

Spring 2017—SYLLABUS
UEP 203, Section 1
Introduction to Public Health

Course description: This course provides a practical and equity-focused approach to the fundamentals of public health. It is organized into two sections: Public Health Fundamentals and Public Health in Practice. The first section covers key concepts in public health: the ecological model of health, history of public health, controversial issues in public health, social determinants of health, biostatistics, epidemiology, and biology of health and disease. The second section of the course, Public Health in Practice, focuses on several areas of current public health practice. Students will appreciate how politics and policymaking are inherent to public health in action; they will gain perspective on the range of programs that public health practitioners implement in order to improve health; they will understand that well-designed and conducted research underlie public health work; finally, students will recognize how movements for change have advanced and continue to advance achievement toward public health goals.

Course objectives

- 1) Appreciate that health problems are located within an influential larger context of social, political and economic forces
- 2) Gain exposure to the achievements and failures of public health and the ongoing controversies facing public health
- 3) Introduce **public health fundamentals** such as epidemiology and social determinants of health and **public health in action** through a focused examination of four public health action areas (politics, programs, research, and movements for change)
- 4) Apply public health principles to health problems and develop strategies to address public health problems

Instructor

Jane Schmitz, PhD

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Office hours Tue and Thurs 12 – 1:00 pm UEP Room #206 and by appointment

Class meeting and location: Tues & Thurs 1:30- 2:55 pm, Fowler 112

Required textbook: Mary Jane Schneider. Introduction to Public Health. 5th edition.

Evaluation criteria

Your final grade will be divided among class participation (10%), small assignments (30%), midterm exam (30%) and final take home assignment (30%).

| Criteria | Description | Percent of final grade | Due |
|----------------------|--|------------------------|--|
| Class participation | <p><i>Debate</i> You will engage in a structured debate on the following topic: “Resolved: food stamps should not be used to buy junk food or sugary drink.”</p> <p><i>News briefing</i> You will choose an article from the news on a public health topic, share it with the class and pose two questions in advance, and lead a 5 minute discussion.</p> <p><i>Scientific presentation</i> You will be part of a mock scientific team that will interpret and present results of public health on air pollution and health.</p> <p><i>In-class discussions</i> You are expected to participate in day-in, day-out class conversations and pose questions most importantly to guest lecturers. We will have an in-class discussion of Unnatural Causes.</p> | 15 | Debate 3/16; scientific presentations 4/13 & 4/18 |
| Small assignments | | 25 | |
| | <p><i>Personal essay</i> From among the Health People 2020 topics listed at www.healthpeople.gov/2020/topics-objectives, choose the health problem of most relevance or interest to you. In two pages, reflect on the roots of your personal interest in public health and in that specific health problem. How has public health touched your life? Via a personal or family health crisis? Via travel around the U.S. or outside the U.S.? Via your parent’s occupations? Via experiences of your friends?</p> | (15) | 2/2 |
| | <p><i>Epidemiology Problem Set</i> Observe the Occidental College campus for poor health outcomes and possible risk factors. Clearly state a scientific question (1 sentence) and a hypothesis (1 sentence) based on that scientific question. Provide one to two background paragraphs on the health problem. Propose a study design to test your hypothesis.</p> | (40) | 2/16 |
| | <p><i>Field Trip Reflection</i> In two pages, react to the LA Port field trip. What is the real cost of buying cheap products that need to be shipped from outside of the US (in the global trade system)? Describe examples of incompatible land use that you witnessed. What is the impact of incompatible land use on community health? How are communities working to protect their health and democratize planning?</p> | (40) | 5/2 |
| Midterm | This in-class exam will cover materials presented in the first half of the semester and it will be composed of multiple choice, short answer and an essay. | 30 | 3/14 |
| Take home final exam | There will be two sections to the exam: 1) description of a public health crisis scenario to which you need to evaluate | 30 | 5/9 |

| Criteria | Description | Percent of final grade | Due |
|-----------------|--|-------------------------------|------------|
| | several potential interventions and 2) short answers covering the second half of the semester. | | |

