

**“Kids First?”:
Imagined Futures and Shifting Conceptions of Risk in Hepatitis B Immunization Policy in
the United States, 1982-1999**

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“We’re not talking about a childhood disease here. This is an attempt to deal with the problems faced by drug users, homeless people, and those who keep company with hookers.”

- New Jersey State Senator C. Louis Bassano, quoted in Lisa Suhay, “A Skirmish Over the Hepatitis B Vaccination,” *New York Times*, July 18, 1999

“The present is governed, at almost every scale, as if the future is what matters most.

Anticipatory modes enable the production of possible futures that are lived and felt as inevitable in the present, rendering hope and fear as important political vectors.”

- Vincanne Adams, Michelle Murphy, and Adele Clarke, “Anticipation: Technoscience, Life, Affect, Temporality,” *Subjectivity* 28 (September 2009): 248

In January 1982, Michael Ritchie, director of the Clement Health Center in Cincinnati, Ohio, contacted the pharmaceutical company Merck to ask about distributing the newly-licensed hepatitis B vaccine.¹ As a community health center run by the Cincinnati Department of Health, Clement Health was dedicated to providing affordable primary care.² *Gay Community News*, a weekly magazine with a national readership, reported that Ritchie wanted to make the vaccine available because hepatitis B, a virus transmitted by blood and other body fluids that attacks the liver, was one of the most common and serious infections among gay men at the time.³ Thirty percent of Clement Health’s male clients were gay, because of Ritchie’s inclusive approach to sexual health outreach, which included offering sexually transmitted disease testing at a popular gay bar.⁴ The Greater Cincinnati Gay Coalition passed a resolution in 1982 thanking him for

¹ John Zeh, “Health Department Asks to Distribute New Vaccine,” *Gay Community News* 10, no. 11, January 1982, 1.

² For more on the history of community health centers, see Bonnie Lefkowitz, *Community Health Centers: A Movement and the People Who Made It Happen*, (New Brunswick: Rutgers University Press, 2007).

³ Zeh, “Health Department Asks to Distribute New Vaccine.” See figure 1 for a New York Health Department poster similarly highlighting hepatitis B as a “serious disease attacking gay men.” Sexual practices common among gay men, such as anal-genital intercourse, oral-genital intercourse, and rectal douching, were correlated with hepatitis B transmission. M.T. Schreeder et al., “Hepatitis B in Homosexual Men: Prevalence of Infection and Factors Related to Transmission,” *Journal of Infectious Diseases* 146, no. 1 (July 1982): 7.

⁴ Zeh, “Health Department Asks to Distribute New Vaccine.” The term “sexual health” emerged in the late 20th century and has been used to signify a variety of concerns, including the prevention of sexually transmitted diseases, which will be my focus in this essay. For more on the history of this term, see Steven Epstein and Laura Mamo, “The Proliferation of Sexual Health: Diverse Social Problems and the Legitimation of Sexuality,” *Social Science & Medicine* 188 (2017): 176-190.

“keeping Cincinnati’s homosexuals healthy” through his dedication to hepatitis B immunization.⁵

Acute hepatitis B causes fever, severe abdominal and joint pain, fatigue, and jaundice. People often recover within six months, but in about 20 percent of cases, the virus remains in the blood and liver indefinitely. Chronic infection can go undetected for years, and it usually causes cirrhosis, which can lead to liver cancer and liver failure.⁶

In 1982, the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control (CDC) recommended hepatitis B vaccination for select groups including gay men, intravenous drug users, and healthcare workers.⁷ Serological surveys had indicated that hepatitis B was highly prevalent in these groups, compared to the general U.S. population, due to their exposure to infectious body fluids.⁸

While the hepatitis B vaccine received an enthusiastic early response from its intended users, it soon stirred controversy because of unfounded rumors that it could transmit the

⁵ John Zeh, “Hepatitis Vaccine Goes to Sexually Active,” *Gay Community News* 10, no. 11, October 1982, 3. Historian Allan Bérubé has shown how in the twentieth century, the social category “gay man” was implicitly associated with Whiteness, obscuring the “cultural heritages, political activism, and everyday existence” of gay men of color. Because most gay health activists in the 1980s were White, when I discuss gay health activism with respect to hepatitis B immunization, I am primarily discussing White people. Scholars such as political scientist Cathy Cohen have studied the experiences of Black gay men with AIDS during the 1980s and 1990s, but the experiences of gay people of color with respect to hepatitis B remain understudied and are an important area for future research. See Alan Bérubé, “How Gay Stays White and What Kind of White It Stays,” in *My Desire for History: Essays in Gay, Community, and Labor History*, ed. Allan Bérubé, John D’Emilio, and Estelle B. Freedman (Chapel Hill: Duke University Press, 2011), 205 and Cathy Cohen, *Boundaries of Blackness: AIDS and the Breakdown of Black Politics* (Chicago: University of Chicago Press, 1999).

⁶ There is no cure, so recovery depends on the ability of a person’s immune system to resolve the infection. William Lee, “Hepatitis B Virus Infection,” *New England Journal of Medicine* 337 (December 1997): 1737.

⁷ The vaccine was also recommended for residents and staff in institutions for developmentally disabled people, hemodialysis patients, recipients of blood transfusions, household and sexual contacts of hepatitis B carriers, and infants born to hepatitis B-positive mothers. Centers for Disease Control (hereafter in notes as CDC), “Recommendation of the Advisory Committee on Immunization Practices (ACIP). Inactivated Hepatitis B Virus Vaccine,” *MMWR* 31, no. 24 (June 1982): 317, <https://www.ncbi.nlm.nih.gov/pubmed/6811846>.

⁸ A 1982 study estimated that the seroprevalence of hepatitis B among gay men was between 51 and 76 percent, among intravenous drug users was between 55 and 65 percent, and among medical personnel was 16 percent. By contrast, the seroprevalence among volunteer blood donors (a proxy for the general population) was 4.4 percent. Seroprevalence was measured by testing serum samples for hepatitis B surface antigen and its antibody. Schreeder et al., “Hepatitis B in Homosexual Men,” 12-14.

bloodborne virus associated with acquired immune deficiency syndrome (AIDS).⁹ Unlike most vaccines at the time, which were made from weakened or inactivated viruses, the hepatitis B vaccine was derived from hepatitis B surface antigen purified from human plasma.¹⁰ Many gay men with hepatitis B were plasma donors for the vaccine.¹¹ Rumors that the vaccine could cause AIDS persisted until the development of a different hepatitis B vaccine made from recombinant DNA instead of plasma in 1986.¹²

Even after the invention of a recombinant hepatitis B vaccine helped to address fear of AIDS transmission, immunization rates among gay men and intravenous drug users remained low. Concluding that these groups were too difficult to reach, in 1991, the ACIP radically revised its hepatitis B vaccination policy. It shifted its focus to a vastly different population and recommended that all infants be immunized in the hospital after birth, when they were certain to have access to a doctor. As they grew up, lasting immunity from the vaccine would guard against disease exposure in adolescence and adulthood. Eventually, the ACIP hoped, the entire U.S. population could be protected against hepatitis B.¹³

This policy change caused further controversy. While most parents embraced hepatitis B immunization for their newborns, some refused to let their babies receive what they considered to be an unnecessary vaccine against a disease stigmatized by its association with gay men and

⁹ The first AIDS cases in the United States were reported in June 1981. CDC, "Current Trends Hepatitis B Vaccine: Evidence Confirming Lack of AIDS Transmission," *MMWR* 33, no. 49 (December 1984): 685, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00000449.htm>.

¹⁰ Elena Conis, "'Do We Really Need Hepatitis B on the Second Day of Life?'" Vaccination Mandates and Shifting Representations of Hepatitis B," *Journal of Medical Humanities* 32 (January 2011): 158.

¹¹ Zeh, "Hepatitis Vaccine Goes to Sexually Active."

¹² This development was intended to make hepatitis B vaccination cheaper as well as to address lingering fears of AIDS transmission, as I will discuss later in this essay.

¹³ CDC, "Hepatitis B Virus: A Comprehensive Strategy for Eliminating Transmission in the United States through Universal Childhood Vaccination: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR* 40, no. 13 (November 1991): 1-2, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00033405.htm>.

intravenous drug users.¹⁴ In the 1990s, the ACIP's recommendation that all infants be vaccinated against hepatitis B became a popular target for anti-vaccine activism.¹⁵ Meanwhile, gay health advocates criticized the persistent barriers to hepatitis B vaccination facing adults at high risk of the disease. In an article titled "Kids First? How Vaccination Politics Undermine Public Health," published in the progressive magazine *American Prospect* in 2000, physician and AIDS activist Joshua Sharfstein reflected on lessons from the history of hepatitis B immunization policy. He blamed the federal government for promoting universal infant immunization but not investing funds to reach the high-risk adult groups who needed the vaccine immediately. Quoting a CDC vaccine expert who had testified at a 1989 conference on hepatitis B eradication, he argued that "the U.S. has not put resources into vaccination of persons whose lifestyle puts them at risk, and that is unfortunate, but it is a fact."¹⁶

What social transformations occurred as a preventative health measure originally recommended primarily for gay men, intravenous drug users, and healthcare workers became a standard intervention for infants? Hepatitis B vaccination afforded Americans the opportunity to imagine a future for themselves and, later, their children that was free from a debilitating disease and the social stigma it carried. However, to some, hepatitis B vaccination presented a frightening future, in which the vaccine gave people AIDS or caused children to develop neurodegenerative diseases. Imagined futures thus both encouraged the adoption of hepatitis B immunization and resistance to it. At the same time, the promise implicit in universal vaccination

¹⁴ U.S. Congress, House of Representatives, Committee on Government Reform, *Hepatitis B Vaccine: Helping or Hurting Public Health? Hearing before the Subcommittee on Criminal Justice, Drug Policy, and Human Resources*, 106th Cong., 1st sess., 1999, 19-42, <https://www.govinfo.gov/content/pkg/CHRG-106hhrg63308/html/CHRG-106hhrg63308.htm>.

¹⁵ Conis, "Do We Really Need Hepatitis B on the Second Day of Life?," 155.

¹⁶ Joshua Sharfstein, "Kids First? How Vaccination Politics Undermine Public Health," *American Prospect* 11, no. 12, May 2000, 15-18.

that everyone would enjoy better health in the future obscured the needs of those who were most likely to contract hepatitis B in the present, marginalizing their futures in public discourse.

To examine the history of hepatitis B immunization, I will draw on gay and mainstream media, scientific journal articles, CDC reports, unpublished ACIP meeting records, and oral history interviews. Queer theory offers a valuable analytical framework because hepatitis B vaccination was strongly connected to gay men, and when it was recommended for all infants, it disrupted boundaries between social groups. The vaccine's queerness in these respects contributed to debates about whom immunization would help and harm.¹⁷ Engaging with queer theorist Mel Chen's work on how inanimate objects can become associated with queerness, I will explore why different iterations of the hepatitis B vaccine stirred controversy.¹⁸ Competing visions of the future also shaped public and private decision-making about hepatitis B vaccination. In the late 20th century, as feminist science studies scholars Vincanne Adams, Michelle Murphy, and Adele Clarke have argued, public health in the United States became defined by a state of thinking and living toward the future, as efforts to control the spread of disease were replaced by disease prevention initiatives and by an individual moral responsibility

¹⁷ The term "queer," while once a pejorative description of non-heteronormative sexualities, has been reclaimed as a form of self-identification with respect to sexuality and gender. The term is also used more broadly by critical theorists to describe phenomena that challenge rigid identity categories and hegemonic norms. Race and ethnicity, as well as sexuality, were important categories for the classification of risk. I will discuss how these categories operated with respect to immunization for Black Americans and the children of Southeast Asian immigrants. An important aspect of the history of hepatitis B immunization which I will not address is the immunization program among Alaska Natives. In 1983, the Arctic Investigations Laboratory of the CDC collaborated with the Indian Health Service, the Alaska Division of Public Health, and Alaska Native health corporations to establish a comprehensive program to address hepatitis B among Alaska Natives, among whom the disease was endemic. The program included immunization of all newborn babies against hepatitis B. For more on the immunization program, see Brian J. McMahon et al., "A Comprehensive Programme to Reduce the Incidence of Hepatitis B Virus Infection and Its Sequelae in Alaskan Natives," *The Lancet* 330, no. 8568 (November 1987): 1134-1136 and Rafael Harpaz et al., "Elimination of New Chronic Hepatitis B Virus Infections: Results of the Alaska Immunization Program," *Journal of Infectious Diseases* 181, no. 2 (February 2000): 413-418.

¹⁸ Mel Chen, *Animacies: Biopolitics, Racial Mattering, and Queer Affect* (Chapel Hill: Duke University Press, 2012).

to optimize health.¹⁹ The history of hepatitis B immunization policy provides the opportunity to ask: what futures are at stake in public health programs? And how can public health programs balance the attention given to present and future needs?

Gay Health Activism and the Hepatitis B Vaccine

In the early 1980s, the vaccine manufacturer Merck saw gay men as a potentially lucrative market for the first hepatitis B vaccine, Heptavax-B.²⁰ It sponsored a controversial public awareness campaign by the non-profit American Liver Foundation to promote immunization.²¹ Full-page advertisements in gay newspapers across the United States featured a gruesome image of a man lying unconscious in a hospital bed with the headline “he took the chance of getting hepatitis B – and lost.”²² A rhetoric of personal choice and responsibility was common at a time when public health research was increasingly focused on chronic illnesses such as lung cancer and heart disease that were influenced by “lifestyle factors” such as diet, exercise, and smoking. Public health messaging therefore emphasized the importance of behavioral modifications to improve health.²³

Merck’s approach to marketing Heptavax-B provoked an outcry among gay health activists. Gay health activism, which had emerged in the 1970s, built on the work of civil rights groups like the Black Panthers and Brown Berets who argued that addressing health disparities was a

¹⁹ Vincanne Adams, Michelle Murphy, and Adele Clarke, “Anticipation: Technoscience, Life, Affect, Temporality,” *Subjectivity* 28 (September 2009): 246-265, see especially 252 and 256.

²⁰ Because of the different iterations of the hepatitis B vaccine, I will typically name the vaccine relevant at a particular historical moment. Farah Huzair and Steve Sturdy, “Biotechnology and the Transformation of Vaccine Innovation: The Case of the Hepatitis B Vaccines 1968-2000,” *Studies in History and Philosophy of Biological and Biomedical Sciences* 64 (August 2017): 11.

²¹ The American Liver Foundation was founded in 1976 to promote liver health and disease prevention.

²² Editorial Board, “Hepatitis, Health and the Hard Sell,” *Gay Community News* 11, no. 8, (September 10, 1983). See figure 2.

²³ Allan Brandt, “The Cigarette, Risk, and American Culture,” *Daedalus* 119, no. 4 (Fall 1990): 171.

necessary part of the struggle for political liberation.²⁴ Activists condemned Merck's vaccine advertisements for promoting the stereotype of the "bad homosexual who can be cured by the good doctor."²⁵ They also criticized the high price of Heptavax-B, which at about \$145 for three shots (approximately \$375 in 2019) far exceeded the average vaccine price of \$2.²⁶ The cost posed a significant financial burden because insurance companies rarely covered the vaccine.²⁷ Merck attributed the high price to the complexity of the development and manufacturing processes, but gay activists blamed corporate profiteering.²⁸ A 1983 editorial in *Gay Community News* lamented,

Despite all its high-minded talk about healing the sick, the medical industry is out to make a buck, and it will not stop short of strong-arm advertising and the exploitation of our oppression to sell us a product everyone deserves to have for free: our health.²⁹

While skeptical of Merck's tactics, *Gay Community News* argued that hepatitis B prevention was an important public health issue and urged "all gay men, in spite of the misgivings we've expressed ... [to] get themselves vaccinated."³⁰ This view was shared by other gay media.³¹ The newspaper stopped running the American Liver Foundation's public service announcements and produced its own instead. It also encouraged readers to donate to community

²⁴ Katie Batza, *Before AIDS: Gay Health Politics in the 1970s*, (Philadelphia: University of Pennsylvania Press, 2018), 6.

²⁵ Editorial Board, "Hepatitis, Health and the Hard Sell."

²⁶ Huzair and Sturdy, "Biotechnology and the Transformation of Vaccine Innovation," 13.

²⁷ Louis Galambos and Jane Sewell, *Networks of Innovation: Vaccine Development at Merck, Sharp & Dohme, and Mulford, 1895-1995* (Cambridge: Cambridge University Press, 1995): 193; William Muraskin, "The Silent Epidemic: The Social, Ethical, and Medical Problems Surrounding the Fight against Hepatitis B," *Journal of Social History* 22, no. 2 (Winter 1988): 287.

²⁸ Galambos and Sewell, *Networks of Innovation*, 193; Editorial Board, "Hepatitis, Health and the Hard Sell."

