# Econ 850: Health Economics

## Spring 2015

### Professor: Donna Gilleskie

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<thead>
<tr>
<th>Office</th>
<th>6B Gardner Hall</th>
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<tr>
<td>Phone</td>
<td>966-5372</td>
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<tr>
<td>Office Hours</td>
<td>By appointment</td>
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<tr>
<td>Course</td>
<td>Econ 850 Health Economics</td>
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<td>Time/Day</td>
<td>11:00 am - 12:15 pm T, TH</td>
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### Grading

<table>
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<tr>
<th>Specification</th>
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<tr>
<td>3 assignments (due Jan 22, Feb 26, Apr 07)</td>
<td>33 %</td>
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<tr>
<td>in class discussion/engagement</td>
<td>12 %</td>
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<tr>
<td>Apr 07-16 in class; to be scheduled</td>
<td>20 %</td>
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<tr>
<td>due Monday, May 01</td>
<td>35 %</td>
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| Last day of class | 3 assignments (due Jan 22, Feb 26, Apr 07) | 33 % |
|-------------------|---------------------------------------------|
| April 23          | 12 % in class discussion/engagement        |
|                   | 20 % Apr 07-16 in class; to be scheduled   |
|                   | 35 % due Monday, May 01                    |

### Purpose:

An important aim of this course is to help you become familiar with and develop a critical understanding of economic research pertaining to the consumer side of health economics (e.g., individual demand for medical care, the health insurance market, individual health behaviors, the interaction between health and labor supply, etc.) in an effort to prepare you for your own dissertation research. The emphasis will be on exploring a variety of methods of modeling dynamic health-related behaviors over time and discussing the appropriateness as well as the limitations of different empirical approaches. The primary focus: how do (and how well do) researchers in this field attempt to capture the economic determinants (both behavioral and policy) and consequences (i.e., outcomes) of health-related behavior?

### Seminars:

Attendance at the Triangle Health Economics Workshop (THEW), the Applied Micro Seminar (Wed 3:30 - 5:00), and the Applied Micro Student Workshop (ECON 985) is very much encouraged, especially at this point in your graduate career when you are looking for a field paper and dissertation topic. Have your name put on the listserv or check out the following sites regularly:

- [http://thew.web.unc.edu/workshop-schedule/](http://thew.web.unc.edu/workshop-schedule/)
- [http://www.unc.edu/joubertc/Applied_micro_seminar.html](http://www.unc.edu/joubertc/Applied_micro_seminar.html)
- [http://www.unc.edu/dgill/links/courses/Econ985/index.html](http://www.unc.edu/dgill/links/courses/Econ985/index.html)
- [http://econ.duke.edu/events/workshops/applied-microeconomics](http://econ.duke.edu/events/workshops/applied-microeconomics)
I. Introduction

(A) Issue: “What is health economics?”
(B) Issue: “How is the market for medical care different from other markets?”
(C) Issue: “How do we as economists understand/explain individual health behaviors/outcomes?”

II. Subject: Demand for Medical Care

(A) Issue: “What determines this demand?”
   • Response: Derive it from the individual’s optimization problem (Homework #1)
(B) Issue: “What do we do with the zeroes (e.g., zero expenditures)?”
   • Response: Tobit model
   • Response: Rand Health Insurance Experiment - Two-part model/retransformation
   • Comment: reduced form estimation, right hand side variables treated as exogenous although some that are included may actually be endogenous
(C) Issue: “But many health outcomes are counts.”
   • Response: binary outcome model (e.g., poisson, negative binomial, etc.)
(D) Issue: “Is there a more general approach?”
   • Response: generalized linear model, Gamma log link model
(E) Issue: “But how well do econometric models fit the entire distribution of an outcome?”
   • Response: finite mixture model, quantile regression, kernel estimation
   • Response: conditional density estimation (Homework #2)
   • Response: “Why might we care about this?”
(F) Issue: “And where is the economic behavior anyway?”
   • Response: a theoretical model of demand (seminal work and extensions)
   • Response: an estimated model of demand
   • Comment: estimation of structural parameters (e.g., primitives of the optimization problem)

III. Subject: Demand for Health Insurance

(A) Issue: “But health insurance IS endogenous?”
   • Response: a theoretical model of supply of and demand for health insurance
   • Response: an empirical model of health insurance selection and medical care consumption
(B) Issue: “And what if some health insurance options have similar characteristics?”
   • Response: nested logit model
   • Response: heterogeneous coefficients model
   • Comment: modeling of unobserved individual heterogeneity
(C) Issue: “Again, where’s the theory?”
   • Response: estimation of a dynamic model of the insurance decision and medical care utilization
(D) Issue: “But can the estimation be done more simply?”
   • Response: set of jointly estimated dynamic equations
   • Comment: estimation of structural equations, joint estimation of a system of demand and production functions
IV. Subject: Health, Health insurance, and Employment Outcomes

(A) Issue: “How do we measure the effect of health insurance on LFP, job mobility?”
- Response: difference in difference model
- Response: exploitation of cross state variation
- Response: another example of an approximation model

(B) Issue: “How can we incorporate health expenses in a retirement model?”
- Response: different approaches in the literature
- Response: “Why is it so difficult to model health insurance choices in a structural model of employment behavior?”

