PHOTO: SUSAN MERRELL

Master of Science in Global Health

Course Overview Catalog

UCSF Global Health Sciences Education

Courses

Courses are subject to change.

201A Foundations of Global Health
George Rutherford, MD, MPH

Course Description
This course introduces the principles of global health by examining different health systems and health metrics with particular emphasis on low- and middle-income countries. Content will cover demographics, population growth, maternal and child health, migrant health, health effects of climate and environment, poverty and health equity, health governance and key institutions, research, development and philanthropy.

Course Objectives
1. Define global health and globalization and describe the basic tenets and principles of global health.
2. List the key bilateral and multilateral institutions, political bodies and non-governmental organizations that contribute to health promotion and policies.
3. Describe the Sustainable Development Goals and how Goal 3 (the only one dealing with health) is being measured.
4. Compare and contrast different international health systems, policies and frameworks.
5. Identify major global health threats and challenges and critically appraise strategies to respond to them.
6. List the major causes of non-communicable and communicable disease morbidity and mortality and describe prevention approaches.
7. List the major causes of maternal and child mortality and describe prevention approaches.
8. Be prepared to participate in complex global health work using a sound ethical approach.

Course Content
- **Global health and development:** Defining global health, measuring health, overview of the global burden of disease, health as a component of development, health-related development strategies and targets, Sustainable and Millennium Development Goals
- **Humans and the environment:** Water, sanitation, land use, agricultural reform, climate change and health consequences of environmental degradation
- **Human population growth and health:** Medical demography, consequences of population growth, controlling population growth, global burden of disease
- **Globalization and migration:** Global markets, communications and information technology, mobility and migration, urbanization, cross-cultural interactions, work force and brain drain
- **Principles of global public health - non-communicable diseases:** Chronic diseases, mental health, injuries, epidemiologic transition, preparing for and dealing with major global public health threats, humanitarian emergencies, essential medicines list
- **Principles of global public health - infectious and tropical diseases:** International disease prevention and control, communicable diseases, International Health Regulations, neglected tropical diseases, prevention strategies
- **Principles of global health - maternal-child health and nutrition:** Diseases of pregnancy and early childhood, nutritional deficiencies, interventions to improve obstetrical and early childhood outcomes
- **Global health governance:** Key institutions and their agendas, role and responsibilities; legal framework for global health and health-related international treaties and agreements; intellectual property, World Trade Agreement

- **Partnerships in global health:** International collaboration, bilateral and multilateral aid organizations, types and management of projects, principles and ethics, evaluation, sustainability and scale up, global public-private partnerships
- **Research and development:** New drug research and development, technology transfer, malaria vaccine, HIV vaccines and microbicides, newer TB drugs and diagnostics, ethics of global health research, 10/90 gap

Teaching Format: Lecture, seminars, independent study, assigned papers

Course Credit: 2 units

201B Global Health Economics
James G. Kahn, MD, MPH

Course Description
This course presents a wide survey of issues and concepts in global health economics, including costing, economic and disease metrics, the relationship of health and wealth, the US health system and reform, the role of the private sector, financial flows in health assistance, cost-effectiveness analysis, resource allocation (including ethics), and workforce. Classes combine lecture and participatory seminars (with presentations and debates). Each student develops a systematic review or research protocol as a term paper.

Course Objectives
1. Describe the epidemiologic transition and cite examples.
2. Understand the impact of identity politics in global public health strategies.
3. Be able to use basic measurements of economic productivity, health care utilization and expenditures.
4. Describe the iterative association between health and economic status.
5. Explain the principles of poverty reduction and the roles of education, culture, geography and history (e.g., colonization).
6. List and explain the different socio-geopolitical bases for different health delivery systems affecting a specific country or region.
7. Explain the relevance of macro and microeconomics to health.
8. Calculate the disease burden of a specific illness in a specified region or country.
9. Describe the informal market and its relevance to health in an urban environment.
10. Describe the concept of health systems and give examples of variants in different regions of the globe.
11. Recognize macro level institutional and structural economic factors that impact health and health care implementation.
12. Learn the metrics used by economists to assess the burden of disease (DALYs, QALYs) and measurement of cost effectiveness, and cost benefit of health interventions.
13. Describe the economic and historical determinants that influence variations in global health by contrasting two geographic regions or countries.
14. Frame the major debates on development strategies and cite examples of success and failure in the economic sector.