Course schedule

| Day | Date | Topic | Notes |
|-----------------------------------|------|---|---------------------------------|
| PUBLIC HEALTH FUNDAMENTALS | | | |
| Tue | 1/24 | What is public health? Introduction to the course | |
| Thu | 1/26 | Public health models for understanding and action | |
| Tues | 1/31 | Biostatistics | |
| Thu | 2/2 | Biology of health and disease <i>Guest instructor: Dwain Morris-Irvin</i> | Essay due |
| Tues | 2/7 | Epidemiology: individual determinants of disease & screening tests | |
| Thu | 2/9 | Epidemiology: risk factors & study design | |
| Tues | 2/14 | Epidemiology: challenges in collecting evidence | |
| Thu | 2/16 | Controversy in public health | Epi problem set due |
| Tues | 2/21 | History of public health | |
| Thu | 2/23 | Medical care and public health; health care reform | |
| Tues | 2/28 | Social determinants of health: where we live, discussion of Unnatural Causes | |
| Thu | 3/2 | Preparation for midterm exam and debate | |
| Tue | 3/7 | NO CLASS | |
| Thu | 3/9 | NO CLASS | |
| Tues | 3/14 | Midterm | |
| Thu | 3/16 | Debate: Topic to be announced | |
| PUBLIC HEALTH IN PRACTICE | | | |
| Tues | 3/21 | Practice example #1: Politics & Policy, Childhood obesity | |
| Thu | 3/23 | Practice example #1: Politics & Policy, Childhood obesity | |
| Tues | 3/28 | Practice example #1: Politics & Policy, Childhood obesity <i>Guest instructor: Matt Sharp</i> | |
| Thu | 3/30 | Practice example #2: Programs, HIV/AIDS | |
| Tues | 4/4 | Practice example #2: Programs, HIV/AIDS <i>Guest panel: HIV outreach to "special populations"</i> | |
| Thu | 4/6 | Practice example #2: Programs, HIV/AIDS | |
| Tues | 4/11 | Practice example #3: Research, Air pollution <i>Guest instructor</i> | |
| Thu | 4/13 | Practice example #3: Research, Air pollution | |
| Tues | 4/18 | Practice example #3: Research, Air pollution | |
| Thu | 4/20 | Practice example #4: Movements for change, Global movement of goods | |
| Tues | 4/25 | Practice example #4: Movements for change, Global movement of goods <i>Guest instructor: Jessica Tovar</i> | |
| Thu | 4/27 | Practice example #4: Movements for change, Global movement of goods <i>Guest instructor</i> | Field trip, 11:30 am to 3:00 pm |
| Tues | 5/2 | Wrap-up & introduction to take home assignment | Field trip reflection due |
| Tues | 5/9 | 12:00 pm Final assignment due | |

Session Learning Objectives and Readings

Part I: Public Health Fundamentals

1/24 What is public health?

Learning objectives

- 1) Introduce definitions of public health, current examples of public health in action and key actors in the public health system
- 2) Describe our nation's most pressing public health challenges; compare the U.S. to other nations and explore sub-national health statistics; examine trends in key health outcomes and risk factors
- 3) Introduce ourselves and describe the course requirements

Readings

- 1) Schneider: Prologue and Chapter 1
- 2) Woolf & Aron. U.S. Health in International Perspective: Shorter Lives, Poorer Health. National Academies Press. Chapter 1

1/26 Public health models for learning and action

Learning objectives

- 1) Become familiar with two important models for thinking and acting in public health
- 2) Apply these models to several public health problems

Readings

- 1) Manchanda R. The Upstream Doctors: Medical Innovators Track Sicknes to Its Source. TED Books. *Prologue and Part I.*
- 2) Fielding JE, Teutsch S, Breslow L. A framework for public health in the United States. *Public Health Reviews* 2010;32:174-189.
- 3) Frieden. A Framework for Public Health Action: The Health Impact Pyramid. *Am J Pub H* Apr 2010; 100;4:

1/31 Biostatistics

Learning objectives

- 1) Appreciate how widely statistics is used in public health
- 2) Learn how statistics help public health deal with inherent uncertainty of data
- 3) Introduce the concept of 'rates' and why they are so widely used to describe and understand data
- 4) Understand the some of the sources of data in public health and why we need data to drive public health discovery and action

