

Epidemiology and Prevention of Non-Communicable Diseases (SPPH 581X)
School of Population and Public Health, UBC
Term 2, January – April 2020

Objectives

The course is intended to provide students with an understanding and substantive knowledge of the epidemiology and burden of non-communicable diseases (NCDs) and their determinants in Canada and globally, introduce students to population-based NCD models and teach the principles of developing and implementing policies and programs for the prevention of NCDs.

Audience

Students in all SPPH programs (PhD and Master's), graduate students in other UBC programs, potentially students from other universities interested in epidemiology, prevention, modeling, and policy development for NCDs. The course may also be useful to public health providers, future public health leaders, as well as population health scientists and government advisors. Non-SPPH students will need approval of the course coordinator.

Prerequisites

None

Format

The course is offered in a traditional, face-to-face format. The course aims to foster discussion and interaction as the basis for understanding the material. It is taught using a variety of methods, such as interactive lectures, discussion of assigned readings, home exercises, in-class exercises, and student presentations.

Instructors

Dr. Jacek Kopec, Professor, Division of Epidemiology, Biostatistics and Public Health Practice, SPPH (course coordinator)

Dr. Kamran Golmohammadi, Clinical Assistant Professor, SPPH, Medical Health Officer, Interior Health

Dr. Hans Krueger, Adjunct Professor, SPPH, and President, H. Krueger & Associates Inc.

Dr. Drona Rasali, Director, Population Health Surveillance and Epidemiology, PHSA

Dr. Nizal Sarrafzadegan, Affiliate Professor, SPPH, and Professor, Isfahan University of Medical Sciences, Isfahan, Iran.

Time and Place

Second term (January – April), Tuesday, 9:00 am – 12 pm, SPPH Room B138.

Office hours for Dr. Kopec: Tuesday after class, Tuesday 1:00-3:00 pm in room 163, otherwise by appointment.

Textbook

There is no textbook for this course. Readings will be assigned for each session. We will make extensive use of materials available on the Internet. In particular, we will use data from the Global Burden of Disease Study available through GBD Compare and other GBD tools.

Evaluation

Class participation	25%
Mid-term quiz	20%
Presentation	20%
Final paper	35%

Grading rubric

Marks are based on the following guidelines:

90-100% - Outstanding work, exceeds expectations in every respect

85-89% - Very good to excellent work, exceeds expectations in most respects

80-84% - Good, solid performance, only minor errors

68-79% - Adequate performance but with significant or multiple errors or lacking in important areas

Final percentage grades are calculated using a distribution-based method. The weighted sum of marks is adjusted statistically to achieve a desired distribution of final grades while maintaining the ranking of students based on the weighted sum.

Note about plagiarism

From: <https://www.grad.ubc.ca/current-students/student-responsibilities/dealing-plagiarism>

*Plagiarism is intellectual theft. It occurs when an individual submits or presents the oral or written work of another person as his or her own. This applies to draft work and oral presentations as well as to final submissions. Failing to properly cite the work of another also constitutes plagiarism, even if it is accidental. Plagiarism by graduate students will be reported to the Faculty of Graduate Studies. Your department or Faculty may have additional information about plagiarism. **You are responsible for understanding what constitutes plagiarism, and for ensuring that you do not commit any act of plagiarism under any circumstances.***

Download the complete document “Dealing with Plagiarism by Graduate Students” at:

https://gradstudies.ok.ubc.ca/_shared/assets/Plag36763.pdf or go to:

<https://www.grad.ubc.ca/faculty-staff/policies-procedures/dealing-plagiarism-graduate-students>

Selected online resources

Global Burden of Disease

<http://www.healthdata.org/gbd/data-visualizations>

<http://www.healthdata.org/data-visualization/gbd-compare>

<http://www.healthdata.org/data-visualization/epi-viz>

<http://ghdx.healthdata.org/>

Canadian sources

<https://infobase.phac-aspc.gc.ca/ccdss-scsmc/data-tool/>

<http://infobase.phac-aspc.gc.ca/cubes/index-eng.html>

<http://www.phac-aspc.gc.ca/publicat/ebic-femc/2005-2008/assets/pdf/ebic-femc-2005-2008-eng.pdf>

