

One way to address and analyze the impact of Brazil's Era of Epidemics on public policy, overall population welfare, changes in treatments, and other areas of interest is to compare the Brazilian context with the epidemic context of another large country in the Western Hemisphere: the United States. This blog post will summarize existing historiography of U.S. health related to infectious diseases in the second half of the nineteenth century. Since the focus is on infectious diseases with epidemic potential, this review has a more narrow scope than U.S. health historiography generally for the period. Many studies exist on mental health, chronic disease, cancer, heart disease, and other health concerns in the nineteenth century; their exclusion here does not necessarily reflect a small place in the literature. Studies conducted by demographers, geographers, and economic historians also have a big presence in this review because their methodologies often analyze mortality.

Existing research, as may be expected, generally follows the existing sources. Census data years, military records, especially concerning Civil War soldiers, surveys of cities like Philadelphia with early vital statistics record-keeping, and hospital data all dominate the literature on non-slave populations. Slaves welfare has a large place in the historiography which is discussed in detail below. I will begin with a summary of research by region, then a short discussion of special populations (women, infants, Native Americans, and slaves), and finally a summary of research about the effects of early public health policy.

Regionally, the northeast United States has been analyzed the most, at least in part due to early and proactive activity by city public health boards, including the gathering of vital statistics.¹ Southern historians have closed the gap with attention on particular towns or epidemics, though attention on the rural poor in the south lags behind attention on the rural poor in the northeast (see, for example, the table of recent dissertations and theses on this blog). The west has had fewer studies using demographic, geographic, and cliometric methods than the south, northeast, or midwest, probably because of the relatively late and patchy conquest of the area and a highly mobile population. However, there are many histories of political, social, and institutional medical care in the west. A few cities, especially San Francisco and Los Angeles, dominate attention in the region.

Studies of women's health are typically not as quantitative as those of men for the simple reason that women did not join the Union Army (with the exception of Cathay Williams, the first female African American soldier in the United States, who passed the Army's medical exam without her sex being discovered). Studies tend to focus on pregnancy, childbirth, and sexuality, and these are typically social histories. The gendered space of the birthing room made systematic documentation of birth outcomes difficult for predominantly male record keepers, though this was less of a problem by the late nineteenth century than it had been for almost all of U.S. history prior. Scholars have explored the moments when men did intrude into childbirth from various angles: as part of the professionalization of medicine, as part of the general struggle between lay control of medical care and control by formally trained physicians, as a gendered intrusion of male physicians and surgeons into female spaces for the purposes of expanding male economic opportunity, and finally as part of the moral attention in the late 1860s and 1870s on obscenity, abortion, and birth control.²

1 Margaret Humphreys, *Yellow Fever and the South* (Baltimore: The Johns Hopkins University Press, 1992), 10.

2 See the essays collected in Judith Walzer Leavitt, ed., *Women and Health in America: Historical Readings* (Madison: University of Wisconsin Press, 1999). For discussion of medical attitudes toward women, particularly women's mental health, see chapter eight of Regina Morantz-Sanchez, *Sympathy and Science: Women Physicians in American Medicine* (New York: Oxford University Press, 1985), 203- 231. For discussion of contraceptives and abortion, see Andrea Tone, *Devices and Desires: A History of Contraceptives in America* (New York: Hill and Wang, 2001), 3-46, and Janet Farrell Brodie, *Contraception and Abortion in Nineteenth-Century America* (Ithaca: Cornell University Press, 1994).

