Economics 483: Cross-Sectional Methods (Fall 2018)
Topic: Patient Care under Uncertainty

The prerequisite for this Ph.D. field course is Economics 480-1. Each student taking the course for credit will be expected to write a research paper, due January 7, 2019. There are no problem sets or examinations.


Slides used throughout course: Patient Care under Uncertainty (PCU) slides, posted to Canvas.

**Tentative Schedule and Readings**

### Introduction to Course (9/27)

### Clinical Guidelines and Clinical Judgment (10/2, 10/4)
Topics: Adherence to Guidelines or Exercise of Judgment?; Degrees of Personalized Medicine; Optimal Care Assuming Rational Expectations; Psychological Research Comparing Evidence-Based Prediction and Clinical Judgment; Second-Best Welfare Comparison of Adherence to Guidelines and Clinical Judgment


### Wishful Extrapolation from Clinical Trials to Patient Care (10/9, 10/11)
Topics: From Study Populations to Patient Populations; From Experimental Treatments to Clinical Treatments; From Measured Outcomes to Patient Welfare; From Hypothesis Tests to Treatment Decisions; Wishful Meta-Analysis of Disparate Studies; Sacrificing Relevance for Certitude


### Credible Use of Evidence to Inform Patient Care (10/16, 10/18, 10/23, 10/25)
Topics: Identification of Treatment Response; Studying Identification; Identification with Missing Data on Patient Outcomes or Attributes; Partial Personalized Risk Assessment; Credible Inference with Observational Data; Identification of Response to Testing and Treatment; Prediction Combining Multiple Studies


Reasonable Care under Uncertainty (10/30)
Topics: Qualitative Recognition of Uncertainty; Formalizing Uncertainty; Optimal and Reasonable Decisions; Reasonable Decision Criteria; Reasonable Choice Between Surveillance and Aggressive Treatment; Uncertainty about Patient Welfare

Reasonable Care with Sample Data (11/6, 11/8)
Topics: Principles of Statistical Decision Theory; Recent Work on Statistical Decision Theory for Treatment Choice; Designing Trials to Enable Near-Optimal Treatment Choice


Population Health Perspective on Reasonable Care (11/13)
Topics: Treatment Diversification; Adaptive Diversification; The Practicality of Adaptive Diversification


Managing Uncertainty in Drug Approval (11/15)
Topics: FDA Approval Process; Type I and II Errors in Drug Approval; Errors due to Statistical Imprecision and Wishful Extrapolation; FDA Rejection of Formal Decision Analysis; Adaptive Partial Drug Approval

Vaccination Policy (11/20)


Student Presentations of Papers in Progress (11/27, 11/29, 12/4)

Note: Classes are not scheduled for 11/1 and 12/6 due to trips. Alternative class times will be set if necessary.
483 Tentative Detailed Class Schedule

Introduction to Course
9/27: PCU_intro slides

Clinical Guidelines and Clinical Judgment
10/2: PCU_1 slides. PCU_Complement 1B

Wishful Extrapolation from Clinical Trials to Patient Care
10/9: PCU_2 slides. PCU_Complement 2A.

Credible Use of Evidence to Inform Patient Care
10/16: PCU_3 slides.
10/25: bounds with instruments, Bhattacharya, Shaikh, and Vytlacil (2012); inequality-probability
bounds, Mullahy (2018).

Reasonable Care under Uncertainty
10/30: PCU_4 slides. PCU_Complement 4A.

Reasonable Care with Sample Data

A Public Health Perspective on Reasonable Care

Managing Uncertainty in Drug Approval
11/15: PCU_7 slides.

Vaccination Policy

Student Presentations of Papers in Progress (11/27, 11/29, 12/4)