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## HISTORY OF EPIDEMIOLOGY I

### Course Syllabus

This course will examine the development of modern epidemiological methods in the 19th and 20th century, through weekly readings of original texts--classic and not-so-classic. Emphasis will be placed on exploring the links between epidemiological methods, concepts of disease and public health practice. This course will deal largely with infectious disease; the second with issues of environmental exposures, and chronic disease.

Students should come to class prepared to discuss the weekly readings. Course requirements include participation and preparation of two short papers analyzing the weekly readings.

### Week 1: TOXIC PLACES

#### Required Readings:

Snow on Cholera, ed. B.W. Richardson. New York: The Commonwealth Fund, 1936, esp. pp. 1-23, 38-59, 71-92, 111-125, 133-137.

Austin Flint, "Relations of Water to the Propagation of Fever," American Public Health Association Reports and Papers (1873), 164-172.

W.T. Sedgwick, "An Epidemic of Typhoid Fever in Lowell, Massachusetts," Boston Medical & Surgical J 124 (April 23, 1891), 397-402.

- 1) What observations did Snow make to establish a connection between exposure to water and cholera in each of his investigations? How did he get his data in each case?
- 2) What underlying theories did Snow have about the nature of cholera which might have influenced his epidemiological investigations?
- 3) What are Flint's & Sedgwick's theories & observations? How are they similar, dissimilar to Snow's? Do you believe Sedgwick? Why?

#### Background:

Genevieve Miller, "'Airs, Waters, and Places' in History," J History of Medicine 17 (January, 1962), 129-140.

Ludmilla Jordanova, "Earth Science and Environmental Medicine: The Synthesis of the Late Enlightenment," in L.J. Jordanova, Roy Porter, eds. *Images of the Earth. Essays in the History of the Environmental Sciences*. (Chalfont St. Giles: British Society for the History of Science, 1979), pp. 119-146.

Margaret Pelling, *Cholera, Fever and English Medicine, 1825-1865*. Oxford: Oxford University Press, 1978.

Christopher Hamlin, *A Science of Impurity. Water Analysis in Nineteenth Century Britain*. Berkeley: University of California Press, 1990.

## Week 2: EPIDEMIOLOGY BEFORE GERMS: YELLOW FEVER

### Required Readings:

William Coleman, *Yellow Fever in the North*. Madison: University of Wisconsin Press, 1987, Chapters 1-5, 7

- 1) In what ways are the investigations at Gibraltar and St. Nazaire similar or different? What kinds of data is available in each case, and how do the investigators use it?
- 2) What conclusions are drawn at St. Nazaire about public health practice?

## Week 3: PROVING HEALTH

### Required Readings:

William Farr, *Vital Statistics*. London: Sanitary Institute, 1885, 212-215, 116-132, 136-142, 147-154, 491-494.

Edgar Sydenstricker, "The Measurement of Results of Public Health Work," in *The Challenge of Facts. Selected Public Health Papers of Edgar Sydenstricker*. New York: Prodist, 1974, 39-64.

- 1) What is the value of death rate data for the epidemiologist? for the public health officer?
- 2) What are the "healthy districts"? How and why does Farr use them?
- 3) What does Sydenstricker think of mortality rates? How does he propose to measure the results of public health work? Why?

### Background:

John Eyler, *Victorian Social Medicine: The Ideas and Methods of William Farr*. Baltimore: Johns Hopkins University Press, 1979.

Mary Poovey, "Figures of Arithmetic, Figures of Speech: The Discourses of Statistics in the 1860s," *Critical Inquiry* 19 (Winter, 1993), 256-276.

#### Week 4: THE EPIDEMIOLOGY OF TUBERCULOSIS

##### Required Readings:

Lawrence F. Flick, "The Contagiousness of Phthisis (Tubercular Pulmonitis), *Transactions of the Medical Society of the State of Pennsylvania* 20 (June, 1888), 164-186.

