

EPID 690
Quantitative Evaluation of Public Health Interventions
Fall 2009

Overview:

This course is about epidemiologic methods for evaluating public health interventions. The main focus of the course will be interventions within the fields of infectious disease and injury control. Although these two fields are different in substantive terms, they have two important features in common:

- Both fields have a strong emphasis on prevention-orientated research
- Time-on-onset is typically short for both injuries and infectious disease. It can be measured in weeks, days, or even seconds. By contrast, CHD and cancer outcomes take years to develop.

The major purpose of the course is to demonstrate how epidemiologic study designs and data analysis methods, commonly used in risk factor studies, are applicable to the evaluation of interventions designed to improve public health. Although the course emphasize methods, the methods are germane to injury and infectious disease. It is recommended that students taking the course have some substantive knowledge of injury OR infectious disease.

Pedagogy:

The course is split into two halves: observational studies and randomized controlled trials (RCTs). Observational topics are covered in the first half of the semester and include pre/post designs, case-control and case-crossover designs, and use of mixed models and time series for the analysis of policies, laws, and regulations. Topics in randomized controlled trials are covered in the second half of the semester and include blinding, recruitment, adherence, cluster-randomization, and analysis of RCT data.

The course will be taught through a combination of didactic lectures and seminar-style discussion of readings. In general, didactic lectures are on Mondays and seminars are on Wednesdays. The Wednesday seminars focus on published research or methods papers. Successful seminars require consistent attendance, adequate preparation and thoughtful, courteous participation from all members of the group. Attendance at all class meetings is expected except in the case of such extenuating circumstances as illness, inclement weather, or attending a professional conference. It is expected that all

students will have read the assigned materials and can participate fully in discussions.

Exams

There will be a mid-term and a final exam in this course. The exams will be conducted during scheduled class time on October 19 and December 09. The exams will include a mix of multi-choice questions, numerical answers, and written answers. The exams are closed book, but you may refer two sheets of paper with summary notes. Bring a calculator. The final exam will focus on the material covered in the second half of the semester, but material from the first half of the semester is also examinable on the final.

Grades

Final grades will be determined as follows:

- 20% for quality of participation in seminars in the first half of the semester
- 30% for mid-term exam
- 20% for quality of participation in seminars in the second half of the semester
- 30% for final exam

EPID 690 Schedule - Fall 2009

	Date	Room	Topic	Speaker	Reading
August					
1	Wednesday Aug 26	RO 228	Evaluation of Injury Interventions	Marshall	--
2	Monday Aug 31	RO 228	Evaluation of ID Interventions	Pettifor	--
September					
3	Wednesday Sep 02	RO 228	Quasi-experiments & time series designs	Marshall	--
--	Monday Sep 07	RO 228	NO CLASS	--	--
4	Wednesday Sep 09	RO 228	Time series & ARIMA	Seminar	Bhattari 2007; Webster 2002
5	Monday Sep 14	RO 228	Poisson models: Modeling policy change I	Marshall	
6	Wednesday Sep 16	RO 228	Modeling policy change: CAP laws	Seminar	Hepburn 2006
7	Monday Sep 21	RO 228	Poisson models: Modeling policy change II	Marshall	--
8	Wednesday Sep 23	RO 228	Modeling policy change: Alcohol regulation	Seminar	Villaveces 2003
9	Monday Sep 28	RO 228	Case-control & Cross-sectional designs	Marshall	--
10	Wednesday Sep 30	RO 228	Case-control & X-Sect: Bike helmets & Bednets	Seminar	Curnow 2005; Cummings 2006; Spencer 2003
October					
11	Monday Oct 05	RO 228	Case-crossover designs	Marshall	Maclure 2000
12	Wednesday Oct 07	RO 228	Case-crossover: hand protection, cellphones	Seminar	Sorock 2004; Redelmeier 1997
13	Monday Oct 12	RO 228	Case-crossover designs	Marshall	--
14	Wednesday Oct 14	RO 228	Designing an observational study	Seminar	--
--	Monday Oct 19	RO 228	In-Class Mid-Term Exam	--	--
15	Wednesday Oct 21	RO 228	Review & Discussion	--	--
16	Monday Oct 26	RO 228	RCTs: strengths and weaknesses	Marshall	--
17	Wednesday Oct 28	RO 228	RCTs vs. observational studies	Seminar	WHI 2002; Prentice 2005; Prentice 2007
November					
18	Monday Nov 02	RO 228	RCTs: blinding, randomization & recruitment	Pettifor	--
19	Wednesday Nov 04	RO 228	Blinding & circumcision	Seminar	Schulz 2002; Auvert 2005; Boultron 2007
20	Monday Nov 09	RO 228	RCTs & cluster-randomization	Pettifor	--
21	Wednesday Nov 11	RO 228	Cluster-randomization: Alcohol, TBA	Seminar	Donner 2004; Wagenaar 2000; Wagenaar 2000; TBA
22	Monday Nov 16	McG1302	Adherence, adverse events, contamination	Pettifor	--
23	Wednesday Nov 18	McG1302	Safety & adherence: Malaria trials	Seminar	Morse 2001; Weiss 2008; Maiteki-Sebuguzi 2008
--	Monday Nov 23	--	NO CLASS	--	--
--	Wednesday Nov 25	--	NO CLASS	--	--
24	Monday Nov 30	RO 228	RCT Analysis: ITT, missing data, MSMs	Marshall	--
December					
25	Wednesday Dec 02	RO 228	RCT Analysis: hip protectors in older adults	Seminar	TBA
27	Monday Dec 07	RO 228	Review & Discussion	--	--
--	Wednesday Dec 09	RO 228	In-Class Final Exam	--	--