

## Sexually Transmitted Infections and HIV in the Southern United States: An Overview

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The geographic patterning of the HIV epidemic, as it evolves in the United States, has been remarkable in many ways. In the past 15 years, there has been a growth in the proportion of AIDS cases in blacks, in residents of the southeastern region, and in men and women infected through heterosexual contact.<sup>1</sup> Sexually transmitted diseases (STDs) other than HIV follow epidemiologic patterns similar to those of AIDS,<sup>2</sup> and syphilis and gonorrhea, like HIV, also disproportionately affect blacks in the nonurban south.<sup>3</sup> This special issue focuses on STDs and their determinants in the southern United States.

In-depth looks at the epidemiology of specific sexually transmitted infections globally (and in the United States) suggest certain insights. First, populations are composed of many diverse subpopulations, and each population-level trajectory of an epidemic consists of many distinct subpopulation trajectories.<sup>4,5</sup> The trajectory of an epidemic of a specific STD differs in subpopulations depending on when and where the infection was introduced; the natural history and transmissibility of the infection; the structure of sexual networks; the demographic, economic, social, and epidemiologic contexts; and the state of the health system.<sup>6</sup>

Second, contextual factors such as demographic, economic, and social composition and trends are important determinants of epidemic trajectory. The important effects of context on the trajectory of an epidemic often influence sexual networks, the health system, or cofactor effects that directly modify transmission efficiency.<sup>7</sup>

Third, the temporal dimension plays an important role in STD epidemiology and prevention.<sup>8-11</sup> STD epidemics evolve through sometimes predictable phases characterized by changing patterns in the distribution and transmission of STD-causing pathogens within and between subpopulations. Furthermore, STD-specific prevention and control programs also go through phases of development, implementation, scale-up, and maturation, and impact STD epidemiology.<sup>12,13</sup>

Fourth, the structures of sexual links in a population—sexual networks and their evolution through time—are an important determinant of the spread of STD in populations.<sup>6</sup>

It is within this framework that we approach the issue of high rates of HIV and STD prevalence in the southern United States. A review of 2 reportable sexually transmitted infections other than HIV suggests that (see Figs. 1 and 2): 1) regional differences in primary and secondary syphilis, which had been particularly

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marked among black men and women, have declined remarkably over the past decade. In fact, currently, the highest primary and secondary syphilis rates are observed in the West for white men; and 2) regional differences in gonorrhea rates have declined much less over the past decade. Regional differentials in gonorrhea rates are not marked among white men and women. Among black men and women, gonorrhea rates in the South have declined over the past decade, and the highest gonorrhea rates are reported in the Midwest.

One measure of heterogeneity of STD morbidity in subpopulations is the disparity ratio, which depicts the ratio of black STD rates to white American STD rates. For the 2 STDs we have reviewed, the disparity ratio is actually higher in other regions than in the South, indicating that gonorrhea and syphilis rates among blacks are closer to rates among whites in the South than they are in the Midwest and Northeast (Figs. 3 and 4).

Unlike the bacterial STD discussed here, viral STD cannot be cured (although they can be suppressed [herpes simplex virus]) and/or made less infectious [HIV] through medication) and are more likely to persist in a particular geographic region. The HIV epidemic—whose emergence in the South may have been partly influenced by the high levels of bacterial STD, particularly syphilis, in the mid-1990s—is likely to endure and remain disproportionately concentrated in the southern United States.

This special issue focuses on STD in the southern United States and the societal determinants that influence STD rates. The articles in the issue address many topics that might be hypothesized to account for the differences in HIV/STD prevalence between the South and other regions of the country. There are remarkable sociodemographic differences between the southeastern United States and other parts of the country. The percentage of the population that is of African descent is considerably higher in the South than elsewhere. Blacks are disproportionately affected by STD, including HIV, independently of region of residence. Second, the deep South contains most of the most impoverished counties in the country.<sup>14</sup> For example, of the 229 counties with the highest poverty rates (more than 25%) in the country, 78% are in the South. Moreover, more people residing in the South live in nonurban areas. Of 229 poorest counties, 94% are rural. Fully 92% of rural blacks live in the South. In the remainder of this article, we review the 3 areas of sociodemographic difference outlined here