Course Content
- **Introduction** to health economics in the context of global health growth (terms, types of economic analysis, how economics informs health policy)
- **Health metrics** (DALYs, QALYs, U5M, mortality, etc.). How health outcomes are measured. GDP and GINI as measures of well-being: problems and alternative indices. Purchasing power parity. Valuation of health and health services (cost, productivity, willingness to pay, discounting). Debate.
- **Health and wealth**. Relationship of wealth and health (e.g., Preston curve). Bidirectional causality: making people healthier improves economic development; economic development makes people healthier. Debate.
- **Health systems** around the world. Organization, financing. Role of the public and private sector. Definition and measurement of health care utilization and expenditures.
- **Health care reform** in the US. History of health financing; Affordable Care Act; administrative costs. Debate on reform strategies.
- **Poverty** causes and reduction strategies and interaction with health (e.g., microfinance, aid, social marketing).

- **Behavioral economics.** Prospect theory and decision heuristics. Examples from health. Influences on behavior, potential for intervention strategies.
- **Cost-effectiveness analysis**. Brief introduction and exercise (reverse classroom approach).
- **Resource allocation and ethics**. How do economic issues play out in reality? What ethical issues are raised and how are they resolved?

Teaching Format: Lectures, participatory seminar exercises, quizzes, term paper (in two rounds), final exam, one session "reverse classroom" (lecture online before class)

Course Credit: 2 units

201C Qualitative Research Approaches in Global Health
Wayne Steward, PhD, MPH
Shannon Fuller, MS

Course Description
This course places a particularly strong emphasis on developing skills for conducting qualitative interviews, which are a frequently used technique for answering social and behavioral research questions. It addresses the following questions: What methods can health professionals use to understand the socio-political-cultural environments where they work? Which methods are most appropriate for which research questions? How are qualitative research methods implemented?

Course Objectives
1. Identify social-behavioral science fieldwork methods such as participant observation, qualitative interviews, focus groups, and surveys.
2. Determine which methodology is most appropriate given a particular research question.
3. Utilize strategies for effectively collecting data via qualitative interviews.
4. Describe the ethical considerations for fieldwork and consent.
5. Code and analyze qualitative data.
6. Identify standard software for qualitative analysis.

Course Content
- Distinguishing qualitative and quantitative social and behavioral science research methods
- Determining when to use qualitative methods or quantitative methods
- Questioning participants
- Qualitative interviewing
- Focus groups
- Data analysis
- Ethics and contexts of intervention
- Final student presentations

Teaching Format: Lectures, seminars

Course Credit: 2 units

202A Communicable Diseases of Global Importance
Vivek Jain, MD, MAS
Christina Yoon, MD, MPH

Course Description
This course covers global communicable diseases, including the biology, history, epidemiology, and economics of key infections. The course focuses on HIV infection, malaria, tuberculosis, and other communicable diseases of international importance. Through lectures, seminars, and independent study, students will learn about the basic principles of infection and immunity, disease epidemiology and pathogenesis, and varied aspects of the treatment and control of leading infections.

Course Objectives
For HIV, tuberculosis, malaria, and other big burden infectious diseases threats, students will gain a broad understanding of:
1. epidemiology and affected populations;
2. strategies for treatment and prevention;
3. novel strategies for the control or eradication of disease threats; and
4. interaction between diverse threats and socioeconomic factors, including poverty education, politics, and government.

