

Health Studies 351
HEALTH SERVICES RESEARCH METHODS

Spring Quarter, 2015

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Classes: Monday/Wednesday 1:30–2:50, BSLC 202
Office hours: By appointment.

The course is intended to acquaint students with the conceptual and methodological issues of research design and secondary data analysis widely used in empirical health services research. To facilitate learning of these methods, the course will use a combination of readings, lectures, examples, problem sets (using Stata), and discussion of applications. The course assumes that students have had a prior course in statistics, including the use of linear regression methods.

The final grade for the course will depend on problem sets (45%), class participation including analyses of applications (15%), and a final exam (40%). Any dates noted in the syllabus are tentative.

Attendance in class is required. Please let the instructor know if you will have to miss class. Readings for each assigned topic should be completed before class.

The primary reading material is excerpted from several econometrics and research design texts:

- Wooldridge, J. (2005). *Introductory Econometrics*, Third edition, South-Western.
- Stock, J. and M. Watson (2003). *Introduction to Econometrics*. First edition, Addison-Wesley.
- Shadish WR, Cook TD, and DT Campbell. *Experimental and Quasi-Experimental Designs*. Boston: Houghton Mifflin Company, 2002.
- Baum CF. *An Introduction to Modern Econometrics Using Stata*. College Station: Stata Press, 2006.
- Angrist, JD and Pischke J (2009). *Mostly Harmless Econometrics*, Princeton University Press.

Required readings, including applications listed in the syllabus and excerpts from the above texts, can be found on Chalk. The following are additional sources that students may find useful:

- Stata manuals
- Wooldridge, J. (2005). *Econometric Analysis of Cross Section and Panel Data*, MIT Press.
- Gelman A and Hill J (2007). *Data Analysis Using Regression and Multilevel/Hierarchical Models*, Cambridge University Press.
- Trochim, William M. The Research Methods Knowledge Base, 2nd Edition. Internet URL: <http://www.socialresearchmethods.net/kb/contents.htm>

All required course readings will be on Chalk. Problem sets should be completed using Stata version 13, available in Usite, Regenstein and Crerar. Check www.stata.com for helpful information.

COURSE OUTLINE

<u>Fundamentals of Health Services Research Design</u>	
March 30	<p>Introduction: What is Health Services Research?</p> <p>Key Conceptual Approaches</p> <ul style="list-style-type: none"> • Donabedian A. Evaluating the Quality of Medical Care. Milbank Quarterly Volume 83, Issue 4, pages 691–729, December 2005 (reprinted from 1966) • Andersen RM. Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? Journal of health and social behavior, 1995 • Aday LA, Andersen RM. A Framework for the Study of Access to Medical Care. Health Serv Res. 1974 Fall; 9(3): 208–220. • Babitsch B, Gohl D, von Lengerke T. Re-revisiting Andersen’s Behavioral Model of Health Services Use: a systematic review of studies from 1998–2011 (skim)
April 1	<p>Validity in Research Design</p> <ul style="list-style-type: none"> ▪ Shadish, Cook and Campbell, Chapters 2 and 3. (Also see Trochim.)
<u>Experimental Research Designs and Methods</u>	
April 6	<p>Social Experiments</p> <ul style="list-style-type: none"> ▪ Angrist and Pischke, Chapter 2, “The Experimental Ideal”. ▪ Heckman J, Smith J. “Assessing the Case for Social Experiments.” The Journal of Economic Perspectives, Vol. 9, No. 2. (Spring, 1995), pp. 85-110. <p>RAND Health Insurance Experiment</p> <ul style="list-style-type: none"> ▪ Newhouse, "Controlled Experimentation in Research Policy," in Eli Ginzberg (ed.), Health Services Research Policy: Key to Health Policy, Harvard University Press, 1991. ▪ Rand Research Highlights: Health Insurance Experiment http://www.rand.org/pubs/research_briefs/RB9174/index1.html <p>Oregon Medicaid Experiment</p> <ul style="list-style-type: none"> ▪ Baicker K, Taubman SL, Allen HL, Bernstein M, Gruber JH, Newhouse JP, Schneider EC, Wright BJ, Zaslavsky AM, Finkelstein AN; Oregon Health Study Group, Carlson M, Edlund T, Gallia C, Smith J. The Oregon experiment--effects of Medicaid on clinical outcomes. N Engl J Med. 2013 May 2;368(18):1713-22. ▪ Finkelstein A, Taubman S, Wright B, Bernstein M, Gruber J, Newhouse JP, Allen H, Baicker K; Oregon Health Study Group. THE OREGON HEALTH INSURANCE EXPERIMENT: EVIDENCE FROM THE FIRST YEAR. Q J Econ. 2012 Aug;127(3):1057-1106.
<u>Quasi-Experimental Research Designs and Methods</u>	
<u>Panel Data Designs</u>	