Readings

- 1) Schneider chapter 7 Making Sense of Uncertainty & chapter 8 The Role of Data in Public Health

2/2 Biology of health and disease, Dwain Irwin-Morris

Learning objectives

- 1) Broadly introduce biological principles needed to understand and to prevent infectious and non-infectious diseases important in public health
- 2) Explore biology of infectious diseases

2/7 Epidemiology I

Learning objectives

- 1) Introduce the definition of epidemiology and deepen understanding via examples of epidemiology in practice.
- 2) Explore individual determinants of disease
- 3) Using the breast cancer BRCA gene test as an example, understand the epidemiology of diagnostic and screening tests

Readings

- 1) Schneider, ch 4. Epidemiology: The Basic Science of Public Health & ch 12, Genetic Diseases and Other Inborn Errors
- 2) Woolf & Aron. U.S. Health in International Perspective: Shorter Lives, Poorer Health. National Academies Press. Chapter 5, Individual Behaviors (optional)

2/9 Epidemiology II

Learning objectives

- 1) Describe the process at the core of epidemiological investigation: forming a scientific question, generating a hypothesis and designing a study.
- 2) Discuss the concepts of risk and risk factors

Readings

- 1) Schneider, ch 5, Epidemiologic Principles and Methods
- 2) Gordis, ch 12 A Pause for Review: Comparing Cohort and Case-Control Studies.
- 3) Ying Bao, Monica L. Bertoia, Elizabeth B. Lenart, Meir J. Stampfer, Walter C. Willett, Frank E. Speizer, and Jorge E. Chavarro. Origin, Methods, and Evolution of the Three Nurses' Health Studies. American Journal of Public Health: September 2016, Vol. 106, No. 9, pp. 1573-1581.

2/14 Epidemiology III

Learning objectives

- 1) Discern the difference between an association and a causal relationship
- 2) Gain an understanding of the challenges of bias and confounding

Readings

- 1) Alfredo Morabia. 120 000 Nurses Who Shook Public Health. American Journal of Public Health: September 2016, Vol. 106, No. 9, pp. 1528-1529.
- 2) Schneider, ch 6, Problems and Limits of Epidemiology
- 3) Gordis ch 13, From Association to Causation: Deriving Inferences from Epidemiologic Studies

2/16 Controversies in public health; the role of government

Learning objectives

- 1) Introduce the broad powers of public health and the tension between individual liberties and public health
- 2) Explore why vaccination programs are controversial

Readings

- 1) Schneider ch 2, Why is Public Health Controversial? & ch 3, Powers and Responsibilities of the Government
- 2) Edwards, Purrell & Burris. Why the C.D.C.'s Power to Quarantine Should Worry Us. New York Times. 1/23/2017

- 3) Bayer R. The continuing tensions between individual rights and public health. EBRO. 8;12. 2007.

2/21 Public health history

Learning objectives

- 1) Appreciate the major achievements and failures of public health in the recent era
- 2) Consider the main attributes of key eras in the public health history and acknowledge how public health mirrors it's societal context over time

Readings

- 1) Centers for Disease Control. Ten Great Public Health Achievements in the 20th Century
<http://www.cdc.gov/about/history/tengpha.htm>
- 2) Institute of Medicine (U.S.). Committee for the Study of the Future of Public Health; Division of Health Care Services. The Future of Public Health. A history of the public health system, ch3.
- 3) Reverby S. "Normal Exposure" and Inoculation Syphilis: A PHS "Tuskegee" Doctor in Guatemala, 1946-1948. Journal of Policy History, Volume 23, Number 1, 2011, pp. 6-28

2/23 Medical care and public health; health care reform

Learning objectives

- 1) Outline the organization of the health care and public health systems—institutions and structures of health care and public health systems
- 2) Appreciate the distinct roles and complementary responsibilities of health care and public health systems
- 3) Understand the mechanisms, including insurance systems, for paying for health services.