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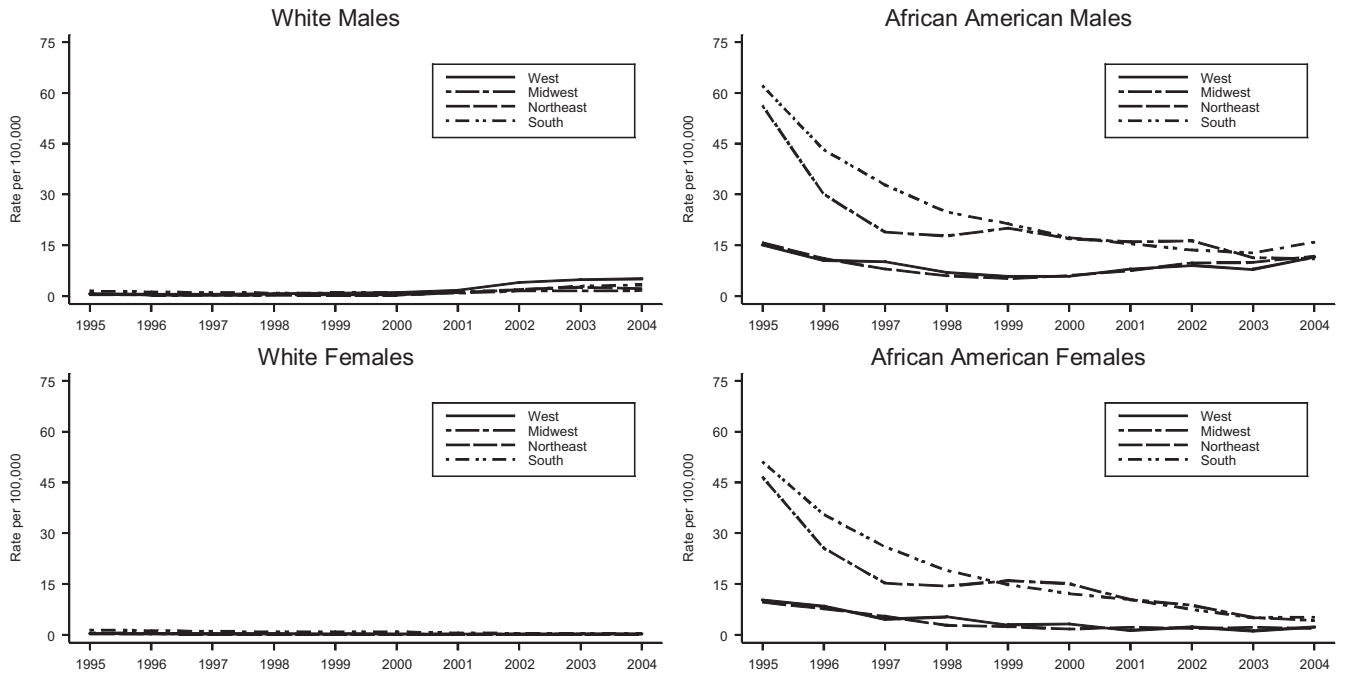


Fig. 1. Primary and secondary syphilis rates per 100,000 population 1995–2004.

and discuss the evidence provided in the articles included in this issue for each.

### Blacks and Sexually Transmitted Disease in the South

As pointed out by Farley,<sup>2</sup> blacks experience high STD rates everywhere in the country, and their rates are not elevated in the

South relative to the rest of the country. Thus, part of the disproportionate prevalence of STD in the South is related to the overrepresentation of blacks in this region.