One of the interesting implications of male intrusion into childbirth is the fact that it was not coupled with increased hospitalization in the United States, unlike in Europe where lying-in hospitals were developed in the seventeenth and eighteenth century by male doctors seeking to expand their practice into the profitable area of childbirth.³ Unfortunately for European women, puerperal fever raged through these hospitals. Until the twentieth century, American women continued to have births at home, assisted by both female midwives and/or male doctors. While also at risk for puerperal fever, they at least avoided certain contact with other victims. Although Louis Pasteur discovered the cause of puerperal fever as a streptococcal infection in 1880, it was not until the first decades of the twentieth century that aseptic procedures were routinely enforced in hospitals.⁴ On the other hand, midwives may have treated umbilical stumps with substances that increased transmission of neonatal tetanus, a problem often noted by slaveowners, for example.⁵

Studies about women's health which do not examine reproductive health are often social or cultural histories which address how new medical knowledge affected female behavior. Nancy Tomes's book *The Gospel of Germs*, for example, explores how the burden of keeping a home sanitary and disease-free fell upon women at the turn of the twentieth century.⁶ Women's participation in public health reform and their activism in the Progressive era has been rightfully examined as an important part of public health history.⁷

Relatively little is known about the health of slave children in general due to their low presence in the historical record. Gwyn Campbell surveyed the literature for information about slave children's lives. She summarized Richard Steckel's work on nutrition (discussed below), found that American slaveowner treatment of pregnant women was relatively lenient compared to Caribbean plantations, and examined the "smothering" deaths of slave children, suggesting that many of these would probably be diagnosed as Sudden Infant Death Syndrome today.⁸ Richard Meckel describes the creation of public health policies for infants in *Save the Babies*. In the nineteenth century diarrheal diseases were seen as the primary cause of infant mortality (though Meckel notes the biggest cause of death is debatable), causing intense scrutiny on milk production, efforts to create a hygienic environment in the home and in public spaces, and eventually proper hygienic education for mothers.⁹ Demographer Gretchen Condran

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- 3 See, for example, Adrian Wilson, *The Making of Man-midwifery: Childbirth in England, 1660-1770* (Cambridge: Harvard University Press, 1995), and Monica Green, *Making Women's Medicine Masculine* (Oxford: Oxford University Press, 2008).
- 4 Dorothy Wertz, "Childbirth," in *The Reader's Companion to U.S. Women's History*, ed. Wilma Mankiller et al. (New York: Houghton Mifflin Company, 1998), 90.
- 5 Todd L. Savitt, "Black Health on the Plantation: Masters, Slaves, and Physicians," in *Sickness and Health in America: Readings in the History of Medicine and Public Health*, 3rd ed., ed. by Judith Walzer Leavitt and Ronald L. Numbers (Madison: University of Wisconsin Press, 1997), 355. Herbert C. Covey, *African American Slave Medicine: Herbal and Non-Herbal Treatments* (Lanham, MD: Lexington Books, 2007), 54.
- 6 Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge: Harvard University Press, 1998).
- 7 For two interesting examples, see Susan L. Smith, *Sick and Tired of Being Sick and Tired: Black Women's Health Activism in America, 1890-1950* (Philadelphia: University of Pennsylvania Press, 1995), and the essay on industrial toxicologist Alice Hamilton by Barbara Sicherman, "Working It Out: Gender, Profession, and Reform in the Career of Alice Hamilton," in *Gender, Class, Race, and Reform in the Progressive Era*, eds. Noralee Frankel and Nancy Schrom Dye (Lexington: University Press of Kentucky, 1991), 127-147.
- 8 Gwyn Campbell, "Children and Slavery in the New World: A Review," *Slavery and Abolition* 27, no. 2 (2006): 266-270.
- 9 Richard A. Meckel, *Save the Babies: American Public Health Reform and the Prevention of Infant Mortality, 1850-1929* (Ann Arbor: University of Michigan Press, 1998), 41-43, 48-51, 135-137.

and her colleagues have produced several studies of infant and child mortality in urban areas.¹⁰ These focus on efforts to reduce infant mortality, including by removing infants from cities, focusing on feeding practices, improving water sanitation and waste disposal infrastructure, improving the quality of the milk supply, and providing education to mothers on child hygiene.