(C) Issue: “How do we measure the effect of health on wages?”
- Response: body mass, disability
- Response: an estimated model of behavior

(D) Issue: “But what measure of health should be used?”
- Response: objective, subjective, latent measures
- Response: Why does health matter? Have we answered that question?

(E) Issue: “And what is the role of the employer?”
- Response: How do insurance offerings by employer/govt affect employee welfare?

V. Subject: Dynamic Consumption of Health “Bads” or Addictive Goods

(A) Issue: “How do economists model addiction?”
- Response: reduced form model
- Response: unobserved heterogeneity
- Response: learning

(B) Issue: “How do economists model the rationality of individual choices?”
- Response: rational part, dual personality (e.g., hyperbolic discounting)
- Response: learning and behavior

VI. Subject: Health-related Decisions over the Life-cycle

(A) Issue: “Past behavior, future consequences?”
- Response: life-cycle model of behavior
- Response: early impacts of health on child, adolescent, adult outcomes

(B) Issue: “How do individuals prepare for uncertain long term care?”
- Response: self-insurance vs. long term care insurance
- Response: asset accumulation, spend down, living arrangement

VII. Subject: Health and Education

(A) Issue: “Yes, health and education are correlated. Where do we go from here?”
- Response: unobservables
- Response: education and smoking decisions

(B) Issue: “Why does education matter? Where does it enter?”
- Response: an estimated model of behavior
- Response: cognitive and non-cognitive skills
List of References, Data Sources, and Readings

Texts for Your Library (not necessary for this class):
Primarily undergraduate texts, but good for reviewing the basics.


Sources of Aggregate Health Data:

- Annual expenditure data are collected by the *Centers for Medicare and Medicaid Services* (CMS). Formerly HCFA, the CMS is the federal agency that administers the Medicare, Medicaid and Child Health Insurance Programs and is part of the U.S. Department of Health and Human Services (DHHS). Website: [www.cms.hhs.gov/NationalHealthExpendData/](http://www.cms.hhs.gov/NationalHealthExpendData/).
- Additional health data are collected by the *National Center for Health Statistics* (NCHS). NCHS is charged with collecting health statistics and has many surveys, including the annual National Health Interview Survey. NCHS is part of the U.S. Department of Health and Human Services. Website: [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).
- Health data are also gathered by the *Agency for HealthCare Research and Quality* (AHRQ). Formerly AHCPR, AHRQ is part of the U.S. Department of Health and Human Services. Website: [www.ahrq.gov/](http://www.ahrq.gov/).
Other Annual Sources of Health Data (published with a lag of one-two years):

- **Statistical Abstract of the United States**
  This is the best initial data source and includes key data from the other sources below. Published by Bureau of the Census, part of the U.S. Department of Commerce, with a two-year delay. e.g. 2011 edition has data for 2009. 
  Website: [www.census.gov/](http://www.census.gov/).

- **Health United States**
  Published by National Center for Health Statistics, part of the U.S. Department of Health and Human Services, with a one-year delay.
  Website: [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).

- **Health Affairs**
  Beginning in 1998 this has an issue that includes an article on HCFA estimates of past annual expenditures and an article on HCFA projections for future expenditures.
  Website: [healthaffairs.org](http://healthaffairs.org).

- **Health Care Financing Review (HCFA)**
  Published by Health Care Finance Administration.
  Website: [www.cms.hhs.gov/](http://www.cms.hhs.gov/).

- **Employee Benefit Research Institute (EBRI)**
  Extensive data on health benefits received by employees.
  Website: [www.ebri.org/](http://www.ebri.org/).

- **Kaiser Family Foundation (KFF)**
  Extensive data on health insurance and the uninsured.
  Website: [www.kff.org/](http://www.kff.org/).

Sources of Individual Health Data:

Cross-Section Data Sets

- **National Health Interview Survey (NHIS)**
  Conducted by the National Center for Health Statistics. About 120,000 persons.
  Website: [www.cdc.gov/nchs/nhis.htm](http://www.cdc.gov/nchs/nhis.htm).

