
CLRES 2820**Special Topics in Clinical Trials**Spring Term

Overview and Objectives: Special Topics in Clinical Trials course will provide information on the different types of clinical trials beyond the Phase III superiority parallel group design. We will use manuscripts on special types of clinical trials to facilitate learning of concepts discussed in class.

Responsibilities:

There will be reading assignments on selected articles and guidelines.

Students will be assigned written exercises that will be graded. All homework assignments will be assigned with a due date. There will be a final project which will involve writing a study protocol for a “special” clinical trial that has been recently completed or is ongoing at the University of Pittsburgh. You are encouraged to work together on class projects and homework assignments, but you should write up your results individually, i.e. very similar papers will not be accepted. Attendance and participation in class are required.

Evaluation criteria will be based on completion of the writing assignments, completion of the final project, and attendance of meetings with instructors.

Course Requirements

Class attendance	5%
Written assignments	65%
Final project	30%

Course Grading Scale:

For the computation of the final course grade as well as for the course assignments, the following grading scale will be used:

A+ >95%	B+ 88-89%	C 70-79%
A 92-95%	B 82-87%	D 60-69%
A- 90-91%	B- 80-81%	F <60%

NOTE: Homework assignments, course information, and communication will be available at <http://courseweb.pitt.edu>.

Required Textbook: Fundamentals of Clinical Trials - Third Edition, Friedman LM, Furberg CD, DeMets DL., John Wright, PSH Inc. Boston, MA, 1998.

Other highly recommended textbooks to be used as references:

Clinical Trials: A Practical Approach, 1996, Stuart J. Pocock, John Wiley & Sons

Clinical Trials: Design, Conduct, and Analysis, 1986 Curtis L. Meinert, Oxford

Clinical Trials: A Methodologic Perspective, 2005, Steven Piantadosi, John Wiley & Sons

Course Syllabus

Session 1	Intro to course and final project Crossover Trials and Equivalence Trials
------------------	--

Required readings:

- 1) Pocock Chapter 8: Crossover Trials
- 2) Piaggio G et al. Reporting of noninferiority and equivalence randomized trials. An extension of the CONSORT statement. JAMA 2006;295:1152-60.

Supplemental Readings:

- 1) Brown. The crossover experiment for clinical trials. Biometrics 1980;36:69-79.
- 2) Hills M, Armitage P. The two-period cross-over clinical trial. Br J Clin Pharm 1979;8:7-20
- 3) Senn S, Lee S. (2004) The analysis of the AB/BA cross-over trial in the medical literature. Pharmaceutical Statistics 3:123-131.
- 4) Putt ME, Ravina B. (2002) Randomized, placebo-controlled, parallel group versus crossover study designs for the study of dementia in Parkinson's disease. Controlled Clinical Trials 23:111-126.
- 5) Stat in Med Non-inferiority trials: advances in concepts and methodology (special issue) 30 Jan 2003, 2:165-336.

Homework Assignment 1: Find examples of a crossover trial and an equivalence or non-inferiority trial. Describe each trial with respect to each of the items: (1) Title (2) Objective (3) Interventions (4) Design and Participants (5) Primary outcome (6) Results for primary outcome (7) Conclusions for primary outcome. Include the full citation and abstract for each trial.

Session 2	Emergency Medicine trials
------------------	----------------------------------

Supplemental Reading:

Federal Register volume 61, no 192, page 51498 (Informed consent in emergency medical interventions)

Homework Assignment 2: Find examples of a surgical trial and an emergency medicine trial (including prehospital). Describe each trial with respect to each of the items: (1) Title (2) Objective (3) Interventions (4) Design and Participants (5) Primary outcome (6) Results for primary outcome (7) Conclusions for primary outcome. Include the full citation and abstract for each trial.

Homework 1 is due.