This elevated prevalence of STD among blacks led some authors to highlight the possible role of racism as a risk factor for sexually transmitted infections. Racism can be seen as playing a role in unequal access to health care, both historically

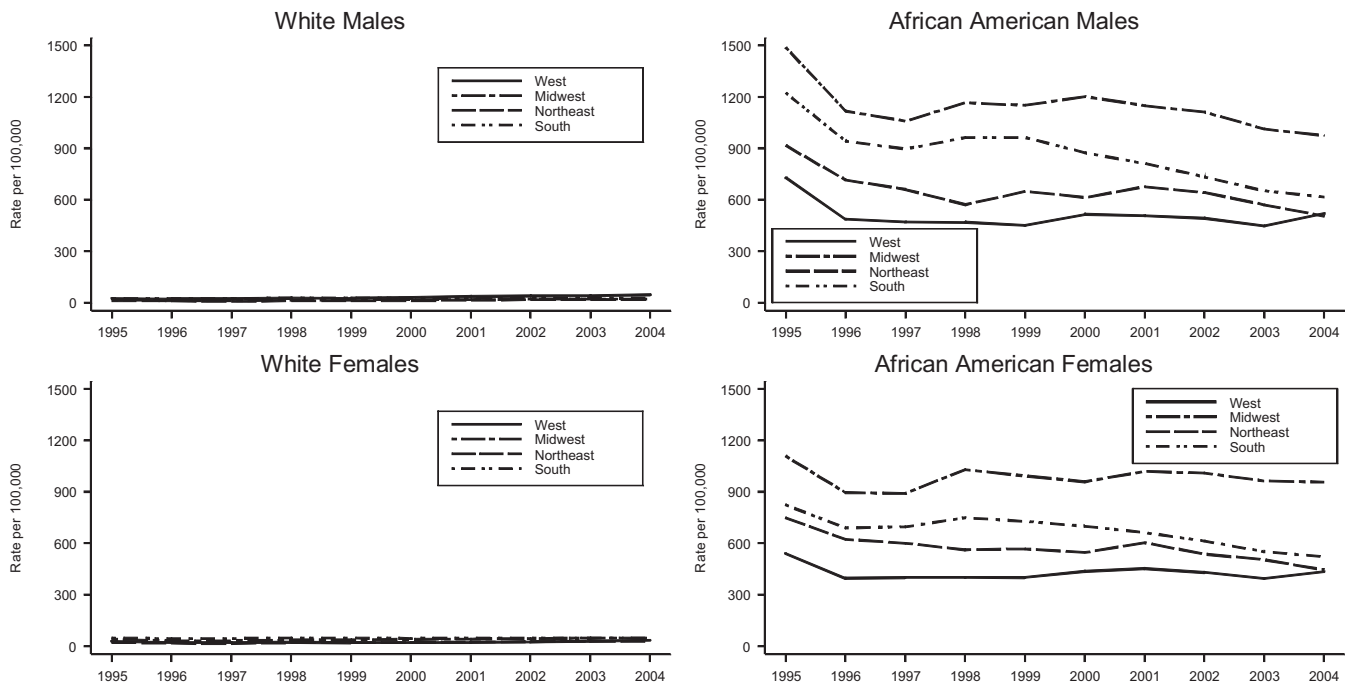


Fig. 2. Gonorrhea rates per 100,000 population 1995–2004.

