

Part 1

Overview Chapters: Behavioral Interventions

History of Behavioral Interventions in STD Control

Laura J. McGough, Ph.D., and H. Hunter Handsfield, M.D.

STDs comprise a wide variety of pathogens, including viruses, bacteria, fungi, and protozoa, along with an equally broad range of clinical manifestations, from mild infections localized to the genitalia to more serious diseases affecting reproductive health, the central nervous system, heart, or the immune system. The fundamental reason for placing these diverse biological agents and their sequelae under the same category of STDs is that they share a common mode of transmission—that is, a common human behavior. Given that the category of STDs is defined according to a common behavior rather than a common biological pathogen or sequela, one would expect behavioral interventions to have been at the center of historical and current strategies to prevent and control STDs. Historically, however, the opposite has been true: compared with epidemic infectious diseases such as plague and cholera, which garnered significant public health attention, STD control was relegated to private physicians and largely ignored by public health officials, except for behavioral efforts aimed largely at “marginal” groups such as prostitutes or military personnel. This chapter explains why behavioral interventions for STD control have been a relatively neglected area of public health programs.

It should be noted that the term “behavioral interventions” has come into use relatively recently (since the 1980s), while behavioral science itself is a 20th-century creation. To avoid the anachronistic practice of imposing modern categories onto the past, it is important to explain past practices within their own historical context. The categories that people in the past used to describe and explain their STD prevention and control activities often developed from fundamentally different conceptions of disease transmission, public health, and human behavior. I have retained the original language (the “pox” instead of syphilis, if that was the term commonly used) to underscore the need to understand disease control efforts in context. Similarly, depending on the context, I will refer to the historic terminology used to characterize populations, groups, behaviors, and diseases, such as prostitutes rather than commercial sex workers.

Efforts to control and treat diseases always develop out of specific historical and cultural contexts. In 19th-century Europe, for example, STD control efforts focused almost entirely on the regulation of prostitution and forced medical inspection of prostitutes. Victorian public health officials and physicians

regarded prostitutes as the main vectors of disease, and prostitutes' behavior as essentially unchangeable, because they were "deviant" human beings. Medical and scientific writings at the time sharply distinguished between normal and "deviant" psychology and behavior. The behavior of prostitutes' male clients, on the other hand, was not considered problematic, but a normal sexual outlet that served to protect "respectable women" from seduction. Victorian preoccupations with class and perceptions about the sexes influenced the selection of the population for health interventions: male sexual privileges were sacrosanct, whereas middle- and upper-class women were assumed to be chaste unless seduced by men. This set of assumptions left a rather narrow field for behavioral interventions, such as repressing prostitution or compelling its practitioners to obtain medical treatment, since they were "deviant" persons who could neither modify their behavior nor be trusted to seek care on their own. By showing how past STD control efforts are often the product of assumptions about disease transmission and human behavior, historical research can help present-day researchers reflect on their own (often implicit) assumptions about how and whether human behavior can change, which aspects are changeable, which populations are best able to change (and why), and through what means behavior change is best achieved.

The history of behavioral interventions in STD control provides no easy lessons for the present. Instead, it is a reminder that change in public health practice is often driven by external events, such as a new government or a war, rather than by developments within the field. The public health community can, however, prepare for and capitalize on changing circumstances in order to build more effective behavioral intervention programs. For example, the United States neglected venereal disease (VD) control after the end of World War I. After becoming Surgeon General in 1937, Thomas Parran made the reduction of syphilis morbidity his major priority. One year to the day before the bombing of Pearl Harbor and American entry into World War II, Parran and his colleagues met to develop a wartime VD control plan. Because of their planning and early meetings with military officials, they were able to change some past military practices that had been damaging to STD control, especially by suggesting public education efforts other than fear-based messages about the dangers of VD. In addition, after considerable lobbying efforts, military personnel were no longer punished for contracting VD and therefore sought rather than avoided health care.

The history of behavioral interventions in STD control shows that continuous public education about successful STD interventions is necessary, along with the development of strong relationships with public officials. Otherwise, there is enormous pressure to adopt three of the following behavioral interventions strategies, all of which (as discussed below) have limitations: 1) fear-based messages about the dangers of STDs; 2) religion-based moral approaches to STD control; and 3) efforts to control the behavior of female sex workers. Despite recent innovations in behavioral science and interventions to reduce morbidity (discussed throughout this book), public health officials need to anticipate that these historical approaches to STD control will remain popular with the wider public. These approaches dominated STD control programs from the 16th through early 20th centuries. The 20th century witnessed several important changes in behavioral intervention strategies, especially the adoption and then rejection of information-based efforts; the shift toward

focusing on the behavior of health care providers rather than just the behavior of patients; and a growing concern with behavior related to surveillance, screening, and treatment, rather than with sexual behavior aimed at primary prevention. One of the principal lessons of 20th-century behavioral interventions, however, is that the behavioral component is usually an afterthought, designed to augment the efforts of control programs oriented toward surveillance and treatment. Because of the limited availability of archival material for the past 20 years, this chapter unfortunately ends in the early 1980s. It is important for future researchers to study the crucial period of the mid-1980s onwards, when the field of behavioral interventions for the control of HIV/AIDS developed and expanded rapidly. Meanwhile, however, the study of behavioral interventions prior to the 1980s yields important insights for present-day practitioners and researchers.

Early Efforts in Europe (16th to 18th Century): Morality and Hygiene

Although the history of responses to STDs can be traced to antiquity, this story will begin in the 16th century, a generation after Europeans experienced an epidemic of a new disease they called the “French disease” or the “pox,” among other names. In the absence of laboratory tests, it is difficult to know whether this disease was the same as modern venereal syphilis based on highly subjective descriptions of symptoms (1). What is important for a history of behavioral interventions, however, is that, by the 1530s, physicians reached a consensus that the disease was primarily transmitted through sexual intercourse. The idea of sexual transmission was relatively new during the 16th century, an ancient Greek idea revitalized by the physician Girolamo Fracastoro (2).

Furthermore, this chapter begins with the 16th century because Europeans developed two fundamentally different, competing disease control strategies, based on different understandings of human behavior and its capacity for change—a conflict that has, in many ways, persisted to the present. By mid-16th century, the French disease or the pox was considered curable through a variety of medications: mercury, guaiacum (a wood that was ground into a powder, boiled, and then dried and used as a medication), and a variety of cures produced by popular healers (1,3,4). Despite the existence of public health offices (first in Italy and later in England) to control plague and other epidemic diseases (5), the major emphasis of STD control was treatment. All parts of Europe primarily relied on medications, sold in pharmacies or on street corners, to control the pox. Because treatment failure was acknowledged as a concern, in addition to the inconvenience and suffering associated with contracting and treating the disease, governments, churches, and physicians across Europe provided advice about prevention. Although there was considerable local variation in response, two broadly different patterns of prevention emerged during the 16th and 17th centuries: 1) the promotion of sexual hygiene for men, accompanied by a limited effort to control the behavior of female prostitutes; and 2) the promotion of religious education, especially the dangers of sins such as adultery.