Studies of Native American mortality have contributed to wider discussions about the effect of new diseases on virgin populations as well as the human cost of European discovery of the Americas.¹¹ These tend to cover the period before 1840 (1838 being the year of the Cherokee removal to Oklahoma, the last of the southeastern tribes to be compelled to do so), or health on reservations in the twentieth century. Little systematic study has been done of Native American populations in between 1850 and around 1890, and what has been done is generally a history of federal policy.¹² The 1850s and 1860s were dominated by north-south sectionalism and the Civil War (and thus historical attention), while from 1865 to about 1890 was a period of war in some part of the west or another as the various tribes were conquered and forced on reservations. Obviously such disruption precluded most consistent record creation and historical attention on disease.

One of the most prominent historiographical conversations in U.S. medical history centers on determining the precise physical toll of slavery.¹³ Richard Steckel's foundational work on the nutrition of slave adults and children using height data from plantation records remains the starting point for questions of slave health.¹⁴ There has been some debate with Steckel over the relative importance of nutrition to long-term health as opposed to disease effects.¹⁵ Todd Savitt has described not only the

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- 10 Gretchen A. Condran and Harold A. Lentzner, "Early Death: Mortality Among Young Children in New York, Chicago, New Orleans," *Journal of Interdisciplinary History* 34, no. 3 (Winter 2004): 315-354. Gretchen A. Condran and Jennifer Murphy, "Defining and Managing Infant Mortality: A Case Study of Philadelphia, 1870-1920," *Social Science History* 32, no. 4 (2008): 473-513. Gretchen A. Condran and Ellen Kramarow, "Child Mortality among Jewish Immigrants in to the United States," *The Journal of Interdisciplinary History* 22 (1991): 223-254. Gretchen A. Condran, Henry Williams, and Rose Cheney, "The Decline in Mortality in Philadelphia from 1870 to 1930: The Role of Municipal Services," in *Sickness and Health in America*, 2nd ed., ed. by Judith Walzer Leavitt and Ronald L. Numbers (Madison: University of Wisconsin Press, 1986), 422-436.
- 11 One of the more important books on this subject is Alfred Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CN: Greenwood Press, 1972). Recent articles have revisited Native American experiences with smallpox: James C. Riley, "Smallpox and American Indians Revisited," *Journal of the History of Medicine and Allied Sciences* 65, no. 4 (2010): 445-477, and Paul Kelton, "Avoiding the Smallpox Spirits: Colonial Epidemics and Southeastern Indian Survival," *Ethnohistory* 51, no. 1 (Winter 2004): 45-71. See also the collections of recent dissertations and theses on this blog for several studies of Native American health.
- 12 See, for example, Ruth M. Raup, *The Indian Health Program, 1800-1955* (Washington: U.S. Division of Indian Health, Department of Health, Education and Welfare, 1959), and Diane D. Edwards, "White Father Medicine and the Blackfeet, 1855-1955: Native American Health and the Department of the Interior," in *Disease and Medical Care in the Mountain West: Essays on Region, History, and Practice*, ed. by Martha L. Hildreth and Bruce T. Moran (Reno: University of Nevada Press, 1998), 43-58. One exception to the policy-oriented histories: Joseph Prince and Richard Steckel, "Nutritional Success on the Great Plains: Nineteenth Century Equestrian Nomads," *Journal of Interdisciplinary History* 33 (Winter 2003), 353-384.
- 13 Robert Fogel, *The Slavery Debates, 1952-1990: A Retrospective* (Baton Rouge: Louisiana State University Press, 2003).
- 14 Richard H. Steckel, "Slave Mortality: Analysis of Evidence from Plantation Records," *Social Science History* 3 (October 1979): 86-114. Richard H. Steckel, "A Peculiar Population: The Nutrition, Health, and Mortality of American Slaves from Childhood to Maturity," *Journal of Economic History* 46 (September 1986): 721-741. Ted A. Rathbun and Richard H. Steckel, "The Health of Slaves and Free Blacks in the East," in *The Backbone of History: Health and Nutrition in the Western Hemisphere*, ed. Richard H. Steckel and Jerome C. Rose (New York: Cambridge University Press, 2002), 208-225.
- 15 Philip R.P. Coelho and Robert A. McGuire, "Diets Verses Diseases: The Anthropometrics of Slave Children," *Journal of Economic History* 60, no. 1 (March 2000): 232-246.

