
CLRES 2130
Health Services Research Using Secondary
Data: Didactic Course

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Online Course

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Introduction

Health services researchers and epidemiologists rely on many publicly and privately available secondary databases, ranging from those collected primarily for research and surveillance (the National Health Interview Survey) to those collected for administrative or billing purposes but which have research utility (Medicare claims). CLRES 2130 provides an introduction to many of the large databases that are frequently used by health services researchers and is the prerequisite for CLRES 2131. This course can be either a simple introduction to secondary databases and their uses in health services research, or it can be the beginning of an 11-month mentored project course that will support you in developing a research question, obtaining data, performing the necessary database management and programming skills using SAS to conduct your analyses, and writing up your research results.

We have chosen several well-known databases that you are likely to either use directly in your own research or encounter in your reading of the medical and health services research literature. For convenience (in terms of data use agreements, IRB issues, etc.), we are relying on public use extracts from these databases. However, the tools provided through this course, both in terms of understanding the organization of large databases and developing systematic approaches for defining and selecting a sample of data for research purposes, are generalizable to specialized extracts that you may request in your future work.

Course Requirements and Grading

Due dates:

Modules, homework and discussion questions:

In order to receive credit for your work, you must mark the session as completed, submit homework, and post discussion board comments **no later than 5:00 p.m. on the session due date**. Late work will receive zero credit.

We recommend that students complete the homework exercises and required reading/discussion board for all sessions; however, for grading purposes, students are only required to submit homework and discussion board comments for 6 of the 7 sessions between Session 2 and 8 (there is no homework or paper for the discussion board for Session 1, other than submitting your HIPAA researchers

certificate, and there is no homework for Session 9 - just a discussion board). Students who complete all 7 of the Session 2-8 assignments will receive extra credit for their work.

Final project proposal:

Your final project proposal is due in the digital drop box by 5:00 p.m. on Monday, March 10.

[Example final project proposal](#) (73 Kb)

Grading:

Late work will receive zero credit.

Internet exercises: 10 points per session (no graded exercises for Sessions 1 & 9); 60 points total (10 extra-credit points possible if you do 7 of 7 homeworks for Sessions 2-8)

Discussion board participation: 5 points per session; 35 points total (5 extra-credit points possible if you do the required reading and participate in the discussion board for 7 of 7 Sessions 2-8)

Project proposal: 60 points total

Internet exercises:

To familiarize students with the general background and content of each database, we have created an Internet-based exercise for each module. The exercises require students to visit the database website and become comfortable with the structure and content of available data. **You will need a copy of WinZip in order to unzip many public use files.** You will be given a URL to begin the exercise. Students may work in pairs/groups on the assignment, but each student must hand in their own work; duplicates are not acceptable. In writing up the assignment, you must list the URLs and names of files that you used to answer each question. *Tip: if you browse the internet inside BlackBoard, the URL will not show up in the address line, so open up a separate web browser to do your homework.*

Submit all completed homeworks using the Assignment tool on Courseweb. We prefer that you label them:

"CLRES_2130_Databasename_Homework_Yourlastname"

Note: In developing and testing some of the Internet assignments, we have found that for some of the databases, Internet Explorer is a more stable platform than Netscape. If individuals encounter problems (e.g. the program crashing) using Netscape, we encourage use of Internet Explorer. Some course instructors have encountered no problems with Netscape, so please begin with the program with which you are most comfortable.

Discussion board based upon the required readings:

We have chosen required readings for each module that use data from the database covered in the module, and where possible, use a distinct statistical methodology. For example, we chose articles that each addressed confounding in different ways: traditional regression analysis or survival analysis with covariables, instrumental variables adjustment, and propensity score adjustment.

Each student must answer the general discussion board question, ask one question of their classmates (the question can be something that was confusing in the article, or could be a broader question), and answer one question posed by a classmate. Amber and Cindy will monitor the discussion boards and will make every effort to answer unanswered questions or to expand on answered questions where needed. Generally we will check the discussion board by 6:00 p.m. each day.

Note: Please post any questions about the course material on the discussion board so that other students can see the instructors' answers. **Do not e-mail questions to the instructors unless they are of a private nature.**

Project Proposal:

Using one of the secondary databases described in the course (or another database of your choosing *subject to approval of the instructors*), you are to prepare a brief proposal for a project that you would like to develop. The proposal should include the following:

1. Specific Aims (including hypotheses).
2. Background. You do not need to complete an exhaustive literature review, but you do need to motivate your project and place it in context with prior research.
3. Research Methods. Describe your research project, including a description of the data sources, the type of data you will collect, your inclusion/exclusion criteria, your analysis plan, and limitations/contributions of the project.
4. Memorandum to the IRB Chairperson. Go to the University of Pittsburgh's IRB web site (<http://www.irb.pitt.edu>) and review the requirements for IRB approval. In a brief memo to the Chair of the IRB Committee, state the type of IRB approval you are seeking, as well as any other exceptions or waivers, and justify your request based on the criteria listed.

Guidelines for the project proposal:

1. The proposal should be a maximum of 5 pages (excluding your IRB memo).
2. Use Arial 11 point font.
3. Use 1-inch margins for the top & bottom and 1.25 inch margins for the right and left (standard Word settings).

Submit project proposals through Courseweb no later than 5:00 p.m. on Monday, March 10.

Course Schedule and Outline

CLRES 2130 is offered exclusively as an online course. There will be 2 optional in-person meetings to supplement the 9 online sessions summarized below.