The Italian city-states provide an excellent example of the former pattern. Italian physicians’ advice on prevention invoked a double standard of morality

that found ways for single men to enjoy sex and avoid infection, while holding women responsible for disease transmission. The celebrated University of Padua anatomist Gabriele Falloppio's lectures on the "French disease" provided a type of "behavioral intervention" for students of medicine: to clean their genitals after intercourse with a prostitute in order to avoid infection. In case cleaning alone was not sufficient, Falloppio recommended that, after coitus, men cover the penis with a bag of cloth soaked in an ointment that would prevent infection (6). Italian writers consistently displayed a sexual double standard, which allowed sexual freedom to men but demanded repentance and moral reform for women. Unmarried women who had contracted the pox and received treatment in hospitals designated for French disease patients (in contrast to wealthier women who could afford private physicians) were encouraged to repent, become nuns, and reside permanently in convents specifically devised for "fallen women" (7). Nonetheless, perhaps because of economic motives, physicians treated "guilty" patients, including prostitutes, one of whom the physician Ercole Sassonia proudly claimed to have cured so that she could continue to practice her art. As one of his colleagues explained, paid women were "worth preserving not for their own health, but primarily for the sake of their male customers" (8, p. 501).

The second approach, prevention through religion-based moral reform, is illustrated with the example of England. Physicians such as William Clowes (the Elder, d. 1604), who was influenced by Puritan thought, refrained from telling patients to wash the genitals to avoid infection. He feared that this advice would encourage illicit sexuality. The only acceptable form of prevention for Clowes was moral reform: men must avoid prostitutes and refrain from adultery. English advice focused almost exclusively on avoiding sin to prevent disease, since disease transmission was associated with sinful sexuality (6).

The differences in these two approaches can be partially explained by the underlying theological differences that developed between Roman Catholic and Protestant interpretations of Christianity. It is important not to exaggerate the differences between the two traditions, which shared a common history and common set of texts. Nonetheless, a few differences are discernible: Roman Catholics continued to emphasize the vulnerability of all human beings to sin and the subsequent importance of charitable actions, whereas certain Protestant groups viewed behavior change as nearly impossible because of predestination. According to this interpretation, some human beings could change through religious conversion; the inability of others to change, however, provided evidence of their future damnation. These differences in beliefs about human ability to change behavior led to strikingly different efforts to control the pox, with Roman Catholics emphasizing hygiene for men and repentance for women and certain Protestants focusing their efforts on the "saved" by preaching abstinence until marriage and fidelity afterwards.

In the absence of reliable annual morbidity data, it is unclear whether either approach met with success. The pox or the French disease remained major problems throughout Europe from the 16th century onward. In London, for example, approximately 20% of all hospital patients were diagnosed with the pox, while the workhouses (ostensibly charitable institutions founded on the assumption that laziness was the cause of poverty) were filled with pox patients, impoverished by disease with nowhere to turn. The pox was both the result of and a major cause of poverty in 17th- and 18th-century London, while

major public health efforts focused on the plague and largely ignored the pox, regarded as a private concern for patients who could afford treatment or relegated to under-funded charities in the case of destitute patients (9). Behavior change was considered to be the domain of the churches, Protestant or Catholic; meanwhile, public health offices devoted their limited resources to the plague, while a virtual army of healers competed to fill the constant demand for cures for the pox (9).

Regulation Versus Abolition of Prostitution: 19th Century

The 19th century provides the best example of efforts to control STDs by controlling the behavior of female prostitutes. Debate raged on whether to legalize and regulate prostitution, complete with regular medical check-ups for prostitutes, or to abolish and criminalize prostitution, thereby making it difficult for clients and prostitutes alike to engage in sexual intercourse. The control of venereal diseases was virtually synonymous with the problem of prostitution from the perspective of the governments of Europe and the United States. The only behavior that mattered to public health officials was whether prostitutes regularly sought medical treatment and thereby avoided spreading infection to their male clients. Because prostitutes were regarded as an inferior class, and therefore unlikely to seek medical care, public health officials focused on regulating their behavior through legal regulation and police enforcement.

Regulation of prostitution reinforced ethnic, class, and racial prejudices, since lower-class women or nonwhite women were regarded as potential prostitutes simply because of their class and race. Laws that allowed for the detention of suspect women provided police in Europe with considerable power over women, with occasional abuses of this power through arbitrary arrest and detention. Because this period also witnessed considerable expansion of European power into Asia and Africa, including the colonization of non-European territories, Europeans took their preoccupations about venereal disease and prostitution into the territories that they ruled. In parts of Asia and Africa, the first major experience of large-scale efforts to control STDs was during the colonial period. Europeans were primarily concerned with protecting European soldiers from being infected by native prostitutes. With few if any exceptions, colonized peoples understood that VD prevention and control efforts were for the benefit of the rulers, not the ruled, and that “behavioral interventions” were directed at the colonized population, not the colonizers and their military personnel who were also likely responsible for the spread of VD.

The French took the lead in advocating legalization and regulation of prostitution rather than prohibiting it. After designing Paris’s sewage system, Dr. A. Parent-Duchâtelet tackled the problem of prostitution, which he saw as fundamentally similar to the need for sewers. Following the line of reasoning that Church Fathers such as St. Augustine had provided, Parent-Duchâtelet described prostitution as an “indispensable excremental phenomenon that protects the social body from disease” (10, p. 4). Extramarital activity could be contained within the system of prostitution, but for the system to work, prostitutes had to be maintained under constant, lifelong surveillance from brothel to hospital to refuge, never allowed to return to society. Prohibition of prostitution

was understood by the French authorities to be a consistent failure, so that regulation and systematic medical inspection made more sense as a means of disease control (10). Other countries, such as Italy and Russia, emulated the French system (11,12). Unfortunately, because 19th-century medical therapies were of limited efficacy, the medical inspection of prostitutes was often as dangerous to their health as it was beneficial. Russian women were rounded up and subjected to forced medical examinations in which the same speculum was used on successive women without cleaning the instrument, thereby making iatrogenic transmission possible (11).