typical care a slave in Virginia might have expected, but the kinds of care slaves offered to each other.¹⁶ A recent study of black Union Army soldiers found that the pre-war socioeconomic status of slaves predicted their resistance to certain diseases. Factors which affected a given person's resistance to disease included skin color, a nonfield occupation while a slave, whether the person lived on a plantation, and whether he lived in a rural area before joining the Army. This study suggests that slave health was not uniform across all slave experiences.¹⁷ Dora L. Costa has studied the health of Union veterans at 1900 and found that black men were at higher risk of death from all causes.¹⁸ The interest in slave health continues; one recent study examined slave hospitals in the South, a subject relevant to the professionalization of medicine during this time period, though the majority of Americans (and slaves) did not use hospitals until the twentieth century.¹⁹ Herbert C. Covey has not only indexed and described slave materia medica, but also analyzed the relationship between slaves and white medicine, including instances of using slaves as medical experimentation.²⁰

Much more is known about the health of slaves than the health of postbellum African Americans, probably in part due to the sudden end of records detailing the health of human property. However, one study of the skeletons of African Americans in a postbellum Arkansas graveyard confirms that health prospects were not improved by emancipation. A highly stressed population with serious nutritional deficiencies suffered from high infant mortality due to congenital syphilis,²¹ in addition to the other common epidemic hazards of the young (including neonatal tetanus and influenza). The issue of slave health remains salient not just for pure humanitarian condemnation of slavery, but also for what it says about the nature of rational choice in market-based systems - thus the high interest by economic historians. Examining African American health also contributes to debates on the presence of race-based immunities to certain diseases like yellow fever and malaria.²² Studies of slave health also benefit from the Army medical records generated by the Civil War and contribute to discussions of Civil War historiography.

Another important historiographical conversation concerns the effectiveness of early public health policy. As Charles Rosenberg has illustrated, the major cholera outbreaks of the nineteenth century encouraged the creation of public health boards in major cities whose existence grew more stable as they dealt with each outbreak.²³ Margaret Humphreys has detailed the unique situation in the postbellum south in her books *Malaria: Poverty, Race, and Public Health in the United States* and *Yellow Fever and the South*. These describe southern boards of health founded in response to yellow

16 Todd L. Savitt, *Medicine and Slavery: The Diseases and Health Care of Blacks in Antebellum Virginia* (Champaign, IL: University of Illinois Press, 1978).

17 Chulhee Lee, "Socioeconomic Differences in the Health of Black Union Soldiers during the American Civil War," *Social Science History* 33, no. 4 (Winter 2009): 427-457.

18 Dora L. Costa, "Race and Older Age Mortality: Evidence from Union Army Veterans," NBER Working Paper No. 10902.

19 Stephen C. Kenny, "'A Dictate of Both Interest and Mercy?': Slave Hospitals in the Antebellum South," *Journal of the History of Medicine and Allied Sciences* 65, no. 1 (January 2010): 2-47.

20 Herbert C. Covey, *African American Slave Medicine: Herbal and Non-Herbal Treatments* (Lanham, MD: Lexington Books, 2007).

21 Jerome C. Rose, "Biological Consequences of Segregation and Economic Deprivation: A Post-Slavery Population from Southwest Arkansas," *Journal of Economic History* 49 (June 1989): 351-60.

22 Margaret Humphreys, *Malaria: Poverty, Race, and Public Health in the United States* (Baltimore: The Johns Hopkins University Press, 2001), 14-20. Kenneth Kiple, "Black Yellow Fever Immunities, Innate and Acquired, as Revealed in the American South," *Social Science History* 1, no. 4 (Summer 1977): 419-436.