Session 1: Introduction: Ethics & Regulation Issues

Instructor: Amber Barnato

Due date: Monday, January 7 by 5:00 p.m.

In the first session we will give a brief introduction to each database, as well as a brief introduction to the history of health services research using secondary data and discuss the strengths and weaknesses of this endeavor. We will review some of the techniques frequently used in such health services research, and will focus on issues related to confidentiality and compliance with local Institutional Review Boards and the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Optional in-person tutorial: How to Download and Manipulate Data

Instructors: Amber Barnato and Cindy Bryce

Date, time & place: Friday, January 11, 10:00-11:30 a.m., Parkvale computer lab (2nd floor)

Session 2: Behavioral Risk Factor Surveillance System (BRFSS)

Instructor: Amber Barnato

Due date: Monday, January 14, 5:00 p.m.

The Behavioral Risk Factor Surveillance System (BRFSS), conducted by the CDC's National Center for Health Statistics (NCHS), is the world's largest telephone survey. The BRFSS tracks health risks in the United States. As scientific research clearly shows that personal health behaviors play a major role in premature morbidity and mortality, information from the survey can be used to track the health of the American people and to set public health priorities.

Session 3: National Health and Nutrition Examination Surveys (NHANES)

Instructor: Amber Barnato

Due date: Monday, January 21, 5:00 p.m.

The National Health and Nutrition Examination Survey (NHANES), also conducted by the CDC's NCHS, combines a home interview with health tests that are done in a mobile examination center. This survey has been designed to collect information about the health and behavior of people in the United States.

Session 4: National Health Interview Survey (NHIS)

Instructor: Cindy Bryce

Due date: Monday, January 28, 5:00 p.m.

The National Health Interview Survey (NHIS) is yet another survey conducted by the CDC's NCHS. Its main objective is to monitor the health of the U.S. population through the collection and analysis of survey data on a broad range of health topics. A major strength of the survey lies in its ability to display health characteristics by many demographic and socioeconomic characteristics.

Session 5: Medical Expenditures Panel Survey (MEPS)

Instructor: Cindy Bryce

Due date: Monday, February 4, 5:00 p.m.

The Medical Expenditure Panel Survey (MEPS), administered through the Agency for Healthcare Research and Quality (AHRQ) and CDC's National Center for Health Statistics (NCHS), collects data on Americans' use of specific health services, including the frequency of utilization and the cost of services. It also provides information on the cost, scope, and breadth of private health insurance held by the U.S. population. MEPS links data on health services expenditures and health insurance to demographics, employment, socioeconomic status, health status, and other characteristics of survey respondents.

Optional in-person tutorial: Q&A, Sampling Design and Weighting

Instructor: Jim Bost

Date, time & place: Friday, February 8, 10:00-11:00 a.m., 219 Parkvale

Session 6: National Health Care Surveys (NHCS)

Instructor: Cindy Bryce

Due date: Monday, February 11, 5:00 p.m.

The National Health Care Survey (NHCS) is a family of six provider-based surveys that describe utilization of health care services in major ambulatory, hospital and long term care settings. (The NHCS also includes a survey of employer sponsored health insurance and a national listing of health care facilities. These will not be discussed.) The surveys have been collected over various lengths of time, in several different settings. All are national probability sample surveys with complex sampling designs. The surveys share common definitions, data items and sampling frames, although each is unique in various aspects. Data for the surveys are collected from providers by the Census Bureau. We will focus on the National Ambulatory Medical Care Survey (NAMCS), the National Hospital Ambulatory Medical Care Survey (NHAMCS), and the National Hospital Discharge Survey (NHDS).

Session 7: Medicare claims data (Medicare)

Instructor: Amber Barnato

Due date: Monday, February 18, 5:00 p.m.

Medicare is administered by the Centers for Medicare and Medicaid Services (CMS). Medicare is the nation's largest health insurance program, and covers over 39 million Americans. Medicare provides health insurance to people age 65 and over, those who have permanent kidney failure, and certain people with disabilities. Data used by CMS to process claims for payments to hospitals and health providers can be used for health services research related to this population.

Session 8: Health Care Utilization Project (HCUP)

Instructor: Cindy Bryce

Due date: Monday, February 25, 5:00 p.m.

HCUP is a family of healthcare databases and related software tools and products developed through a Federal-State-industry partnership and sponsored by the AHRQ. HCUP databases provide national information of patient-level health care data, the Nationwide Inpatient Sample (NIS), which includes the largest collection of hospital care data in the United States, with all-payer, encounter-level information beginning in 1988.

Session 9: Case Study: Trends in Bariatric Surgery

Instructor: Amber Barnato

Due date: Monday, March 3, 5:00 p.m.

In this session we ask you to read 3 original articles and 2 editorials published in a single issue of JAMA. This series of articles provides an excellent case study of topical research using secondary data sources.

Project Proposal Due: Monday, March 10, 5:00 p.m.

Course Policies

Late assignments: Late assignments will receive zero credit.

Academic integrity: Students in this course will be expected to comply with the [University of Pittsburgh's Policy on Academic Integrity](#). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity.

Disabilities: If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and [Disability Resources and Services](#) no later than the 2nd week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call 648-7890 (Voice or TTD) to schedule an appointment. The Office is located in 216 William Pitt Union.

Incomplete grades: Students who are unable to complete the course for any reason must contact the course instructor as soon as possible to discuss grades and remediation [course reasons ("I" incomplete), extenuating personal reasons ("G" incomplete), withdrawal ("W")]. Students will have one calendar year from the start of the course to complete the course requirements, otherwise an "I" or "G" grade will remain on the transcript.

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