²⁹ Editorial Board, "Hepatitis, Health and the Hard Sell."

³⁰ Ibid.

³¹ For example, *Intergay Report*, a weekly international gay radio program in New York City, praised hepatitis B vaccination as a valuable health intervention for the gay community. *Intergay Report*, May 17, 1982, International Gay Information Center Radio, Television, and Film Productions A00619, New York Public Library, Manuscripts and Archives Division, New York, New York.

health centers and nonprofit gay clinics so that “those who cannot afford to capitalize the medical industry can still receive the expensive vaccine.”³²

More than two dozen gay clinics in major American cities had been established by gay health activists in the 1970s.³³ Their services, which included sexually transmitted disease prevention, testing, and treatment, were intended to address the distinctive needs of gay communities. David Ostrow, who as a medical student in the 1970s co-founded Chicago’s Howard Brown Memorial Clinic, recalled that he knew that hepatitis B was a significant issue among gay people in Chicago because at least ten percent of the patients who walked into the clinic suffered from the disease.³⁴ In other settings, doctors rarely talked to gay men about their sexual histories, and sexually transmitted diseases often went undiagnosed. One former client of a municipal clinic in Chicago recalled that “the clinic was just foul to gay people, just nasty.”³⁵ Furthermore, to prevent their employers from learning they were gay, gay men often had to pay for medical services out of pocket instead of using health insurance.³⁶ The knowledgeable, nonjudgmental, and affordable care offered by gay clinics was lifesaving. However, as historian Katie Batza has argued, gay health activists, most of whom who were White, often failed to design health services in ways that fought structural racism. As a result, gay health services in the 1970s and early 1980s primarily benefited White people.³⁷

³² Editorial Board, “Hepatitis, Health and the Hard Sell.”

³³ The Fenway Community Health Clinic in Boston, the Gay Community Services Center in Los Angeles, and the Howard Brown Memorial Clinic in Chicago are three notable examples. For more on the history of gay health clinics, see Batza, *Before AIDS*, 6-8, 46.

³⁴ David Ostrow, interview with the author, June 27, 2018.

³⁵ Karla Rideout, interview by Katie Batza, July 12, 2007, quoted in Batza, *Before AIDS*, 2.

³⁶ Batza, *Before AIDS*, 1-4.

³⁷ Ibid, 48. Following Juan Battle and Martha Crum, I capitalize the word White to distinguish the racial category and related identity from the color. Similarly, I capitalize the word Black when referring to race. See Juan Battle and Martha Crum, “Black LGB Health and Well-Being,” in *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations*, ed. Ilan H. Meyer and Mary E. Northridge, (New York: Springer, 2007), 321n1.

Gay activists across the United States worked to increase access to Heptavax-B. In Cincinnati, the Greater Cincinnati Gay Coalition raised money to enable Clement Health to cover some of the vaccine's cost.³⁸ In New Haven, the Gay Health Task Force at Yale University led a protest movement against the Yale Health Plan's refusal to cover the vaccine on the grounds that it was expensive and that gay men voluntarily exposed themselves to the disease. The group persuaded the Yale Health Plan to reduce the out-of-pocket cost of the Hepatitis B vaccine from \$106 to \$35.³⁹

Such advocacy laid a foundation for AIDS activism, which dominated gay health politics by the mid-1980s. The ideas that biomedicine could promote gay health and that its benefits should be made available to all were refined by the AIDS Coalition to Unleash Power (ACT UP), founded in 1987, which sought to increase access to experimental drugs to treat human immunodeficiency virus (HIV), which causes AIDS.⁴⁰ Activism regarding hepatitis B immunization and AIDS also differed in important ways. David Ostrow and other gay clinic administrators had good relationships with the CDC in the 1970s and early 1980s, and they collaborated with CDC researchers on the design of hepatitis B vaccine trials.⁴¹ By contrast, the federal government's slow response to the AIDS crisis caused ACT UP to have an antagonistic relationship with federal health agencies. The organization staged protests at the CDC and FDA to demand more inclusive AIDS studies and greater access to experimental therapies.⁴²

³⁸ Zeh, "Hepatitis Vaccine Goes to Sexually Active."

³⁹ George Chauncey, "Yalies Force Lower Fees for Vaccine," *Gay Community News* 10, no. 39 (April 1983): 3.

⁴⁰ Steven Epstein, *Impure Science: AIDS, Activism, and the Politics of Knowledge*, (Berkeley, University of California Press, 1996), 219, 222.

⁴¹ Ostrow, interview with the author.

⁴² Epstein, *Impure Science*, 220; Steven Epstein, *Inclusion: The Politics of Difference in Medical Research* (Chicago: University of Chicago Press, 2007), 63

Bad Blood, Tainted Promise

Gay men contributed greatly to the development of Heptavax-B. Many who had hepatitis B, which one man recalled “felt like a bad case of the flu,” traveled weekly to blood donation sites.⁴³ There, they allowed technicians to “jab [their veins] with a needle and remove about two pints of precious blood,” as the Associated Press put it.⁴⁴ Donors were financially compensated, at a rate of \$50 per blood donation session.⁴⁵ However, plasma recruitment efforts emphasized the opportunity to help prevent a disease endemic in the gay community, and donors were primarily motivated by a desire to help others.⁴⁶ Many expressed pride in contributing to what some called the “first anti-cancer drug,” given the association between chronic hepatitis B and liver cancer.⁴⁷

Recruited by advocacy groups like the Gay Men’s Health Project of New York City, thousands of other gay men volunteered to participate in vaccine efficacy trials, which were run at gay clinics in major cities like Chicago and New York.⁴⁸ Researchers at the New York Blood Center, who conducted the first controlled clinical trial of the vaccine, explained in a 1980 article in the *New England Journal of Medicine* that they considered gay men ideal test subjects. Because gay men were at a higher risk of contracting the disease than the general population, fewer volunteers were needed to determine the vaccine’s efficacy.⁴⁹

⁴³ The University of Cincinnati’s Hoxworth Blood Center and the New York Blood Center were two such donation sites. Zeh, “Health Department Asks to Distribute New Vaccine”; Associated Press, “Gay Gives Blood Every Few Days,” *Los Angeles Times*, October 12, 1980.

⁴⁴ Associated Press, “Gay Gives Blood Every Few Days.”

⁴⁵ Ibid.

⁴⁶ See figure 3 for an example of a pamphlet recruiting gay men to donate blood to produce the hepatitis B vaccine.

⁴⁷ Zeh, “Health Department Asks to Distribute New Vaccine.”

⁴⁸ The New York Blood Center, “What You Should Know about Hepatitis Type B in Gay Men and a New Hepatitis B Vaccine,” 1979, International Gay Information Center Papers, Box 11, New York Public Library, Manuscripts and Archives Division, New York, New York; Ostrow, interview with the author. For additional information on gay men’s participation in hepatitis B vaccine trials, see Batza, *Before AIDS*, 103-106.

⁴⁹ Wolf Szmunn et al, “A Controlled Clinical Trial of the Efficacy of the Hepatitis B Vaccine (Heptavax B): A Final Report,” *Heptatology* 1, no. 5 (1981): 385.

Showing unusual recognition of gay men's contributions, the national media depicted their participation in the development of Heptavax-B as selfless and important. A 1980 Associated Press article celebrated gay volunteers who handed out literature on the street about plasma donation and vaccine testing. The author also praised Charles Cole, an "avowed homosexual" who had hepatitis B and had volunteered to give "precious blood" even before he knew he would be compensated. "I thought it was terrific," Cole said about the opportunity to donate plasma. "If I could help just one person not have to go through what I went through, it would be worth it." The article also quoted vaccine experts who publicly commended gay men's participation. Donald Francis, a member of the CDC's Hepatitis Division who later became famous for his research on AIDS, said, "Once the vaccine is licensed, the U.S. public really should congratulate the gay community." Wolf Szmunes, coordinator of the first large-scale efficacy study for Heptavax-B, likewise credited cooperation from gay groups with making the study a success.⁵⁰

This praise disappeared a few years later, after the CDC confirmed that AIDS was transmitted by a bloodborne virus.⁵¹ Gay men's role in the development of Heptavax-B now cast a dark shadow on the plasma-derived vaccine.⁵² While gay men were not the only ones affected by AIDS, they were often held responsible for it.⁵³ In a 1988 essay in the gay magazine *Out/Look*, Allan Bérubé, a historian and gay activist whose partner Brian Keith died of AIDS in 1987, criticized common rhetoric such as "gay men should have known better; AIDS is the inevitable result of the sexual revolution; [and] the 'gay plague,' the 'gay cancer,' the 'gay

⁵⁰ Associated Press, "Gay Gives Blood Every Few Days."

⁵¹ CDC, "Current Trends Update: Acquired Immunodeficiency Syndrome (AIDS) – United States," *MMWR* 32, no. 35 (September 1983): 465, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00001163.htm>.

⁵² CDC, "Current Trends Hepatitis B Vaccine," 685.

⁵³ Historian Richard McKay has analyzed how the popular (false) narrative that a gay man, Gaétan Dugas, was the "patient zero" of the North American AIDS outbreak helped fuel the blaming of gay men for the epidemic. Richard McKay, *Patient Zero and the Making of the AIDS Epidemic*, (Chicago: University of Chicago Press, 2017).

disease' was created by the 'gay lifestyle.'” These glib phrases, he argued, were part of a long history of homophobia and hate.⁵⁴

The CDC found no microbiologic or empiric evidence of AIDS transmission via the hepatitis B vaccine and concluded that the rigorous plasma purification process had inactivated any residual virus particles. It issued several public statements confirming the vaccine's safety.⁵⁵ Gay and mainstream media such as *Gay Community News* and the *New York Times* publicized the CDC's message and emphasized the importance of hepatitis B vaccination. Nonetheless, Merck's marketing director told the *Philadelphia Inquirer*, “the specter of AIDS has clouded and delayed the acceptance of the drug.”⁵⁶ In Georgia, the *Atlanta Constitution* reported that only 35 percent of high-risk healthcare workers at the Veterans Administration had accepted free hepatitis B vaccination because they feared AIDS transmission by gay blood donors.⁵⁷ Similar vaccine hesitancy among Veterans Administration medical staff in East Orange, New Jersey was publicized by the *New York Native*, a gay magazine. A hospital spokesman denounced such reports as sensationalistic, but as the *Native* author pointed out, only 60 of 400 hospital employees had accepted free vaccination.⁵⁸

Immunization rates among gay people were also “underwhelming,” as the *Medical Tribune*, a national newspaper for doctors, reported. The *Tribune* blamed this trend primarily on

⁵⁴ Allan Bérubé, “Caught in the Storm: AIDS and the Meaning of Natural Disaster,” in *My Desire for History: Essays in Gay, Community, & Labor History*, ed. John D’Emilio and Estelle B. Freedman (Chapel Hill: University of North Carolina Press, 2011), 153, 144.

⁵⁵ Advisory Committee on Immunization Practices (hereafter in notes as ACIP), CDC, Minutes of Meeting, January 24-25, 1983, Records of the ACIP, NRC 442-10-002, Box 6, National Archives at Atlanta, Georgia; CDC, “Current Trends Hepatitis B Vaccine,” 685-687.

⁵⁶ Terry Bivens, “Sales of Hepatitis Vaccine Suffer from Fear of AIDS,” *Philadelphia Inquirer*, Tuesday, July 12, 1983.

⁵⁷ Charles Seabrook, “Fear of AIDS is Causing Some to Shun Vaccine for Hepatitis,” *Atlanta Constitution*, May 12, 1983.

⁵⁸ Vincent Lankewish, “‘Fear’ of Vaccine Said Exaggerated,” *New York Native* no. 66, June 20-July 3, 1983.

the AIDS contamination scare.⁵⁹ Contamination rumors resonated with gay men at a time when, as Allan Bérubé described in his 1988 *Out/Look* essay, “the new storm of AIDS – the panic as well as the disease – [took] the safety out of our old shelters by attacking our bodies, our lovemaking, and our sexual institutions.”⁶⁰ However, unlike healthcare workers who had free access to hepatitis B immunization through their employers, gay men faced a variety of barriers including discrimination at clinics and the vaccine’s high cost. The *Medical Tribune*’s emphasis on AIDS oversimplified these complex reasons for vaccine hesitancy among some gay men.

As gay men’s bodies were constructed in the public imagination as probable reservoirs of disease, Heptavax-B was in turn sexualized and reimagined as a hazard. An analogous process occurred in 2007, when several popular Chinese-made toys were recalled due to harmful lead levels, and some American consumer organizations demanded a ban on all Chinese-made products. As toys became threatening health risks, Mel Chen has argued, they were also rhetorically constructed as racialized threats.⁶¹ Similarly, media stories that cited gay men’s involvement in hepatitis B vaccine production to explain vaccine refusal made the vaccine itself a vehicle for the supposed danger that gay men’s bodies carried.

The impact of the revelation that a bloodborne pathogen caused AIDS was amplified by blood’s deep cultural significance. Before AIDS, as bioethicist Thomas Murray has argued, blood donation promoted community ties by connecting blood donors to strangers and their donations to the public good. When blood was established as a vector for AIDS, and when gay men were identified as common donors of contaminated blood, those ties frayed. Blood

⁵⁹ Toni Davies, “Gays Shun Even Free Heptavax: AIDS Bugaboo?” *Medical Tribune*, February 23, 1983.

⁶⁰ Ostrow, interview with the author; Bérubé, “Caught in the Storm,” 155.

⁶¹ Chen, *Animacies*, 170-171.

donation, which once had been a form of kinship among strangers, became another reason to demonize gay men.⁶²

Americans' ideas about the hepatitis B vaccine were influenced by a state of thinking and living toward the future, an affective state characterized by Adams, Murphy, and Clarke as "anticipation." This state is both a response to predictable uncertainty and a way of orienting oneself temporally, "in which one inhabits time out of place as the future."⁶³ People at high risk for hepatitis B had to imagine several different futures – in which they got vaccinated but contracted AIDS or avoided vaccination but contracted hepatitis B – in order to decide whether they wanted immunization. Because the contamination of the hepatitis B vaccine was only a hypothetical threat, no amount of data could prove the impossibility of harm. The persistent possibility, no matter how small, that a vaccine made partly from gay men's blood could cause AIDS resonated with and amplified anxieties about the threat that gay men posed to the health and moral fabric of society.

Heptavax-B can be characterized as a cyborg, a term used by feminist science studies scholar Donna Haraway to describe "a hybrid of machine and organism, a creature of social reality as well as a creature of fiction."⁶⁴ It was produced through the transformation of human biomaterial into a "sterile" injection, as hepatitis B surface antigen was purified from human plasma by means of chemicals and heat. Yet plasma, even when removed from the body and preserved elsewhere, retains an indelible connection to the people that produced it.⁶⁵ Blood is a

⁶² Thomas H. Murray, "The Poisoned Gift: AIDS and Blood," *The Milbank Quarterly* 68 (1990): 214-216.

⁶³ Adams, Murphy, and Clarke, "Anticipation," 246-247.

⁶⁴ Donna Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late 20th Century," in *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991), 149.

⁶⁵ This connection inspired 20th-century research programs. Historian Joanna Radin has documented how Cold War scientists assembled large-scale blood serum sample collections to create knowledge about race, infectious diseases, drug resistance, and inherited patterns of susceptibility and resistance. Joanna Radin, "Unfolding Epidemiological Stories: How the WHO Made Frozen Blood into a Flexible Resource for the Future," *Studies in History and Philosophy of Biological and Biomedical Sciences* 47 (2014): 63.

substance onto which much can be written – ancestry, environmental exposures, and social behavior. In the last century, these narratives have often been produced without the consent and against the interest of the people whose blood is at stake.⁶⁶

Ironically, the hybrid nature of Heptavax-B had garnered it praise when the vaccine was first developed. Hepatitis experts had hailed it as “extraordinarily safe” compared to other vaccines because it was produced from purified viral proteins derived from plasma instead of from an attenuated form of the virus itself.⁶⁷ But AIDS made Heptavax B’s synthesis of the technological and the human a liability. There is a particular intensity, as Chen has argued, to a queer exchange between two animate or inanimate bodies that risks injury.⁶⁸ The intimate way in which immunization brought people together – a derivative of one person’s plasma injected directly into another person’s muscle – contributed to the vaccine’s danger in the public imagination.