Course Content
- HIV I: History, epidemiology and prevention
- HIV II: Biology, host-viral interactions, disease manifestations, opportunistic infections, antiretroviral treatment and access
- Malaria I: Epidemiology, biology, host-parasite interactions, clinical features, diagnosis
- Malaria II: Treatment, control, prevention, and elimination
- Tuberculosis: Basic concepts, history, host-bacterial interactions, routes of spread, epidemiology, global inequities, prevention and control strategies
- Dengue virus infection in Latin America
- Neglected tropical diseases
- Helminths and protozoa of medical importance
- Global health and the eye, with emphasis on trachoma
- Influenza and respiratory infections
- Diarrheal disease
- Infectious diseases of urban slums
- Zoonoses and prevention of new pandemics
- Short presentations by students

Teaching Format: Lectures, seminars, independent study, assigned paper, quizzes, midterm exam

Course Credit: 3 units

202B Non-Communicable Diseases and the Environment in Global Health
James Seward, MD, MPP, MMM

Course Description

This course covers chronic diseases of global health importance, such as cardiovascular illnesses, the emergence of diabetes, cancer, and respiratory disease. The course examines risk factors and related trends, such as the consequences of urbanization and westernization. In addition, the course emphasizes the effects of climate change and environmental exposures. Other topics include injuries, surgical interventions, humanitarian emergencies, and mental health. Students learn about policy options and interventions to prevent and manage chronic illnesses.

Course Objectives
1. Characterize the global scope, burden and trends of non-communicable diseases (NCDs).
2. Describe the demographic and epidemiological transitions in the context of a global rise in non-communicable diseases.
3. Demonstrate integration of knowledge of non-communicable diseases into the larger framework of global burden of disease.
4. Define the major environmental factors that contribute to non-communicable diseases and examine proposals to mitigate environmental degradation as they relate to global health.
5. Describe the role of governments, international organizations, NGOs, and communities in addressing attributable burden of disease.
6. Analyze challenges in the prevention and control of non-communicable diseases from a public health perspective.
7. Demonstrate ability to examine non-communicable disease control from a political, economic and scientific vantage.
8. Cite examples of environmental causes of chronic disease and their mitigation.
9. Describe the burden of mental illness on a global scale.
10. Describe the global burden of cancer and name some common malignancies linked to infectious causes.
11. Describe the tobacco framework and list successful initiatives in tobacco control.
12. Enumerate how injuries and trauma can be mitigated in resource poor countries.
13. Demonstrate knowledge of environmental, life style and genetic risk factors for common chronic diseases such as cancer, heart disease, diabetes, and pulmonary disease.
14. Explain the "epidemiological transition" and describe ways to measure the effect of urbanization and modernization on health.
15. Describe the growing obesity epidemic and explain its effect on health.
16. Discuss the major causes of injury-related morbidity/mortality and some of the prevention strategies.
17. Explain how maternal and child health is measured and cite measures to improve maternal-child health outcomes.
18. Explain how nutritional interventions can reduce child mortality in resource poor countries.
19. Describe the roles of food, water, and energy use in chronic disease.

Course Content
- The changing epidemiology of chronic disease in global health
- Cardiovascular disease, including myocardial infarction, hypertension, and stroke
- Chronic obstructive lung disease and its determinants
- The role of tobacco use in chronic disease

- Indoor and outdoor air pollution as causal factors in disease
- The role of diet—including environmental factors and public policy—in the obesity epidemic and the development of diabetes
- The role of the built environment in chronic disease
- Injury prevention and approaches to improving pre-hospital care
- Occupational disease as a major global cause of disability
- The special vulnerabilities of children to malnutrition and environmental disease
- Substance abuse, including alcohol, as a contributor to NCDs
- The growing importance of mental health disorders

Teaching Format: Lectures, seminars, independent study, assigned projects

Course Credit: 3 units

202D Socio-cultural and Behavioral Determinants of Health
Kelly Knight, PhD

Course Description
This course describes key cultural, social, and economic issues and methods in global health. The course is interdisciplinary, emphasizing the fields of anthropology, sociology, public health, global health, and critical global health studies. The course examines the confluence of factors (including globalization; the impact of social, economic, and political systems; the local and global economy; transnational organizations; culture, race, class, gender, sexuality; and North/South inequalities) that create and sustain the conditions that lead to disparities in health status and health care, both domestically and globally.

Course Objectives
1. Delineate macro level political, institutional, policy, and structural factors that impact health and health care in relation to local, cultural, and regional contexts.
2. Define what social, cultural, behavioral and economic determinants of health are, and the processes involved in how these factors shape health and health inequalities.
3. Identify the key players, institutions, political bodies, and non-governmental organizations that contribute to health promotion, policies, and disparities.
4. Recognize the inadvertent positive and negative consequences of interventions that work to resolve some of the most important global health issues of our time.