Despite its longstanding Protestant tradition, Great Britain briefly experimented with the legalization and regulation of prostitution, because of demands made by the British army to provide a “sexual outlet” for enlisted men who were not allowed to marry. The Contagious Diseases Acts of 1864, 1866, and 1869 permitted a wide range of regulatory powers to the police to detain any woman suspected of venereal infection pending medical inspection. From the perspective of modern knowledge about, for example, the limited ability of physical examinations to detect syphilis or gonorrhea, this approach was doomed to failure as a control strategy. But the negative social consequences were drastic: Many police and other officials suspected virtually any working-class woman of possible involvement in prostitution, which meant that most or all lower-class women were subject to police harassment and detainment based on spurious grounds. Soldiers were not subject to medical inspection. Thus, the pervasive sexual double standard provoked political protests from an alliance of working-class and middle-class women, with the eventual repeal of the Contagious Diseases Acts in 1886 (13).

The British brought this system of VD regulation of women to India. In 1886, the military authorities encouraged the availability of local women for British troops, explaining that “in the regimental bazaars it is necessary to have a sufficient number of women, to care that they are sufficiently attractive, to provide them with proper houses...” (14, p. 79). Although the British Army regarded Indian women as the source of disease for its soldiers, it is likely that the reverse was as much of a problem. In fact, hospital admission rates for VD in the Native Army (composed of Indian soldiers) was one-tenth that of the British Army (14, p. 82). It is not clear whether hospital admission rates reflect differences in disease morbidity, in access to health care between English and Indian soldiers, or in lower clinical attack rates in fully or partially immune Indian soldiers. Nonetheless, from the perspective of many Indian observers, it was the behavior of white troops, not Indian women, that was a problem. The issue of prostitution and VD became part of the Indian nationalist platform when, in 1892, the eighth Indian National Congress protested state regulation of prostitution (15, p. 604). Similarly, in Shanghai, China, where the French, British, Germans, and Americans exercised political control, the regulation of Chinese prostitutes led to tensions between whites and Chinese authorities. From the European perspectives, venereal diseases were a local problem, spread from Chinese prostitutes to European soldiers; the Chinese perspective unsurprisingly was the opposite, especially in the case of syphilis, which Chinese physicians argued had not existed in China prior to European military domination (16).

The 19th-century experiment in the regulation of prostitution as the key to VD control illustrates some of the historical difficulties with this approach. Because the lower classes, racial and ethnic minorities, and women were

virtually always over-represented among the population of sex workers, efforts to regulate sex workers often exacerbated social and economic inequalities that already existed in society and increased their vulnerability to disease and exploitation. Regulatory efforts therefore devolved into punitive approaches that targeted one group, sex workers, while neglecting the wider dynamics of disease transmission throughout the population. The punitive approaches also undermined disease control efforts because, fearing punishment, many patients avoided medical treatment and care.

Education for Prevention: The Age of Eugenics During the Early 20th Century

The coalition between feminists, social workers, and moral reformers that brought an end to the Contagious Diseases Acts in Great Britain endured and was reactivated in the face of the next military threat, the outbreak of the First World War. In the United States, a similar alliance between the leading social worker Jane Addams, philanthropist John D. Rockefeller, and other interested physicians and reformers founded the American Social Hygiene Association (ASHA) in 1913, which actively promoted education in order to prevent the spread of venereal diseases. The social hygiene movement brought together two groups which coexisted uneasily: moral reformers and science-based technocrats. Between these two extremes was a large middle ground of people committed to both health and sexual morality (17). The influence of the social hygiene movement on public health made this field an interesting hybrid of science and professional social reform, both fields influenced by morality and subject to internal disputes as well as external attacks. At stake was more than just a dispute about whose ideas and whose approach was more effective, but who could control resources, define the problems, and implement solutions. Because the reformers of this period had focused so heavily on prostitution and its threat of venereal disease, scientists began to distance themselves from the question of prostitution *per se* and from social and behavioral science approaches to VD control and to focus on more biological issues related to disease.

Behavior was explicitly linked to biology in the field of eugenics, still in its heyday in the early 20th century. Eugenics, a movement (defined as scientific during the time and later debunked as pseudo-science) that focused on the importance of genetic “fitness” at the individual and national level, encouraged research and education on the problem of venereal diseases. Its emphasis on “racial purity,” however, undermined or even precluded any prevention efforts directed at non-whites. Although eugenics was hardly the only influence on public health research and practice during the early 20th century, it played a disproportionate role in VD prevention and treatment programs precisely because sexuality, sexual health, and reproduction were central preoccupations of the eugenics movement. Eugenics influenced how VD education programs were developed and implemented in the United States, Europe, and in European colonies in Asia and Africa (18–20).

Although eugenics influenced policies throughout the world, “moral education” as a preventive method was more common in the Anglophone countries than in continental Europe. Conflict over the best method of preventing the spread of VD produced tensions between the United States and its ally, France,

where soldiers from the American Expeditionary Force (AEF) were stationed in 1917. After the American troops flocked to the local French prostitutes, who were still legally allowed to practice their trade under the system of regulation devised during the 19th century, American commanders decided to make the contraction of VD a court-martial offense. The French commanders criticized American policy on the grounds that the policy of sexual continence placed French civilian women at greater risk of rape by not providing a suitable sexual outlet for American soldiers. Of particular concern to French officials was the presence of black American soldiers, whom they (like white Americans and other Europeans) believed were not capable of sexual control and likely to rape French civilian women (17).

Condoms became widely available in the United States after a 1918 ruling by Judge Frederick Crane in the New York court of appeals that physician-prescribed birth control for the prevention of disease was neither indecent nor immoral, thereby establishing a solid legal basis for the sale of condoms. During World War I, condom sales had skyrocketed. A number of companies had entered the business in order to capture this new source of wealth. By war's end, however, condom sales had declined, leaving these companies in fierce competition. During the 1920s, condom sales moved from the "shameful" secrecy of mail-order purchases and the sanitized space of the druggist to the street: street peddlers, elevator operators, waiters, and bartenders were among the many hawking condoms to ordinary men in every walk of life. The Youngs Rubber Corporation of New York, which produced the Trojan condom, adopted a strategy that ultimately allowed the firm to beat much of the competition: to sell only at drug stores and emphasize the condom's high quality and reliability. In 1937, the Food and Drug Administration (FDA) included condoms under its jurisdiction for inspection. In order to make sure that Trojan condoms passed FDA testing, thereby living up to Trojan's advertising campaign, Youngs Rubber invested in the research and development of a machine to test condom reliability; the machine was patented in 1940. Only two condom companies (Youngs Rubber and Julius Schmid, which made the brands Ramses, Sheiks, and Trojans) passed FDA tests, thereby leaving the condom market wide open for these companies. The Schmid company's "Ramses rubbers" further benefited when the U.S. Army endorsed them in 1940, just in time for the increased demand of wartime (21).