The cultural challenges associated with a plasma-derived vaccine helped to drive vaccine innovation. In 1986, the FDA approved Recombivax HB, produced from yeast genetically engineered to express hepatitis B surface antigen.⁶⁹ As the first genetically-engineered vaccine, Recombivax became a symbol of biomedical progress.⁷⁰ FDA commissioner Frank Young

⁶⁶ Scholars such as Joanna Radin, Jenny Reardon, and Kim TallBear have written about how this phenomenon has particularly affected Indigenous communities, a result of decades-long research initiatives that collected blood and other human tissue samples from Indigenous groups around the world. See Joanna Radin, “Latent Life: Concepts and Practices of Human Tissue Preservation in the International Biological Program,” *Social Studies of Science* 43, no. 4 (2013): 484-508; Jenny Reardon, “The Human Genome Diversity Project: A Case Study in Coproduction,” *Social Studies of Science* 31, no. 3 (June 2001): 357; and Kim TallBear, “Beyond the Life/Not-Life Binary: A Feminist Indigenous Reading of Cryopreservation, Interspecies Thinking, and the New Materialisms,” in *Cryopolitics: Frozen Life in a Melting World*, ed. Joanna Radin and Emma Kowal (Cambridge: MIT Press, 2017), 185.

⁶⁷ United Press International, “New Hepatitis Vaccine Hailed as Safe, and a Breakthrough,” *Washington Post*, October 11, 1980.

⁶⁸ Chen, *Animacies*, 206.

⁶⁹ For a more detailed description of recombinant DNA technology and the development of the recombinant hepatitis B vaccine, see Huzair and Sturdy, “Biotechnology and the Transformation of Vaccine Innovation,” 13-15.

⁷⁰ Mamo and Epstein, “The Pharmaceuticalization of Sexual Risk,” 160.

declared that it heralded “a new era in vaccine production” and expressed hope that it would remove any lingering, albeit unwarranted, fears of AIDS transmission and persuade high-risk groups that they could be safely vaccinated.⁷¹ AIDS was not the only reason for the new vaccine – Merck had been interested in developing a recombinant hepatitis B vaccine even before the AIDS epidemic, because genetic engineering had the potential to speed vaccine production and permit bulk manufacture, thus cutting costs.⁷² Still shaken by lawsuits in the 1960s over polio vaccine tainted with live virus, the pharmaceutical industry, as historian Elena Conis has shown, was also interested in developing recombinant DNA technology to eliminate the need to use whole viruses in vaccines for other diseases such as polio and influenza, making them safer.⁷³

When Recombivax finally came on the market, it was not safer or more effective than the old plasma-derived vaccine, and although the *New York Times* noted it was cheaper to make, Merck did not price it any lower than Heptavax-B.⁷⁴ Nonetheless, as science studies scholars Farah Huzair and Steve Sturdy have shown, Recombivax and other recombinant hepatitis B vaccines that followed were far more commercially successful than the plasma-derived vaccine, mainly due to public perceptions of their safety.⁷⁵ By removing any trace of human connection to the hepatitis B vaccine, genetic engineering sought to banish the lingering specter of AIDS contamination.

The CDC’s Demarcation of Risk and Identity

The surveillance and management of risk were integral to public health in the late 20th century. Health researchers identified new risk factors for a variety of illnesses, including lung

⁷¹ Associated Press, “FDA Backs Lab-Made Vaccine for Hepatitis,” *Hartford Courant*, July 24, 1986.

⁷² Margot Slade Hoffman, “Soon, Money Will Prevent Hepatitis,” *New York Times*, November 22, 1981.

⁷³ The scandal had prompted half of the vaccine manufacturers in the United States to pull out of the market altogether. See Conis, ““Do We Really Need Hepatitis B on the Second Day of Life?”” 160-161.

⁷⁴ Associated Press, “FDA Backs Lab-Made Vaccine for Hepatitis.”

⁷⁵ Huzair and Sturdy, “Biotechnology and the Transformation of Vaccine Innovation,” 13-15.

cancer and heart disease, evaluated populations for degrees of risk, and assigned interventions accordingly.⁷⁶ The ACIP initially recommended hepatitis B vaccination only for a few high-risk groups because it believed that it could develop a precise, cost-effective intervention, and vaccinating high-risk adults was seen as the best strategy to do so.⁷⁷

During the 1980s, however, the incidence of hepatitis B in the United States increased by 37 percent, reaching 300,000 new cases a year by 1989.⁷⁸ The ACIP attributed this increase partly to low vaccination rates among the risk groups that accounted for the majority of hepatitis B cases: gay men, intravenous drug users, and heterosexual people with multiple partners.⁷⁹ Yet it found that 85 percent of the vaccine had been distributed to only three risk groups: people who worked in healthcare professions and were exposed to blood, staff and clients of institutions for the developmentally disabled, and staff and patients in hemodialysis units, who accounted for under ten percent of acute hepatitis B cases. Recognizing that, unlike gay men and intravenous drug users, many of these people were public employees and therefore covered by state-funded vaccination programs, the ACIP called for “increased efforts...to develop programs to vaccinate

⁷⁶ Adele Clarke et al., “Biomedicalization: Technoscientific Transformations of Health, Illness, and U.S. Biomedicine,” *American Sociological Review* 68 (April 2003): 172. For discussions of lung cancer and heart disease see Brandt, “The Cigarette, Risk, and American Culture,” 155-176 and Robert Aronowitz, “The Social Construction of Coronary Disease Risk Factors,” in *Making Sense of Illness*, (Cambridge: Cambridge University Press, 1998), 111-144.

⁷⁷ Harold Margolis, interview with the author, July 29, 2018; H.S. Margolis, G.C. Schatz, and M.A. Kane, “Development of Recommendations for Control of Hepatitis B Virus Infections: The Role of Cost Analysis,” *Vaccine* 8 (1990): S81-S84; Ronald Hershow, Stephen Hadler, and Mark Kane, “Adoption of Children from Countries with Endemic Hepatitis B: Transmission Risks and Medical Issues,” *The Pediatric Journal of Infectious Disease* 6, no. 5 (1987): 433.

⁷⁸ This change was measured for the period 1979-1989. ACIP, CDC, Minutes of Meeting, February 21-22, 1989, records of the ACIP, NRC 442-10-002, Box 9, National Archives at Atlanta, Georgia; CDC, “Recommendations of the Advisory Committee on Immunization Practices Update on Hepatitis B Prevention,” *MMWR* 36, no. 23 (June 1987): 353, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00019181.htm>.

⁷⁹ By the mid-1980s, “heterosexual activity” was recognized as a significant risk factor for hepatitis B. A 1990 study by CDC researchers found that between 1982 and 1988, the percentage of hepatitis B cases associated with “heterosexual activity” increased dramatically. Miriam Alter et al., “The Changing Epidemiology of Hepatitis B in the United States: Need for New Vaccination Strategies,” *JAMA* 263, no. 9 (March 1990): 1220-1221. See figure 4 for a graph of risk factor trends for hepatitis B.

persons in all high-risk groups.”⁸⁰ It did not speculate as to why programs lagged for some groups, but it was easier for states to sponsor immunization of public employees than to allocate money for the immunization of adults who were not government affiliates. Widespread prejudice against gay men and intravenous drug users also probably made taxpayer-funded programs for them politically unviable. The ACIP did not offer recommendations for how state or federal programs could address disparities in vaccination coverage.

Immunizing high-risk groups was further complicated by epidemiological research that showed that almost a third of people with hepatitis B denied having any risk factors. The CDC concluded that some people were simply not reporting behaviors such as sex with multiple partners or intravenous drug use, but this apparent imprecision in risk classification made the CDC unsure of how to reach these populations.⁸¹

In response, in the late 1980s, CDC researchers began to seek more precise means of assessing hepatitis B risk. They turned to serological epidemiology, the use of human serum to study disease patterns, which had become a popular research methodology in the mid-20th century as a result of work by the World Health Organization to standardize practices for collecting and preserving blood samples.⁸² In 1989, Geraldine McQuillan et al. published a study in the *American Journal of Medicine* on the seroprevalence of hepatitis B in the United States and its demographic and behavioral factors.⁸³ Using preserved blood from participants in the second National Health and Nutrition Examination Survey (1976-1980), the researchers tested

⁸⁰ As of June 1985, 70 percent of states had established programs for vaccinating healthcare workers under state jurisdiction, and 75 percent had established programs for vaccinating staff at state institutions for the developmentally disabled. There were no government-sponsored immunization programs designed for gay men and intravenous drug users. CDC, “Recommendations of the Advisory Committee on Immunization Practices Update on Hepatitis B Prevention,” 353.

⁸¹ Ibid.

⁸² Radin, “Unfolding Epidemiological Stories,” 62.

⁸³ Geraldine McQuillan et al., “Seroepidemiology of Hepatitis B Virus Infection in the United States,” *The American Journal of Medicine* 87 (September 1989): 5S-10S.

the sera for antibodies to hepatitis B surface antigen. This study was the first that the CDC considered representative of the American population. Previous small studies had evaluated the seroprevalence of hepatitis B among blood donors, but this population consisted primarily of middle and upper class White men.⁸⁴

Race and biological sex were of particular interest, topics that had attracted new research attention following a 1984 Reagan administration report on health disparities.⁸⁵ Characterizing race and biological sex as “intrinsic risk factors...that are not altered by time,” McQuillan et al. used the preserved blood samples to propose a timeless relationship between identity markers and disease.⁸⁶ Yet race and sex were (and are) not causative risk factors for disease. They are at best correlative ones, contingent on geographic and temporal particularities. As environmental exposures, social relationships, sexual practices, and access to healthcare changed throughout the 1980s, relationships among race, sex, and health were constantly in flux.

Limiting their study of racial difference to a comparison of hepatitis B among White and Black Americans, McQuillan et al. found that the prevalence of hepatitis B was more than four times higher among Blacks than Whites.⁸⁷ Given that the prevalence of hepatitis B among Blacks spiked around adolescence, the researchers posited that higher rates of premarital sexual intercourse among Black teenagers were responsible for this disparity, and that the vaccine should be made available to “all persons at risk based on the epidemiology of the disease rather than self-reported risk behavior.”⁸⁸ Another CDC study published a year later made a similar

⁸⁴ Ibid, 5S-6S. See for example Wolf Szmuness et al., “Seroepidemiology of Hepatitis B Virus Infection in the United States,” *Journal of Infectious Diseases* 127 (1973): 17-25.

⁸⁵ McQuillan et al., “Seroepidemiology,” 5S-6S; Vanessa Gamble and Deborah Stone, “U.S. Policy on Health Inequities: The Interplay of Politics and Research,” *Journal of Health Politics, Policy, and Law* 31 (2006): 105.

⁸⁶ McQuillan et al., “Seroepidemiology,” 8S.

⁸⁷ The prevalence of hepatitis B was 3.2 percent among Whites compared to 13.7 percent among Blacks. Ibid, 6S.

⁸⁸ The researchers noted that the National Survey of Family Growth conducted in 1982 had demonstrated higher rates of premarital sexual intercourse among Black teenagers than White ones. Ibid, 5S-6S, 8S.

claim.⁸⁹ The conclusion by McQuillan et al. that Black people were at high risk for hepatitis B and were left out by current immunization recommendations reflected a tendency to think of, for example, gay men and Black people as mutually exclusive categories, when in reality they were overlapping. This was also an issue during the AIDS epidemic, prompting some AIDS activists to point out the intersectional experiences of Black gay men with AIDS. Sociologist and health activist Cindy Patton noted in *Gay Community News* in 1984 how CDC statistics on racial demographics in the AIDS epidemic were often misread, as “most people assume that all of the blacks are Haitian or IV users, and that all of the gays are white, but this is far from the truth. Blacks and Hispanics are over-represented in the gay AIDS cases, as well.”⁹⁰

Studies linking race with sexually transmitted diseases came under significant scrutiny after Newton Osborne and Marvin Feit asked in *JAMA* in 1992, “is racial research in medicine racist?” They argued that such studies typically relied on implicit hypotheses that Hispanics and African-Americans were more “promiscuous,” more susceptible to infections, or more likely to report infections, and noted that racial differences were used as surrogates for other socioeconomic or cultural factors. When researchers did not specify their hypotheses, it enabled data to be used to “support the view of African Americans, Spanish Americans, and Native Americans as reservoirs of diseases associated with poor judgment and character flaws.”⁹¹

⁸⁹ In *JAMA* in 1990, Miriam Alter et al. reported that the incidence of hepatitis B in non-White racial/ethnic groups was almost twice that in White populations. The authors noted that in their study, Blacks, Hispanics, and other groups who had no identifiable source for HBV infection were more likely than whites to be unemployed and posited that “although not a risk factor itself, low socioeconomic level may indicate life styles, behaviors, or habits that result in greater risk for HBV infection.” Alter et al., “The Changing Epidemiology of Hepatitis B,” 1220.

⁹⁰ Patton further described how “In New York and D.C., AIDS organizers have begun to address the racism in the gay community by holding AIDS forums that specifically deal with the different experiences of black and white gay men with AIDS.” Cindy Patton, “Illness as Weapon,” *Gay Community News* 11, no. 49, June 1984, 4.

⁹¹ Newton Osborn and Marvin Feit, “The Use of Race in Medical Research,” *JAMA* 267, no. 2 (January 1992): 275, 277.

Osborn and Feit focused on AIDS research, but their argument was equally applicable to the CDC's approach to understanding racial and ethnic disparities in hepatitis B.

The CDC studies on hepatitis B among Black people left the role of social inequality in health disparities largely unexamined. They did not discuss how race and socioeconomic status were correlated with access to healthcare, nor did they address why race was correlated with socioeconomic status in the first place. A more accurate term for health disparities affecting people of color, as critical race theorist Dorothy Roberts has argued, is health inequities, because “government and private businesses have developed inadequate and inferior healthcare resources where black people are concentrated,” and because racial inequality “makes people of color sicker in the first place.”⁹² Nor did the CDC's hepatitis B studies interrogate the myriad social and political factors that mediated connections between race and behavior. For example, as political scientist Cathy Cohen has documented, bloodborne diseases like HIV and hepatitis B disproportionately affected intravenous drug users of color partly because of racial differences in the conditions surrounding drug use. There was a greater risk of being arrested for possession of hypodermic needles and syringes in predominately Black and Latino neighborhoods under heightened police surveillance, which made Black and Latino/a drug users more likely to rent needles at shooting galleries.⁹³ By failing to account for these complex relationships, the CDC's argument that hepatitis B was more prevalent among Black Americans because of “life styles, behaviors, or habits that result in greater risk for HBV infection” pathologized Blackness.⁹⁴

⁹² Dorothy Roberts, “Debating the Cause of Health Disparities: Implications for Bioethics and Racial Equality,” *Cambridge Quarterly of Healthcare Ethics* 21 (2012): 333.

⁹³ Cohen, *Boundaries of Blackness*, 127-128

⁹⁴ Alter et al., “The Changing Epidemiology of Hepatitis B,” 1220.

In the 1980s, the CDC also turned its attention to hepatitis B in immigrant communities in the United States. Immigration to the United States had reached historic proportions.⁹⁵ Roughly a third of new immigrants came from Southeast Asia, where hepatitis B was endemic.⁹⁶ At an ACIP meeting in May 1988, Adele Franks from the CDC's Division of Reproductive Health discussed hepatitis B transmission among children born in the United States to Southeast Asian refugees.⁹⁷ Her research, later published in the *New England Journal of Medicine*, found that nearly half the hepatitis B cases among these children were not attributable to perinatal transmission from an infected mother, suggesting instead child-to-child transmission between households.⁹⁸ Her co-author Mark Kane from the CDC's Hepatitis Branch questioned whether current ACIP recommendations were adequate to disrupt such transmission.⁹⁹ In 1990, the ACIP updated its hepatitis B immunization recommendations to address "populations with high endemicity of [hepatitis B] infection," including refugees from hepatitis B-endemic areas, particularly Southeast Asia. The ACIP recommended universal vaccination of infants in these populations to prevent disease transmission during childhood, when it was most common, occurring both within and between families.¹⁰⁰

⁹⁵ Approximately nine million immigrants, including refugees, moved to the United States between 1981 and 1990. Zita Arocha, "1980s Expected to Set Mark as Top Immigration Decade," *Washington Post*, July 23, 1998. The term "immigrant" is sometimes used separately from "refugee" to denote differences in legal status. However, following Paul Ong and John Liu, I consider refugees a subset of immigrants. Paul Ong and John Liu, "U.S. Immigration Policies and Asian Migration," in *New Asian Immigration in Los Angeles and Global Restructuring*, ed. Paul Ong, Edna Bonacich, Lucie Cheng (Philadelphia: Temple University Press, 1994), 52.

⁹⁶ The 1965 Immigration Act enabled more Asians to immigrate to the United States through family reunification provisions and occupational preferences, and the 1975 Indochina Migration and Refugee Assistance Act and the 1980 Refugee Act admitted large numbers of refugees from Vietnam, Laos, and Cambodia following the United States' failed military involvement in the Vietnam War. Ong and Liu, "U.S. Immigration Policies and Asian Migration," 52; Linda W. Gordon, "Southeast Asian Refugee Migration to the United States," *Center for Migration Studies* 5, no. 3 (1987): 153.