Course Content
- Culture and health
- Structural violence, structural adjustment, and fundamental causes of health
- Five generations of research on socioeconomic status and global health
- Gender relations and global health, including masculinities
- Synergistic epidemics of violence and HIV
- Race relations and global health
- Globalization and transnational organizations
- Critical assessment of global health measures and metrics
- Medical compliance, and provider assessments of patient adherence
- Structural interventions and health

Teaching Format: Lectures, seminars, group work, discussion, assigned papers

Course Credit: 3 units

202F Strategic Information in Global Health (elective)
Ali Mirzazadeh, PhD, MD, MPH
George Rutherford, MD, MPH

Course Description

This course covers the following topics: use of surveillance and programmatic data for estimating burden of disease and trends in disease incidence and prevalence; sampling and estimating size of hard-to-reach populations (e.g., respondent-driven sampling, time-location sampling, capture-recapture, multipliers); data synthesis and triangulation; and monitoring and evaluation. There will be guest lecturers to describe specific areas of public health surveillance.

Course Objectives
1. To understand the concepts of public health surveillance and how data are collected, analyzed and utilized at the global level
2. To understand how to evaluate different attributes of public health surveillance systems
3. To understand the use of demographic and behavioral data in global health (e.g., Demographic and Health Surveys, Behavioral Surveys)
4. To understand how global public health interventions are monitored and evaluated

Course Content
- Using strategic information in global public health practice (1 session)
- Using surveillance and programmatic data for estimating burden of disease and trends in disease (5 sessions)
- Data synthesis and triangulation (1 session)
- Monitoring and evaluation (2 sessions)

Teaching Format: Lectures, seminars, surveillance data analysis exercises

Course Credit: 2 units

203 Global Health Practice Seminar
Madhavi Dandu, MD, MPH
Alden Blair, MSc, PhD(c)

Course Description
This goal of this year-long course is to cultivate all of the skills necessary to develop and complete a capstone proposal. At the end of this course, students will be proficient in 1) scientific writing, 2) team-based learning, 3) presentation skills, and 4) ethics. The skills built to complete a successful capstone project will be applicable to future global health career paths.

GHS 203A (Fall Quarter) Course Objectives
1. Demonstrate proficiency in oral and written communication.
2. Write a short scientific proposal.
3. Communicate independently and effectively with your advisor and mentor and begin the process of identifying and communicating with experts in your area of interest.
4. Develop a dynamic and succinct elevator speech about your research interests.
5. List the necessary building blocks of a scientific proposal.
6. Conceive, develop and write a background and significance section for your capstone project.
7. Deliver a professional presentation on the design, outcomes and potential applications of a scientific proposal.

GHS 203B (Winter Quarter) Course Objectives
1. Demonstrate advanced proficiency in oral and written communication.
2. Write a complete capstone proposal.
3. Communicate independently and effectively with your advisor and mentor and identify at least two experts to contact in your field of interest.
4. Deliver a dynamic and succinct elevator speech about your research.
5. Successfully complete the written and oral qualifying exams.

GHS 203C (Spring Quarter) Course Objectives
1. Advance understanding of your personal leadership style.
2. Communicate independently and effectively with your advisor and mentor to finalize the capstone project plan.
3. Understand the most important ethical issues related to working with underserved populations.
4. Obtain necessary final IRB approvals, both foreign and domestic, for your capstone project.

GHS 203D (Summer Quarter) Course Objectives
1. Demonstrate advanced proficiency in oral and written communication.
2. Communicate independently and effectively with your advisor and mentor to finalize capstone analysis and outcome.
3. Write a comprehensive capstone product.
4. Deliver a professional presentation on the design, outcomes and potential applications of your capstone product.