As condom sales were expanding during the 1920s, a coalition of groups, including the United States Public Health Service (USPHS), undertook major educational efforts to warn young people about the dangers of VD. In an effort to ground the educational efforts in solid scientific research, the National Research Council established a Committee for Research in Problems of Sex specifically to examine the problem of venereal diseases, including human behavior (22). No time looked more promising for the development of behavioral interventions as a fundamental part of STD control: a major philanthropist, John D. Rockefeller, was willing to provide funding for sex behavior research and programs, while community organizations such as the YMCA and the USPHS made VD prevention and sex education their priorities. This initial postwar enthusiasm rapidly dissipated in the face of multiple conflicts: between scientists; between scientists and the American Social Hygiene Association; and between federal and local authorities over control of VD prevention activities. Furthermore, prevention efforts were undermined by the

content of the messages themselves: Adolescent American boys, white and black, viewed educational posters about white men's responsibility to "lift up" inferior races with their example of moral behavior and physical fitness (23). Internationally, in European colonies in Asia and Africa, public health authorities decided not to initiate prevention and education activities since the "inferior races" were incapable of sexual control (24,25).

Still influenced by the basic Progressive Era (ca. 1890–1920) beliefs in the ability of human beings to improve society and change behavior through education and legislative reform, postwar reformers seized on sex education as an ideal instrument for the prevention of venereal disease. Between 1919 and 1924, the USPHS developed a series of slides and posters for exhibition called the "Keeping Fit" campaign, primarily fear-based representations of men and women who had sex outside of marriage as being carriers of disease. Sexuality was alluded to rather than forthrightly discussed; even depictions of anatomy were not displayed. Rather than openly discuss sexuality, the exhibit maintained discretion through the "silent lecture," that is, no lecture at all. As mentioned before, all the images were of white people, with explicit mention of the importance of avoiding venereal disease in order to maintain the strength of the (white) race. Although the campaign carefully avoided controversial images and frank discussion of sexuality, local authorities nevertheless complained that the campaign was too explicit for their constituencies, or not appropriate for their primary audiences, who might be working class or of various ethnic backgrounds. Owing to financial constraints, the program was never uniformly implemented throughout the United States, and tensions between local and federal authorities contributed to the program's demise in 1924. Education efforts were therefore sporadic and primarily founded on a moral and racial ideology of purity through sexual abstinence (23).

Research scientists were no better able to advance a thorough study of human sexual behavior and its effect on venereal disease than public health officials were able to sustain an effective sex education program. Concerned about establishing sexuality research as a legitimate field of inquiry that would be able to attract "bright young men" into the field, the Committee for Research in Problems of Sex distanced itself from direct questions about the prevention of VD. Committee members argued that research about venereal disease was too closely linked to a moral agenda promoted by ASHA. To complicate matters, Rockefeller himself had provided financial support to both ASHA and the Committee, which made researchers concerned that their work would not be accepted as scientific. Furthermore, the cutting edge of biological research at the time was physiology. At a 1921 conference to determine the research agenda, committee members agreed that the fundamental problem behind VD was the "sex impulse." Grants were therefore awarded for animal and human studies in physiology and endocrinology to gain more insight into the biology behind the "sex impulse," but not to studies dealing directly with human behavior and its relationship to VD transmission (22). American scientists deliberately excluded research on VD prevention and behavioral interventions from their agenda for the study of human sexuality.

Internationally, competition between European countries fostered a Darwinian preoccupation with the "fittest of nations," evidence of which would be high birth rates and low rates of venereal diseases. European nations failed to meet these standards, as birth rates plummeted and venereal disease

continued to be common from roughly 1900 through the 1930s (19). Europeans directed their education efforts only to their own citizens, not to the “inferior” populations they had colonized. In South Africa, for example, health education was thought to be a pointless exercise for black Africans, whom doctors regarded as irresponsible regarding their own health and too “raw and ignorant” to take medications on their own (25, pp. 147–8). Across the continent, black Africans were subject to compulsory examination and treatment, while whites enjoyed voluntary services. In 1908 in Uganda, for example, the medical staff of the Royal Army Medical Corps initiated mass treatment with mercury injections because “the present state of civilization in the country does not permit any legislative measures with a view to prevention” (24, p. 101). Twenty years later, compulsory examinations of entire villages were still being carried out in rural Uganda. When a British doctor complained about the degrading and humiliating treatment of black African women, she was fired (24, p. 101). In colonial Rhodesia (now Zimbabwe), the Public Health Act of 1924 empowered authorities to examine any African and, if deemed necessary, destroy Africans’ homes in order to protect whites from diseases allegedly carried by black Africans, although the rate of venereal infection in black Africans was consistently lower than in whites (26). During this period, methods of VD education, behavioral interventions and treatment were inseparable from the prevailing racial ideologies, which compromised the quality of public health efforts.

The New Deal and World War II: Comprehensive Approaches to STD Control

Although the same racial ideology continued to inform public health practices in the United States and abroad during the Second World War, the New Deal era and wartime brought about several innovations in VD control, including behavioral interventions. In the United States, Surgeon General Thomas Parran laid the groundwork for a public health approach to VD control with his book *Shadow on the Land*, published in 1937. Parran outlined a program of screening, tracing sexual contacts of infected partners, and offering treatment to those infected in order to “break the chain of infection.” Parran opposed a purely moral approach to VD control, which placed the blame for infection upon patients, fueled public disregard for the patients, and undermined efforts to devote public resources to these diseases. The cost of not treating these diseases, he argued, ultimately was much higher than the costs of treating them, considering the long-term sequelae of syphilis (blindness and insanity) and the loss of worker productivity (17). At the same time, his insistence that many patients with VD were “innocent” and his desire to reduce the silence and shame surrounding VD made it difficult for him and other public health officials to confront some of the more troubling aspects of VD control, such as pediatric gonorrhea, usually the result of incest. Rather than confront the troubling problem of incest, publicly risking associating this shameful crime with VD, physicians and public health officials chose to blame toilet seats for cases of pediatric gonorrhea (27).

Parran also shifted the focus of behavioral interventions from the patient to the health care provider. Largely because of Parran’s efforts, Congress passed

the National Venereal Disease Control Act in May 1938, with a \$15 million appropriation that enabled new clinics to open (an increase from 1,750 in July 1938 to almost 3,000 in July 1940) and provided services and medications for indigent patients of private physicians (17, pp. 143-147). This act passed partly because it was an era of large public works projects, the “New Deal,” designed to lift America out of economic depression; furthermore, Parran was a long-time friend of President Roosevelt. As a result of this legislation, surveillance and treatment efforts expanded with increased screening, laboratory services, and access to medications. The major focus of behavior change efforts was to encourage and, for some populations (such as pregnant women or couples seeking marriage licenses), require syphilis screening as a routine part of health care—in other words, to “normalize” the Wasserman test for syphilis antibodies. Focusing on the behavior of health care providers, rather than only the behavior of patients, represented a major shift in public health practice.