⁹⁷ ACIP, CDC, Minutes of Meeting, May 18, 1988, records of the ACIP, NRC 442-10-002, Box 8, National Archives at Atlanta, Georgia.

⁹⁸ Adele L. Franks et al., "Hepatitis B among Children Born in the United States to Southeast Asian Refugees," *The New England Journal of Medicine* 321 (November 1989): 1301.

⁹⁹ ACIP, Minutes of Meeting, May 18, 1988.

¹⁰⁰ CDC, "Protection Against Viral Hepatitis, Recommendations of the Advisory Committee on Immunization Practices," *MMWR* 39, RR-2 (February 1990): 17, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00041917.htm>.

Asian immigrants, as American Studies scholar Lisa Lowe has argued, have often been treated as alien groups that needed to be assimilated.¹⁰¹ The CDC's research on hepatitis B transmission among children of Asian immigrants saw immigrant communities as distinct social networks through which disease could spread. The recommendation that all children of Southeast Asian refugees be vaccinated against hepatitis B both marked these communities as epidemiologically different and promoted their assimilation into the public health infrastructure of the United States. Assimilated immigrants could use American healthcare providers to vaccinate their children and thus modify their children's immune systems to prevent them from carrying a disease less common in the United States than in Asia. The immunization of the children of Southeast Asian refugees was also an important precursor to universal infant immunization a year later.

Children Take Precedence in Hepatitis B Immunization

The ACIP's approach to hepatitis B prevention shifted after serological epidemiology studies in the mid-1980s revealed that the prevalence of chronic hepatitis B in the United States was far greater than previously thought, vastly exceeding the prevalence of acute infection. The frequency of chronic hepatitis B varied widely by age group because immature immune systems have more difficulty resolving infection.¹⁰² Because infants were found to be especially at risk for chronic illness, the ACIP sought to strengthen its efforts to prevent perinatal transmission.¹⁰³ In 1988, it recommended screening all pregnant women for hepatitis B and vaccinating newborns

¹⁰¹ Lisa Lowe, *Immigrant Acts: On Asian American Cultural Politics*, (Chapel Hill: Duke University Press, 1996), 4.

¹⁰² Approximately 95 percent of infected neonates develop asymptomatic chronic hepatitis B, compared to 30 percent of children and 3 to 5 percent of adults. Lee, "Hepatitis B Virus Infection," 1737.

¹⁰³ Margolis, interview with the author. The ACIP initially recommended screening pregnant mothers who were at high risk of hepatitis B and immunizing newborns of mothers who tested positive. However, several studies found that it was too difficult for hospitals to accurately determine which mothers should be screened. ACIP, CDC, Minutes of Meeting, February 5-6, 1987, Records of the ACIP, NRC 442-10-002, Box 8, National Archives at Atlanta, Georgia; ACIP, CDC, Minutes of Meeting, October 28-29, 1987, Records of the ACIP, NRC 442-10-002, Box 8, National Archives at Atlanta, Georgia.

whose mothers tested positive.¹⁰⁴ This recommendation was successfully implemented across the country with funding from a federal grant.¹⁰⁵

The ACIP revisited the steady increase in hepatitis B cases at meetings in 1989 and 1990. It concluded that its current recommendation regarding vaccination of high-risk populations was insufficient, and a new approach was needed.¹⁰⁶ Harold Margolis, director of the CDC's Viral Hepatitis Division, suggested several ways to promote hepatitis B immunization, including expanded programs for vaccination of high-risk groups, and universal immunization of infants or adolescents. Although the ACIP had previously favored increased outreach to high-risk adults, Margolis argued for a new focus on the immunization of young people because they could "be accessed by prevention programs before high-risk lifestyles are initiated." Even though adolescents were closer to the typical age of exposure to hepatitis B, parents were more likely to take their infants for regular doctor's appointments, which made infant immunization predictable.¹⁰⁷ Margolis recalled that the high rate of chronic infection among infants was also an important factor in the ACIP's decision to shift to an infant-based strategy.¹⁰⁸ The ACIP agreed with Margolis that infant vaccination was the best way to control hepatitis B, even though it might take 15 to 20 years to see the public health effects.¹⁰⁹

¹⁰⁴ ACIP, CDC, Minutes of Meeting, February 10-11, 1988, Records of the ACIP, NRC 442-10-002, Box 8, National Archives at Atlanta, Georgia. At this time, prenatal screening was most commonly used for women at risk of having children with genetic disorders such as Tay-Sachs disease. Pregnant women were also screened for immunity to rubella, a disease which can cause birth defects, to determine whether they could be vaccinated. Neil A. Holtzman, "Prenatal Screening: When and for Whom?," *Journal of General Internal Medicine* 5 (September-October 1990): S42.

¹⁰⁵ Margolis, interview with the author.

¹⁰⁶ ACIP, Minutes of Meeting, February 21-22, 1989; ACIP, CDC, Minutes of Meeting, October 16-17, 1990, Records of the ACIP, 442-10-002, Box 10, National Archives at Atlanta, Georgia

¹⁰⁷ ACIP, Minutes of Meeting, February 21-22, 1989.

¹⁰⁸ Margolis, interview with the author.

¹⁰⁹ ACIP, Minutes of Meeting, October 16-17, 1990. By contrast, most vaccines given to children, such as those against measles and polio, addressed childhood illnesses.

In the ACIP's 1991 hepatitis B guidelines, it recommended universal vaccination of infants. It also advised immunization for adolescents who were at high risk of infection because they used intravenous drugs or had multiple sexual partners. High-risk adult groups remained on the list, but with the disclaimer that "vaccinating persons engaged in high-risk behaviors, life-styles, or occupations before they become infected generally has not been feasible."¹¹⁰

The ACIP's declaration that vaccinating high-risk adult populations was "generally not feasible" did not acknowledge the significant role that the vaccine's high cost, which was still over \$100 and rarely covered by insurance, played in deterring people from seeking immunization.¹¹¹ Given that the ACIP had devoted part of a 1989 meeting to this issue, the omission is striking.¹¹² The claim about infeasibility also obscured work by gay activists in the early 1980s to increase access to the hepatitis B vaccine. Gay clinics had rushed to acquire it, gay publications had developed public service announcements to promote vaccination awareness, gay activists had raised money to subsidize the cost of the vaccine for those who could not afford it, and gay employees at institutions like Yale had lobbied their health insurance plans for coverage of the vaccine.¹¹³ Federal and state health departments could have built on this grassroots activism and supported hepatitis B vaccination programs for high-risk adults at gay clinics and federally funded health centers.

The lack of immunization outreach initiatives likely reflected political obstacles in a decade in which President Ronald Reagan endorsed a bill that would have barred giving federal

¹¹⁰ CDC, "Hepatitis B Virus: A Comprehensive Strategy," 1-2.

¹¹¹ Ibid; John Gallagher, "The Next Epidemic? Physicians Fear Hepatitis Could be the Next Disease to Devastate the Gay Community," *Advocate*, (Los Angeles, April 28, 1998): 18.

¹¹² The ACIP had expected the cost to drop after Glaxo Smith Kline introduced its own recombinant hepatitis B vaccine, in competition with Merck, but this had not happened. ACIP, CDC, Minutes of Meeting, September 26-27, 1989, Records of the ACIP, NRC 442-10-002, Box 9, National Archives at Atlanta, Georgia.

¹¹³ Zeh, "Health Department Asks to Distribute New Vaccine"; Editorial Board, "Hepatitis, Health and the Hard Sell"; George Chauncey, "Yalies Protest Lack of Hep B Vaccine," *Gay Community News* 10, no. 34 (March 1983): 3.

funds to “any organization that suggests that homosexuality can be an acceptable alternative lifestyle” and cut funding for neighborhood health centers by 25 percent.¹¹⁴ In addition, grassroots activism to increase access to hepatitis B vaccination for high-risk adults had declined since the early 1980s because the AIDS epidemic had consumed the attention of gay health activists, obscuring the lingering problem of hepatitis.¹¹⁵ As Tony Rodriguez, a gay physician in Philadelphia, told the *Advocate*, a prominent gay newspaper, in the late 1980s hepatitis B “really was coming up on the horizon as a major public health issue, and because of the [lack of the] resources the community needed, it got lost.”¹¹⁶

The ACIP’s universal infant immunization recommendation was not intended to harm gay men and other adult groups at high risk for hepatitis B. Yet in practice, it privileged the health of young children who had not yet engaged in behaviors like sex and intravenous drug use over adults who had. In the late 20th century, law and public policy often harmed queer adults for the purported goal of protecting children who, as queer theorist Lee Edelman has argued, came to symbolize ideal citizens entitled to a full share of the nation’s future good. This phenomenon was exemplified by laws that prohibited gay marriage on the grounds that same-gender parenting would be detrimental to children.¹¹⁷ Because the federal government invested resources in childhood hepatitis B vaccination instead of programs for high-risk adult populations, it allowed some of the people most likely to contract hepatitis B to remain vulnerable to the disease. This absence was reinforced at the state level, as no states developed hepatitis B immunization programs for gay men or intravenous drug users.

¹¹⁴ U.S. Congress, House, Family Protection Act, HR 311, 97th Cong., 1st sess., introduced in House January 5, 1981, <https://www.congress.gov/bill/97th-congress/house-bill/311>; Lefkowitz, *Community Health Centers*, 17-18.

¹¹⁵ Gallagher, “The Next Epidemic?,” 18.

¹¹⁶ *Ibid.*

¹¹⁷ Lee Edelman, *No Future: Queer Theory and the Death Drive*, (Chapel Hill, Duke University Press, 2004), 11, 28-29.

The ACIP's decision to focus on infants was consistent with a strong federal emphasis on childhood vaccination since the 1960s. The Vaccination Assistance Act of 1962, giving states grants for immunization programs against diphtheria, tetanus, pertussis and polio, had prioritized preschoolers because they were at "greatest risk" from those diseases.¹¹⁸ Presidents Jimmy Carter and George H.W. Bush both had launched high-profile childhood immunization initiatives while in office.¹¹⁹ These programs had broad political appeal as cost-effective ways to improve children's health and ultimately reduce healthcare expenses.¹²⁰

While hepatitis B primarily affected adults, not children, the ACIP's decision to shift its hepatitis B control strategy to focus on infant immunization reflected the central role that childhood immunization had come to play in public health. This was not the first time that the ACIP had advised the mass immunization of children against a disease that did not directly affect them. In 1964, it had recommended vaccinating school-age children against rubella in order to prevent pregnant women from contracting the disease, which could cause devastating fetal birth defects. While rubella was not dangerous for children, immunizing them was seen as the easiest way to reduce the spread of the disease.¹²¹ Parents were motivated to have their children vaccinated against rubella, as historian Leslie Reagan has argued, by the vulnerability of the fetus, "a future imagined child carried by expectant mothers." They sought to protect the health of their own children as potential parents and of their potential grandchildren.¹²² As with

¹¹⁸ Elena Conis, *Vaccine Nation*, (Chicago: University of Chicago Press, 2015), 25.

¹¹⁹ Carter's program, introduced in 1977, sought to vaccinate 90 percent of all children against seven preventable infections within two years. It also sought to establish a permanent system to ensure the full and timely immunization of all children born in the United States. Conis, *Vaccine Nation*, 91. Bush's program, established in 1991, sought to ensure that children received all vaccinations recommended by the ACIP by age two. Diana R. Woods and Dean D. Mason, "Six Areas Lead National Early Immunization Drive," *Public Health Reports* 107, no. 3 (May-June 1992): 252.

¹²⁰ Conis, *Vaccine Nation*, 91.

¹²¹ For more on the ACIP's recommendation regarding the rubella vaccine, see Conis, *Vaccine Nation*, 76.

¹²² Leslie Reagan, *Dangerous Pregnancies: Mothers, Disabilities, and Abortion in Modern America*, (Berkeley: University of California Press, 2012), 184-185.

childhood rubella immunization, the success of universal infant hepatitis B immunization depended on parents imagining vaccination as an effective tool to ensure such future wellbeing.

CDC health education materials, as well as newspaper coverage of the ACIP's revised recommendation, promoted vaccination as a way for parents to protect against as-yet-unknown risks of their children's future lifestyles and to improve the health of the next generation. A CDC pamphlet titled *Why Does My Baby Need Hepatitis B Vaccine?*, distributed to pediatrician offices across the country in 1993, called the vaccination "an investment in your baby's future" that "protects your children from HBV if they are exposed to infection as teenagers or adults."¹²³ A 1991 article in *Redbook*, a popular women's magazine, warned that hepatitis B, "once limited to intravenous drug users and homosexual men," was "spreading among the general population" and urged readers to get themselves and their children vaccinated.¹²⁴ Thus, it implied, parents who believed their children would never have gay sex or use drugs should still immunize them to protect their future health. Further emphasizing this future vision, a 1992 article in the *Washington Post* quoted CDC officials who argued that although hepatitis B was not a major health risk for children, the hope was that "by catching infants and toddlers now, we will have a population that is 100 percent immunized, 20 years from now."¹²⁵

The ACIP's shift from selective immunization against hepatitis B to universal vaccination was an acknowledgement of the limitations of risk prediction. Given the many ways by which hepatitis B could be transmitted, it was impossible to determine precisely who would get the disease and difficult to reach those who were most at risk. At the same time, the ACIP's

¹²³ CDC, "Why Does My Baby Need Hepatitis B Vaccine?" Brochure, 1993, Records of the ACIP, NRC 442-10-002, Box 11, National Archives at Atlanta, Georgia; Harold Margolis and Walter Orenstein to "Colleague," Atlanta, Georgia, March 5, 1993, Records of the ACIP, NRC 442-10-002, Box 11, National Archives at Atlanta, Georgia.

¹²⁴ Leslie Laurence, "Beware the Quiet Killer," *Redbook* 177, no. 6, October 1991, 24, 32.

¹²⁵ Associated Press, "Hepatitis Shots Urged for Children," *Washington Post*, July 28, 1992.

recommendation rendered everyone potentially at risk of hepatitis B. This idea was powerful at a time when a million Americans were thought to carry HIV, and more than 106,000 had died, in an endless plague that one doctor described as something “Michael Crichton couldn’t have dreamt ... up.”¹²⁶ A universal hepatitis B vaccination policy both acknowledged the terrifying pervasiveness of infectious disease and maintained optimism that biomedical innovations could eventually protect everyone.

The Adolescence Paradox

The ACIP’s prioritization of universal infant vaccination came at the expense of adolescents, who were at the threshold between mostly risk-free childhoods and potentially risky adulthoods. In the United States in the 1990s, adolescents (11 to 21 years of age) and young adults (22 to 39 years of age) had the highest rates of hepatitis B because, as researchers argued in the *Journal of Adolescent Health*, they were most likely to engage in unprotected sex and needle sharing.¹²⁷ The ACIP’s decision not to emphasize adolescent vaccination was practical. Most adolescents did not have regular contact with a healthcare provider who could administer the series of three hepatitis B vaccines.¹²⁸ Adolescent medicine had emerged as a field in the 1950s, but in the following decades, as the Task Force on Pediatric Education, a group dedicated to reviewing pediatric medical training, concluded in the late 1970s, “the health needs of adolescents [were] being inadequately met.”¹²⁹ Inattention to adolescent hepatitis B immunization was thus partly a consequence of insufficient healthcare services.

¹²⁶ Michael Crichton was a popular science fiction author whose 1969 novel *Andromeda Strain* told the story of a team of scientists investigating the outbreak of a deadly extraterrestrial microorganism in Arizona. Gina Kolata, “10 Years of AIDS Battle: Hopes for Success Dim,” *New York Times*, June 3, 1991.

¹²⁷ Monique Lawrence and Mark Goldstein, “Hepatitis B Immunization in Adolescents,” *Journal of Adolescent Health* 17 (1995): 237.

¹²⁸ CDC, “Hepatitis B Virus: A Comprehensive Strategy,” 1-2.

¹²⁹ Michael Cohen, “Importance, Implementation, and Impact of the Adolescent Medicine Component of the Report of the Task Force on Pediatric Education,” *Journal of Adolescent Health Care* 1, no. 1 (1980): 1. Surveys of pediatric and internal medicine residents in the late 1980s likewise indicated that many felt undertrained in

When the American Academy of Pediatrics (AAP) published its revised hepatitis B immunization guidelines in 1992, it recommended universal immunization of adolescents “when resources permit.” Selective immunization based on risk factors, it argued, was difficult and ineffective.¹³⁰ This recommendation, which was broader than the ACIP’s, sparked debate among doctors and parents. A *Denver Post* article on the controversy explained that “while the vaccine is effective and very safe...it’s also expensive.”¹³¹ Many insurance plans did not cover immunization or even non-urgent doctor’s visits for adolescents.¹³²

Support for adolescent hepatitis B vaccination grew in the early 1990s, despite barriers. The National Foundation for Infectious Diseases (NFID) ran a high-profile campaign to promote vaccination among adolescents and young adults.¹³³ In many states, as part of AIDS prevention initiatives, sex education in schools was becoming common.¹³⁴ At the same time, as a result of lobbying by conservative groups such as the Heritage Foundation, a growing number of sex education teachers only taught abstinence, and some were prohibited by state law from discussing homosexuality.¹³⁵

The NFID circulated a poster with the tagline “get the facts, then get the vax” under a graphic of a vaccine plunging into the words “hepatitis B virus” stylized with dripping blood. In

adolescent healthcare. Heather Munro Prescott, *A Doctor of Their Own: The History of Adolescent Medicine* (Cambridge: Harvard University Press, 1998), 170.