April 8	<p>Clustered data: Clustering and Robust Standard Errors</p> <ul style="list-style-type: none"> • Baum, pp. 133-139 • Angrist and Pischke, p293-323 <p>A note on linear probability models</p>
April 13	<p>Introduction to Hierarchical/Multilevel/Panel Data Models</p> <p>Fixed Effects and Random Effects</p> <ul style="list-style-type: none"> ▪ Wooldridge, pp. 426-475. ▪ Stock and Watson, pp. 271-295. ▪ Angrist and Pischke, Chapter 5
April 15	<p>Fixed Effects and Random Effects</p> <p><i>Applications:</i></p> <ul style="list-style-type: none"> ▪ Xie J, Dow WH. Longitudinal study of child immunization determinants in China. Soc Sci Med. 2005 Aug;61(3):601-11. Epub 2005 Feb 19. ▪ Hirth RA, Turenne MN, Wheeler JR, Pan Q, Ma Y, Messana JM. Provider monitoring and pay-for-performance when multiple providers affect outcomes: An application to renal dialysis. Health Serv Res. 2009 Oct;44(5 Pt 1):1585-602.
<u>Difference-in-Differences Models</u>	
April 20	<p>Difference-in-Differences Models</p> <ul style="list-style-type: none"> ▪ Stock and Watson, pp. 373-409. ▪ Dimick JB, Ryan AM. Methods for evaluating changes in health care policy: the difference-in-differences approach. JAMA. 2014 Dec 10;312(22):2401-2.
April 22	<p>Difference-in-Differences Models</p> <p><i>Applications:</i></p> <ul style="list-style-type: none"> ▪ Blum AB, Kleinman LC, Starfield B, Ross JS. Impact of state laws that extend eligibility for parents' health insurance coverage to young adults. Pediatrics 2012 Mar;129(3):426-32.2012 Mar;129(3):426-32. ▪ Patel MS, Volpp KG, Small DS, et al. Association of the 2011 ACGME resident duty hour reforms with mortality and readmissions among hospitalized. Medicare patients. JAMA 2014 Dec 10. ▪ Gidwani R, Bhattacharya J. CMS Reimbursement Reform and the Incidence of Hospital-Acquired Pulmonary Embolism or Deep Vein Thrombosis. J Gen Intern Med. 2014 Dec 18. ▪ Ryan AM, Blustein J, Doran T, D Michelow M, Casalino LP. The Effect of Phase 2 of the Premier Hospital Quality Incentive Demonstration on Incentive Payments to Hospitals Caring for Disadvantaged Patients. Health Serv Res. 2012 Mar 14.
<u>Propensity Scores</u>	
April 27	<p>Propensity Scores</p> <ul style="list-style-type: none"> ▪ Austin PC, Mamdani MM. A comparison of propensity score methods: a case-study estimating the effectiveness of post-AMI statin use. Stat Med. 2005 Oct 11; ▪ Rosenbaum PR, Rubin DB. The Central Role of the Propensity Score in

