I've also included a link to Chapter 8. You are not required to read it but just look at the graphs in the chapter especially 8.1, 8.5, 8.8-8.10, 8.14).

#Fogel, Robert, *The Escape from Hunger and Premature Death, 1700-2100*, Cambridge, UK :Cambridge University Press, 2005, 1-42.

#Cutler, David and Grant Miller, "The Role of Public Health Improvements in Health Advances: The Twentieth-Century United States." *Demography* 42(1), 2005, 1-22.

c. Health and development: macro and micro perspectives

c1. How health impacts development

Bloom, David E. and David Canning, "The Health and Wealth of Nations," *Science*, 2000, 287(5456), 1207-1208.

c2. Testing the hypothesis: Macro Studies

#Acemoglu, Daron, and Simon Johnson, 2007. "Disease and Development: The Effect of Life Expectancy on Economic Growth," *Journal of Political Economy*, 115 (6), December, 925-985 (Focus on Pages 925-945).

c3. Testing the hypothesis: Micro Studies

#Cutler, David M., Winnie Fung, Michael Kremer, Monica Singhal, and Tom Vogl, 2010. "Early-life Malaria Exposure and Adult Outcomes: Evidence from Malaria Eradication in India," *American Economic Journal: Applied Economics*, 2(2), 72-94.

#Bleakley, Hoyt. 2007. "Disease and Development: Evidence from Hookworm Eradication

in the American South." *Quarterly Journal of Economics* 122(1): 73-117.

d. Statistics detour – Regression Discontinuity Design

e. Modern correlates of health

#Clark, Damon, and Heather Royer. 2013. "The Effect of Education on Adult Mortality and Heath: Evidence from Britain." *American Economic Review* 103(6): 2087-2120.

#Sullivan, Daniel and Till von Wachter, 2009. "Job Displacement and Mortality: An Analysis Using Administrative Data." *Quarterly Journal of Economics* 124(3), 1265-1306.

#Chetty, Raj, et al. 2016. "The Association Between Income and Life Expectancy in the US, 2001-2014." *JAMA* 315(16): 1750-1766.

III. The Government control of unhealthy behavior

a. Pigouvian taxes

Folland, Goodman and Stano, Chapter 24.

Gruber, J., Chapter 6 of *Public Finance and Public Policy*, 2005, New York: Worth Publishers, p.144-168.

b. Do smokers and drinkers pay their way?

#Manning, WB, EB Keeler, JP Newhouse, EM Sloss, J Wasserman. 1989. "The taxes of sin. Do smokers and drinkers pay their way?" *JAMA* Mar 17, 261(11):1604-1609.

Viscusi, W. Kip, 2008. "How to Value a Life." *Journal of Economics and Finance,* 32: 311-323.

c. Explaining the rise on obesity and can taxes work again?

#Cutler, David, Edward Glaeser and Jesse Shapiro, 2003. "Why Have Americans Become More Obese?" *Journal of Economic Perspective*s, 17(3). 93-118.

#Fletcher, Jason M., David Frisvold, and Nathan Tefft. 2010. "The Effect of Soft Drink Taxes on Child and Adolescent Consumption and Weight Outcomes." *Journal of Public Economics* 94(11-12), 967-974.

d. **Deaths of Despair and the Current Drug Crisis**

#Case, Anne, and Angus Deaton. 2017. "Mortality and Morbidity in the 21st Century." *Brookings Papers of Economic Activity*. 397-476

#Evans, William N., Ethan Lieber, and Patrick Power. 2019. "How the Reformulation of OxyContin Ignited the Heroin Epidemic." *Review of Economics and Statistics* 101(1): 1-15.

#Alpert, Abbie, William N Evans, Ethan Lieber, and David Powell. 2019. "Origins of the Opioid Crisis and its Enduring Impacts." NBER Working paper No. 26500.