Wartime brought a new sense of public urgency to the problem of VD control. Because historically wartime is associated with increased VD incidence and loss of military manpower due to illness, the USPHS began planning for the possibility of a VD epidemic before the United States even entered the war. On December 7, 1940, precisely one year before the bombing of Pearl Harbor, Raymond Vonderlehr, chief of the Venereal Disease Division, sent a memorandum to Thomas Parran to initiate wartime planning for VD control. Although the military adopted many of the same policies it had followed during World War I, especially the repression of prostitution, one key policy changed: Soldiers and sailors who contracted VD were no longer subject to such penalties as loss of pay. Rather than serving as a deterrent to infection, the penalties had apparently discouraged infected personnel from seeking treatment, thereby encouraging greater costs, loss of manpower, and further spread of infection, according to military medical officers and the Surgeon General (17,28). Again, the major focus of behavioral interventions was to try to encourage testing and treatment. The targets for the interventions were policies that were regarded as detrimental to patients’ willingness to seek health care. Beyond the encouragement of testing and treatment, military personnel received a wide range of behavioral interventions: educational campaigns designed to provide information about VD, in addition to fear-based messages about the dangers of disease and the threats that women in particular represented; and access to prophylaxis kits, which included condoms (17).

For civilians, wartime efforts to control VD initially brought a new period of repression, especially for working-class women, but later provided the first large-scale behavioral intervention efforts. The 1941 May Act outlawed vice activities, such as prostitution and alcohol, near military installations. Like previous, historical experiences with prosecution of prostitution, the police acquired broad authority to arrest and detain “suspicious” women, which in practice often meant that working-class women were subject to arbitrary arrest and detention (17). One woman who stopped at a lunch counter near a military installation to eat by herself, for example, was regarded as suspicious, arrested and subjected to a medical examination for VD (29). In the public mind, VD control became associated with prostitution, especially because the newly opened Rapid Treatment Centers (RTCs) accepted both gonorrhea and syphilis patients directly from jails or detention centers to voluntarily serve the remainder of their sentences. With the first in March 1942 in Leesville, Louisiana,

RTCs opened throughout the country, with 30 running by September of 1943, and continued expansion to new cities and states. The largest was in Augusta, Georgia, with 470 beds. RTCs offered residential facilities for the course of treatment, which declined from six to two weeks as increasingly effective therapies became available. Public health officials were eager to use this period of treatment as a means for introducing a more comprehensive VD control program, including but not limited to arsenical therapy (and later penicillin) (28).

Penicillin therefore replaced arsenical therapy in a comprehensive residential treatment, counseling, and rehabilitation program. Interestingly, the introduction of penicillin did not alter the RTCs' approach to disease control other than to shorten the period of treatment to two weeks. RTCs offered programs that ranged from counseling from a social worker and psychiatric screening to recreational activities, job training, and even job placement. With the heavy demand for labor in wartime industries, some women were trained in skills such as riveting and metal work and offered jobs at the end of their treatment; others were trained in traditionally "female" fields such as hair dressing and sewing. These centers also provided opportunities for behavioral research, such as psychiatric research at the St. Louis center "to determine how much in this field can be offered to venereally-infected individuals with emotional and adjustment difficulties" (28). Some of the RTCs included a full-time social worker on staff, but the type and quality of services, as well as the atmosphere of each center, varied tremendously from location to location. The broad interpretation of the RTCs' mandate to prevent and control venereal diseases to include job skills training, job placement, and psychosocial support for patients developed partly because these centers often used the facilities and personnel from former New Deal social welfare programs, such as the Civilian Conservation Corps camps and the National Youth Administration. The publicity surrounding these centers focused almost entirely on the repression of prostitution, with the unfortunate consequence that the public believed that control of prostitution alone was sufficient to contain venereal diseases. "The long-term case-finding, treatment, case-holding, and prophylaxis programs that are the real heart of our effort are less dramatic and unless a special effort is made are distinctly overshadowed," Vonderlehr wrote in a memo to Parran (28).

Wartime provided the rationale for a focus on VD *per se*, while the apparatus of the New Deal programs provided public health officials with the expertise, facilities, and equipment to undertake a variety of social programs. In the aftermath of the Great Depression, social problems were often defined as the result of economic upheaval rather than personal moral failure. In this context, behavioral interventions for VD prevention and control focused upon job training and job placement, providing continuity with earlier New Deal programs. In addition to providing job skills, social workers counseled patients to accept "personal responsibility" for their health, since the availability of penicillin did not keep patients from becoming reinfected. This comprehensive, well-funded approach to VD control was the result of a unique conjunction of historical circumstances: a Surgeon General committed to VD control (Thomas Parran); strong political alliances between the USPHS and the Presidential administration; wartime concern for VD and its effect on military manpower; and the availability of trained personnel, buildings, and equipment from previous social programs that could be redirected toward the fight against

VD. This wartime allocation of resources and expertise proved difficult to sustain after the war for a variety of reasons described below.

Post-War Reappraisal: From Public to Private Health

The immediate postwar period brought no change in VD control policies and practices, since military officials acknowledged the potential danger if infected troops were allowed to return to civilian life and spread disease. As part of the process of demobilization, the Army was responsible for retaining soldiers until they were noninfectious, then lab reports were sent to state health officers to complete treatment in the demobilized soldier's state of residence. The RTCs continued to operate as well (28). In the longer term, however, interest in VD prevention and control, especially behavioral interventions, declined for two reasons. First, scientists interpreted wartime studies of the effects of behavioral interventions on VD, such as they were, as a failure. Second, with the widespread availability of penicillin, public health priorities shifted away from VD. Many clinical and public health experts confidently predicted the elimination of gonorrhea and syphilis (and many other bacterial infections) in the near future, so that further public expenditures on prevention were not warranted.

Behavioral interventions and prevention counseling during wartime had been conducted without a solid grounding in research about what worked. A 1945 training manual, for example, attempted to provide advice on human behavior in order to deftly avoid controversies over competing theories, since there was not as yet established research on which to build programs. One of the fundamental concepts of human behavior this manual taught was that "to be understood is to be helped." Counselors should take time to try to understand patients, since "it is the time and interest given rather than the particular theoretical formulation that is important" (30).

Wartime research evaluated the effects of education programs on different variables: the retention of information about VD by recipients of education programs (e.g., which type of pamphlet was more effective in imparting information) and overall morbidity (28). Public health officials and researchers assumed that information alone was sufficient to change behavior. It was an unexamined assumption, which had devastating effects on the subsequent history of prevention efforts: Prevention in general, and behavioral prevention in particular, was judged to be a failure. In assessing the result of wartime research at a conference on preventive medicine in 1954, Lt. Col. Timmerman explained that "there was no evidence that frequent VD talks or movies cut down the exposure of men to VD when overseas." Moral education also was judged not to be a solution, either, since "church membership in general was only very slightly associated with abstaining from intercourse." Certain personality types, especially borderline personalities, Timmerman concluded, were associated with VD acquisition, and persons with these personalities remained susceptible "in spite of military education, experience, or recreational opportunities" (30).

