SPPH 513: Clinical Epidemiology

Course Notes 2017

Course Syllabus

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Major revisions (2016)

INTERIM VERSION 2016-OCT-20; SUBJECT TO REVISION
Online updated versions list revisions on page 2.

List of revisions after 2016-OCT-10

Oct-20:
Course learning goals and objectives: typos corrected, list edited

SPPH 513: Clinical Epidemiology

Course syllabus, Spring 2017

1. Course Description

This course will introduce topics and methods in clinical epidemiology. It will involve formulating a clinical practice guideline.

- Three credits
- One of HCEP 400, HCEP 502 or one of SPPH 400, SPPH 502
- A clinical background is an asset but not necessary
- Maximum enrolment 30 students

2. Course operation

Class Time: Tuesdays 2:00–5:00pm

Location: Room 149, SPPH

Instructor: Ralph Brands, MD MHSc, Clinical Professor, SPPH
rbrands@mail.ubc.ca
Office Hours: by appointment at SPPH or by email

Learning Goals and Objectives (expanded in each course unit)

The overall goal of this course is to provide the basis for familiarity with fundamental concepts of clinical epidemiology.

Clinical epidemiology has been conceptualized as *a basic science for clinical medicine*. It works as the extension of epidemiology in support of clinical medicine by understanding how medical evidence is designed, obtained, evaluated, understood, and applied. The overarching goal is always supporting *evidence to action*.

These themes are developed in sections about diagnosis, clinical agreement, threats to validity, numerical issues, therapy, prognosis, qualitative research, meta-analysis, and management recommendations. Specific goals for each section are available in course materials for that section.

On completion of this course the student will:

Be familiar with a recent framework for understanding clinical epidemiology, through a synthesis of content from the course text and GRADE.

Understand the principles of diagnosis and testing to support *evidence to action*.

Be able to identify and understand clinical disagreement, as well as metrics of clinical disagreement and their applicability to support *evidence to action*.

Be familiar with the fundamental study designs.

Develop a perspective on understanding threats to validity in the context of different study types, and the importance of bias and numerical issues arising from use of frequentist statistics.

Understand how to recognize, minimize, and prevent threats to validity in future research.

Be familiar with critical appraisal frameworks and their rationale for all types of medical evidence.

Understand the importance of macro issues such as the efficacy/effectiveness spectrum in evaluation and design of research about therapy.

Understand the fundamental importance and applicability of observational research in support of therapy and study of risk, prognosis, and natural history.

Be able to recognize and critically appraise medical evidence from qualitative research.

Undertake formulation of a management recommendation using GRADE, standardized workflow (evidence to decision frameworks) and supporting software.

Be able to contribute to or lead clinical teams formulating future management recommendations using GRADE.

Understand the importance of patient values and preferences in formulation of recommendations for management and in evaluation of clinical evidence.

3. Course Structure

Instructor led problem-oriented discussion. Study completed prior to each class, with short online quiz before most classes. The course instructor will grade evaluation activities. Student presentations of some topics.

Attendance is mandatory (per UBC regulations) and noted.

4. Text and Course materials

Users' Guides to the Medical Literature: A Manual for Evidence-based Clinical Practice by Guyatt et al., (3rd Ed 2015). The text for this course is required.

Course website contains links to other online course materials (articles, software etc).

5. Student Evaluation

Mini-presentation (25%)

A 15-20 minute oral presentation in a clinical epidemiology topic of interest with emphasis on practical issues and threats to validity.
A sample list of some previous topics is appended.

Major project (25%)

Working in groups (of 2-4), students complete a management recommendation (clinical practice guideline), usually on a recommended topic. Methodology (GRADE) and process (GRADEPro GDT, GRADE DECIDE, OpenMeta[Analyst] etc, are mandated. The major project is completed prior to term end, and is presented during the last class.

Class participation (10%):

Students will be assigned a mark between 0-10 for their attendance, willingness to participate in class discussion and the degree to which their participation enhances discussion in the class.

Quizzes (25%):

Short online quizzes must be completed online before most classes (deadline usually prior day).

WEEK	DATE	TOPIC
1	Jan 3	Overview / Diagnosis
2	Jan 10	Diagnosis (cont)
3	Jan 17	Diagnosis (cont) Clinical disagreement
4	Jan 24	Clinical disagreement (cont)
5	Jan 31	Patient Management Recommendations
6	Feb 7	Patient Management Recommendations (cont) Threats to Validity I
7	Feb 14	Threats to Validity II
	Feb 21	NO CLASS (SPRING BREAK)
8	Feb 28	Threats to Validity II (cont)
9	Mar 7	Therapy and Prognosis
10	Mar 14	Therapy and Prognosis
11	Mar 21	Therapy and Prognosis
12	Mar 28	Qualitative Research
13	Apr 4	Major project presentations

NOTE: Schedule is tentative and subject to change and rearrangement according to class needs.

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Mini-presentations, Spring 2017

SAMPLE only – Most recent version in *UBC Connect: SPPH 513*

WEEK	DATE	PRESENTATIONS
1	Jan 3	
2	Jan 10	
3	Jan 17	
4	Jan 24	1. The Lie Detector Test 2. Verification Bias
5	Jan 31	
6	Feb 7	3. Observer Variability in Mammography 4. Spectrum of Disease in Diagnostic Test Studies
	Feb 14	NO CLASS (SPRING BREAK)
7	Feb 21	5. Pelvic Examination: Diagnosis or clinical agreement? 6. The Will Rogers Phenomenon
8	Feb 28	7. Berkson's Bias 8. Detection Bias
9	Mar 7	9. Protopathic bias 10. Reverse Confounding
10	Mar 14	11. Encainide and Flecainide 12. EC-IC Bypass
11	Mar 21	13. Confounding by Indication 14. Prevalence-incidence bias
12	Mar 28	15. Time-dependent bias 16. Lead-time bias
13	Apr 4	

NOTE: This lists presentations given Spring 2016. There may be fewer, additional, or different presentations given this year, depending on course needs. The list is given for information purposes only; don't plan around these dates.

A Level (80% to 100%)

A+ is from 90% to 100%. It is reserved for exceptional work that greatly exceeds course expectations. In addition, achievement must satisfy all the conditions below.

A is from 85% to 89%. A mark of this order suggests a very high level of performance on all criteria used for evaluation. Contributions deserving an A are distinguished in virtually every aspect. They show that the individual (or group) significantly shows initiative, creativity, insight, and probing analysis where appropriate. Further, the achievement must show careful attention to course requirements as established by the instructor.

A- is from 80% to 84%. It is awarded for generally high quality of performance, no problems of any significance, and fulfillment of all course requirements. However, the achievement does not demonstrate the level of quality that is clearly distinguished relative to that of peers in class and in related courses.

B Level (68% to 79%)

This category of achievement is typified by adequate but unexceptional performance when the criteria of assessment are considered. It is distinguished from A level work by problems such as:

1. one or more significant errors in understanding
2. superficial representation or analysis of key concepts
3. absence of any special initiatives
4. lack of coherent organization or explication of ideas

The level of B work is judged in accordance with the severity of the difficulties demonstrated.
B+ is from 76% to 79%.
B is from 72% to 75%.
B- is from 68% to 71%.
C Level (55% to 67%)

Although a C+, C, or C- grade may be given in a graduate course, the Faculty of Graduate Studies considers 68% as a minimum passing grade for graduate students. See the UBC Calendar for details.

Appendix: Learning objectives and strategies for selected course units.

Diagnosis, clinical disagreement, bias, statistical issues, therapy, prognosis, management recommendations.