

340.673 HISTORY OF EPIDEMIOLOGY
4th Quarter, Spring 2009
Tuesdays, 1:30-3:20

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.

Students should come to class prepared to discuss the weekly readings. Course requirements include participation and preparation of a short papers analyzing one of the weekly readings. Most (not all) of the required readings are on electronic reserves at the Welch library:

<http://eres.welch.jhmi.edu/eres/coursepage.aspx?cid=729>

You will need a password to access these readings. The background readings and the required reading for November 11 are on reserve at the History of Medicine Library, 3rd Floor of Welch. The library is only open Mon-Fri, 9-4:30

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MARCH 24: INTRODUCTION

MARCH 31: 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.

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 Sedgwick's theories & observations? How are they similar, dissimilar to Snow's? Do you believe Sedgwick? Why?

Background Readings:

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.

Paneth N, Vinten-Johansen P, Brody H, Rip M., "A rivalry of foulness: official and unofficial investigations of the London cholera epidemic of 1854," *Am J Public Health*, 1998, 88:1545-53.

APRIL 7: EPIDEMIOLOGY BEFORE GERMS: YELLOW FEVER

Required Readings:

William Coleman, *Yellow Fever in the North*. Madison: University of Wisconsin Press, 1987, Chapters 1-5, 7 (on reserve, History of Medicine)

- 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?

APRIL 14: 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.

APRIL 21: THE SOCIAL CAUSATION OF DISEASE: PELLAGRA

Required Readings:

"Discussion Pellagra Symposium," *Southern Medical Journal* 9 (1916), 31-42.

"Report of the Pellagra Commission of the N.M.A.," *Journal of the National Medical Association* 10 October-December (1918), 163-166.

Joseph Goldberger, G.A. Wheeler and Edgar Sydenstricker, "A Study of the Relation of Family Income and Other Economic Factors to Pellagra Incidence in Seven Cotton-Mill Villages of South Carolina in 1916," in Goldberger on Pellagra, ed. Milton Terris. Baton Rouge: Louisiana State University Press, 1964, 225-267.

Background:

Daphne Roe, *A Plague of Corn. The Social History of Pellagra*. Ithaca: Cornell University Press, 1973.

Elizabeth Etheridge, *The Butterfly Caste. A Social History of Pellagra in the South Westport*: Greenwood Publishing, 1972.

Edward Beardsley, *A History of Neglect. Health Care for Blacks and Mill Workers in the Twentieth-Century South*. Knoxville: University of Tennessee Press, 1987.

Gerald M. Oppenheimer, "Paradigm Lost: Race, Ethnicity and the Search for a New Population Taxonomy," *American Journal of Public Health*, (2001) 91, 1049-1055.

Harry M Marks, "'Epidemiologists Explain Pellagra: Gender, Race and Political Economy in the Work of Edgar Sydenstricker,'" *Journal of the History of Medicine and Allied Sciences* 58 (January 2003), 34-55.

APRIL 28: SMOKING, CANCER AND PUBLIC HEALTH

Required Readings:

Richard Doll and A. Bradford Hill, "Lung Cancer and Other Causes of Death In Relation to Smoking. A Second Report on the Mortality of British Doctors," *British Medical J* 2 (November 10, 1956), 1071-1081.

R.A. Fisher, "Lung Cancer and Cigarettes?" *Nature* 182 (1958),108.

R.A. Fisher, "Cancer and Smoking," *Nature* 182 (1958), 596.

Jerome Cornfield, William Haenszel, E. Cuyler Hammond, Abraham Lilienfeld, Michael D. Shimkin, and Ernst L. Wynder, "Smoking and Lung Cancer: Recent Evidence and A Discussion of Some Questions," *J of the National Cancer Institute* 22 (1959), 173-203.

Bernard G. Greenberg, "Problems of Statistical Inference in Health with Special Reference to the Cigarette Smoking and Lung Cancer Controversy," *Journal of the American Statistical Association* 64 (1969), 739-758.

- 1) What is the evidence that smoking "causes" lung cancer? What are the arguments against the claim that smoking "causes" lung cancer?
- 2) What studies or research might resolve the issue?

Background:

Colin White, "Research on Smoking and Lung Cancer; A Landmark in the History of Chronic Disease Epidemiology," *Yale J of Biology and Medicine* 63 (1990), 29-46.

William H. Wynder, "Tobacco as a Cause of Lung Cancer," *American Journal of Epidemiology* 146 (1997), 687-694.

Marc Parascandola, "Cigarettes and the US Public Health Service in the 1950s," *Am J Public Health*, 2001, 91:196-205.

Luc Berlivet, "Association or causation?" The debate on the scientific status of risk factor epidemiology, 1947-c. 1965," *Clio Medica*, 2005, 75: 39-74.

MAY 5 : THE EPIDEMIOLOGY OF A CHRONIC DISEASE

Required Reading:

Ancel Keys, "Prediction and Possible Prevention of Coronary Disease," *American J of Public Health* 43 (November, 1953), 1399- 1407.

Jacob Yerushalmy and Herman E. Hilleboe, "Fat in the Diet and Mortality from Heart Disease," *New York State J of Medicine* 57 (1957), 2243-2254.

Gary Taubes, "The Soft Science of Dietary Fat," *Science* 291 (2001), 2536-41, 2543-5.

- 1) What kind of evidence was presented in favor of the proposition that dietary fat causes heart disease? What are the arguments against?
- 2) What kinds of studies might resolve this controversy?

Background:

Karin Garrety, "Social Worlds, Actor Networks and Controversy: The Case of Cholesterol, Dietary Fat and Heart Disease," *Social Studies of Science*, 27 (1997), 727-773.

Harry M Marks, *The Progress of Experiment*. Cambridge University Press, 1997, pp. 164-196.

Gerald M Oppenheimer, "Becoming the Framingham Study, 1947-1950," *American J of Public Health*, 2005, 95: 602-610.

- 1) What kind of evidence existed that the American diet was causing high levels of heart disease? What objections were made to this evidence?
- 2) What was the nature of the dietary problem: e.g. which constituents of the diet were responsible? How do we know?

MAY 12: MAMMOGRAPHY

Required Readings:

Sam Shapiro, Philip Strax, Louis Venet, "Evaluation of Periodic Breast Cancer Screening with Mammography: Methodology and Early Observations [1966]," reprinted in *CA-A Journal for Clinicians* 40 (March/April, 1990), 111-125.

Steven N. Goodman, "The Mammography Dilemma: A Crisis for Evidence-Based Medicine?," *Annals of Internal Medicine* 137 (3 September 2002), 363-365.

O. Olsen, P. Gotzsche, "Systematic Review of Screening for Breast Cancer with Mammography," <http://image.thelancet.com/lancet/extra/fullreport.pdf>

Jane Wells, "Mammography and the Politics of Randomised Controlled Trials," *BMJ* 317 (31 October 1998), 1224-30.

1) What is the "mammography dilemma"? What kind of a crisis does it pose for evidence based medicine?

2) Who should get screened for breast cancer? Who should decide?

Background:

William C. Black and H. Gilbert Welch, "Advances in Diagnostic Imaging and Overestimations of Disease Prevalence and the Benefits of Therapy," *NEJM* 328 (April 29, 1993), 1237-1243.

Barron H. Lerner, "Great Expectations: Historical Perspectives on Genetic Breast Cancer Testing," *AJPH* 89 (1999), 938-944

Ilana Lowy, "Breast Cancer and the 'Materiality of Risk': The Rise of Morphological Prediction," *Bull Hist Med*, 81 (2007), 241-266.

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.