Before Alfred Kinsey created major controversy in 1948 with his publication of *Sexual Behavior in the Human Male*, his research had already influenced military policy away from prevention as early as 1946. In showing that

patterns of sexual behavior were established by age 16, Kinsey's research was used by military officials to justify both their continued policy not to treat VD as a criminal offense and their decision not to focus on prevention efforts. Critics had worried that the absence of a penalty encouraged sexual promiscuity. Military leaders argued that sexual behavior was already established by the time young men enlisted, and they cited Kinsey's work in support of this claim. Although the use of Kinsey's work prevented a backlash against the decriminalization policy, it also undermined efforts to focus research and resources on prevention and behavioral interventions. If sexual patterns were already established by age 16, then the appropriate avenue of intervention was not the military or public health, but "proper home, school and church influences" (30). According to this philosophy, VD control was a fundamentally private concern.

For civilians, the story was much the same, as the government abandoned its role in providing VD treatment. Parran's successor to the post of Surgeon General, Leonard Scheele, decided to close the publicly funded RTCs in 1953 and pass the majority of treatment and care on to private physicians. Scheele presented his decision as a major victory: Research efforts and pharmaceutical production had produced penicillin and other antibiotics, thereby eliminating the need for RTCs. "Now every private physician can be an efficient venereal disease control officer, giving ambulatory treatment to patients in his office, while State and local health departments maintain the important supporting services of case finding, contact tracing, referral, treatment of many patients unable to pay for private care, and education" (31). A two-tiered system of VD treatment therefore developed in the United States: private physicians for those who could afford them; public clinics for the rest. Regarded as "cured," infectious diseases no longer represented the cutting edge of medicine, so resources moved into chronic diseases such as cancer and heart disease.

With the decline in public support for VD control, funding for behavioral interventions was all but eliminated. One of the last papers given at a 1962 "World Forum on Syphilis and Other Treponemes" was devoted to a behavioral science program at San Francisco's VD clinic, one of the only clinics in the United States to have a full-time psychiatric social worker on staff. This one worker represented a significant reduction in staffing since 1942 when the clinic employed a psychiatrist, a psychologist, and two psychiatric social workers. Because patients did not always follow through with referrals for mental health services, the San Francisco clinic found that it was useful to have a full-time mental health expert available on site. The psychiatric social worker counseled all patients under age 21, any adult patient with a problem "either personality or situational" (such as marital difficulties or alcoholism), and patients who broke "treatment rules or who otherwise has difficulty adjusting to the clinic routine" (32). This program represented virtually the only behavioral intervention in the entire country and received relatively little attention.

European countries did not follow the American pattern of shutting down public clinics, but they did shift their emphasis from prevention to treatment. In England, for example, the National Health Service was established in 1948, and VD treatment was provided free of charge. But venereal diseases, especially behavioral interventions to control VD, were no more on the radar screen in the United Kingdom or Europe than they were in the United States.

Between 1948 and the advent of AIDS was a period of “benign neglect during which there was little policy development or resource commitment, punctuated by short periods where changing epidemiological patterns or media scares stimulated political interest” (33). “Benign neglect” aptly characterizes most of the world’s approach to VD control after the immediate postwar period.

Blaming the Patient: Syphilis Eradication and Noncompliant Patients, 1950s to 1970s

When the world was not ignoring the problem of STDs, as they increasingly came to be called during the 1970s, they were undertaking periodic campaigns to eradicate at least one of them, namely syphilis. Syphilis eradication campaigns had important consequences for the type of behavioral interventions that were commonly used during this period. In the United States, behavioral interventions were used to support the major efforts of the eradication campaigns, which were primarily directed towards surveillance, partner management, and treatment. Public health officials focused on the behaviors that were perceived as facilitators or barriers to disease eradication: patients’ willingness to name sexual contacts; patients’ cooperation with physicians’ instructions, especially regarding medications (34); and the willingness of “difficult-to-reach” populations, such as male homosexuals, migrant workers, and teenagers, all regarded as reservoirs of infection, to seek health care and submit to screening.

In the United States, public health advisers, usually hired immediately after college graduation and then trained in public health practice, and nurses conducted the interviews and traced sex partners. Confidentiality was key to winning trust. Public health advisers attended “interviewing school.” With a combination of classroom instruction, role playing, and feedback, public health advisers learned how to elicit information from patients, including asking about same-sex partners. Despite training in asking about same-sex partners, however, homosexual men in particular were reluctant to provide names of their partners from the 1950s through the 1970s (35–37). As one man said to the public health adviser interviewing him, “I don’t mind telling you about myself, but I don’t want to tell you who else is gay” (37).

The intense focus on syphilis eradication unfortunately coincided with another federal government initiative directly aimed at homosexual Americans: the “Pervert Elimination Campaign” launched by the U.S. Park Police in 1947 to crack down on gays, followed by the McCarthy-inspired Federal Loyalty Program in which approximately 1,000 persons were fired for alleged homosexuality (38). The tactics of these two separate, unrelated elimination campaigns unwittingly bore certain similarities which must have undermined gay Americans’ trust in the syphilis eradication effort. To eliminate homosexuality from the federal government, vice squad officers frequented bars and clubs where homosexuals were known to congregate, interviewed co-workers and neighbors, and even compiled lists of “known” homosexuals (38). As mentioned before, public health officials tried to elicit names of contacts and, in some cities at least, maintained lists of homosexuals in order to contact them should an epidemic break out among homosexuals in that city. Public health officials perceived this relationship between

homosexuals and the public health department as voluntary, but it is not clear whether gays felt the same way. At a VD seminar in Jacksonville, Florida, in 1959, for example, public health officials noted that “in Atlanta a roster of homosexuals is maintained and when an infection is found in a member of this group, word is sent out and the entire group comes in and are tested” (31). Although public health officials kept the confidentiality of their patients’ names, many gays, who may have already experienced harassment from other government officials, extended their suspicion to public health officials as well. In Washington, D.C., where harassment of homosexuals reached the greatest intensity in the nation due to its large number of federal employees and location of the McCarthy hearings (38), a syphilis epidemic broke out in 1956 and continued for at least three years (31). Harassment apparently had a direct effect on gay men’s willingness to seek health care.