Teaching Format: Lecture, small group, independent study, individual presentations

Course Credit: Fall 2 units, Winter 2 units, Spring 2 units, Summer 2 units

204A and 204B Global Health Capstone
Madhavi Dandu, MD, MPH

Course Description
The capstone project provides a rich opportunity to explore an interest area in considerable depth. Students are required to develop a longitudinal project, starting in the fall quarter and culminating in a final written and oral presentation at the end of summer quarter. Students will work closely with the Practice Seminar (GHS 203) course faculty to develop an appropriate project based on their interest and skills and an available field site where UCSF has an ongoing project.

Course Objectives
1. Work effectively in a resource-constrained environment or with an underserved population.
2. Demonstrate cultural and ethical sensitivity in designing a capstone project or intervention.
3. Complete an independent project in a global health setting.
4. Reflect on the key elements of successes and challenges during the conduct of the capstone project.
5. Summarize and communicate key elements of the project to all stakeholders.
6. Create a plan to handle obstacles and mitigate problems encountered during the project.
7. Give examples of ethical problems that arise during the conduct of the project.
8. Demonstrate leadership and diplomatic skills.

Course Credit: 204A (Spring) 2 units, 204B (Summer) 4 units

205 Global Health Policy
Laura Schmidt, PhD, MSW, MPH

Course Description
This course introduces policy and development in the context of global health. Students examine the structure and function of evidence-based policy planning and implementation using selected case studies. Learning the skills of assessment, monitoring, and evaluation, students examine global health development interventions ranging from disease control to eradication to health promotion. Guest lecturers acquaint the students with field experiences and practical outcomes.

Course Objectives
1. Apply a simple analytical framework, Walt and Gilson's health policy triangle, to any global health problem.
2. Use this framework to (a) analyze past policy successes and failures, and (b) plan how to effect changes in the future.
3. Apply more detailed methods of policy analysis (e.g., stakeholder analysis) to identify the key policy actors, their interests, their ability to create change, and their positions, to become equipped to pursue policy change.
4. View global health policymaking through the "lens" of power.
5. Distinguish between different dimensions of power as applied to policymaking.
6. Contrast the different theories of how decisions are made in global health and assess whether these theories hold true in your daily life as a global health practitioner.
7. Use three different analytical frameworks (the Hall Model, Kingdon's three streams model, and Shiffman and Smith's model) to understand how certain issues rise to the top of the global health agenda, while others are ignored.
8. Describe and understand the role of both the governmental and non-governmental sectors in global health policymaking (especially the role of interest groups).
9. Plan a specific strategy for getting a policy implemented, using a variety of implementation approaches, with a focus on "top-down," "bottom-up" and "mixed" implementation models.
10. Identify the barriers that prevent policymakers from using evidence and the strategies that you can use to overcome them.
11. Describe and understand how development assistance for health influences the global health policy process, and learn to use the IHME data visualization tool to understand financing flows in global health (viz.healthmetricsandevaluation.org/fgh/).
12. Recognize how policy frameworks (e.g., the health policy triangle) have influenced global policymaking in international TB control and have helped to shape the implementation of the Global Health 2035 strategy (www.globalhealth2035.org).
13. Apply all of the above analytical frameworks and tools in an integrated manner in devising policy responses to real-world global health challenges.

Course Content
The course provides a real-world, practical understanding of health policy and policy change, based on a solid academic foundation. It introduces students to current debates about health policy and equips them with practical tools for assessing policy-change potential and enacting it.

Teaching Format: Lectures, seminars, independent study, student presentations, essays, quizzes, final written examination

Course Credit: 3 units

206 Introduction to Epidemiology
Craig Steinmaus, MD, MPH

Course Description
This course introduces basic principles of biomedical epidemiology research. Topics include the goals and basic principles of epidemiology for public health research, descriptions of the basic study designs used in epidemiology (case-control, cohort, cross-sectional, ecologic, descriptive and others), common errors seen in epidemiology (confounding and bias), and how epidemiologic research is used to advance public health. Specific topics include study design, bias, confounding, data collection, ethics, causal inference, and meta-analysis.