¹³⁰ American Academy of Pediatrics Committee on Infectious Disease, “Universal Hepatitis B Immunization,” *Pediatrics* 89, no. 4 (April 1992): 798. At the time, the ACIP and AAP each published their own immunization recommendations, which closely followed each other but were not identical. Sometimes this caused confusion among healthcare providers, who took guidance from both sets of recommendations. Margolis, interview with the author.

¹³¹ Diane Eicher, “Hepatitis B Vaccine Carries a Quandary; Debate Rages over Necessity of Wide Usage,” *Denver Post*, June 27, 1994.

¹³² *Ibid.*

¹³³ *Ibid.*

¹³⁴ Laura Duberstein Lindberg, Leighton Ku and Freya Sonenstein, “Adolescents’ Reports of Reproductive Health Education, 1988 and 1995,” *Family Planning Perspectives* 32, no. 5 (September-October 2000): 222.

¹³⁵ Such curricula presented abstinence until heterosexual marriage as the solution for society’s sexual problems. Jeffrey P. Moran, “Sex Education and the Rise of the New Right,” *Reviews in American History* 31, no. 2 (June 2003): 286-287.

bold red lettering, the poster warned that the disease was “100 times more contagious than AIDS” and “can kill you.”¹³⁶ The comparison to AIDS was powerful. By 1995, more than half a million AIDS cases had been reported to the CDC, and almost two-thirds of those people had died.¹³⁷ AIDS threatened adolescents as well as adults. While AIDS still disproportionately affected gay men, there was growing recognition that everyone was susceptible to the disease.¹³⁸ The availability of a safe, effective hepatitis B vaccine contrasted starkly with the lack of a HIV vaccine, which had been in clinical trials at the National Institutes of Health (NIH) since 1987.¹³⁹

The NFID also published a brochure for adolescents featuring the well-known sex educator Ruth Westheimer. She deemphasized the role of sex in spreading hepatitis B, warning that “anyone can get hepatitis B, not just those who are sexually active.”¹⁴⁰ By highlighting nonsexual hepatitis B transmission, Westheimer defended hepatitis B immunization against charges that it was irrelevant as long as adolescents practiced abstinence. She also disrupted the narrative that the disease was only a problem for “promiscuous” gay men and others with supposedly “deviant” sexualities.

Separating hepatitis B from stigmatized sexualities was, as sociologists Laura Mamo and Steven Epstein have argued, part of a longer process of “desexualization” that had begun with the ACIP’s universal infant vaccination recommendation in 1991.¹⁴¹ Yet the bold language and blood-filled graphics in the NFID campaign demonstrate that even as hepatitis B came to be seen

¹³⁶ National Foundation for Infectious Diseases, “Hepatitis B: Get the Facts, then Get the Vax,” Poster, 1994, *U.S. National Library of Medicine Digital Collections*, accessed March 11, 2018, <https://resource.nlm.nih.gov/101449865>. See Figure 5.

¹³⁷ CDC, “First 500,000 AIDS Cases – United States, 1995,” *MMWR* 44, no. 46 (November 1995): 849, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00039622.htm>.

¹³⁸ Between 1993 and 1995, gay men accounted for less than half of new AIDS cases. *Ibid.*

¹³⁹ National Institute of Allergy and Infectious Diseases, “History of HIV Vaccine Research,” *NIAD*, last modified October 22, 2018, <https://www.niaid.nih.gov/diseases-conditions/hiv-vaccine-research-history>.

¹⁴⁰ Eicher, “Hepatitis B Vaccine Carries a Quandary.”

¹⁴¹ Mamo and Epstein, “The Pharmaceuticalization of Sexual Risk,” 160.

as more than a sexually transmitted disease, it was still stigmatized as a consequence of carelessness.

The NFID campaign promoted hepatitis B vaccination as a way for adolescents to take responsibility for their health at a time when Americans were increasingly expected to regulate their wellbeing through self-education, self-surveillance, and risk reduction.¹⁴² Yet the NFID's catchy slogan "get the facts, then get the vax" ignored the obstacles that young people might face when seeking vaccination, from lack of access to a provider who could administer the vaccine, to the high cost of the vaccine itself. Still, some state and local health departments established hepatitis B immunization programs for adolescents to circumvent such barriers. In 1992, for example, the Oregon Department of Human Resources established a free, statewide hepatitis B vaccination program in facilities that served adolescents who were at increased risk of the disease, including juvenile detention centers and family-planning clinics.¹⁴³ A year later, the Minnesota Department of Health established similar programs as part of a statewide commitment to universal adolescent hepatitis B vaccination.¹⁴⁴

By the mid-1990s, there was a growing consensus among public health experts that an effective hepatitis B prevention strategy should fully include adolescents.¹⁴⁵ In October 1994, the ACIP expanded its recommendation to include all 11- and 12-year-olds who had not received the vaccine.¹⁴⁶ It acknowledged that routine infant vaccination, while effective, might not reduce the

¹⁴² Clarke et al., "Biomedicalization," 172.

¹⁴³ The same year, the San Francisco Department of Public Health began voluntary hepatitis B vaccination programs in several middle schools. A middle school in Baton Rouge, Louisiana started a similar program. CDC, "Hepatitis B Vaccination of Adolescents – California, Louisiana, and Oregon, 1992-1994, MMWR 43, 1994," *JAMA* 272, no. 14 (1994): 1096, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00032366.htm>.

¹⁴⁴ Michael Osterholm, "Hepatitis B in Minnesota: A Case for Universal Immunization," *The Pediatric Infectious Disease Journal* 17, no. 7 (July 1998): S30.

¹⁴⁵ Lawrence and Goldstein, "Hepatitis B Immunization in Adolescents," 240.

¹⁴⁶ CDC, "Notice to Readers Update: Recommendations to Prevent Hepatitis B Virus Transmission -- United States," *MMWR* 44, no. 30 (August 1995): 574-575, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00056293.htm>

incidence of hepatitis B for 20 to 30 years, but hoped that adolescent immunization would produce quicker results.¹⁴⁷

This shift was facilitated by the expansion of adolescent health as a medical subfield. The Society for Adolescent Medicine established board certification in 1993 to attract more primary caregivers.¹⁴⁸ The recognition of adolescent medicine as a legitimate subspecialty made it easier for healthcare practitioners to think about adolescents as a distinctive risk group for hepatitis B who needed specialized intervention.¹⁴⁹

Universal adolescent immunization was also made possible by new federal immunization funding through the Vaccines for Children Act, which went into effect in 1994.¹⁵⁰ The Act, an initiative of President Bill Clinton, provided free vaccines recommended by the ACIP to Native American and Alaska Native children, children covered by Medicaid, and children without health insurance.¹⁵¹ The ACIP persuaded Congress to cover hepatitis B immunization for adolescents as well as infants.¹⁵²

While the Vaccines for Children Act made hepatitis B vaccination available to an unprecedented number of young people, the vaccine remained prohibitively expensive for many adults. In a 1998 *Advocate* article, John Gallagher complained that health insurance companies were often reluctant to cover adult vaccination, which made it difficult for gay men to protect themselves against hepatitis B. Infection rates among gay men had declined slightly in the late

¹⁴⁷ Ibid.

¹⁴⁸ Prescott, *A Doctor of Their Own*, 172.

¹⁴⁹ Adolescent hepatitis B vaccination made further progress in 1996 when the CDC published a comprehensive report on adolescent immunization based on recommendations by the ACIP, the AAP, the American Academy of Family Physicians, and the American Medical Association. The report recommended a routine healthcare provider visit at 11-12 years of age as part of a comprehensive strategy to improve adolescent vaccination rates and integrate vaccination with other preventative services. CDC, "Immunization of Adolescents," *MMWR* 45, no RR-13 (November 1996): 1, <https://www.cdc.gov/mmwr/PDF/rr/rr4513.pdf>.

¹⁵⁰ Margolis, interview with the author.

¹⁵¹ Conis, *Vaccine Nation*, 175

¹⁵² Margolis, interview with the author.

1980s and early 1990s as a result of safer sex practices, such as condom use, adopted in the wake of the AIDS epidemic. However, Gallagher warned, commitment to safer sex was “eroding among some gay men,” and as a result, “healthcare providers are concerned that hepatitis will quickly become a major health issue once more.” Because of low vaccination rates, hepatitis B again had the potential to “devastate the gay community.”¹⁵³

Challenges to Universal Hepatitis B Vaccination

Following the ACIP’s 1991 recommendation, states gradually began to require hepatitis B immunization for kindergarten entry.¹⁵⁴ Such requirements had become popular since the 1960s, when the CDC promoted immunization mandates as part of a measles eradication campaign. These laws, as historian James Colgrove has argued, represented an effort to remedy health disparities using the tools of the administrative state. Compulsory vaccination was intended not only to control contagion but also to ensure that all children, regardless of class, received protection.¹⁵⁵ By 1998, 28 states required hepatitis B vaccination for school entry.¹⁵⁶

As hepatitis B vaccination became more common, it also came under new scrutiny. *Science* declared in 1998 that “a shadow falls on [the] hepatitis B vaccination effort,” as a small but growing number of people who had received the hepatitis B vaccine claimed to have experienced serious adverse effects from vaccination. They reported a variety of autoimmune and nervous system disorders, including multiple sclerosis. Researchers such as Bonnie Dunbar, a molecular biologist at the Baylor College of Medicine in Houston, proposed that the vaccine might trick recipients’ immune systems into attacking their own tissues. While there was no

¹⁵³ Gallagher, “The Next Epidemic?”

¹⁵⁴ Kevin Malone and Alan Hinman, “Vaccination Mandates: The Public Health Imperative and Individual Rights,” in *Law in Public Health Practice*, ed. Richard A. Goodman et al. (Oxford: Oxford University Press, 2003), 270. For a complete list of hepatitis B prevention mandates by state, see figure 6.

¹⁵⁵ James Colgrove, *State of Immunity: The Politics of Vaccination in 20th Century America* (Berkeley: University of California Press, 2006), 175.

¹⁵⁶ Malone and Hinman, “Vaccination Mandates,” 270.

laboratory evidence to support this hypothesis, it was plausible, as a similar autoimmune mechanism had been documented for arthritis caused by Lyme disease.¹⁵⁷

Other vaccines had also recently come under scrutiny. A 1982 NBC investigative report had spurred public outrage by claiming that the pertussis component of the diphtheria-pertussis-tetanus (DPT) vaccine caused severe adverse effects in one out of 7,000 children. Scientists and doctors denounced the report, calling it distorted and inaccurate.¹⁵⁸ Nonetheless, Congress responded by passing the 1986 National Childhood Vaccine Injury Act, which required doctors to report vaccine reactions and established a vaccine tax to compensate the families of vaccine-injured children.¹⁵⁹

Fears that vaccines were injuring children were revived in 1998, when British gastroenterologist Andrew Wakefield published a study in the *Lancet* suggesting that the measles-mumps-rubella (MMR) vaccine could cause autism.¹⁶⁰ MMR vaccination rates in Britain and the United States dropped. Wakefield was later found guilty of scientific misconduct and had his medical license revoked, and in 2011 the *Lancet* retracted his study, but the damage to public confidence in vaccines was significant.¹⁶¹ Around the same time, an FDA report sparked public concern over the mercury content of vaccines against influenza and hepatitis B, which were preserved with the mercury-containing compound thimerosal. Congress had requested that the FDA evaluate the mercury content of pharmaceuticals and biologics in

¹⁵⁷ Eliot Marshall, "A Shadow Falls on Hepatitis B Vaccination Effort," *Science* 281, no. 5377 (July 1998): 630-631.

¹⁵⁸ While the vaccine could cause devastating side effects in children such as convulsions, brain damage, and death, these adverse events were very rare. Government statistics on the pertussis vaccine indicated that brain damage occurred once in every 100,000 to 172,000 shots. Conis, *Vaccine Nation*, 116, 122-123.

¹⁵⁹ James Colgrove, "Immunity for the People: The Challenge of Achieving High Vaccine Coverage in American History," *Public Health Chronicles* 122 (March-April 2007): 255.

¹⁶⁰ James Colgrove, *State of Immunity: The Politics of Vaccination in 20th Century America* (Berkeley: University of California Press, 2006), 229.

¹⁶¹ Elena Conis, "Vaccines, Pesticides, and Narratives of Exposure and Evidence," *AMS Paterson Lecture—Conference AMS Paterson 2016*, 301.

response to recent research indicating potentially harmful levels of mercury in people's bodies.¹⁶² In 1999, the Public Health Service and the AAP issued a statement asking manufacturers to eliminate or reduce the mercury content of their vaccines. Although public health experts debated the necessity of this decision, as Elena Conis has shown, the statement and subsequent vaccine reformulations supported rumors that vaccine ingredients were dangerous substances.¹⁶³

New anti-vaccine organizations emerged in response to these immunization anxieties. Most notable was the National Vaccine Information Center (NVIC), founded in the early 1980s by parents who believed that their children had been injured by vaccines.¹⁶⁴ Rejecting the CDC's dictum that if a vaccine prevented many infectious disease deaths, a small number of vaccine injuries were acceptable, the group proclaimed, "When it happens to you or your child, the risks are 100%."¹⁶⁵ The organization became a prominent voice against universal hepatitis B vaccination.¹⁶⁶

Critics of universal hepatitis B vaccination were part of a world in which environmental risk was pervasive. Disasters at Chernobyl, Love Canal, Three Mile Island, and Bhopal did not spare people based on race, ethnicity, or socioeconomic status. As a result, even privileged segments of society began to exhibit symptoms of what social theorist Ulrich Beck termed the "risk society": a condition of terror and desperation coming from an inability to calculate the potential harms

¹⁶² Mercury exposure can cause damage to the nervous, digestive and immune systems. Ibid.

¹⁶³ Ibid, 304.

¹⁶⁴ The parents had called the NBC station in Washington, D.C. following the broadcast of *DPT: Vaccine Roulette*, and NBC had put them in touch. Conis, *Vaccine Nation*, 116, 123.

¹⁶⁵ Barbara Loe Fisher, "Hepatitis B Vaccine: The Untold Story," *The Vaccine Reaction* 1, September 1998, 5.

¹⁶⁶ People who reported autism-related disorders to the federal Vaccine Adverse Events Reporting System (VAERS) in the 1990s were as familiar with the NVIC as they were with the CDC. Emily Jane Woo et al., "Vaccine Risk Perception Among Reporters of Autism After Vaccination: Vaccine Adverse Event Reporting System 1990–2001," *American Journal of Public Health* 94, no. 6 (June 2004): 94.

caused by everyday life.¹⁶⁷ Don DeLillo's novel *White Noise*, the 1985 winner of the National Book Award, used fiction to capture this all-pervasive dread by depicting a world in which, "every day on the news there's another toxic spill. Cancerous solvents from storage tanks, arsenic from smokestacks."¹⁶⁸ Rhetoric about the threat that vaccines posed to children's health was thus part of a larger discourse in the late 20th-century United States about the omnipresence of environmental hazard.¹⁶⁹

In 1995, in response to reports of a possible link between the hepatitis B vaccine and multiple sclerosis, Merck convened a meeting of vaccine experts from the CDC, the NIH, pharmaceutical companies, and the World Health Organization. The panel found that the vaccine had no statistically significant association with the onset or exacerbation of multiple sclerosis but recommended additional epidemiological studies to assuage public concern.¹⁷⁰ The recommendation did not resolve debates about hepatitis B vaccination, which were driven by questions about what evidence was needed to determine that a vaccine was safe, and who had the authority to judge that evidence. For those who suspected that the hepatitis B vaccine could cause multiple sclerosis, epidemiological studies that indicated the vaccine was safe simply had not yet asked the right questions. The as-yet-unknown loomed large at a time when new knowledge seemed to be accumulating at an ever faster rate.¹⁷¹

Several groups of people in the United States and Europe who claimed to have been injured by hepatitis B vaccination sued for compensation from vaccine manufacturers and

¹⁶⁷ Ulrich Beck, *Risk Society: Towards a New Modernity*, trans. Mark Ritter (London: Sage Publications 1992), 49, 51.