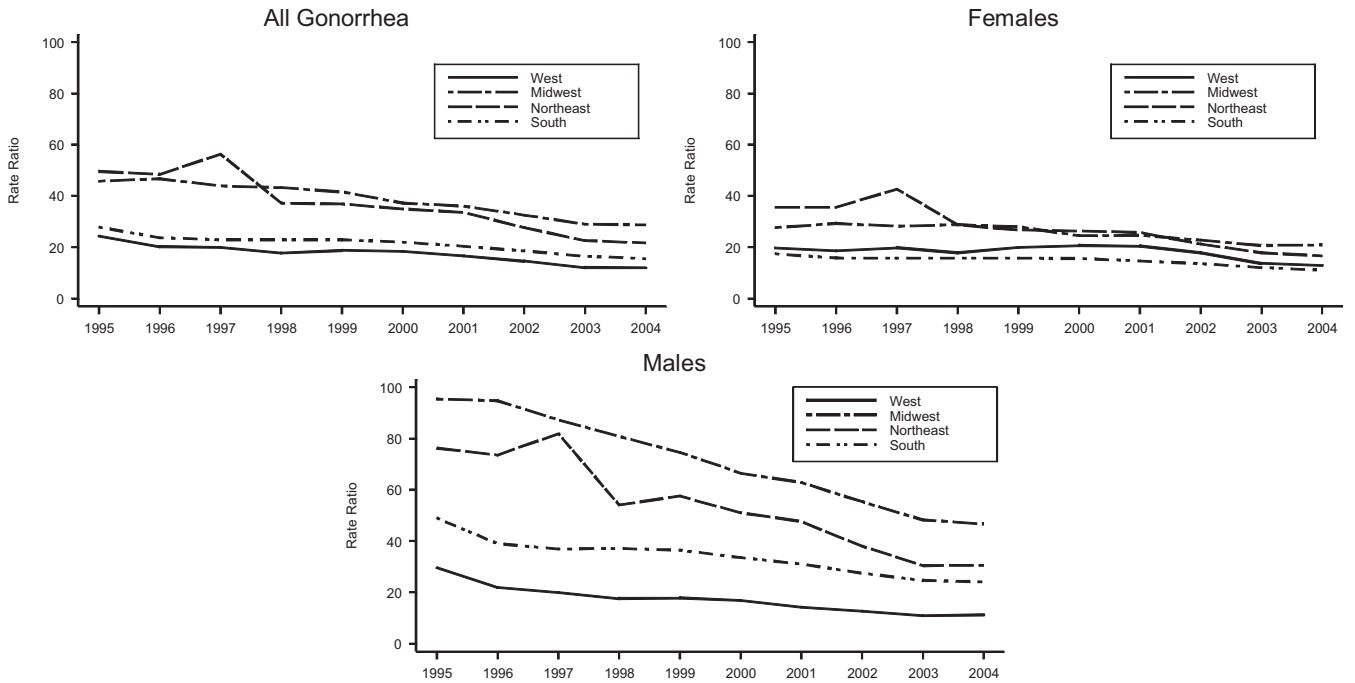


Fig. 3. Black to white disparity ratio of primary and secondary syphilis, 1995–2004.

and currently,<sup>15</sup> and in differential acceptability of the services provided.<sup>16</sup> Racism also carries responsibility for poverty as a result of discrimination in education and employment. Thomas<sup>16</sup> describes historical factors such as the mechanization of agriculture and northward migration of blacks in this context. The dif-

ferential rates of incarceration of black men may be considered a form of institutionalized racism. Among the effects of these high rates of incarceration is the removal of men from the potential pool of sex partners; this affects sexual networks in ways that promote the spread of sexually transmitted infections.<sup>17</sup>