Robert Koch, "The Epidemiology of Tuberculosis," *Annual Report of the Smithsonian Institution* (1910), 659-674.

Wade Hampton Frost, "How Much Control of Tuberculosis?," *American Journal of Public Health* 27 (1937), 759-766.

- 1) What can epidemiology show about tb, according to Flick? according to Koch? according to Frost?
- 2) What is Frost's model of the epidemiology of tb? Why is he interested in active cases?

##### Background:

Rene and Jean Dubos, *The White Plague. Tuberculosis, Man and Society*. New Brunswick; Rutgers University Press, 1987.

George Comstock, "Frost Revisited: The Modern Epidemiology of Tuberculosis," *American J of Epidemiology* 101 (1975), 363-382.

#### Week 5: POLIO

##### Required Readings:

"Transactions of a Special Conference...for the Consideration of the Prevention of the Spread of Poliomyelitis", U.S. Public Health Service, Bulletin No. 83 (1917), 66-77.

Naomi Rogers, "Dirts, Flies and Immigrants: Explaining the Epidemiology of Poliomyelitis, 1900-1916," *Journal of the History of Medicine* 44, (October, 1989), 486-505.

Simon Flexner, "Epidemiology and Recent Epidemics," *Science* 50 (October 3, 1919), 313-318.

John Rodman Paul, "Geography and Antibodies," *Trans Assoc American Physicians* (1952), 184-190.

- 1) Why is epidemic polio unequally distributed? What theories are available to explain its distribution?
- 2) Who gets more polio, the poor or the rich? urban or rural people?
- 3) What are the concerns of epidemiologists studying polio? what are the concerns of public health officials and business people? how are they different?

Background:

John Rodman Paul, *A History of Poliomyelitis*. New Haven: Yale University Press, 1971.

Naomi Rogers, *Dirt and Disease. Polio Before FDR*. New Brunswick: Rutgers University Press, 1992.

Week 6: Filariasis

Required Readings:

T. Cobbold, "On Filariae and other parasites in relation to endemics and epizootics," *Trans. Epi Soc London*, 1881-82 n.s. t.1.

Patrick Manson, "Geographical Distribution of filaria," *Trans Intl Soc Dem & Hygiene*, 1(1892) 79-97

C.W. Daniels, "Filariae and Filarial Disease in British Guiana," *J Tropical Medicine* 1 (1898), 13- 18.

- 1) What kind of data do you need for the epidemiology of parasites?
- 2) How do you prove that a parasite causes a disease? How or why is it more difficult than proving that a bacteria causes a disease?
- 3) What are Manson's "postulates"?

Week 7: Yellow Fever

Required Readings:

Margaret Warner, "Hunting the Yellow Fever Germ: The Principal and Practice of Etiologic Proof in Nineteenth Century America," *Bulletin of the History of Medicine* 59 (1985), 361-382.

Randall M. Packard, "A Land Filled With Mosquitoes: Fred L. Soper, the Rockefeller Foundation, and the Anopheles Gambiae Invasion of Brazil," *Parassitologia* 36 (1994), 215-237.

Ilana Lowy, "Epidemiology, Immunology and Yellow Fever: The Rockefeller Foundation in Brazil, 1923-1939," *J History of Biology* 30 (1997) 397-417.

- 1) How did the "germ theory" change the rules of evidence for epidemiological inquiry?
- 2) How do you explain Soper's failure to recognize the sources of "wild" yellow fever?

## Week 8: AIDS AND SOCIAL EPIDEMIOLOGY

### Required Readings:

Randall M. Packard and Paul Epstein, "Epidemiologists, Social Scientists and the Structure of Medical Research on AIDS in Africa," *Social Science and Medicine* 33 (1991), 771-794.

Gerald M. Oppenheimer, "Causes, Cases and Cohorts: The Role of Epidemiology in the Historical Construction of AIDs," in Elizabeth Fee and Daniel M. Fox, eds. *AIDS. The Making of A Chronic Disease*. Berkeley: University of California Press, 49-83.