<https://www.canada.ca/en/public-health/corporate/mandate/about-agency/working-together-globally-canada-world-health-organization-collaborating-centre-chronic-noncommunicable-disease-policy.html>

<https://ncdalliance.org/>

<http://www.cdpc.ca/>

CDC US

<http://www.cdc.gov/DataStatistics/>

Gapminder

<http://www.gapminder.org/>

<https://www.gapminder.org/tools/# chart-type=bubbles>

WHO

<https://www.who.int/nmh/ncd-tools/en/>

www.who.int/entity/global-coordination-mechanism/working_group1/en/

www.who.int/hpr/nutrition/index.shtml

http://apps.who.int/iris/bitstream/10665/80149/1/9789241504782_eng.pdf?ua=1

<https://www.who.int/ncds/en/>

Course Schedule for 2019/2020

Date/Instructor	Topic
Session 1 January 7 Dr. Kopec	Course overview and introduction to NCDs Student introductions; Course overview; What are NCDs? Sources of data on NCDs; Why are NCDs important – epidemiological transition; Compression vs. expansion of morbidity; Major causes of NCDs; Global trends in NCDs.
Session 2 January 14 Dr. Sarrafzadegan	Global approach to NCD prevention WHO/UN NCD framework for NCD prevention; Global action plan; Assessing national capacity; NCD global surveillance, targets, indicators, and available tools;
Session 3 January 21 Dr. Sarrafzadegan	Principles of NCD prevention and control Population vs. high-risk approach to prevention; Comprehensive, integrated community-based programs; Implementation research models; Best-buy strategies and challenges;
Session 4 January 28 Dr. Kopec	Measuring NCD burden Mortality and morbidity; Global Burden of Disease (GBD) indicators: Years of Life Lost (YLLs), Years Lost to Disability (YLDs), Disability-Adjusted Life Years (DALYs); Measuring health preferences; Attributable burden;
Session 5 February 4 Dr. Kopec	NCD burden in Canada Trends in health indicators for Canada by age and sex and comparisons with other countries; Observed vs. expected DALYs; Projections of trends; NCD burden attributable to risk factors; Socio-economic gradient in health;
Session 6 February 11 Students Dr. Kopec	Mortality and morbidity for selected NCDs Ischemic heart disease; Stroke; Lung, colon, breast and prostate cancer; Asthma and COPD; Diabetes; Back and neck pain; Osteoarthritis; Alzheimer's disease; Depression; Other common conditions;
February 18	Reading week - no classes
Session 7 February 25 Dr. Kopec	Introduction to modelling of NCDs Quiz. Population-based simulation models of NCDs; Examples of model applications; Principles of risk prediction and personalized prevention; Risk and life expectancy calculators;
Session 8 March 3 Students Dr. Kopec	Prevalence and burden of selected risk factors Smoking; Nutrition (grains, salt, sugar, fat, meat, other); Alcohol and drugs; Physical inactivity; Obesity; Physiological risk factors (blood pressure, cholesterol, glucose); Occupational and environmental risks;
Session 9 March 10 Dr. Krueger	Economic burden of NCDs and their determinants Measures of economic burden; Cost-of-illness studies; Economic burden of major NCDs and their determinants in Canada;
Session 10 March 17 Dr. Golmohammadi	NCD prevention in Canada Community-based approaches to NCDs; Integration into primary health care; Multi-sectoral policies; Private sector engagement; Examples of NCD prevention programs in Canada;
Session 11 March 24 Dr. Rasali	NCD prevention and control at a provincial/local level Approaches to NCD prevention/control in BC; Examples of current policy issues in developing and implementing programs for NCDs in BC;
Session 12 March 31	Review and student presentations
Session 13 April 7	Student presentations