

# Unveiling the Hidden Epidemic of Sexually Transmitted Diseases

J. Dennis Fortenberry, MD, MS

**I**N 2000, A TOTAL OF 702 093 GENITAL INFECTIONS DUE to *Chlamydia trachomatis* and 358 995 due to *Neisseria gonorrhoeae* were reported to the Centers for Disease Control and Prevention.<sup>1</sup> These reported cases represent an extraordinary number of curable infections. One explanation for the persistence of high levels of disease may lie in a gross underestimation of the burden of disease in the population. Both *C trachomatis* and *N gonorrhoeae* have poorly understood capacities for production of asymptomatic infections. A pool of untreated persons sustains high levels of disease, even for individuals not otherwise characterized by patterns of high-risk sexual behaviors.<sup>2</sup>

The number of persons with asymptomatic sexually transmitted diseases (STDs) is unknown but many studies suggest it is large, likely exceeding the number of symptomatic infections.<sup>3-5</sup> In 1997, the Institute of Medicine described the state of STDs in the United States as a “hidden” epidemic.<sup>6</sup> This dramatic term called attention to lack of basic epidemiologic data regarding the prevalence of STDs in the United States and the stigma that surrounds their diagnosis and treatment. The consequence has been sustained epidemics of STDs with enormous personal and economic costs.

In this issue of THE JOURNAL, Turner and colleagues<sup>7</sup> provide data that additionally reveal the true extent of sexually transmitted chlamydial and gonococcal infections. A sensitive and specific nucleic acid amplification test—ligase chain reaction—was used to identify the point prevalence of gonococcal and chlamydial genitourinary infections among adults aged 18 to 35 years. Urine testing allowed specimen collection in the privacy of the participants’ homes. The study has several methodological strengths including a carefully designed sampling frame and a high (79.5%) rate of acceptance of urine STD screening.

Several of the findings in the study by Turner et al are especially noteworthy. First, 7.9% of those tested had undiagnosed gonococcal or chlamydial infection (or both). Most individuals with these infections were asymptomatic. Moreover, all participants who reported a diagnosis of gonorrhea or chlamydia in the previous year tested negative for those organisms. Thus, these infections probably do not rep-

resent persons who failed to obtain treatment for previously diagnosed infections.<sup>8</sup>

Second, the data confirmed the higher rates of infection among young adults and among blacks. A complete explanation for age and racial/ethnic differences in STD risk has not been documented although selection of partners from high-risk sexual networks is at least partially responsible.<sup>9</sup> Moreover, rates of gonorrhea and chlamydia among non-blacks and among older participants were not negligible. In fact, gonorrhea rates were highest among participants aged 31 to 35 years. Such data raise important questions about the current gonorrhea surveillance system that reports the highest gonorrhea rates to be among those aged 25 years or younger.<sup>1</sup>

Third, Turner et al also found that less than 5% of infected participants reported symptoms of dysuria or genital discharge within 6 months. Thus, the most important stimulus for care in the current sexual health care system is not relevant to most infected persons.<sup>10,11</sup> Asymptomatic infections must be identified by other mechanisms such as partner notification, case-contact tracing, or routine screening in the setting of health care obtained for other reasons. Unfortunately, Turner et al did not address the number of participants with a stimulus for care from these sources. Partner notification is widely used, but many partners exposed to STDs are never contacted.<sup>12</sup> Contact tracing by public health workers can be an effective STD control tool, but it is labor intensive and expensive.<sup>13</sup> Routine screening for chlamydia has been associated with reductions in rates of pelvic inflammatory disease,<sup>14</sup> but universal chlamydia screening of at-risk women remains an elusive goal.<sup>15,16</sup>

Finally, Turner et al found that the number of undiagnosed, untreated gonorrhea and chlamydia infections exceeded infections presumed to have been treated in Baltimore, Md, during the same period. While recent declines in gonorrhea rates might be considered evidence of effectiveness for current STD control programs,<sup>1</sup> data such as those provided by Turner et al show that STD control efforts—however vigorous—are far from complete. Efforts to con-

**Author Affiliation:** Section of Adolescent Medicine, Indiana University School of Medicine, Indianapolis.

**Corresponding Author and Reprints:** J. Dennis Fortenberry, MD, MS, Riley Children’s Hospital, 575 N West Dr, Room 070, RPG, Indianapolis, IN 46202 (e-mail: jfortenb@iupui.edu).

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trol STDs that rely on symptoms to identify all infected persons will always be insufficient.

The study by Turner et al does contain a serious limitation in its exclusion of individuals aged 17 years or younger. The impact of this exclusion is difficult to judge. Chlamydia rates are highest among sexually active adolescents,<sup>1</sup> but many adolescents in any chosen population are not sexually active. The exclusion of adolescents also points out the complex tensions that evolve from issues of adolescent sexual activity and the arbitrary distinctions between adolescent and adult. Since the boundaries around sexual networks of adolescents and adults are not fixed, exclusion of younger participants leaves important questions unanswered. However, population-based STD research with adolescents is possible, and subsequent research efforts would be much better informed by inclusion of representative samples of younger participants.<sup>17</sup>

While Turner et al avoid—perhaps wisely—detailed discussion of the larger social and policy implications of their data, several points can be made. It is clear that clinicians can do a better job with sexual health risk assessments, STD screening and treatment, and partner notification and treatment.<sup>18</sup> Embarrassment on the part of the patient or clinician or poor assessment of sexual health risk are common but not satisfactory reasons for avoiding this task.<sup>19</sup> In addition, STD surveillance systems need to be updated to include regular population-based surveys of STD prevalence because their feasibility and acceptability have been reasonably well demonstrated.<sup>17</sup> Such surveys would provide a more accurate picture of the burden of STD and more appropriate benchmarks for assessment of STD control efforts. Moreover, the data by Turner et al raise important questions about the most appropriate means to deliver STD diagnostic and treatment services on a population basis. Urine-based testing in schools provides one model associated with reduced chlamydia rates.<sup>20</sup> Although such programs raise many thorny issues related to costs, confidentiality, and potentially harmful effects of false-positive screening tests, the time has come to begin to address these and related issues.

The veils surrounding STDs are not simply those of inadequate documentation of disease prevalence. Societal willingness to stigmatize sexuality and STDs continues to hide issues that are central aspects of our lives. Given the morbidity and costs of STDs, including those due to human im-

munodeficiency virus infection, these are veils that no longer seem affordable.

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