- 1) What do epidemiologists understand about the epidemiology of HIV infections? What don't they understand?
- 2) What would you need to know to have a social epidemiology of HIV infections?

### Recommended Readings:

Peter A. Senior and Raj Bhopal, "Ethnicity as a Variable in Epidemiological Research," *British Medical J* 309 (July 30, 1994), 327-330.

### Background References

Those of you with little or no background in the history of public health and/or epidemiology may find it useful at times to read up on periods and individuals. Background readings for specific topics are listed in the syllabus; from time to time, I may hand out additional special bibliographies. However, the following items may be of more general use.

#### A. General Background

Eric Hobsbawm, *The Age of Capital, 1848-1875*. New York: Scribner, 1975.

Eric Hobsbawm, *The Age of Empire, 1875-1914*. New York: Pantheon Books, 1987.

Eric Hobsbawm, *The Age of Extremes. A History of the World, 1914-1991*. New York: Pantheon Books, 1994.

Hamlin, Christopher, *Public Health and Social Justice in the Age of Chadwick*. Cambridge University Press, 1998.

Anthony S. Wohl, *Endangered Lives. Public Health in Victorian Britain*. Cambridge: Harvard University Press, 1983.

William Bynum, *Science and the Practice of Medicine in the 19th Century*. Cambridge: Cambridge University Press, 1994.

Barbara Rosenkrantz, *Public Health and the State. Changing Views in Massachusetts, 1842-1936*. Cambridge: Harvard University Press, 1972.

Michael Worboys, *Spreading Germs. Disease Theories and Medical Practice in Britain, 1865-1900*. Cambridge University Press, 2000.

Elizabeth Fee, *Disease and Discovery. A History of the Johns Hopkins School of Hygiene and Public Health, 1916-1939*. Baltimore: Johns Hopkins University Press, 1987.

Elizabeth Fee and Roy M. Acheson, *A History of Education in Public Health. Health That Mocks The Doctors' Rules* (New York: Oxford University Press, 1991),

## B. History of Epidemiology

Elizabeth Fee, "Adapting to Specialization: The Founding, Growth and Transformation of the American Journal of Hygiene," *American Journal of Epidemiology* 134 (November 15, 1991), 1036-1037

C.E.A. Winslow, *The Conquest of Epidemic Disease. A Chapter in the History of Ideas*. Abraham Lilienfeld, *Times, Places and Persons. Aspects of the History of Epidemiology*. Baltimore: Johns Hopkins University Press, 1980.

C.E. A. Winslow, et al. *The History of American Epidemiology* (St. Louis: C.V. Mosby Company, 1952).

John Rodman Paul, *An Account of the American Epidemiological Society. A Retrospect of Some Fifty Years*. New York: Academic Press, 1973.

## C. Methodology

Mervyn Susser, "Epidemiology in the United States After World War II: The Evolution of Technique," *Epidemiologic Reviews* 7 (1985), 147-177.

Abraham Lilienfeld, "A Century of Case-Control Studies: Progress?," *Journal of Chronic Disease* 72 (1979), 5-13.

Paul E.M. Fine, "John Brownlee and the Measurement of Infectiousness," *J Royal Statistical Society Series A* 142 (1979), 347-362.

C.P. Jones, "'Race' in the Epidemiological Literature: An Examination of the AJE 1921-1990," *American J of Epidemiology* 134 (November, 1991), 1079-1084.

#### D. Reading Collections

John Ashton, *The Epidemiologic Imagination: A Reader*. Buckingham: Open University Press, 1994.

Sander Greenland, *Evolution of Epidemiologic Ideas; Annotated Readings on Concepts and Methods*. Chestnut Hill: Epidemiology Resources, 1987.

Pan American Health Organization, *The Challenge of Epidemiology: Issues and Secondary Readings*. Washington: Pan American Health Organization, 1988.