Course Objectives
1. Identify the basic goals of epidemiology and public health research.
2. Cite the basic principles of case-control, cohort, cross-sectional, case reports and series, intervention studies, cluster investigations and ecologic studies.
3. Delineate the practical aspects of designing a valid epidemiologic study.
4. Know and cite examples of the basic outcome metrics commonly used in epidemiology, including rate ratios, odds ratios, risk ratios, and standardized mortality/incidence ratios.
5. Recognize, avoid, and critically evaluate bias and errors in epidemiology studies, including confounding, selection bias, information bias, misclassification, and others.
6. Critically review group projects to design an epidemiologic system.
7. Define the basic tenets of causal inference (i.e., what type of data is needed to help prove that an exposure causes an outcome).
8. Summarize epidemiologic literature on a particular topic and perform a meta-analysis.

Course Content
- Overview of observational study designs: descriptive, ecological, case control, cohort. Journal article review: ecological and descriptive case studies.
- Interventional studies: the randomized clinical trial (RCT), stratification and randomization methods. Journal article review: RCT case studies, clinical and community examples.
- Designing an epidemiological research study: hypothesis seeking vs. hypothesis testing, independent and dependent variables, sampling, sample size calculation, analysis plan.
- Validity, precision and error. Sources of error in observational studies: chance, bias and confounding.
- Methods to minimize error. Dealing with bias: study design, measurement, sampling, matching. Detecting and avoiding bias in case control studies. Misclassification. Review of paper to examine bias.
- Sample size, power calculations, matching, restricting. Perform sample size calculation.
- Ethics of epidemiologic studies and clinical trials. Consent, assent, and ethics of cross-cultural investigation.
- Meta-analysis and systematic review.

Teaching Format: Lectures, seminars, independent study, and exams

Course Credit: 2 units

207 Introduction to Biostatistics
Alden Blair, MS, PhD(c)
Yea-Hung Chen, PhD, MS

Course Description
This course introduces biostatistics. Topics progress from probability and descriptive statistics to bivariate analyses, and conclude with multivariable modeling theory. The course teaches parametric and non-parametric statistical methods and uses R statistical software for analyses.

Course Objectives
1. Clearly articulate how the collection and analysis of data impact the process of answering a research question.
2. Use statistically-appropriate reasoning and methods in research design, data analysis, and problem solving in global health research.
3. Effectively summarize data using numerical information and graphical displays.
4. Articulate the methods of achieving estimations and expressions of uncertainty around these estimates.
5. Use and interpret hypothesis tests.
6. Interpret results of statistical analyses reported in global health studies.
7. Communicate statistical findings effectively to different audiences, including write-ups, oral presentations, and the construction of informative tables.

Course Content
- Description of variables: nominal, ordinal, categorical, continuous
- Descriptive statistics: distributions, means, standard deviation, standard error, and variance; predictors, outcomes, exposure variables and their measurement
- Probability, Bayes' theorem, diagnostic tests
- Probability distributions: binomial, normal, standard normal
- Central limit theorem, confidence intervals for means and proportions, Student's distribution
- Hypothesis testing, statistical error, power
- t-test and Analysis of Variance
- Non-parametric tests
- Proportions and chi-square test
- Correlation and simple linear regression
- Multiple linear regression
- Practical application of statistics to real-world problems
- Presentation of statistical data via tables and written summaries
- Analyzing data using statistical software

Teaching Format: Lectures, laboratory, independent study, assigned projects, and practice with statistical software (R)

Course Credit: 3 units

208 Women's Health and Empowerment (elective)

Anke Hemmerling, MD, PhD, MPH
Mara Decker, DrPH, MHS
Denise Dunning, PhD

Description
The course provides core knowledge and skills from several disciplines on how to improve women's health and well-being, globally. It aims to expand students' understanding of the interconnected factors that influence women's empowerment and health, including foundations of sexual and reproductive health, economic development, political frameworks and global reproductive rights, demographic and social changes, basic principles of empowerment theory, educational opportunities, and advances in gender equality.