¹⁶⁸ Don DeLillo, *White Noise*, (New York: Viking Press, 1985), 166.

¹⁶⁹ For a literary analysis of rhetoric about environmental hazard and toxicity during this time, see Lawrence Buell, "Toxic Discourse," *Critical Inquiry* 24, no. 3 (Spring 1998): 639-665.

¹⁷⁰ Marshall, "A Shadow Falls on Hepatitis B Vaccination Effort," 630-631.

¹⁷¹ As Adams, Murphy, and Clarke have observed, a defining feature of modernity is "the acknowledgement of an ongoing deferral of truth as ever changing (as more sophisticated ways of knowing it continually emerge)." Adams, Murphy, and Clarke, "Anticipation," 247.

demanded that compulsory vaccination be stopped.¹⁷² Lawsuits to address alleged harm from the vaccine were a form of resistance to a phenomenon that legal historian Barbara Young Welke has described as “owning hazard” in the goods of everyday life. Welke developed this concept through her study of injurious consumer products in the postwar United States, such as cowboy suits made from flammable fabric, which caused hundreds of young children to be badly burned or killed.¹⁷³ Companies were required to provide monetary compensation to consumers for accidental injury or death, but this offered little comfort. No amount of money could repair the damage endured.¹⁷⁴ Lawsuits by people who believed that they suffered from neurodegenerative disorders because of hepatitis B vaccination promoted the idea that individuals should not be compelled to incur hazard in the form of immunization for the benefit of the population.

Reports of hepatitis B vaccine injuries attracted particular attention in France, where a Paris physician had identified more than 600 cases of illness, many with multiple sclerosis-like symptoms, in people who had received the hepatitis B vaccine. An alliance of 15,000 activists sued the national government, accusing it of understating the hepatitis B vaccine's risks and exaggerating its benefits for the average person.¹⁷⁵ The French Ministry of Health fueled public alarm a few months later when it suspended hepatitis B vaccination in schools, pending an investigation into the possibility that the vaccine could cause multiple sclerosis.¹⁷⁶ This decision came just a few years after the French government was embroiled in a national scandal caused by the revelation that the national center for blood transfusions had knowingly distributed HIV-

¹⁷² Marshall, “A Shadow Falls on Hepatitis B Vaccination Effort,” 630-631.

¹⁷³ Barbara Young Welke, “The Cowboy Suit Tragedy: Spreading Risk, Owning Hazard in the Modern American Consumer Economy,” *Journal of American History* 101, no. 1 (June 2014): 100.

¹⁷⁴ *Ibid.*, 98-101, 117-121.

¹⁷⁵ Marshall, “A Shadow Falls on Hepatitis B Vaccination Effort,” 630-631.

¹⁷⁶ Alexander Dorozynski, “Suspension of Hepatitis B Vaccination Condemned,” *British Medical Journal* 317 (October 1998): 1034.

contaminated blood products to hemophiliacs in 1984 and 1985.¹⁷⁷ Even though by the 1990s, hepatitis B vaccines were manufactured from recombinant DNA instead of plasma, the powerful specter of “tainted blood” made people particularly wary of introducing foreign elements into their bloodstream.

In the United States, after the French government suspended adolescent hepatitis B vaccination, the ACIP immediately denounced the decision. It resolved to develop a coherent media outreach strategy to address misinformation about the hepatitis B vaccine and other immunizations, hoping to prevent the French government’s actions from exacerbating vaccine hesitancy in the United States.¹⁷⁸ The AAP and the Multiple Sclerosis Society also issued statements reaffirming their endorsement of hepatitis B vaccination as exceptionally safe and effective.¹⁷⁹

Yet American vaccination critics continued to voice their skepticism. In a 1998 special report on hepatitis B vaccination in the NVIC’s magazine *Vaccine Reaction*, Barbara Loe Fisher, NVIC president, contended that not only was there not enough evidence for the safety of hepatitis B immunization, but also compulsory immunization was unnecessary because the disease was not common in childhood, unlike other infectious diseases such as chickenpox and measles for which vaccines were required. Hepatitis B, she emphasized, was “primarily an adult disease....prevalent in high risk populations such as needle using drug addicts; sexually promiscuous heterosexual and homosexual adults; [and] residents and staff of custodial institutions such as prisons.” These sentiments, she said, had been voiced by parents across the

¹⁷⁷ Jane Kramer, “Bad Blood,” *The New Yorker* 69, no. 33 (1993): 74-95; Alan Riding, “Scandal Over Tainted Blood Widens in France,” *New York Times*, February 13, 1994.

¹⁷⁸ ACIP, CDC, “Minutes of Meeting 21 October 1998,” 74-75, 79-90 in Records of the ACIP, NRC 442-10-002, Box 6, National Archives at Atlanta, Georgia.

¹⁷⁹ Dorozynski, “Suspension of Hepatitis B Vaccination Condemned,” 1034; U.S. Congress, *Hepatitis B Vaccine: Helping or Hurting Public Health*, 10.

country who had contacted the NVIC to complain about the ACIP's 1991 recommendation and subsequent immunization laws.¹⁸⁰ While these statements reflected a popular narrative about hepatitis B, they distorted the actual epidemiology of the disease in the United States, where by 1988, 30 percent of hepatitis B cases had no known source, and about 25,000 children under five contracted the disease each year.¹⁸¹

In New Jersey, when the state legislature was debating a bill to require hepatitis B immunization for school entry, Republican State Senator C. Louis Bassano voiced similar skepticism about the vaccine's relevance to most children. "They are trying to treat the wrong people with this vaccine," he declared. "They can't reach the adults through education, so this is their solution. I think it is a poor one." The bill did not pass.¹⁸² Such rhetoric imagined groups such as intravenous drug users and gay men as dangerous reservoirs of hepatitis B, whose unwillingness to get vaccinated necessitated a universal immunization policy that exposed vulnerable infants to a potentially harmful vaccine. It echoed the fear that gay men who donated plasma to produce Heptavax-B could transmit AIDS to those who were vaccinated.

Biological and social toxicity have a fluid relationship in modern American rhetoric, as Mel Chen has argued. Toxicity has become a common metaphor (the toxic personality, the toxic political atmosphere). This has raised the visibility of toxicity's companion, the "threatened immunity" of a biological or social entity that must be protected.¹⁸³ Fear about the potential harms caused by the hepatitis B vaccine led to arguments for limiting immunization to groups such as gay men and intravenous drug users on the (epidemiologically inaccurate) basis that they

¹⁸⁰ Fisher, "Hepatitis B Vaccine," 1.

¹⁸¹ Alter et al., "The Changing Epidemiology of Hepatitis B," 1218.

¹⁸² Lisa Suhay, "A Skirmish over the Hepatitis B Vaccination: Health Department Steps in and Leaves the Parents Out," *New York Times*, July 18, 1999.

¹⁸³ Chen, *Animacies*, 191, 194.

were the only ones at risk of hepatitis B because of their “immoral” lifestyles. This paradigm inscribed biological risk onto the bodies of groups who were already associated with moral hazard.

The U.S. House of Representatives Subcommittee on Criminal Justice, Drug Policy, and Human Resources held a hearing in May 1999 titled “Hepatitis B Vaccine: Helping or Hurting Public Health?” as part of a series of hearings on childhood immunization.¹⁸⁴ During the hearing, parents who opposed compulsory hepatitis B vaccination asked Congress why it was necessary to immunize infants against a disease that primarily affected adults and adolescents.¹⁸⁵ Most diseases that are part of the childhood vaccination schedule, like measles, cause obvious symptoms in children and can spread rapidly through schools and daycare facilities. By contrast, even when hepatitis B is contracted in childhood, the chronic form of the disease often does not manifest symptoms of liver scarring, cancer, or failure until adulthood.¹⁸⁶ Michael Belkin, whose infant daughter had died hours after her second hepatitis B vaccine, declared that “newborn babies are not at risk of getting this disease.”¹⁸⁷ Judy Converse, whose infant son had started having seizures five hours after his first hepatitis B vaccine, echoed this sentiment:

The immunity [the vaccine] imparts wears off before a child is old enough to have sex with an infected partner or use contaminated needles, which are the foremost modes of transmission. Therefore, it is my opinion that there is no benefit and only risk for newborns receiving this vaccine.¹⁸⁸

Other critics suggested that children would only benefit from hepatitis B immunization if they lived with parents whose sexual practices or drug use made them likely disease carriers. For

¹⁸⁴ Colgrove, *State of Immunity*, 231.

¹⁸⁵ U.S. Congress, *Hepatitis B Vaccine: Helping or Hurting Public Health*, 34.

¹⁸⁶ Colgrove, *State of Immunity*, 150.

¹⁸⁷ U.S. Congress, *Hepatitis B Vaccine: Helping or Hurting Public Health*, 12.

¹⁸⁸ Ibid, 16. In fact, according to CDC data collected in the early 1990s, hepatitis B vaccines given to infants had long-term efficacy. Harold S. Margolis, Miriam J. Alter, and Stephen C. Hadler, “Hepatitis B: Evolving Epidemiology and Implications for Control,” *Seminars in Liver Disease* 11, no. 2 (1991): 90.

example, subcommittee member Democratic Representative John Tierney quoted a vaccine skeptic who asked, “Does a baby born of stable parents in a good environment have enough chance of getting hepatitis B to warrant subjecting it to...an unknown danger?”¹⁸⁹ Such claims were laden with coded racial and ethnic stereotypes.¹⁹⁰ Given that studies in the late 1990s had found that Blacks, Asian Americans, and Pacific Islanders had higher exposure to hepatitis B than Whites, rhetoric about “stable parents in a good environment” whose children did not need hepatitis B vaccination was an encoded way of saying “White parents.”¹⁹¹

Vaccination supporters at the hearing tried to downplay hepatitis B’s association with demonized adult groups by focusing on the vulnerability of children and people without known risk factors for the disease. Harold Margolis reminded Congress about the 25,000 young children exposed to the hepatitis B virus in their households and communities each year. He emphasized that 90 percent of infants and 30 to 60 percent of children under five who contracted hepatitis B remained chronically infected throughout their lives. He also warned that “because hepatitis B produces a chronic infection, a decision not to vaccinate a child not only puts that child at risk of infection, but puts others in the community at risk as well.”¹⁹² Barbara Hahn, a former deaf interpreter living with hepatitis B, told the subcommittee that she was part of the 40 percent of hepatitis B patients who would never know how they got sick. Despite the stigma surrounding her disease, she knew that she had not acquired the infection from sexual contact, drug use, or tattoos. She said that she

¹⁸⁹ U.S. Congress, *Hepatitis B Vaccine: Helping or Hurting Public Health*, 42.

¹⁹⁰ Environmental historian Carl Zimring has shown that in the United States, the mutual construction of ideas about race and the environment, and particularly race and waste, has given rise to a White identity synonymous with cleanliness. Carl Zimring, *Clean and White: A History of Environmental Racism in the United States* (New York: New York University Press, 2016).

¹⁹¹ Christine Crews, “Deadly Disease Ravaging Black Community,” *Philadelphia Tribune*, March 2, 1999.

¹⁹² U.S. Congress, *Hepatitis B Vaccine: Helping or Hurting Public Health*, 34-37.

supported universal hepatitis B immunization to protect people without any known risk factors for the disease.¹⁹³

Critics of the ACIP's policy, like Fisher and Bassano, reinforced the marginalization of groups like gay men and intravenous drug users when they claimed that universal vaccination of infants was "trying to treat the wrong people with this vaccine," suggesting that hepatitis B prevention should be the concern of those who put themselves at risk for the disease, not the general public.¹⁹⁴ Yet vaccination advocates during the 1999 hearing also contributed to the erasure of stigmatized groups at high risk by focusing on the vulnerability of people outside those groups to justify a robust prevention strategy. When advocates such as Margolis and Hahn highlighted the prevalence of hepatitis B among children and adults who did not engage in intravenous drug use or have multiple or same-sex partners, they appealed to the notion that such people deserved good health to justify hepatitis B immunization as a public priority.¹⁹⁵

Conclusion

Despite the controversies, between 1993 and 2000 the hepatitis B vaccination rate among American children aged 19 to 35 months increased from 16 percent to 90 percent.¹⁹⁶ By 2018, 46 states had implemented laws requiring hepatitis B immunization for school entry.¹⁹⁷ As universal infant vaccination has become widely accepted, hepatitis B immunization has been stripped of its association with sexual health, as Laura Mamo and Steven Epstein have shown.¹⁹⁸ In the 1980s, David Ostrow recalled, when someone went to a gay clinic to be immunized against hepatitis B,

¹⁹³ Ibid 19-20

¹⁹⁴ Suhay, "A Skirmish over the Hepatitis B Vaccination."

¹⁹⁵ Rhetoric of deservingness had been influential in American social welfare since the 19th century, when supposedly lazy "paupers" were relegated to poorhouses while others were aided in less demeaning ways. George Sher, "Health Care and the 'Deserving Poor,'" *The Hastings Center Report* 13, no. 1 (February 1983): 9.

¹⁹⁶ CDC, *MMWR* 51, no. 25 (June 2002): 549.

¹⁹⁷ Immunization Action Coalition, "Hepatitis B Prevention Mandates for Daycare and K-12," *Immunize*, last modified November 11, 2018, <http://www.immunize.org/laws/hepb.asp>.

¹⁹⁸ Mamo and Epstein, "The Pharmaceuticalization of Sexual Risk," 159-160.

his doctor would not give him a shot and send him on his way. Rather, the patient would be encouraged to have an in-depth conversation about his sexual practices and safer sex. These conversations included topics such as poppers and anal fisting that mainstream healthcare providers did not know or were reluctant to discuss. They spanned physical and mental health, an important intersection at a time when many gay men were openly shunned.¹⁹⁹

By contrast, since the early 1990s, when a nurse immunizes a baby against hepatitis B in a maternity ward shortly after delivery, there is no discussion of how this might fit into the framework of sexual health. Hepatitis B has become another disease prevented through immunization. This trend has reduced stigma, but it may also signal that the comprehensive approach to sexual health that people like Ostrow championed is being deprioritized in favor of a technoscientific prevention model. While the latter is effective at addressing specific diseases, there are many aspects of sexual health that it leaves out.

In 2006, debates about the use of compulsory vaccination to reduce the prevalence of a sexually transmitted disease were revived by the FDA's licensure of Merck's Gardasil, the first human papillomavirus (HPV) vaccine. HPV, the most common sexually transmitted disease in the United States, often goes away without causing health problems, but sometimes it persists and can cause cervical and other cancers.²⁰⁰ In 2007, the ACIP recommended the vaccine for

¹⁹⁹ Ostrow, interview with the author.

²⁰⁰ The HPV vaccine was the second immunization, after the hepatitis B vaccine, to prevent a sexually transmitted disease and a virus associated with cancer. HPV is most commonly associated with cervical cancer, but it is also linked to cancers of the vulva, penis, anus, and throat. The causal connection between some types of HPV and cancer is complex and not fully understood. For more on the relationship between virus and disease process, and the erasure of that complexity in many public discussions of HPV, see Lundy Braun and Ling Phoun, "HPV Vaccination Campaigns: Masking Uncertainty, Erasing Complexity," in *Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine's Simple Solutions*, ed. Keith Wailoo, Julie Livingston, Steven Epstein, and Robert Aronowitz, (Baltimore: Johns Hopkins University Press, 2010), 39-60.

girls between 9 and 26 to prevent HPV-induced cervical cancer later in life. Soon, Merck started lobbying state legislatures to make it mandatory.²⁰¹

That year, Republican Governor of Texas Rick Perry issued an executive order requiring Texas girls to be vaccinated against HPV prior to sixth grade, making Texas the first state with such a mandate. He also directed state health authorities to make the vaccine available for free to the underinsured.²⁰² The order, which seemed to defy the Texas Republican party's strong abstinence platform, angered lawmakers in the Republican-controlled legislature.²⁰³ Evangelical communities in Texas organized to repeal it, arguing that it interfered with parents' rights to raise their children and encouraged premarital sex. A month later, the Texas legislature passed a bill nullifying the mandate.²⁰⁴ Recognizing that a veto would be politically inflammatory, Perry allowed the bill to become law without his signature, and HPV vaccination was no longer required for Texas adolescents. In his comments on the bill, he chastised the legislature, arguing that even women who abstain from sex until marriage could "become victims of this insidious virus."²⁰⁵ At stake in the controversy were questions about what futures young girls were expected to have and how HPV vaccination might change those futures.

Merck's rush to lobby for vaccination mandates before Gardasil was well established as an adolescent health intervention impeded vaccine acceptance in the years that followed. The HPV controversy has attracted scholarly attention because it has provided an opportunity to

²⁰¹ Andrew Pollack and Stephanie Saul, "Merck to Halt Lobbying for Vaccine for Girls," *New York Times*, February 21, 2007.