	<p>Observational Studies for Causal Effects. <i>Biometrika</i> 1983 Vol. 70, No 1., p41-55.</p> <ul style="list-style-type: none"> ▪ Angrist and Pischke, pp 80-91. ▪ Gelman and Hill, Chapter 10.
April 29	<p>Propensity Scores</p> <p><i>Applications:</i></p> <ul style="list-style-type: none"> ▪ Kruse GB, Polsky D et al. The Impact of Hospital Pay-for-Performance on Hospital and Medicare Costs. <i>Health Services Research</i> 2012 47:6. ▪ Sanghavi P, Jena AB, Newhouse JP, Zaslavsky AM. Outcomes after out-of-hospital cardiac arrest treated by basic vs advanced life support. <i>JAMA Intern Med.</i> 2015 Feb;175(2):196-204.
<u>Instrumental Variables</u>	
May 4	Identification
May 6	<p>Instrumental Variables</p> <ul style="list-style-type: none"> ▪ Woodridge, pp. 484-514. ▪ Stock and Watson, pp. 331-366. ▪ Harris KM, Remler DK. Who is the marginal patient? Understanding instrumental variables estimates of treatment effects. <i>Health Serv Res.</i> 1998 Dec;33 (5 Pt 1):1337-60.
May 11	<p>Instrumental Variables</p> <p><i>Applications:</i></p> <ul style="list-style-type: none"> ▪ McClellan, M, et al., "Does More Intensive Treatment of Acute Myocardial Infarction Reduce Mortality?" <i>JAMA</i>, Sept 21; 272(11): 859-866, 1994. ▪ Cawley J, Meyerhoefer C. The medical care costs of obesity: An instrumental variables approach. <i>J Health Econ.</i> 2012 Jan;31(1):219-30.
<u>Regression Discontinuity</u>	
May 13	<p>Regression Discontinuity Designs</p> <ul style="list-style-type: none"> • Moscoe, Bor, Baernighausen. Regression discontinuity designs are underutilized in medicine, epidemiology, and public health: a review of current and best practice. <i>Journal of Clinical Epidemiology</i> 68 (2015) 132e143 • Angrist and Pischke, Chapter 6 • Skim: Lee DS, Lemieux T. Regression Discontinuity Designs in Economics. NBER Working Paper 14723, February 2009.
May 18	<p>Regression Discontinuity Designs</p> <p><i>Application:</i></p> <ul style="list-style-type: none"> • Almond D, Doyle JJ, Kowalski AE, Williams H. Estimating marginal returns to medical care: evidence from at-risk newborns. <i>Q J Econ.</i> 2010 May 1;125(2):591-634.
<u>Analysis of Complex Survey Data</u>	

May 20	<p>Complex Survey Data</p> <ul style="list-style-type: none"> ▪ Hahs-Vaughn DL, McWayne CM, Bulotsky-Shearer RJ, Wen X, Faria AM. Methodological considerations in using complex survey data: an applied example with the Head Start Family and Child Experiences Survey. <i>Eval Rev.</i> 2011 Jun;35(3):269-303.
May 25	Memorial Day – no class
<u>Qualitative and Mixed Methods Designs</u>	
May 27	<ul style="list-style-type: none"> ▪ Sofaer, S. (1999). "Qualitative Methods: What Are They and Why Use Them?" <i>Health Services Research</i> 34(5 (Part 2)): 1101-1118. ▪ Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. <i>Health Serv Res.</i> 2007 Aug;42(4):1758-72. ▪ Weiner BJ, Amick HR, Lund JL, Lee SY, Hoff TJ. Use of qualitative methods in published health services and management research: a 10-year review. <i>Med Care Res Rev.</i> 2011 Feb;68(1):3-33. ▪ Fetters MD, Curry LA, Creswell JW. Achieving integration in mixed methods designs-principles and practices. <i>Health Serv Res.</i> 2013 Dec;48(6 Pt 2):2134-56.
June 1	<p><i>Applications:</i></p> <ul style="list-style-type: none"> ▪ Bradley, E. H., E. S. Holmboe, et al. (2001). "A Qualitative Study of Increasing Beta-Blocker Use After Myocardial Infarction: Why Do Some Hospitals Succeed?" <i>JAMA</i> 285(20): 2604-2611. ▪ Hamilton AB, Cohen AN, Glover DL, Whelan F, Chemerinski E, McNagny KP, Mullins D, Reist C, Schubert M, Young AS. Implementation of evidence-based employment services in specialty mental health. <i>Health Serv Res.</i> 2013 Dec;48(6 Pt 2):2224-44.
June 3	Final Exam