Readings

- 1) Schneider ch 26, Is the Medical System a Public Health Issue?
- 2) Schneider ch 27, Why the U.S. Medical System Needs Reform?

2/28 Social determinants of health: Where we live

Learning objectives

- 1) Detail the social and social environmental factors that are key determinants of health
- 2) Discuss how the topics, people and places presented in Unnatural Causes relate to the social determinants of health
- 3) Explore the biological pathway between stress and poor health
- 4) Examine the life and death of Freddie Gray as a case study in social determinants of health—and the role of lead poisoning in hindering child development.

Readings

- 1) Schneider ch 14, Psychosocial Factors Affect Health Behavior
- 2) Silbergeld E. Preventing Lead Poisoning in Children. Annu. Rev. Public Health. 1997. 18:187–210
- 3) Ames, A., Evans, M., Fox, L., Milam, A., Petteway, R., Rutledge, R.. 2011 Neighborhood Health Profile: Sandtown-Winchester/Harlem Park. Baltimore City Health Department, December 2011

3/2 Preparation for midterm & debate

3/7 & 3/9 No class

3/14 MIDTERM

3/16 Debate

Learning objectives

- 1) Thoroughly consider both sides of a volatile public health issue
- 2) Gather and package facts on debate topic and develop debate strategy
- 3) Work in teams in a fast-paced situation

Part II: Public Health in Practice

3/21 Politics & Policy: Obesity

Learning objectives

- 1) Attempt to match the scientific consensus on the causes of obesity with the political and policymaking reality.
- 2) Describe the actors and stake holders forces shaping obesity-related policymaking.

Readings

- 1) Schneider ch 16, Public Health Enemy Number Two and Growing: Poor Diet and Physical Inactivity
- 2) Zimmerman F. Using marketing muscle to sell fat: the rise of obesity in the modern economic. Annual Review of Public Health. 2011. 32:285–306

3/23 Politics & Policy: Obesity

Learning objectives

- 1) Learn the history and basic features of the federal food programs that aim to prevent child undernutrition as well as child obesity
- 2) Explore in depth the federal School Lunch Program and the complex negotiations surrounding this Program

Readings

- 1) Confessore N. How school lunch became the latest political battleground. New York Times. Oct 7 2014.

3/28 Politics & Policy: Obesity

Learning objectives

- 1) Hear directly from a policymaker how California legislation related to child obesity was crafted and implemented.

3/30 Programs: HIV/AIDS

Learning objectives

- 1) Introduce the HIV/AIDS virus and global, national and local epidemiological trends.
- 2) Analyze options for HIV/AIDS interventions using a framework including *when*, *who*, and *how* to intervene.

Readings

- 1) Schneider chapter 9, The Conquest of Infectious Diseases & chapter 10, The Resurgence of Infectious Disease
- 2) Gottlieb M. Pneumocystis pneumonia-- Los Angeles. American Journal of Public Health. June 2006, Vol 96, No. 6

4/4 Programs: HIV/AIDS (guest panel)

Learning objectives

- 1) Appreciate the diversity of approaches real-life public health organizations use in order to prevent HIV/AIDS in special populations.

4/6 Programs: HIV/AIDS

Learning objectives

- 1) Become familiar with the HIV/AIDS epidemic among people who inject drugs.
- 2) Analyze two very different approaches to HIV prevention among people who inject drugs (Indiana vs Vancouver).
- 3) Appreciate powerful sociocultural and political forces influence public health programs.

Readings

- 1) Strathdee & Beyrer. Threading the Needle—How to Stop the HIV Outbreak in Rural Indiana. *N Engl J Med* 373;5: 397-399 & Adams' response to Strathdee and Beyrer

4/11 Research, Air pollution (Jill Johnston)

Learning objectives

- 1) Introduce the causes of and health consequences of air pollution.

Readings

- 1) Schneider ch 21, Is it Safe to Breathe?
- 2) Kunzli et al. Breathless in Los Angeles: The Exhausting Search for Clean Air. *Am J Pub Hel.* September 2003, Vol 93, No. 9.