IV. Health insurance and the demand for medical care

a. Choices under uncertainty and the role of insurance

Nicholson, Walter, *Microeconomic Theory: Basic Principles and Extensions,* 7th edition, Dryden press, 1998. Chapters 8 and 10, p 209-259.

b. Moral hazard

Folland, Goodman and Stano, Chapters 8 and 9.

#Newhouse, Joseph, *Free for All*, Cambridge, MA: Harvard University Press, 1993, p. 3-28, 31-49, 338-345.

#Finkelstein, Amy, et al., 2012. "The Oregon Health Insurance Experiment: Evidence from the First Year." *Quarterly Journal of Economics* 127(3), 1057-1106.

#Baicker, Katherine, et al. 2013. "The Oregon Experiment – Effects of Medicaid on Clinical Outcomes." *New England Journal of Medicine* 368(18), 1712-1722.

#Chandra, Amitabh,
Jonathan Gruber, and Robin McKnight. 2010. "Patient Cost-Sharing and Hospitalization Offsets in the Elderly," *American Economic Review* 100(1), 1-24.

c. Adverse selection

Folland, Goodman and Stano, Chapter 10.

Rothschild, Michael and Joseph Stiglitz, 1976. "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information," *Quarterly Journal of Economics*, 90(4): 629-650.

#Cutler, David M., and Sarah J. Reber, "Paying for Health Insurance: The Tradeoff Between Competition and Adverse Selection," *Quarterly Journal of Economics*, 113(2), pp. 433-466.

#Simon, Kosali, "Adverse Selection in Health Insurance Markets? Evidence from State Small-Group Health Insurance Reforms," *Journal of Public Economics,* 89, 2005, 1865-1877.

e. Some Basics of Government Health Care Programs

The Kaiser Family Foundation, Basics of Medicare
http://kff.org/medicare/issue-brief/an-overview-of-medicare/

The Kaiser Family Foundation, Basics of Medicaid
http://kff.org/reportsection/medicaid-at-50-the-elderly/

f. Employer-provided health insurance

Folland, Goodman and Stano, Chapter 11.

For this section, it might be useful for you to review your class notes from intermediate micro economics on income and substitution effects.

Kaiser Family Foundation: How Private Health Coverage works
https://kaiserfamilyfoundation.files.wordpress.com/2013/01/7766.pdf

Blumenthal, David. 2006. "Employer-Sponsored Health Insurance in the United States – Origins and Implications." *New England Journal of Medicine* 355: 82-88.

Shiels, J., Haught, R., "The Cost of Tax-Exempt Health Benefits in 2004," *Health Affairs,* Web exclusive, February 24, 2004.

Reinhardt, Uwe, 1999. "Employer-Based Health Insurance: A Balance Sheet," *Health Affairs,* 18(6), 124-132.

e. The health benefits of insurance coverage

#Card , David, Carlos Dobkin, Nicole Maestas, 2009. "Does Medicare Save Lives?" *Quarterly Journal of Economics,* 124(2), 597-636.

#Goldin, Jacob, Ithai Lurie, and Janet McCubbin. 2019. "Health Insurance and Mortality: Evidence from Taxpayer Outreach." NBER Working Paper No. 26533.

#Doyle, Joseph J. Jr. 2005. "Health Insurance, Treatment and Outcomes: Using Auto Accidents as Health Shocks." *Review of Economics and Statistics* 87(2), 256-270.

f. How health insurance interacts with the job market

Summers, Lawrence, 1989. "Some Simple Economics of Mandated Benefits," *American Economic Review,* May 177-183.

Krueger, Alan, and Uwe Reinhart, "The Economics of Employer versus Individual Mandates," *Health Affairs*, Spring (II) 1994, 34-53.

#Gruber, J., 1994. "The Incidence of Mandated Maternity Benefits," *American Economic Review,* 84(3), 622.641.

#Cutler, David, Jonathan Gruber, 1996. "Does Public Insurance Crowd Out Private Insurance," *Quarterly Journal of Economics,* 111, 391-430.