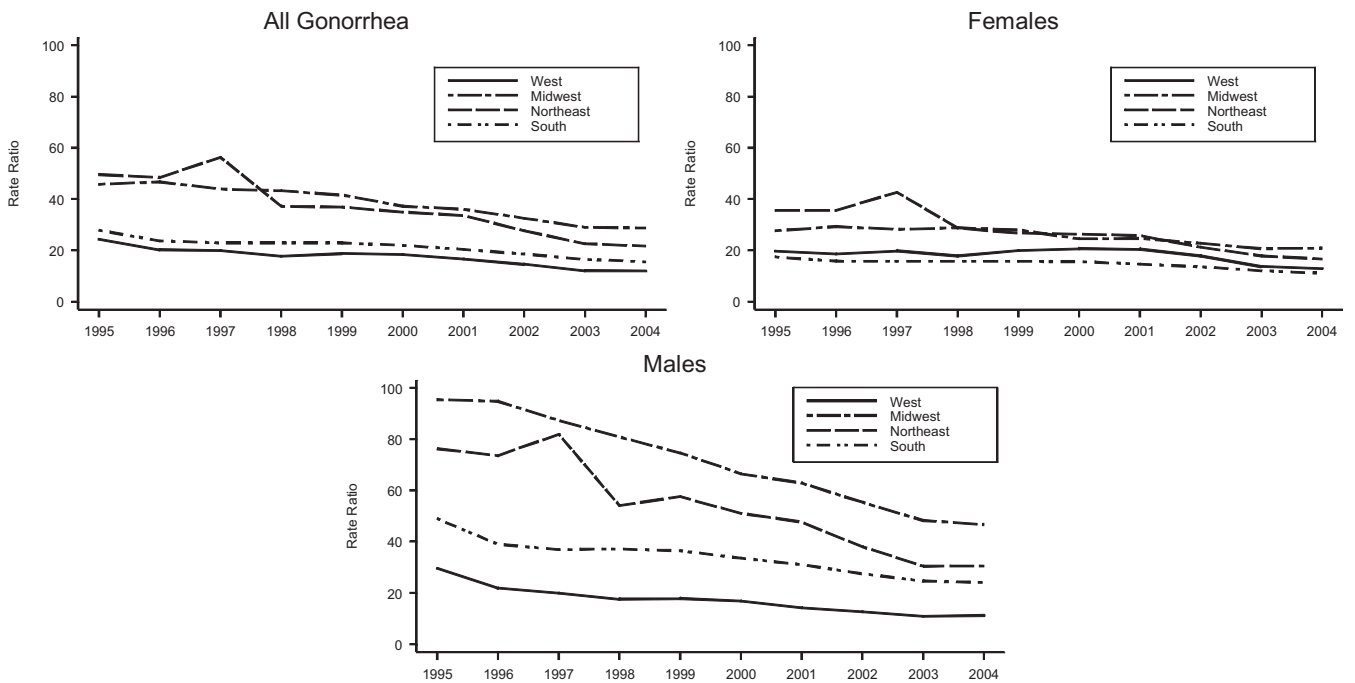


Fig. 4. Black to white disparity ratio of gonorrhea 1995–2004.

### Poverty

Poverty is strongly associated with STD prevalence. Although the mechanisms of action through which poverty affects STD are not clear, one potential mechanism that has been suggested is psychologic depression along with increased use of drugs and alcohol, which may increase risky sexual behavior. However, an examination of regional differences in these mental health factors<sup>18</sup> failed to substantiate them as likely contributors to regional differences in STD. Sex trading for nondrug-related reasons, as well as other negative effects on sexual networks, remain possible poverty-related mechanisms of action in the relationship between poverty and STD prevalence.

Another factor related to poverty is the regional differentials in enrollment in the military. The southern states contribute to military service in numbers disproportionate to their population percentages<sup>19</sup>. Because military service provides employment, training, and educational benefits, it is not surprising that it attracts low-income individuals. Participation in the military is associated with high rates of HIV and STD internationally<sup>20</sup> and domestically.<sup>21,22</sup>

### Rural/Nonurban Context

Residence in rural or semirural environments may contribute to STD spread in several ways. First, access to health care, including prevention services, may be logistically difficult as a result of long distances. Second, stigma surrounding sexual behavior and disease is likely to be heightened in nonurban areas. Shame and fear of stigmatizing reactions on the part of neighbors may lead to reluctance to seek sexual health services in close-knit communities.<sup>23</sup> Men who have sex with men (MSM) may be less likely to be open about their sexual behaviors in such communities and may concurrently be sexually involved with women, who in turn may be unaware of the risk posed to them by their partners' MSM behavior.<sup>24</sup> However, it is unknown whether the prevalence of bisexual behavior or covert MSM behavior is elevated in rural communities or the South specifically. It has also been suggested that the prominence of the church, with its sexual prohibitions, intensifies fear of stigma (E. J. Brown, personal communication, 2003).

Three prevention intervention approaches are described in this volume. Two of them<sup>25,26</sup> are particularly useful in situations in which concern about stigma may prevent people from seeking prevention services. One of these<sup>25</sup> describes the use of mass media and social networks to influence norms and behavior. Mass media interventions may be deployed even in very rural contexts because they are independent of physical distance and access. Interpersonal communication often prompted by mass media material, which flows through social communication networks, is a necessary additional ingredient in fostering behavior change. Another intervention approach relies on structural change.<sup>26</sup> Such approaches are also particularly useful in potentially stigmatizing contexts. Strategies such as increasing alcohol taxation do not induce stigma and have been shown to be effective in reducing STD incidence.<sup>27</sup> Finally, Berman<sup>28</sup> discusses the importance of STD treatment in reducing the transmission of HIV.

Rates of bacterial STD have declined in the South and elsewhere, and little is known about the geographic distribution of non-HIV viral STD. However, recent data suggest that HIV rates have soared among blacks, particularly in the rural areas of the South.<sup>29</sup> This collection of papers is intended to stimulate future

targeted research and intervention efforts into the epidemiology and prevention of HIV and other STD in these populations.

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