Public health officials also had trouble reaching migrant workers and teenagers (31), who shared the same mistrust of government motives as gays did. The difficulties in reaching these “special groups” (as public health officials called them) demonstrate the limitations of the behavioral interventions being used at the time. Predicated on the idea that interviewers’ techniques could be refined and developed to elicit information, interviewing methods failed to take account of the political, cultural, and economic vulnerabilities of certain groups of patients. Homosexual men and women could lose their jobs if they were identified as such. Migrant workers faced deportation. Furthermore, different branches of government were actively collecting and recording information about homosexuals and migrant workers precisely in order to fire them or deport them. It is not difficult to see why these groups had difficulty trusting another branch of government, public health, to maintain confidential information, regardless of whether they had had bad experiences with public health officials. Providing names was too big a risk to take. Behavioral interventions focused on ways of getting individuals to cooperate with government authorities, but failed to take account of the intrusive, repressive role that government played in the lives of certain populations.

Behavioral interventions scarcely appeared on the research agenda for STDs during the 1960s and 1970s. The cutting edge of scientific research during the 1970s was the microbiology of STDs, not behavioral science. Under the influence of King Holmes, who revitalized what had for several decades been a dormant field, STDs became part of the clinical specialty of infectious diseases, rather than the specialty of dermatology. This shift represented a significant change in the methods, practices and research agenda for the newly revitalized field, towards answering some of the basic questions about the microbiology of these pathogens (39).

At the same time, the success of penicillin and other antibiotics had focused attention on treatment. Patients wanted access to medications. African-American health activism after World War II, for example, focused primarily on access to treatment, especially since African Americans had largely been excluded from major government programs during the development of public health programs from 1890 to 1930. Middle-class black women organized themselves in clubs, community organizations and churches to crusade for basic public health services in black communities. Run by lay people, these efforts focused on personal hygiene, sanitation, and improvement of neighborhood water, milk, and food supplies. Although these efforts probably

significantly improved health conditions and survivorship, many black Americans regarded these kinds of “behavioral interventions” and prevention activities as amateur efforts and therefore as second-class treatment, the product of government disregard for and lack of resources for black Americans while white Americans had access to physicians and medication. As a result, black health activists after the war focused on access to treatment rather than prevention and behavioral interventions (40). In many ways, however, African Americans were no different than the rest of America, focused on treatment rather than prevention.

Mistrust of syphilis prevention and treatment efforts were further undermined in 1972, when a journalist reported ethical problems with a 40-year-old continuing research study of 399 black men in Alabama, the infamous Tuskegee study. The USPHS began the study of untreated syphilis in black men in 1932 and misled the research subjects, who believed that they were receiving medical treatment for “bad blood” (a local term that referred to syphilis) when in fact researchers withheld treatment, including penicillin when it became available. When this study was made public in 1972, the public, especially blacks, expressed outrage and the study was discontinued (41). The lasting effect, however, was to further undermine public support for STD prevention and treatment programs, including for HIV/AIDS during and after the 1980s (42).

The Advent of AIDS: Behavioral Interventions at the Forefront

It took an unprecedented tragedy, the devastating AIDS epidemic that was first identified during the early 1980s, to turn attention towards behavioral interventions for the control of STDs. A fatal disease with no cure, and no effective therapy until 1996, the only way to control the epidemic was through effective prevention. Previous assumptions—that providing information about disease would change behavior, for example—were tested and evaluated systematically, as the remaining chapters in this volume describe.

The public health community had only recently turned to behavioral science to provide solutions to the burden of chronic diseases, especially cancer and cardiovascular disease, which the United States faced during the 1970s and 1980s. In 1982, for example, the leading journal *American Psychologist* devoted an entire issue to the relationship between public health and psychology (43). The majority of the articles focused on how the field of psychology could offer behavioral modification techniques, theories of learning, and communications strategies to change “health-impairing habits and life-styles,” notably cigarette smoking, in addition to changing behaviors related to stress and psychosocial reactions to illness (44). Psychology’s emphasis on the individual, versus public health’s emphasis on the population, quickly emerged as one of the key problems in bridging these two fields. For some psychologists, however, the emphasis on the individual was one of psychology’s major selling points for public health practice in an era of expanding medical costs and demands for a reduced role of government during the Reagan era. One psychologist defined the field of “behavioral health” as “an interdisciplinary field dedicated to promoting a philosophy of health that stresses *individual*

responsibility in the application of behavioral and biomedical science knowledge and techniques to the *maintenance* of health and the *prevention* of illness and dysfunction by a variety of self-initiated or shared activities” (45,46, italics in original). The emphasis on individual responsibility resonated with the Republican administration’s emphasis on decreasing the size of government. None of these early articles on psychology and public health discussed the potential role of behavioral science in controlling STDs. Until acquired immunodeficiency syndrome (AIDS) was acknowledged as a significant public health threat several years after its first appearance, little attention was paid to the development of effective behavioral interventions to reduce the spread of STDs. One legacy of the early 1980s’ emphasis on “behavioral health” as an issue of individual responsibility and individual behavior change was an early emphasis on HIV behavioral interventions at the individual (versus community or policy) level.

This historical introduction to behavioral interventions in STD control provides a few key lessons for current practitioners. First, until the AIDS epidemic, behavioral interventions have seldom been placed at the forefront of STD control and seldom had the level of resources, research, and program planning that has been directed towards treatment and biological research. Major public health initiatives, such as the syphilis eradication programs of the 1960s, often used behavioral interventions primarily to assist interviewers find contacts and bring them into treatment, rather than to understand systematically the full spectrum of roles behavioral interventions could play to prevent and control disease.

Second, the general public has not always responded warmly to behavioral interventions. Sex education efforts often offended conservative sexual mores, but discomfort about sexuality only partially explains negative public reaction. Far more serious is the perception that prevention and behavioral interventions are a substitute for effective treatment, especially in the case of American minority groups (40), although further research is necessary to explore how widespread this perception has been during recent decades. Equally problematic is the perception that behavioral interventions are an example of government intrusion into private life. For groups whose private lives were the subject of intense public, political debate, notably gay Americans, it is hardly surprising that behavioral interventions have been regarded as one more unwanted intrusion. The future success of behavioral interventions may depend on whether the American public learns about the contributions that behavioral science and behavioral interventions can play in reducing STD and HIV acquisition and transmission—and to learn that behavioral interventions have not failed to control STDs historically, because they were virtually never tried.

References

1. Arrizabalaga J, Henderson J, French R. *The Great Pox: The French Disease in Renaissance Europe*. New Haven: Yale University Press; 1997.
2. Nutton V. The seeds of disease: an explanation of contagion and infection from the Greeks to the Renaissance. *Medical History*. 1983;27:1–34.
3. Gentilcore D. *Healers and Healing in Early Modern Italy*. Manchester: Manchester University Press; 1998.
4. Pomata G. *Contracting a Cure: Patients, Healers, and the Law in Early Modern Bologna*. Baltimore: Johns Hopkins University Press; 1998.