²⁰² Associated Press, "Texas Governor Orders STD Vaccine for All Girls," *NBC News*, February 3, 2007.

²⁰³ Wade Goodwyn, "In Texas, Perry's Vaccine Mandate Provoked Anger," *NPR*, September 16, 2011.

²⁰⁴ Public opinion was further damaged by revelations that Perry's former chief of staff, Mike Toomey, had been paid several hundred thousand dollars to lobby for Merck, and that Merck's political action committee had donated \$5,000 to the governor's campaign during negotiations with his staff. Ibid.

²⁰⁵ They could, for example, contract the disease if they married someone with HPV. Rick Perry, Message for H.B. 1098, "An Act Pertaining to Immunization against Human Papillomavirus," May 8, 2007, 1-3, https://lrl.texas.gov/scanned/govdocs/Rick%20Perry/2007/HB1098_filingMessage.pdf.

study the intersection of governance, global equity, scientific evidence, and sexuality with respect to public health.²⁰⁶ Several scholars seeking to contextualize and address low HPV vaccination rates have looked to the history of hepatitis B immunization policy.²⁰⁷

Expansion of compulsory hepatitis B immunization has greatly reduced the prevalence of the disease among children and young adults.²⁰⁸ As a result, many thousands fewer people have had to contend with it and subsequent liver deterioration. Yet this is not a straightforward success story. For decades after the development of a safe and effective vaccine, the prevalence of hepatitis B among adults 50 years of age and older increased, because high-risk adults continued to contract the disease at pre-vaccine rates.²⁰⁹

While the ACIP correctly observed in its 1991 recommendation that immunizing adults against hepatitis B was more difficult than immunizing children, its gloss of adult immunization as “generally not feasible” foreclosed possibilities for community health collaborations. As I have shown, in the 1980s there was a robust network of gay health providers and activists who worked to make the hepatitis B vaccine available to the many gay men who wanted it. The CDC did not develop immunization outreach initiatives in collaboration with gay clinics and

²⁰⁶ Keith Wailoo et al., “Introduction,” in *Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine’s Simple Solutions*, ed. Keith Wailoo, Julie Livingston, Steven Epstein, and Robert Aronowitz, (Baltimore: Johns Hopkins University Press, 2010), xiii.

²⁰⁷ Historian Jason Schwartz has found that HPV immunization mandates have lagged far behind hepatitis B immunization mandates and therefore has recommended developing new strategies to increase HPV vaccination rates. Jason Schwartz and Laurel Easterling, “State Vaccination Requirements for HPV and Other Vaccines for Adolescents, 1990-2015,” *JAMA* 314, no. 2 (July 2015): 185. James Colgrove has identified mandatory hepatitis B vaccination as a precedent for requiring immunization against HPV, which is not casually transmissible, on the grounds that it would reduce human suffering and healthcare costs.²⁰⁷ James Colgrove, “The Coercive Hand, the Beneficent Hand: What the History of Compulsory Vaccination Can Tell Us about HPV Vaccine Mandates,” in *Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine’s Simple Solutions*, ed. Keith Wailoo, Julie Livingston, Steven Epstein, and Robert Aronowitz, (Baltimore: Johns Hopkins University Press, 2010), 15.

²⁰⁸ Between 1988 and 2006, the seroprevalence of hepatitis B in the United States decreased among people 6 to 19 years of age from 1.9 percent to 0.6 percent and among people 20 to 49 years of age from 5.9 percent to 4.6 percent. Annemarie Wasley et al., “The Prevalence of Hepatitis B Virus Infection in the United States in the Era of Vaccination,” *Journal of Infectious Diseases* 202, no. 2 (July 2010): 192. See figure 7 for a graph of these trends relative to the annual percentage of infants vaccinated.

²⁰⁹ Between 1988 and 2006, the seroprevalence of hepatitis B among adults 50 years of age and older increased from 7.2 percent to 7.7 percent. *Ibid.*

community health centers, despite previous research partnerships with them and new federal funding for community health centers.²¹⁰ Federal support for clinics offering adult hepatitis B immunization might have led to a faster decline in disease prevalence by protecting those immediately at risk.

The marketing of Gardasil as a vaccine to prevent cervical cancer, as Steven Epstein has shown, largely ignored the causal connection between HPV and anal cancer, excluding gay men's health from public debate about HPV vaccination.²¹¹ In response, some gay health advocates sought to incorporate Gardasil into a larger framework of anal cancer prevention and treatment. This activism was part of a new gay men's health movement that emerged in the late 1990s, which, in the words of activist Eric Rofes, sought "to expand dramatically beyond a narrow focus on HIV and address the many health issues faced by gay men of all colors and all generations."²¹² Partly in response to this activism, in 2011 the ACIP revised its recommendation on HPV immunization to include teenage boys and young men.²¹³

In contrast to HPV immunization, hepatitis B immunization was from the start understood as relevant for gay men. Yet the histories of these vaccines also have striking

²¹⁰ Ostrow, interview with the author. Between 1987 and 1992, the Bush administration increased funding for federally qualified community health centers by more than \$150 million. RCHN Community Health Foundation, "Health Centers Then and Now," *Community Health Center Chronicles*, accessed February 10, 2019, <https://www.chccchronicles.org/histories>.

²¹¹ Anyone can get anal cancer, but Epstein focused on gay men because they have been particularly affected. There were many reasons anal cancer was ignored, including its low incidence in the overall population, the stigma surrounding anal sex, and limited attention to gay men in biomedical research. Steven Epstein, "The Great Undiscussable: Anal Cancer, HPV, and Gay Men's Health," in *Three Shots at Prevention: The HPV Vaccine and the Politics of Medicine's Simple Solutions*, ed. Keith Wailoo, Julie Livingston, Steven Epstein, and Robert Aronowitz, (Baltimore: Johns Hopkins University Press, 2010), 62.

²¹² Eric Rofes, "What Is a Healthy Gay Man?" Opening Plenary Address, presented at the Gay Men's Health Summit, Boulder, CO, July 19-23, 2000, quoted in Steven Epstein, "Sexualizing Governance and Medicalizing Identities, The Emergence of 'State-Centered' LGBT Health Politics in the United States," *Sexualities* 6, no. 2 (2003): 140.

²¹³ National Center for Immunizations and Respiratory Disease, "HPV Vaccine is Cancer Prevention for Boys, Too!" *Centers for Disease Control and Prevention*, last modified December 17, 2018, <https://www.cdc.gov/features/hpvvaccineboys/index.html>.

similarities with respect to gay men's health. Both have drawn the strongest government support, in terms of funding to subsidize vaccination and laws requiring vaccination for school entry, for the immunization of people considered innocent, like infants and school-age girls. In the absence of strong government support for hepatitis B and HPV immunization for gay men, gay health advocates have worked to increase access to these potentially lifesaving interventions. And in both cases, greater access to hepatitis B immunization has ultimately been achieved not through vaccination programs that center gay men's health, but through universal immunization programs that have focused on groups that are not yet sexually active.²¹⁴

In the United States today, because of universal immunization against hepatitis B and HPV, boys who grow up to identify as gay men and engage in practices such as anal sex are less likely to become gravely ill from these sexually transmitted diseases and their associated cancers. But while universal immunization of young people can facilitate healthier futures for individuals with respect to specific diseases, what does universal immunization mean for the political future of sexual health and gay health in particular? The very concept of sexual health, as Mamo and Epstein have argued, can gloss over the shaming of non-heteronormative sexualities. Yet stigma has remained right below the surface.²¹⁵

I have shown how stigma made it harder for gay men to access the hepatitis B vaccine in the 1980s and how moral panic around hepatitis B's association with gay men made infant immunization controversial in the 1990s. The immunization of young people against a few sexually transmitted diseases before they become sexually active does little to disrupt discrimination based on sexual orientation. As new immunizations make it easier to prevent

²¹⁴ I use the term "universal immunization" with respect to HPV immunization because the ACIP now recommends it for all adolescents and young adults, even though most states do not mandate it.

²¹⁵ Epstein and Mamo, "The Proliferation of Sexual Health," 178, 188.

sexually transmitted diseases, it is important to center, rather than elide, social causes of health inequities. This includes paying more attention to the needs of those who are most vulnerable to disease in the present. But it also requires thinking about how public health programs that purport to be universal can encourage, rather than preclude, activist futures.

Word Count: 11,585



Now one serious disease attacking gay men can be prevented

Hepatitis B is a devastating disease. It is sexually transmitted and 65% of gay men will contract it in their lifetime. The disease can cause serious discomfort. It often requires hospitalization and can lead to cirrhosis of the liver, cancer and death.

More people die each year from hepatitis B and its complications than the total number of AIDS cases reported to date.

Many gay men become chronic carriers of hepatitis B, infecting others while showing no signs or symptoms.

What does all this mean?

If you are a gay man the odds of contracting hepatitis B are against you.

Fortunately, now there is a safe, effective vaccine available which can protect you against hepatitis B.

Make an appointment today to find out if you are at risk of contracting hepatitis B.

Why take chances with your health?

You only have one liver – when it goes – you go!!

The New York doctors and health facilities listed below are offering the blood screening for hepatitis B at their laboratory cost of \$15 (plus a reduced office fee of only \$15) through July 15, 1984.

Peter A. Seitzman, M.D.
311 E. 79th St., Suite C
288-8382

N. Patrick Hennessey, M.D.
614 Second Ave., (34th St.)
Suite E
683-6470

Marc Rubenstein, M.D.
246 E. 20th Street
475-2175

Joan Waitkevich, M.D.
1 Haven Plaza (Ave. C & 12th St.)
475-6030

Marvin D. Heldeman, M.D.
135 Central Park West (73rd St.)
873-0909

Frank Rundle, M.D. and
Nathaniel Pier, M.D.
1995 Broadway (68th St.)
787-7820

Daniel L. Brook, M.D.
850 Seventh Ave. (54th St.)
Suite 403
246-3610

Joyce Wallace, M.D.
225 West 12th Street
929-2530

Dennis V. Passer, M.D.
748 Greenwich St. (11th St.)
243-6060

Stanley W. Roman, D.O.
2 Fifth Ave.
533-0209

Community Health Project
208 West 13th St.
691-8282

Evenings only – \$10 office fee
No appointment necessary

For more information, call the American Liver Foundation: 1-800-223-0179, or attend a support group meeting for Hepatitis B carriers and others concerned about the disease, sponsored by the American Hepatitis B Association, every Monday and Thursday, 8 P.M., 208 West 13th Street.

co-sponsors:

American Liver Foundation
Cedar Grove, NJ 07009
201-857-2626 (NJ)
or 800-223-0179

American Hepatitis B Association
208 West 13th Street
New York, NY 10011

New York Physicians for Human Rights
70 Greenwich Avenue
Box 109, New York, NY 10011

The physicians listed above are independent practitioners and not necessarily affiliated with the sponsoring organizations.

Provided as a community service by New York City Department of Health,
Office of Gay and Lesbian Health Concerns.

Figure 1. New York City Department of Health, Office of Gay and Lesbian Health Concerns, "Now One Serious Disease Attacking Gay Men Can be Prevented," Poster, 1984, International Gay Information Center Papers, Box 11, New York Public Library, Manuscripts and Archives Division, New York, New York.

**HE TOOK THE CHANCE OF GETTING HEPATITIS B—
AND LOST.**



**NOW THE CONSEQUENCES ARE JUST BEGINNING.
CHRONIC ACTIVE HEPATITIS, CIRRHOSIS... OR DEATH.**

You undoubtedly know someone who's had it. The "bad hepatitis" that can keep you in bed for weeks and out of a job for months—that can mean lifelong disability and even death from infection or cancer of the liver. Where do you get it? From people who have become carriers of the virus. Today it is estimated that at least 200,000 gay men are carriers of the hepatitis B virus and spread the infection through intimate contact. That's the main reason why more than half of all gay men will never see their doctors advised.

How can you tell who's a carrier? You probably can't. Most carriers seem to be perfectly healthy and many are themselves unaware that they harbor the virus.

Once you get hepatitis B, there's no specific treatment for it. But now there's something you can do to help prevent sequelae!

**DON'T TAKE A CHANCE—
CONTACT YOUR DOCTOR OR CLINIC AND ASK ABOUT THE HEPATITIS B VACCINE.**

It is highly effective in those who receive all three shots. Do it today because you never know where or when you'll make contact with a carrier!

If you'd like more information about hepatitis B and the vaccine, call The American Liver Foundation at (212) 875-2626.

**This message is brought to you as a public service by
The American Liver Foundation.**

Studies showed that the vaccine prevented against reinfection by hepatitis B virus in 84% to 94% of those who received the required three shots.

Hepatitis B virus is an important cause of liver disease, a common cause of the liver. Even mild forms of this disease can lead to serious complications and ultimately, including liver cancer. There is no specific treatment for liver disease.

Transmission is recommended for carriers who have a higher risk of becoming infected with hepatitis B virus because of frequent sexual contact with infected persons or exposure to body fluids from such people. It is not yet proven against hepatitis B virus by sexual contact with hepatitis B virus.

Because of the long incubation period for hepatitis B, it is possible for generalized infection to be present at the time the vaccine is given. The vaccine may not prevent hepatitis B in such persons.

In these studies involving 1,200 persons, the overall rate of adverse reactions did not differ significantly in those given vaccine and those given placebo or placebo substitution. No side effects were reported. Most side effects were adverse reactions not observed during clinical trials.

Over 200,000 people are estimated to have received the vaccine since its release and the vaccine is considered to be generally safe and effective. Hepatitis B has a long incubation period and corresponding infection may possibly be present at the time the vaccine is given. Thus, repeated contact of hepatitis B virus is required and the virus appears to be present in the vaccine. Adverse reactions to the vaccine, including hepatitis, are rare. Some persons have been reported to have had severe allergic reactions, having difficulty swallowing the vaccine or severe allergic reactions. Some persons have been reported to have had reactions and other symptoms have been attributed.

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Figure 2. American Liver Foundation Advertisement for the Hepatitis B Vaccine, reprinted in Editorial Board, "Hepatitis, Health, and the Hard Sell," *Gay Community News*, September 10, 1983.

YOUR BLOOD
MAY BE
VALUABLE
FOR MAKING
A NEW
VACCINE
AGAINST
HEPATITIS B
NOW AT
EPIDEMIC
LEVELS
IN GAY MEN

Figure 3. Serex, "Your Blood May Be Valuable for Making a New Vaccine against Hepatitis B," Brochure, 1982, International Gay Information Center Papers, Box 11, New York Public Library, Manuscripts and Archives Division, New York, New York.