- Many other data sets also conducted by the National Center for Health Statistics.
  Website: [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).

Panel Data Sets

- **Medical Expenditure Panel Survey (MEPS)**
  Beginning 1996, conducted by the Agency for Health Care Research and Quality (AHRQ). This superseded NMES. It has five rounds of interviews over a 2 1/2-year period. Overlapping cohorts. These data are then linked with additional information collected from the respondents’ medical providers, employers, and insurance providers.
  Website: [www.meps.ahrq.gov/mepsweb/](http://www.meps.ahrq.gov/mepsweb/).
- **National Medical Expenditure Surveys (NMES)** of 1977 and 1987
  Conducted by the Agency for Health Care Policy Research (AHCPR). Most detailed expenditure data. Five rounds of interviews at 4 month intervals with dated utilization information. 35,000 persons.

- **Medicare Current Beneficiary Survey (MCBS)**
  Claims from CMS. Costs money to acquire. I have access to 1995-2011 data.
  Website: [www.cms.gov/MCBS/](http://www.cms.gov/MCBS/).

- **Health and Retirement Survey (HRS)**
  Cohort of individuals aged 51-61 in 1992 followed every two years. Cleaned RAND version of the data is available.
  Website: [hrsonline.isr.umich.edu/](http://hrsonline.isr.umich.edu/).

- **National Longitudinal Study of Adolescent Health (Add Health)**
  Website: [www.cpc.unc.edu/projects/addhealth](http://www.cpc.unc.edu/projects/addhealth).

- **Rand Health Insurance Study (RHI)**
  Major experiment in late 1970’s where 7,000 people were randomly assigned to different health insurance policies and followed for 3-5 years.

- **Other panel data sets primarily used in labor economics but with some limited data on health:**
  - *Survey of Income Program and Participation* (SIPP), conducted by Census Bureau for BLS
  - *National Longitudinal Surveys* (NLS), conducted by Ohio State University and NORC
  - *Panel Survey of Income Dynamics* (PSID), conducted by University of Michigan
  - *Russian Longitudinal Monitoring Survey* (RLMS), conducted by University of North Carolina
  - *British Household Panel Survey* (BHPS), funded by the Economic and Social Research Council
  - *Household, Income, and Labour Dynamics in Australia* (HILDA) conducted by Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA)
Government Sites:

- **Centers for Medicare and Medicaid Services (CMS)**
  Website: [www.cms.hhs.gov/](http://www.cms.hhs.gov/).

- **National Institutes of Health (NIH)**
  Also in DHHS. Finances most health research.

- **Agency for Healthcare Research and Quality (AHRQ)**
  In DHHS. Formerly Agency for Health Care Policy Research (AHCPR). Runs the National Medical Expenditure Surveys. Finances much health economics research.
  Website: [www.ahrq.gov/](http://www.ahrq.gov/).

- **National Center for Health Statistics (NCHS)**
  In DHHS. Runs the National Health Interview Survey and many other surveys. Produces Health U.S.
  Website [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).
Suggested Readings for Course Topics:

I. Introduction (What is Health Economics?)

(A) General Issues

   http://jhppl.dukejournals.org/cgi/reprint/26/5/851
   http://jhppl.dukejournals.org/cgi/reprint/26/5/835 (In addition to this paper, this issue contains a variety of other papers focused on Arrows seminal AER paper.)

(B) Some Numbers

   http://works.bepress.com/dana_goldman/77
II. The Demand for Medical Care

(A) Homework # 1. Understanding the empirical specification of the demand for medical care.

(B) Zeroes


(C) Count data


(D) More general approaches


(E) Estimation of the distribution


(F) Economic Models


(G) Solution and Estimation of Dynamic Structural Optimization Problems
3. Keane, M. 2010. “Structural vs. Atheoretical Approaches to Econometrics.” Journal of Econometrics 156: 3-20. (And read the comments on this article, in the same volume.)

III. The Supply of and the Demand for Health Insurance

(A) Health insurance is endogenous

(B) Discrete choice models of health insurance


(C) Models of health insurance decisionmaking


(D) Approximation models of health insurance, utilization, and health outcomes


IV. Role of Health and Health Insurance in Employment Decisions/Outcomes

(A) Job Mobility


(B) Retirement and Health Insurance


(C) Wages


(D) Health: measurement and role?


(E) Role of the employer (i.e., how to model health insurance options)


V. Dynamic Consumption of Addictive Goods

(A) Rational Addiction


(B) More on Expectations and Learning