5. Carmichael A. Contagion theory and contagion practice in fifteenth-century Milan. *Renaissance Quarterly*. 1991; 44:213–225.
6. Schleiner W. Moral attitudes toward syphilis and its prevention in the Renaissance. *Bull. Hist. Med.* 1994;68:389–410.
7. McGough LJ. Quarantining beauty: the French disease in early modern Venice. In: Siena KP, ed. *Sins of the Flesh: Responding to Sexual Disease in Early Modern Europe*. Toronto: Centre for Reformation and Renaissance Studies; 2005.
8. Schleiner W. Infection and cure through women: Renaissance constructions of syphilis. *Journal of Medieval and Renaissance Studies*. 1994;24:499–517.
9. Siena KP. *Venereal Disease, Hospitals, and the Urban Poor: London's 'Foul Wards,' 1600–1800*. Rochester: University of Rochester Press; 2004.
10. Corbin A. *Women for Hire: Prostitution and Sexuality in France after 1850* (trans. Sheridan A). Cambridge, MA: Harvard University Press; 1990.
11. Bernstein L. *Sonia's Daughters: Prostitutes and their Regulation in Imperial Russia*. Berkeley: University of California Press; 1995.
12. Gibson M. *Prostitution and the State in Italy, 1860–1915*. Columbus: Ohio State University Press; 1986.
13. Walkowitz J. *Prostitution and Victorian Society: Women, Class and the State*. New York: Cambridge University Press; 1980.
14. Kaminsky AP. Morality legislation and British troops in late nineteenth-century India. *Military Affairs*. 1979;43:78–84.
15. Levine P. Rereading the 1890s: venereal disease as “constitutional crisis” in Britain and British India. *Journal of Asian Studies*. 1996;55:585–612.
16. Hershatter G. *Dangerous Pleasures: Prostitution and Modernity in Twentieth-Century Shanghai*. Berkeley: University of California Press; 1997.
17. Brandt AM. *No Magic Bullet: A Social History of Venereal Disease in the United States since 1880*, 2nd ed. New York: Oxford University Press; 1987.
18. Gorchov L. Sexual Science and Sexual Politics: American Sex Research, 1920–1956. Ph.D. Dissertation. Baltimore: Johns Hopkins University; 2002.
19. Davidson R, Hall LA, eds. *Sex, Sin and Suffering: Venereal Disease and European Society since 1870*. New York: Routledge; 2001.
20. Haller M. *Eugenics: Hereditarian Attitudes in American Thought*. New Brunswick: Rutgers University Press; 1984.
21. Tone A. *Devices and Desires: A History of Contraceptives in America*. New York: Hill and Wang; 2001.
22. National Academies Archives, Washington, DC: Committee for Research in Problems of Sex, 1920–1965.
23. Lord A. Models of masculinity: sex education, the United States Public Health Service, and the YMCA, 1919–1924. *Journal of the History of Medicine*. 2003;58:123–152.
24. Lyons M. Medicine and morality: a review of responses to sexually transmitted diseases in Uganda in the twentieth century. In: Setel PW, Lewis M, Lyons M, eds. *Histories of Sexually Transmitted Diseases and HIV/AIDS in Sub-Saharan Africa*. Westport, CT: Greenwood Press; 1999.
25. Jochelson K. *The Colour of Disease: Syphilis and Racism in South Africa, 1880–1950*. New York: Palgrave; 2001.
26. McCulloch J. The management of venereal disease in a settler society: colonial Zimbabwe, 1900–1930. In: Setel PW, Lewis M, Lyons M, eds. *Histories of Sexually Transmitted Diseases and HIV/AIDS in Sub-Saharan Africa*. Westport, CT: Greenwood Press; 1999.
27. Sacco L. Sanitized for your protection: medical discourse and the denial of incest in the United States, 1890–1940. *Journal of Women's History*. 2000;14: 80–104.
28. National Archives, College Park, MD, Record Group 90.

29. Hegarty M. Patriots, prostitutes, patriotutes: the mobilization and control of female sexuality in the U.S. during World War II. Ph.D. Dissertation. Columbus: Ohio State University; 1998.
30. National Archives, College Park, MD, Record Group 112.
31. National Archives, Southeast Region, East Point, GA, Record Group 442.
32. Angell M. A behavioral science action program in a venereal disease clinic. In: *Proceedings of World Forum on Syphilis and Other Treponematoses*. Atlanta: Communicable Disease Center, Venereal Disease Branch; 1964.
33. Evans D. Sexually transmitted disease policy in the English National Health Service, 1948-2000: continuity and social change. In: Davidson R, Hall LA, eds. *Sex, Sin and Suffering: Venereal Disease and European Society since 1870*. New York: Routledge; 2001:237-252.
34. Greene JA. Therapeutic infidelities: 'noncompliance' enters the medical literature, 1955-1975. *Social History of Medicine*. 2004;17:327-343.
35. Spencer J. Personal Interview: February 22, 2005, Atlanta, GA and February 24, 2005, Gainesville, GA.
36. Martich, F. Personal Interview: February 10, 2005, Atlanta, GA.
37. Naehr, J. Personal Interview: January 18, 2005, Atlanta, GA.
38. Johnson DK. *The Lavender Scare: The Cold War Persecution of Gays and Lesbians in the Federal Government*. Chicago: University of Chicago Press; 2004.
39. Aral SO and Douglas JM. Personal Interviews: March 25, 2005, Atlanta, GA.
40. Smith S. *Sick and Tired of Being Sick and Tired: Black Women's Health Activism in America, 1890-1950*. Philadelphia: University of Pennsylvania Press; 1995.
41. Jones JH. *Bad Blood: The Tuskegee Syphilis Experiment*, 2nd ed., New York: Free Press; 1993.
42. Gamble VN. Under the shadow of Tuskegee: African Americans and health care. *American Journal of Public Health*. 1997;87:1773-1778.
43. DeLeon PH, Pallak MS. Public health and psychology: an important, expanding interaction. *American Psychologist*. 1982;37:934-935.
44. Singer JE, Krantz DS. Perspectives on the interface between psychology and public health. *American Psychologist*. 1982;37:955-960.
45. Matarazzo JD. Behavioral health's challenge to academic, scientific, and professional psychology. *American Psychology*. 1982;37:1-14.
46. Matarazzo JD. (1980). Behavioral health and behavioral medicine: frontiers for a new health psychology. *American Psychology*. 1980;35:807-817.

Behavioral Interventions for Prevention and Control of
Sexually Transmitted Diseases

Aral, S.O.; Douglas, J.M. (Eds.)

2007, XXX, 578 p., Hardcover

ISBN: 978-0-387-47863-0