Session 3	Group Randomized Trials Complementary and Alternative Medicine
------------------	---

Homework Assignment 3: Find examples of a complementary and alternative medicine trial and a group/cluster randomized trial. Describe each trial with respect to each of the items: (1) Title (2) Objective (3) Interventions (4) Design and Participants (5) Primary outcome (6) Results for primary outcome (7) Conclusions for primary outcome. Include the full citation and abstract for each trial.

Required readings:

1. Friedman, Furberg, and DeMets text: pp 119-122.
2. Killip, Mahfoud, Pearce (2004) What is an intracluster correlation coefficient? Crucial concepts for primary care researchers. *Annals of Family Medicine* 2:204-208.
3. Donner A, Klar N. (1996) Statistical considerations in the design and analysis of community intervention trials. *Journal of Clinical Epidemiology* 49:435-439.

Supplemental Readings:

- 1) Cornfield J. (1978) Randomization by group: a formal analysis. *American Journal of Epidemiology* 108:100-2.
- 2) Donner (1998) Methodological considerations in the design of the WHO antenatal care randomized controlled trial. *Paediatric Perinatal Epidemiology*. 12 (Suppl 2): 59-74.
- 3) Villar (2001) WHO antenatal care randomised trial for the evaluation of a new model of routine antenatal care. *Lancet* 357:1551-64.
- 4) Stevens J, Murray DM, Catellier DJ, Hannan PJ, Lytele LA, Elder JP, Young DR, Simons-Morton DG, Webber LS. (2005) Design of the Trial of Activity in Adolescent Girls (TAAG). *Contemporary Clinical Trials* 26: 223-233.

Session 4	Small clinical trials and trials for rare diseases Small group discussions of trials
------------------	---

Homework Assignment 4: Find two trials from two rare diseases from the NIH Office of Rare Diseases Research <http://rarediseases.info.nih.gov/RareDiseaseList.aspx?PageID=1>. Describe each trial with respect to each of the items: (1) Title (2) Objective (3) Interventions (4) Design and Participants (5) Primary outcome (6) Results for primary outcome (7) Conclusions for primary outcome. Include the full citation and abstract for each trial.

Homework Assignments 2 and 3 are due.

Session 5	Behavioral medicine interventions Pediatric trials and minority recruitment
------------------	--

Homework Assignment 5: Find examples of a behavior medicine trial and a pediatric trial. Describe each trial with respect to each of the items: (1) Title (2) Objective (3) Interventions (4) Design and Participants (5) Primary outcome (6) Results for primary outcome (7) Conclusions for primary outcome. Include the full citation and abstract for each trial.

Session 6	Oncology Trials Critical Care/Pediatrics Trial
------------------	---

Required

1. Carcillo J, Holubkov R, Dean JM, Berger J, et al. (2009) Rationale and design of the pediatric critical illness stress-induced immune suppression (CRISIS) prevention trial. *J Parenter Enteral Nutr* 33(4):368-74.

2. Carcillo JA, Dean JM, Holubkov R, Berger J, et al. (2011) The randomized comparative pediatric critical illness stress-induced immune suppression (CRISIS) prevention trial. *Pediatric Crit Care Med.* Nov 10 [Epub ahead of print]

Homework Assignment 6: Find an example of an oncology trial and a critical care medicine trial. Describe the trial with respect to each of the items: (1) Title (2) Objective (3) Interventions (4) Design and Participants (be sure to fully describe the unit of randomization versus the unit of analysis) (5) Primary outcome (6) Results for primary outcome (7) Conclusions for primary outcome. Include the full citation and abstract for each trial.

Homework Assignments 4 and 5 are due.

Session 7	Women's Health trials Physical Therapy and Exercise Trials
------------------	---

Homework Assignment 7: Find examples of a women's health trial and an exercise or physical therapy trial. Describe each trial with respect to each of the items: (1) Title (2) Objective (3) Interventions (4) Design and Participants (5) Primary outcome (6) Results for primary outcome (7) Conclusions for primary outcome. Include the full citation and abstract for each trial.

Session 8	Presentation of individual module 3 projects
------------------	---