Course Objectives
1. Explain the ways in which social, economic, and cultural factors can both promote and impede women's and girls' health and empowerment.
2. Analyze how men's and boys' involvement contributes to women's health and empowerment.
3. Explore how girls' education contributes to individual, community, and national development.
4. Discuss how gender influences the Sustainable Development Goals and other global priorities.
5. Evaluate case studies of interventions designed to improve women's health and empowerment in differing cultural and national contexts.
6. Recognize macro level political, institutional, and structural factors that impact women's health and empowerment in relation to local, cultural, and regional contexts.
7. Discuss the impact of women's health on the advances in other sectors including child health, education, economic development, and social stability.
8. Recognize the major institutions, policies, and non-governmental organizations that influence women's health and empowerment.
9. Describe the historical context of politics, policies, and laws related to women's health and human rights.
10. Analyze the contrasting perspectives and changing paradigms on women's health and empowerment among epidemiologists, demographers, economists, human rights activists and development specialists.

Course Content
- Educational empowerment and girls' health
- Adolescent sexual and reproductive health
- Maternal and child health, family planning, and abortion politics
- History and shifts in global reproductive health policy
- Demographic and societal changes and their relationship to women's empowerment, economic growth and environmental resources
- Population decline and postponement of childbearing in industrialized countries
- Sexually transmitted and other reproductive tract infections
- Health issues of older women

Teaching Format: Lectures, seminar, case study discussions

Course Credit: 2 units

209 Comparative Health Systems: Financing and Delivering Health Services
Neelam Sekhri Feachem, MHA

Course Description
This course examines the most important models for financing and delivering health care around the world. The course provides a historical and cultural perspective on how countries organize their health systems, and discusses the implications of these policy choices on cost, access, and quality of care.

Course Objectives
1. Explain the concept of a health system, why it is important, and its basic functions and goals.
2. Describe the importance of universal health coverage (UHC) and ways in which countries can achieve UHC.
3. Describe ways of financing health systems, including risk pooling and pre-payment mechanisms.
4. Explain the basic dynamics of health insurance markets.
5. Present a map of at least one country's health system, analyzing its stewardship, financing, and delivery mechanisms, and describing how well it achieves its health system goals.
6. Compare the organization of various health systems and discuss implications for efficiency, quality, and access through small group presentations and discussions.

Course Content
- Introduction to health systems
- Financing health care and the role of donor funding
- Different models for achieving UHC through case studies of seven low-, middle- and high-income countries
- Innovative ways to organize health services, including developing human resources and the use of public-private partnerships
- Measuring health systems performance

Teaching Format: Seminar, discussion, case study

Course Credit: 3 units

212 Global Health Law (elective)
Offered at UC Hastings every odd year, winter quarter
Jennifer Templeton Dunn, JD

Course Description
This course takes a comparative and interdisciplinary approach to public health law, exploring how countries provide and regulate health care. The course begins by examining how health care systems are organized and how they are financed, comparing health care systems from other countries in order to better evaluate the strengths and weaknesses of our own system. The course then covers the right to health as it exists in international law, national constitutions, and domestic legislation, as well as the barriers to implementing and enforcing this right. Finally, the course looks at the development of international and national laws governing informed consent and research on human subjects in developing countries.

Course Objectives
1. Identify the impediments to positive health outcomes and access to healthcare in different legal and health care systems.
2. Engage in multi-disciplinary group problem-solving to address global health policy issues and problems.
3. Articulate and compare how the rights of the individual are protected in the different legal systems studied and critically examine what happens when individual rights are in conflict with public health goals.
4. Apply law and legal theories to problems and controversies inherent in health disparities and discuss changes in the law and legal frameworks that would contribute to reducing disparities and improving global health.
5. Write an organized, concise and clearly articulated research paper (or multiple short papers) concerning a policy question or problem relating to global health.

Teaching Format: Lectures, student presentations, essay

Course Credit: 3 units

213 Systematic Review for Global Health Decision-Making (elective)
Mohsen Malekinejad, MD, DrPH
Hacsi Horvath, MA
George Rutherford, MD, MPH

Course Description
Rigorous systematic reviews are regarded as the gold standard for assessing the effectiveness of public health interventions. Key systematic review principles and methods also can be applied to other important areas of public health (e.g., prevalence of diseases, qualitative evidence, diagnostic test accuracy). The goal of this course is to provide participants with a grounded theoretical understanding of all major aspects of conducting a high-quality systematic review focusing on effectiveness of interventions. Students develop systematic review protocols (detailed work-plans for systematic reviews), but are not required to conduct the full systematic reviews (though they are welcome to do so outside the course).