23 Charles Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866* (Chicago: The University of Chicago Press, 1962), 92, 102, 190, 210-212.

fever epidemics, as opposed to Rosenberg's northern, cholera-sensitive boards of health. Before discovery of the mosquito vector, southerners tried to manage epidemics primarily through quarantine (especially from ports known to have yellow fever epidemics), disinfection of goods, ships, and trains, and some street sanitation in the middle of yellow fever epidemics.²⁴ Malaria was seen as a clearly place-based disease before the discovery of the mosquito vector and much attention was paid to distinguishing yellow fever from malaria due to the enormous financial costs of quarantines.²⁵ Mosquito control efforts (including cost-intensive hand killing of mosquitoes, putting oil in water cisterns, and other methods developed in Panama) after the turn of the century characterized fights against both yellow fever and malaria. Humphreys notes that it was likely lifestyle changes which drove malaria out of the midwest, north, and west such as moving homes away from mosquito breeding grounds, and that anti-malaria efforts such as DDT and New Deal irrigation projects may have had less of an effect than the lifestyle changes associated with improved standards of living for the southern poor.²⁶

Some of the most important early public health work was provision of clean water and waste disposal for burgeoning cities. This infrastructure began to be installed as early as the 1870s for some towns, but by the turn of the century most places had sewers and water pipes for at least part of their population. Case studies of the growth process of towns and cities have indicated that even when local governments or private companies began to put in water and sewer systems, mortality from diarrheal, respiratory, and other diseases did not immediately decline due to the crowding associated with rapid urbanization and industrialization.²⁷ Werner Troesken has challenged the commonly held assumption that southern cities lagged behind the rest of the nation in provisioning water and sewer systems for their urban populations, and he has also discovered that African Americans benefited as much or more from urban water and sewer systems before 1910.²⁸ The reason for this is twofold: first, African Americans were less healthy to begin with and so had more to gain from clean water supplies, and second, while there was residential segregation in southern towns, it was on such a small scale in the early part of the Jim Crow era that whites could not exclude them from services without excluding other whites.²⁹ However, the importance of any given municipal service should not be regarded as the answer to reduced mortality; decline was likely due to the combination of disease control efforts, economic, nutritional, and environmental improvement, and changes in individual behavior which explain reduced mortality around the turn of the century, as Condran et al. point out in their study of Philadelphia.³⁰

By exploring the historiography from the perspective of region, special populations, and focus on the public health efforts, I hope to offer a starting point from which to compare the United States' epidemic

24 Humphreys, *Yellow Fever and the South*, 8-10.

25 Humphreys, *Malaria*, 43.

26 Humphreys, *Malaria*, 35-40, 69-93.

27 Jeffrey K. Beemer, Douglas L. Anderton, and Susan Hautaniemi Leonard, "Sewers in the City: A Case Study of Individual-Level Mortality and Public Health Initiatives in Northampton, Massachusetts, at the Turn of the Century," *Journal of the History of Medicine and Allied Sciences*. 60, no. 1 (2004): 42-72. Susan I. Hautaniemi, Alan C. Swedlund and Douglas L. Anderton, "Mill Town Mortality: Consequences of Industrial Growth in Two Nineteenth-Century New England Towns," *Social Science History* 23, no. 1 (1999): 1-39. Crimmins, Eileen M. and Gretchen A. Condran, "Mortality Variations in US Cities in 1900: A Two-Level Explanation by Cause of Death and Underlying Factors," *Social Science History* 7, no. 1 (1983): 31-59.

28 Werner Troesken, *Water, Race, and Disease* (Cambridge: MIT Press, 2004). Segregation laws were passed in 1910 throughout the south, and cities or towns which added water and sewer systems after this date, such as Shaw, Mississippi, did in fact exclude their African American residents from the services. Troesken 36, 93-116.

29 Troesken, 2-13.

30 Condran, Williams, and Cheney, 456-457.

context to Brazil's. Although no two populations were exactly the same, perhaps the experiences of Americans will elucidate choices made in Brazil about treatment, public health, or even individual behavior.