Gruber, Jonathan, and Kosali Simon. 2008. "Crowd-Out 10 Years Later: Have Recent Public Insurance Expansions Crowded Out Private Health Insurance." *Journal of Health Economics* 27(2), 201-217.

V. Medical technology and health care costs

Newhouse, Joseph, "Medical Care Costs: How Much Welfare Loss?" *Journal of Economic Perspectives,* 6(3), 1992, 3-31.

Pauly, Mark. "Should We Be Worried About High Real Medical Spending Growth in the US?" *Health Affairs,* Web Exclusive, Jan 8, 2003, w3-15.

#Cutler, D., M. McClellan, "Is Technological Change in Medicine Worth it? *Health Affairs,* 20(5), 2001, 11-29.

#Cutler, David, Allison B. Rosen, and Sandeep Vijan, 2006. "Value of Medical Innovation in the United States: 1960-2000," *New England Journal of Medicine*, 355(9), 920-927.

The last two sections of the class will put together much of what we've learned about economics in the health care sector and look at two current topics.

VI. The Affordable Care Act

The Kaiser Family Foundation Summary of the Affordable Care Act
http://kff.org/health-reform/fact-sheet/summary-of-the-affordable-care-act/

Barrett, Jessica, and Edward R. Berhick. 2016. *Health Insurance Coverage in the United States: 2016*, U.S. Census Bureau, Washington, DC.
https://www.census.gov/content/dam/Census/library/publications/2017/demo/p60-260.pdf

Please look over this document and come to class with five interesting facts about the uninsured.

Baicker, Katherine and Chandra, Amitabh, 2008. "Myths and Misconceptions about U.S. Health Insurance," *Health Affairs*, Web Exclusive: w533-w543.

Garthwaite, Craig, and John A. Graves. 2017. "Success and Failure in the Insurance Exchanges." *New England Journal of Medicine* 376(10): 907-910.

McCue, Michael, and Mark Hall. 2018. "How Have Health Insurers Performed Financially Under the ACA's Market Rules." Commonwealth Fund Issue Brief, October.

#Courtmanche, James Marton, Benjamin Ukert, Aaron Yelowitz, and Daniela Zapata. 2017. "Early Impacts of the Affordable Care Act on Health Insurance Coverage in Medicaid Expansion and non-Expansion States." *Journal of Policy Analysis and Management* 36(1): 178-210.

#Frean, Molly. Jonathan Gruber, and Benjamin D. Sommers. 2017. "Premium subsidies, the Mandate, and Medicaid Expansion: Coverage Effects of the Affordable Care Act." 53(1): 72-86.

VII. The COVID-19 Pandemic

Crosby, Alfred. 1989. *America's Forgotten Pandemic: The Influenza of 1918*. New York: Cambridge University Press. This book is not required but it has a lot of good background information about the 1918 flu. Online access is available from an on-campus computer via the library at https://www-fulcrum-org.proxy.library.nd.edu/concern/monographs/2j62s512v. Chapters 1, 4, 6 and 7 are interesting. The last two chapters talk about what happened in Philadelphia and San Francisco when the cities decided to NOT social distance in the wake of the pandemic.

#Clay, Karen, Joshua Lewis, Edson Severini. 2019. "What Explains thje Cross-City Variation in Mortality During the 1918 Influenza Pandemic? Evidence from 438 US Cities." Economics & Huma Biology 35: 42-50.

#Almond, Douglas. 2006. "Is the 1918 Influenza Pandemic Over? Long-term effects of in utero Influenza Exposure in the Post-1940 US Population." *Journal of Political Economy* 114(4): 672-712.

#Cronin, Chris, and William N. Evans. 2020. "Private Precaution and Public Restrictions: What Drives Social Distancing and industry Foot Traffic in the COVID-19 Era." NBER Working Paper #27531.