4/13 & 4/18 Research, air pollution

Learning objectives

- 1) Conduct critical reading of scientific journal articles on air pollution; identify the study design, data collection methods, discern the main results and the implications of the research. Identify possible limitations to the research.
- 2) Present a summary of the journal article to your classmates at a mock scientific conference.

Readings

- 1) Gauderman, W. J., et al. (2015). "Association of improved air quality with lung development in children." *N Engl J Med* **372**(10): 905-913.
- 2) Gauderman, W. J., et al. (2002). "Association between air pollution and lung function growth in southern California children: results from a second cohort." *Am J Respir Crit Care Med* **166**(1): 76-84.
- 3) Gilliland, F. D., et al. (2001). "The effects of ambient air pollution on school absenteeism due to respiratory illnesses." *Epidemiology* **12**(1): 43-54.
- 4) McConnell, R., et al. (1999). "Air pollution and bronchitic symptoms in Southern California children with asthma." *Environ Health Perspect* **107**(9): 757-760.
- 5) McConnell, R., et al. (2002). "Asthma in exercising children exposed to ozone: a cohort study." *Lancet* **359**(9304): 386-391.

4/20 Movements for change: global movements of goods

Learning objectives

- 1) Approach a new and complex topic: health impacts of the global movement of goods. Become familiar with new terminology related to the logistics industry.

- 2) Trace the journey of a doll from China to Chicago and relate that seemingly innocuous journey to serious health impacts.
- 3) Introduction to array of community-based groups who have mobilized to protect their health.

Readings

- 1) Garcia A et al. THE (Trade, Health, Environment) Impact Project: A Community-Based Participatory Research Environmental Justice Case Study. *Environmental Justice* 6(1); 2013
- 2) Matsuoka, Hricko, Gottlieb & De Lara. *Global Trade Impacts: Addressing the Health, Social and Environmental Consequences of Moving International Freight through Our Communities*. Occidental College and University of Southern California. 2011
 - a. Globalized World, Goods Movement Impacts: An Introduction p.3-5
 - b. A Doll's Journey: From China to Chicago [box] p.4
 - c. Part I: Trends and Issues p.7-21
- 3) The Impact Project Policy Brief Series
 - a. Importing Harm: U.S. Ports' Impacts on Health and Communities. Jan 2012.
 - b. Storing Harm: the Health and Community Impacts of Goods Movement Warehousing and Logistics. Jan 2012.
 - c. Driving Harm: Health and Community Impacts of Living near Truck Corridor. Jan 2012.
 - d. Tracking Harm: Health and Environmental Impacts of Rail Yards. Jan 2012.

4/25 *Movements for change: global movements of goods (Jessica Tovar)*

Learning objectives

- 1) Develop an understanding of the links between public health, global trade, environmental rules and regulations, community organizing and system change
- 2) Learn about the Zero Emissions Now campaign of the Moving Forward Network. A leader of the campaign will describe the goals, strategies, tactics, challenges and successes of this campaign.

Read/Watch

- 1) Truax C et al. *Neighborhood Assessment Teams Case studies from Southern California and instructions on community investigations of traffic-related air pollution*. The Impact Project 2013.
- 2) Matsuoka, Hricko, Gottlieb & De Lara. *Global Trade Impacts: Addressing the Health, Social and Environmental Consequences of Moving International Freight through Our Communities*. Occidental College and University of Southern California. 2011
 - a. Part II. The Changing Landscape: Organizing Strategies and Policy Innovations
Read the section on California p.24-34
- 3) Zero Emissions Now campaign video <https://youtu.be/2CICrBlaYdI>
- 4) *Dear Mr. Buffett Video* is part of the efforts against having the SCIG Railyard built right next to a community that includes schools, a child care center, a park and a community garden in West Long Beach. This area is already overburdened by Goods Movement. <https://www.youtube.com/watch?v=nG8TtFoNbJU>

4/27 *Movements for change: global movements of goods (bus tour)*

Learning objectives

- 1) Experience the reality of the global movement of goods by observing the freeways, rail yards and Port facilities while also hearing first-hand from residents of Port communities and members of community organizations.

Readings

- 1) To be announced

5/2 *Wrap-up & final assignment*