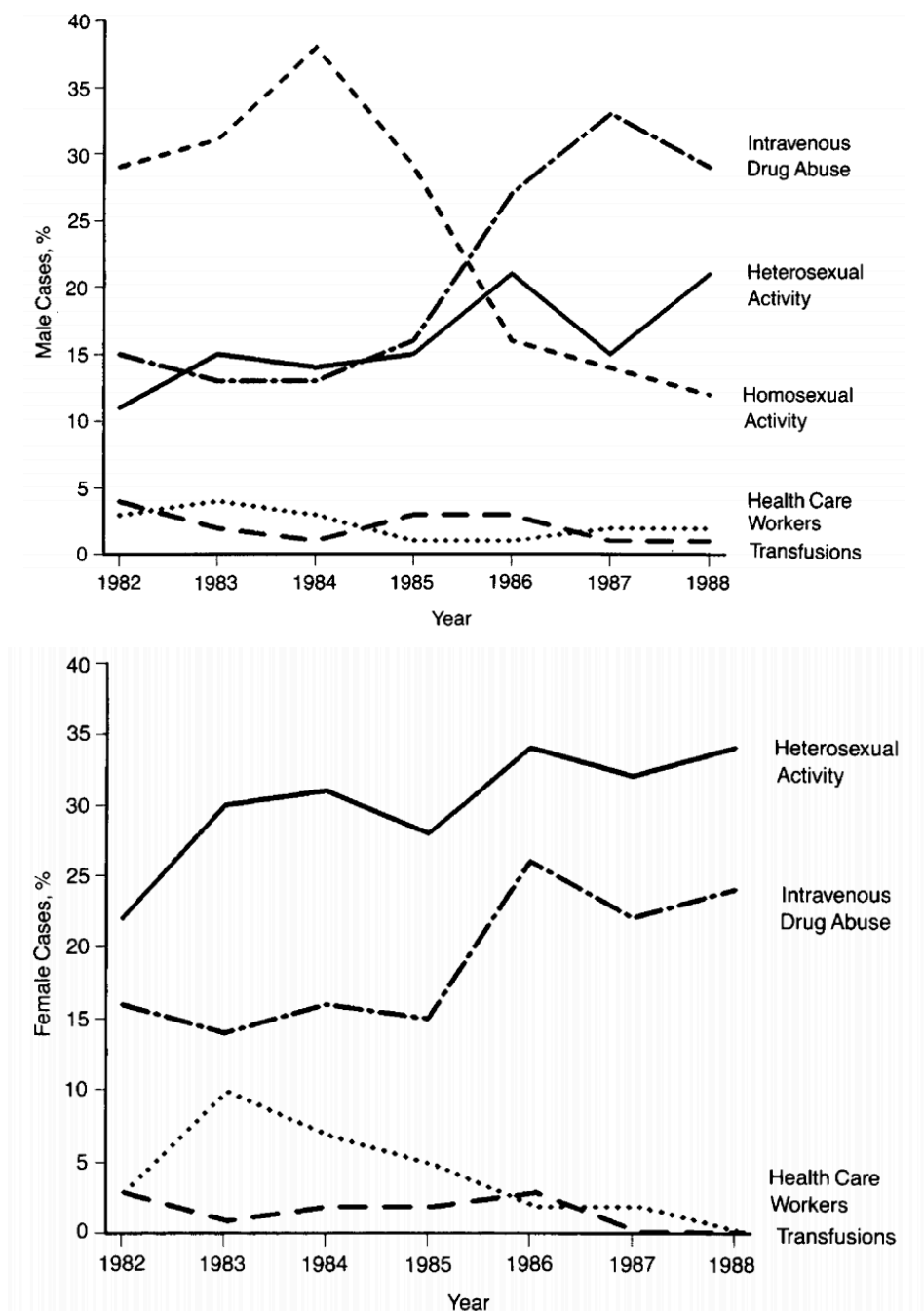


Figure 4. Trends in risk factors among men and women for acquiring hepatitis B, 1982-1988. Data was collected in four sentinel counties: Jefferson County (Birmingham), Alabama; Denver County (Denver), Colorado; Pinellas County (St. Petersburg), Florida; and Pierce County (Tacoma), Washington. These counties had populations of 500,000 to 800,000. "Heterosexual activity" referred to "sexual contact with a hepatitis B patient, with a hepatitis B virus carrier, or with multiple partners," and healthcare workers were those "who had frequent contact with blood." Miriam Alter et al., "The Changing Epidemiology of Hepatitis B in the United States: Need for New Vaccination Strategies," *JAMA* 263, no. 9 (March 1990): 1220-1221.



Figure 5. National Foundation for Infectious Diseases, “Hepatitis B: Get the Facts, then Get the Vax,” Poster, 1994, *U.S. National Library of Medicine Digital Collections*, accessed March 11, 2018. <https://resource.nlm.nih.gov/101449865>

State	Hep B childhood vaccination mandate?	HepB child care mandate (year took effect)	Hep B elementary school mandate (year took effect)	HepB secondary school mandate (year took effect)
Alabama				
Alaska	yes	2001	2001	2001
Arizona	yes	1997	1997	2000
Arkansas	yes	2000	2000	2000
California	yes	1997	1997	1999
Colorado	yes	1997	1997	1997
Connecticut	yes	1995	1996	2000
Delaware	yes	1999	1999	1999
Dist of Columbia	yes	1997	1997 prog [†]	1997 prog [†]
Florida	yes	yes	1998 prog [†]	1997 prog [†]
Georgia	yes	1997	1997	
Hawaii	yes	1998	1998	7/2002
Idaho	yes	1995	1995	children born after 11/22/1991
Illinois	yes	1997	1997 prog [†]	1997 prog [†]
Indiana	yes		1999	6/2005
Iowa	yes		1999	yes
Kansas	yes	9/2009	9/2004	SY 2009-10
Kentucky	yes	1998	1998	2001
Louisiana	yes	1998	1998	SY 2009-10
Maine	yes	11/2002		
Maryland	yes	2000	2001 prog [†]	2007 prog [†]
Massachusetts	yes	1993	1996	1999 prog [†]
Michigan	yes	1997	2001	9/2002
Minnesota	yes	9/2014	2000	2001
Mississippi	yes	yes	1999	yes
Missouri	yes	1995	1997	1999
Montana	yes	6/2018		
Nebraska	yes	2/2004	1999 prog [†]	2000 prog [†]
Nevada	yes	10/2007	7/2002	
New Hampshire	yes	1996	children born after 1/1/93	children born after 1/1/1993
New Jersey	yes		2001	2004
New Mexico	yes	2000	9/2002	1999
New York	yes	1995	1998	2000
North Carolina	yes	1994	1999	9/2005
North Dakota	yes		SY 2000-01 prog [†]	yes
Ohio	yes	1999	1999 [†]	2006 [†]
Oklahoma	yes	1999	1998 prog [†]	1997 prog [†]
Oregon	yes	1998	1998	2000
Pennsylvania	yes	1994	1997	2002
Rhode Island	yes	1998	1999	2000
South Carolina	yes	1994	1998	1998
South Dakota				
Tennessee	yes	1999	1999	7/2002
Texas	yes	1998	1998	2000
Utah	yes	7/2008	1999 prog [†]	yes
Vermont	yes	3/2011	8/2008	1999 [†]
Virginia	yes	1994	1994	2001
Washington	yes	1997 prog [†]	1997 prog [†]	7/2008 [†]
West Virginia	yes	2000	2008	
Wisconsin	yes	1997	1997	1997 [†]
Wyoming	yes	1999	1999	1998

Figure 6. List of hepatitis B immunization mandates by state as well as the years they took effect. † Signifies a “progressive” law in which each new school year another successive grade became covered by the law (e.g., 7th grade in 2000, 7th and 8th grade in 2001). An empty box indicates the absence of a mandate. Immunization Action Coalition, “Hepatitis B Prevention Mandates for Daycare and K-12,” *Immunize*, last modified November 15, 2018, <http://www.immunize.org/laws/hepb.asp>.

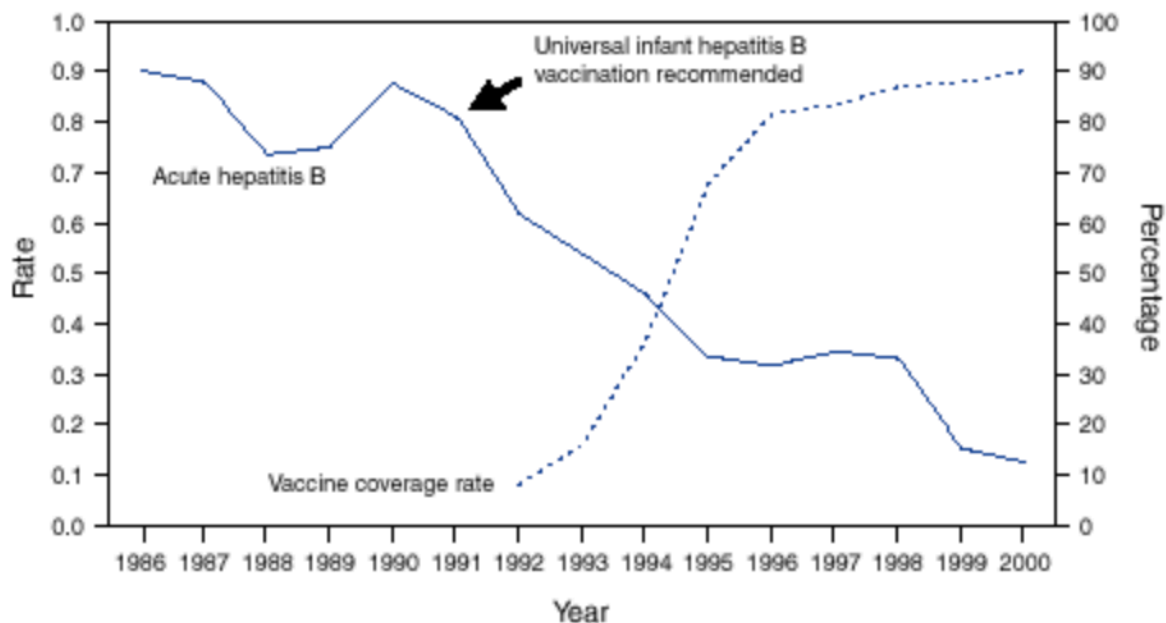


Figure 7. Rate of reported acute hepatitis B among children aged 1 to 9 years and percentage of children aged 19 to 35 months who received hepatitis B vaccine by year in the United States, 1986-2000. Rate measured per 100,000 children aged 1 to 9 years. Centers for Disease Control, "Achievements in Public Health: Hepatitis B Vaccination -- United States, 1982-2002," *MMWR* 51, no. 25 (June 2002): 549-552, 56.

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Bibliographical Essay

Archival research for my senior essay started in the spring of 2018, when I traveled to the National Archives in Atlanta, Georgia to look at the records of the CDC's Advisory Committee on Immunization Practices (ACIP). I had just completed a yearlong public policy fellowship through Yale and was fascinated by how culture shapes public policy and vice versa. As I had hoped, the minutes from the ACIP's meetings, which are held three times annually, allowed me to track how the committee's thinking about hepatitis B immunization policy changed between 1982, when it recommended vaccination for a few adult groups at high risk of the disease, and 1991, when it recommended immunization for all children in the United States. I was intrigued by how the ACIP conceptualized who was at risk for hepatitis B, what epidemiological data the committee drew on, what aspects of hepatitis B prevention it prioritized, and what challenges it foresaw with respect to policy implementation. The ACIP records also enabled me to examine how the committee responded to skepticism in the 1990s regarding the safety and necessity of hepatitis B immunization for children. In addition, because meetings covered immunization against a variety of diseases, reading the meeting minutes helped me to think about how hepatitis B immunization fit into a larger constellation of federal immunization policy in the 1980s and early 1990s.

While the ACIP records contained a few letters from healthcare providers and parents regarding childhood immunization, they did not include many perspectives of people who were affected by hepatitis B and hepatitis B immunization policy. To examine how the hepatitis B vaccine was received by gay men in the early 1980s, I traveled to New York to work with the International Gay Information Center (IGIC) Papers in the Manuscripts and Archives Division of the New York Public Library. The IGIC was founded in New York in 1982 for the purpose of

collecting and preserving historical records and papers documenting the gay rights movement in America. The collection included a variety of ephemera (posters, brochures) encouraging gay men to get vaccinated against hepatitis B. These were produced by organizations such as the Gay Men's Health Project, a health clinic for gay men founded in New York in 1973. The IGIC collection also included gay media coverage from the 1980s that hailed the arrival of the new hepatitis B vaccine. I looked at this press coverage in conjunction with digitized articles from national gay newspapers that documented the work of gay health clinics in Boston, Chicago, and Cincinnati to make the hepatitis B vaccine available at low cost. This material helped me to understand the significant role that gay activist organizations played in promoting hepatitis B immunization among gay men. However, because gay activists in the early 1980s were disproportionately White people who lived in urban areas, this material could not provide a comprehensive picture of gay men's experiences with respect to hepatitis B immunization.

To situate gay activists' responses to hepatitis B immunization in the history of gay health activism in the United States, I turned to Katie Batza's book on gay health politics in the 1970s, in which she demonstrated that a vast network of gay health clinics existed in the United States before the AIDS crisis. I benefitted greatly from the dozens of interviews that she conducted with healthcare providers and patients at gay health clinics. While the hepatitis B vaccine came onto the market in the early 1980s, which is beyond the scope of Batza's book, her work to highlight a diverse array of patient voices motivated me to pay more attention to these perspectives in my own work.

In the Gay and Lesbian Collections at both the New York Public Library and Yale University, I looked for unpublished correspondence from gay men in the 1980s regarding hepatitis B immunization, with the hope that I could gain more personal perspectives on its

benefits and limitations. However, besides a letter to a newspaper editor by Joe Di Sabato, founder of a gay publications advertising-placement firm, regarding unexpectedly low hepatitis B immunization rates among gay men, I had trouble finding examples of such correspondence. I was surprised by this given the significant amount of correspondence in these archives that dealt with people's experiences of AIDS and gay activism regarding AIDS. This absence likely exists because the development of a hepatitis B vaccine was not as shocking or socially disruptive as the AIDS epidemic, so people did not discuss or document it in the same way. To get the individual perspectives that I knew were important to my narrative, I had to pay closer attention to quotes from people with hepatitis B, gay health activists, and healthcare providers in gay and mainstream media coverage of hepatitis B immunization.

Batza's book inspired me to conduct an interview with David Ostrow, a co-founder of the Howard Brown gay health clinic in Chicago who had helped to run hepatitis B immunization trials in the early 1980s. Ostrow, who was an important source for Batza, still lives in Chicago, where I worked this summer. As we ate watermelon on his porch, Ostrow told me about how common hepatitis B was among the gay men who had come to the Howard Brown clinic in the 1980s. He spoke highly of the CDC's collaboration with Howard Brown on the development of a hepatitis B vaccine but lamented how poorly most mainstream healthcare providers understood gay men's sexual practices and the unique sexual health challenges they faced. As part of his work with Howard Brown, he had traveled around the country, including to the CDC headquarters in Atlanta, to educate healthcare providers about these issues. Our conversation made me realize that I needed to do more to explore how the association of hepatitis B with sex and sexuality shaped the social meanings of hepatitis B immunization.

I also had the opportunity to interview Harold Margolis, who was director of the CDC's Viral Hepatitis Division and a member of the ACIP in the 1990s. He helped me to better understand the epidemiological rationale behind the ACIP's different iterations of hepatitis B immunization policy. While I had been focused on the ACIP's statement in its recommendation for universal infant immunization that high-risk adult groups were too hard to reach, Margolis explained that the ACIP had also come to understand that it was hard to identify adults and children at risk of hepatitis B and that childhood hepatitis B was disproportionately likely to become chronic.

Margolis recommended that I read several epidemiological studies conducted by the CDC in the 1980s on the prevalence of hepatitis B. These studies helped me to understand the changing epidemiology of hepatitis B in the United States and the challenges this posed to hepatitis B immunization policy. They also gave me insight into how the CDC classified people into risk groups and explained why some people were more likely to contract hepatitis B than others. Historian Allan Brandt's work on risk factors helped me to contextualize these studies in terms of the central role that measuring and managing risk played in public health in the late 20th-century United States. While the CDC's efforts to document health disparities with respect to hepatitis B did not include much critical reflection, work by political scientist Cathy Cohen and critical race theorist Dorothy Roberts provided analytical tools to examine how the CDC blurred the social, political, and biological in the ways it linked hepatitis B risk to race and ethnicity.

To understand how the CDC's shift to childhood hepatitis B immunization was received by the public, I read articles published throughout the 1990s in major newspapers such as the *New York Times*, the *Chicago Tribune*, and the *Los Angeles Times*. This press coverage, which

encouraged parents to get their children vaccinated against hepatitis B, gave me the opportunity to explore how the hepatitis B vaccine was desexualized and reimagined as a suitable health intervention for children. As a counterpoint, I looked at media coverage of anti-vaccination activists who opposed childhood hepatitis B immunization. This gave me the opportunity to explore how they marshalled arguments not only about vaccine safety, but also about how children were not at risk for hepatitis B. The transcript of a Congressional hearing on hepatitis B immunization provided valuable additional perspectives from both proponents and opponents of childhood vaccination. However, the Congressional committee believed that in order to be balanced, it needed to hear from a roughly equal number of people on each side, so the proportion of anti-vaccine advocates represented in the hearing was much higher than in the general population. I had to contextualize opposition to childhood immunization as a minority position, albeit a politically and culturally telling one.

As my research progressed, I became interested in how theoretical perspectives from feminist science studies could enrich my interpretations of primary sources. Work by Vincanne Adams, Michelle Murphy, and Adele Clarke on anticipation helped me to think about how the shift to universal infant immunization created tension between the imagined health needs of those in the future and the present by prioritizing the protection of children against a disease common among young adults. Mel Chen's work on animacy helped me to think about the symbolic weight that the plasma-derived hepatitis B vaccine carried as a biomedical intervention that broke social boundaries by exposing people to other people's (potentially infectious) bodily fluids. Her work also helped me to explore how fear and stigma surrounding certain groups of people can be mapped onto the inanimate objects associated with them, as I sought to understand why some anti-vaccine activists found hepatitis B immunization so threatening.

One valuable direction for future research on hepatitis B immunization would be to conduct a more extensive set of oral history interviews with people who identified as being part of one or more groups at risk for hepatitis B in the 1980s and 1990s, particularly gay men and intravenous drug users. Historical methodology developed through Subaltern Studies would be valuable here. Studying how those most at risk for hepatitis B perceived, and responded to, significant changes in hepatitis B immunization policy during this time would create new opportunities to understand the history of public health in the 20th-century United States from “below” in addition to from “above.” Such a project would particularly help to bring in more of the voices of gay people of color, which are less represented in archival records of gay activism.