
CLRES 2820

Special Topics in Clinical Trials

Dates: 3/4/09-3/30/09

Meeting Times: MW 10:00-12:00

Location: VALE 305A

Phone contact: 412-246-6961

Course Instructors:

Charity G. Moore, PhD

Sunday Clark, ScD

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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 four 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:

90 - 100 = A	80 - 85 = B	70 - 75 = C	60 - 65 = D
86 - 89 = B+	76 - 79 = C+	66 - 69 = D+	< 60 = F

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

Date: March 4, 2009

Session 1

**Pharmacoepidemiology & Phase IV trials
Pharmacoeconomic Studies**

**Clark
Hanlon**

Required Readings:

- 1) Spinewine A, Schmader KE, Barber N, Hughes C, Lapane KL, Swine C, Hanlon JT (2007) Appropriate prescribing in elderly people: how well can it be measured and optimised? *Lancet* 370:173-84.
- 2) <http://www.fda.gov/cder/pmc/default.htm>
- 3) <http://www.fda.gov/cber/regsopp/84016.htm>
- 4) Glasser SP, Salas M, Delzell E. (2007) Importance and challenges of studying marketed drugs: what is a Phase IV study? Common clinical research designs, registries, and self-reporting systems. *Journal of Clinical Pharmacology* 47:1074-1086.

Homework Assignment 1: Find an example of a pharmacoepidemiology, pharmacoeconomic, or Phase IV study. First state which type of study you believe the study to be. Describe the study 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. **Due:** March 9, 2009.

Date: March 9, 2009

Session 2

**Crossover Trials
Equivalence Trials**

**Moore
Moore**

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 2: 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. **Due** March 16, 2009.

Date: March 11, 2009

Session 3

**Behavioral medicine interventions
Emergency Medicine trials**

**Marcus
Callaway**

Supplemental Reading:

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

Homework Assignment 3: Find examples of a behavioral medicine trial and an emergency medicine 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. **Due** March 18, 2009.

Date: March 16, 2009

Session 4

**Surgical trials
Complementary and Alternative Medicine**

**Irrgang
Glick/Weiner**

Homework Assignment 4: Find examples of a complementary and alternative medicine trial and a surgical 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. **Due** March 23, 2009.

Date: March 18, 2009		
Session 5	Medical device trials Meta-Analysis (including clinical trial registration)	Clark Bost

Required readings:

1. Meta-analysis: Friedman, Furberg, DeMets text: pp 308-316.

Supplemental Information:

<http://www.fda.gov/oc/ohrt/irbs/devrisk.pdf>

Epidemiology of medical devices (Torrence) <http://www.pitt.edu/~super1/lecture/lec0281/001.htm>

Homework Assignment 5: Find examples of a meta-analysis study and a medical device 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. **Due** 3/25/09.

Date: March 23, 2009		
Session 6	Group Randomized Trials Presentation of individual module 3 projects	Moore

Required readings:

1. Friedman, Furberg, and DeMets text: pp 119-122.
2. Killip, Mahfoud, Pearce (2004) What is an intraclass 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.

Homework Assignment 6: Find an example of a group/cluster randomized 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. **Due** March 30, 2009.

Date: March 25, 2009		
Session 7	Group Randomized Trial Public Health Trial	Schwarz Stebbins

Date: March 30, 2009		
Session 8	Presentation of individual module 3 projects	