

**Queen's University
Department of Public Health Sciences**

**EPID 831: Chronic Disease Epidemiology
Winter 2020 - DRAFT**

Instructor: William Pickett

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Office Hours: by appointment

Class Days/Times: Tuesdays, 230 until 530

Location: Carruthers Hall, 311

Prerequisites: EPID 801 and EPID 821 (or equivalent) with permission of course instructor

Course Description:

This course will provide an overview of the epidemiology of some of the leading non-infectious causes of morbidity and mortality in Canada, and will highlight the key methodological considerations for the study of each disease or health problem.

The first module of the course will describe the leading causes of morbidity and mortality in Canada and worldwide, measurement of disease burden, classification of diseases, methods of disease surveillance, and related epidemiological conceptual models.

The second module will present the natural history, patterns of occurrence, personal and economic burden, social and physical determinants, and interventions for the prevention and/or management of selected types of these chronic diseases.

Course Objectives:

After taking this course students will be able to:

- 1) identify leading causes of morbidity and mortality in Canada, and globally
- 2) describe the epidemiology/public health burden of selected important chronic diseases
- 3) understand conceptual and methodological issues related to these chronic diseases
- 4) formulate a research question and design a research study or a policy brief in the area of chronic disease epidemiology

Resources:

There is no required textbook for this course. Course notes, handouts, selected readings, and other course materials will be made available on the onQ site. **Students are expected to study the readings before the class and be prepared for class discussions.** In addition, the following resources will be either on reserve in the library, or are available publicly online. These recommended resources provide a starting point for the development of student lectures and completion of assignments.

1. Harris RE. *Epidemiology of Chronic Disease*: Jones & Bartlett Learning, 2013.
2. Remington RL. *Chronic Disease Epidemiology and Control*, 3rd edition. APHA, 2010
3. Public Health Agency of Canada
 - a. Chronic Diseases:
<http://www.phac-aspc.gc.ca/cd-mc/index-eng.php>
 - b. Canadian Chronic Disease Surveillance System:
<https://health-infobase.canada.ca/ccdss/data-tool/>
4. World Health Organization; Chronic Diseases and Health Promotion:
https://www.who.int/chp/about/integrated_cd/en/
5. Creating policy briefs:
<http://www.ncchpp.ca/docs/2019-PC-KS-PolicyBrief-EN.pdf>
6. CIHR Project Grant Instructions:
<http://cihr-irsc.gc.ca/e/49560.html#b2>

COURSE CONTENT:

DATE	TOPICS COVERED
MODULE 1	
January 7	1) Course overview 2) Introduction to chronic disease epidemiology
January 14	1) Leading causes of morbidity and mortality 2) Measurement of the burden of diseases 3) Classification systems
January 21	1) Epidemiological models for chronic disease 2) Chronic disease surveillance (J Queenan)
<i>Topic for Chronic Disease Report identified and approved by email</i>	

MODULE 2

January 28 Injuries

Part 1 of Chronic Disease Report due

February 4 Violence

February 11 Diseases of aging (**A Vafaei**)

February 18 **READING WEEK – NO CLASS**

February 25 Coronary heart disease, diabetes, obesity

March 3 ***Midterm exam (covers the first 7 lectures, January 7 to February 25)***

March 10 Chronic Disease Report Session: Peer-review of Initial Ideas

Part 2 of Chronic Disease Report due on March 11th

March 17 Respiratory disease, asthma, COPD

March 24 Cancer

March 31 Mental health

April 7 ***Part 3 (final report) of Chronic Disease Report due***

Class Format

Each class will typically be divided into three one-hour components

- 1) An introduction to core epidemiological material, usually presented by Dr. Pickett
- 2) A group learning exercise designed by Dr. Pickett with input from experts
- 3) Supplemental lecture related to the topic(s) under study, presented by Dr. Pickett or student groups (Module 2 only)

Course Assessment:

- **Reflections:** 15% of overall grade

At the end of three different sessions, students will be asked to provide a short, written reflection on one or more questions posed by Dr. Pickett. These will be handwritten responses provided on a form that is distributed in class. This is to encourage attendance and deep attention during the course. If a student is ill or absent for legitimate reasons, there will be opportunity for another reflection to be completed at a later date. Each reflection will be worth 5% of the total course grade.

- **Co-teaching of a session:** 20% of overall grade (Module 2, due dates vary)

The goal of this assignment is to provide some teaching opportunities for students and to enhance their presentations skills. Individual students, or groups of students, will meet the instructor and will be assigned to co-teach part of a class in the second module of the course.

- **Midterm Exam:** 25% of overall grade (March 3, 2020)

The midterm exam will cover material presented prior to February 25th. The exam format will involve short answer questions that emphasize understanding of concepts rather than memorization and regurgitation of course material.

- **Major Term Assignment: Chronic Disease Report:** 40% of overall grade
(Part 1, 10% + Part 2, 10% + Part 3, 20% = 40%)

Students are required to identify an important chronic disease for focused study. This disease should be relevant to Canadian populations and cannot be the subject of their. The assigned disease should be approved by the instructor (by email) by January 21st. The work involved in this assignment then has three components:

- ***Part 1: Brief Surveillance Report. (due January 28th)***

Students will briefly describe the selected disease and its importance to public health in Canada. This can be presented in traditional report format aimed at an educated lay audience, or via something that is more creative and practical (e.g., an “infographic”, a UTube video, etc ... creativity is welcomed). Additional questions that this assignment may address include: Are there sub-populations within Canada that are particularly vulnerable? What are main

contextual and individual risk factors for the disease? How do these risk factors affect some Canadian populations? All claims should be supported by reliable evidence such as global and Canadian statistics (PHAC, WHO, ...) and high quality literature. Part 1 is worth 10% of the final grade.

- **Part 2: Application of a disease model (due March 11th)**

In part 2, students will propose and defend a model that best explains the etiology of the selected disease, or summarizes response to prevention or treatment of the disease. A written report (no longer than two pages) on the proposed model is due on March 11th, one day after a designated review session. The model should be supported by scientific evidence. In the March 10th class, each student will be provided with the opportunity to present their ideas and seek feedback from the instructor(s) and their peers. Part 2 is worth 10% of the final grade.

- **Part 3: Final Report (due April 7th)**

Based on the findings in Parts 1 and 2 of this Assignment, and peer/instructor feedback provided in the March 10th session, students will develop the final report for their assignment after choosing one of the following options:

Option 1: Research protocol

Following guidelines for *CIHR Project Grant Proposals* (A one page summary, plus a proposal that is 10 pages maximum plus references), students will propose a research protocol to study aspects of the etiology, prevention, or treatment of their chosen chronic disease. The protocol will be aimed at a scientific audience, and should include an overview of the problem, rationales and objectives, description of the study population, study design, how to measure the main variables under study, which procedures may improve the validity of the study, proposed statistical analyses, and potential public health or clinical implications of the research.

Option two: Policy Brief

Students will prepare a policy brief (A one-page summary, plus 10 page brief plus references) highlighting a real public health issue related to their chosen disease in a Canadian context. The report will be aimed at a professional public health audience, and should include detailed surveillance information, recent changes in the rate of the disease, and potential reasons for these changes. They will suggest social and public health policy options for dealing with the disease at the population level. Part 3 is worth 20% of the final grade, and is due one week after classes end on April 7th.