Course Objectives
1. Explain the need for systematic reviews and meta-analyses.
2. Formulate a research question using the Population, Intervention, Comparator, Outcome (PICO) framework.
3. Develop a rigorous systematic review protocol.
4. Understand the steps for comprehensively searching the scientific literature.
5. Assess the risk of bias in interventional studies (with a focus on randomized controlled trials).
6. Understand the basic methods of meta-analysis.
7. Use the Review Manager (RevMan) software as a tool to organize the review and to perform meta-analysis.
8. Understand factors contributing to heterogeneity among studies and explain how heterogeneity can affect interpretation of systematic review results.
9. Understand the distinction between internal validity and external validity, and explain the limitations of applying the findings from a systematic review outside of its included studies.
10. Perform rigorous critical appraisal of a systematic review.
11. Describe key components of leading methodologies for assessing the quality of systematic review evidence.
12. Know how to register systematic review protocols in international registries and understand why it is important to do so.

Teaching Format: Lectures, hands-on practice, student presentations, group discussions

Course Credit: 2 units

215 Leadership in Public Engagement in Global Public Health (elective)
Grey Frandsen, MA

Course Description
This fast-paced, dynamic course will provide core knowledge and practical skills for a new generation of strategies, methods, and technologies for engaging, mobilizing and empowering the public in the face of today's global public health challenges. The format of the class will provide students a vibrant forum for discussion, case studies, small group exercises, and a range of guest lecturers from around the world.

Course Objectives
1. Define first principles associated with the public engagement landscape
2. Develop an in-depth understanding of how public engagement programs can play a direct or indirect role in public health initiatives
3. Analyze, architect, and evaluate risk communications plans in preparation for crises
4. Analyze the need for public or community engagement in public health initiatives in a variety of settings, including in permanent, semi-permanent, start-up, and crisis-related settings
5. Determine how to find, engage, and empower key stakeholders in communities
6. Understand the various models for engaging and organizing communities to achieve public health outcomes
7. Recognize key gaps, challenges, problems, and/or crises in public engagement, public opinion, and/or emerging sentiment
8. Determine which tools may best be employed to engage, activate, or communicate with key constituencies in public health initiatives
9. Justify the need for public and/or community engagement programs, budgets, and/or prioritization within existing or future public health initiatives
10. Understand where to find information, resources, and tools for future public engagement and community engagement strategy and programs

Teaching Format: Lectures, seminars, case presentation

Course Credit: 2 units

EPI 213 Cost-Effectiveness Analysis in Medicine and Public Health (elective)

Offered by UCSF Department of Epidemiology and Biostatistics

Dhruv Kazi, MD, MSc, MS
James G. Kahn, MD, MH
Elliot Marseille, DrPH, MPP

Course Description

This course builds from basic portrayal of decision problems, to more inclusive and sophisticated methods. In a world where policy-makers, donors, and payers are increasingly cost-sensitive, how does one measure returns on investments in health? Cost-effectiveness analyses can help formally evaluate clinical and policy decisions, particularly when decisions have to be made on the basis of incomplete or imperfect information (as is usually the case). Section activities parallel the lectures; assignments include both programmed exercises on current topics and development of the student's own decision analysis and cost-effectiveness analysis.

Course Objectives

1. Use of decision trees to portray alternative courses of action and their consequences.
2. Principles of cost-effectiveness analysis, including estimating costs and health outcomes, and estimating cost-effectiveness ratios.
3. Uncertainty in input parameters, and how this translates into uncertainty in the principal result of cost-effectiveness analyses.
4. Sensitivity analyses, and their central role in informing decisions in the setting of imperfect information.
5. Markov modeling to understand long-term costs and consequences of clinical and policy decisions.
6. Effective verbal and written communication of cost-effectiveness analyses.
7. Real-world examples of cost-effectiveness analyses that influenced clinical guidelines or health policy.
8. Specific challenges with cost-effectiveness analyses pertaining to low- and middle-income countries.
9. Critical review of published cost-effectiveness analyses.

Teaching Format: Lectures, group project, one-day global health economics seminar

Course Credit: 2 units