

# From Control to Crisis: The Resurgence of Sexually Transmitted Diseases

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At the turn of the century, the Centers for Disease Control and Prevention (CDC) reported that many sexually transmitted diseases (STDs) in the United States were on the decline.<sup>1</sup> National objectives presented in the CDC's Healthy People program to reduce *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG), and syphilis morbidity by 2000 were reportedly reached or were moving toward their target.<sup>2</sup> Public health officials reveled in the success of prevention, testing, and treatment efforts to control STD incidence, even redirecting the conversation toward plans to eliminate syphilis.<sup>3</sup>

Unfortunately, federal funds allotted to STD prevention began to decline beginning in 2002—decreasing by one third by 2018, after adjusting for inflation (see Figure 1).<sup>4,5</sup> In near-perfect synchrony, the United States experienced a severe resurgence of STDs.<sup>6</sup> According to the newly released CDC STD Report, the number has increased to a combined total of nearly 2.3 million reported cases of CT, NG, and primary and secondary (P&S) syphilis in 2017 alone—more than twice the number of cases reported in 2000.<sup>7</sup> In response, the National Coalition of STD Directors has called on the US President and the Department of Health and Human Services to declare STDs a public health crisis.<sup>6</sup>

How did we get to this public health crisis? There is no one answer, but many factors related to federal STD prevention budget cuts help explain this resurgence: health departments are shrinking, community clinics are closing, contact tracing is dwindling, and sexual health education is minimal.<sup>8,9</sup> Safeguarding the public's health is a government responsibility; advocates must engage US legislators in the difficult conversation to increase funding for STD prevention, testing, and treatment services. While this plays out, we present 3 reasonable, evidence-based steps to address the STD crisis—learned from the efforts of AIDS Healthcare Foundation and Los Angeles LGBT Center's STD services for high-risk populations.

## ALL PRIMARY CARE PROVIDERS SHOULD IMPLEMENT OPT-OUT STD TESTING

Opt-out STD testing in a primary care setting means CT, NG, and syphilis testing for all patients unless a patient declines. A general consent for care, obtained at patient registration, is sufficient to ensure efficient clinical procedures and appropriate STD testing. Current CDC screening guidelines recommend opt-out HIV testing for all women aged 13 to 64 years, all pregnant

women at their first prenatal visit, and all men aged 13–64 years.<sup>10</sup> However, the same guidelines do not include any opt-out testing for CT, NG, and syphilis. In addition, many providers do not assess risky sexual behaviors (e.g., non-condom use) that may indicate a patient for STD testing.<sup>11–15</sup> Appropriate sexual health assessments ensure providers balance public health needs with cost-effectiveness.

One of the most pressing justifications for opt-out STD testing is the rise of congenital syphilis—the transmission of syphilis from mother to child during pregnancy or birth. Congenital syphilis cases were on the decline in the 2000s but have increased every year since 2012.<sup>7</sup> Congenital syphilis has been associated with stillbirth and numerous issues ranging from bone deformities to neurologic impairment.<sup>16</sup> A study conducted in Louisiana, the state with the highest rate of congenital syphilis, found that one third of the cases could have been prevented during the mothers' appointments with their prenatal care providers.<sup>17</sup> Another study found that only 7 states follow CDC syphilis screening recommendations for pregnant women; 6 states still do not require prenatal syphilis screening at any stage of pregnancy or birth and the majority of states only require syphilis screening at the first prenatal visit.<sup>18</sup> To sustainably reduce congenital syphilis rates, all states must fully comply with the CDC's syphilis screening recommendations for all women at first prenatal visit and repeat screenings for at-risk pregnant women during the third trimester and at delivery.

Opt-out testing is also necessary due to the asymptomatic nature of STDs. For example, a study found that one-quarter of men and half of women may exhibit no symptoms for urethral NG<sup>19</sup>; for urethral CT, 2 studies found that 90% of men and 70% to 95% of women were asymptomatic.<sup>20,21</sup> A study by Owusu-Eduesei Jr. et al. documented cost savings and reduced STD prevalence after the implementation of opt-out CT testing for young women.<sup>22</sup> Ultimately, implementing opt-out testing in all primary care settings is likely to reduce STD morbidity and mortality.

## CLINICS MUST OFFER EXTRAGENITAL STD TESTING

Extragenital testing refers to pharyngeal and rectal swabs for extragenital CT and NG infections. In addition to urine collection, the CDC recommends that all gay, bisexual, and other men who have sex with men (collectively referred to as MSM) receive extragenital CT and NG testing (rectal CT and NG screening and pharyngeal NG screening), given potential exposure at those anatomical sites, because urine-only CT and NG testing can miss more than two thirds of infections.<sup>23</sup> Unfortunately, many primary care providers remain inconsistent in adhering to the CDC's extragenital testing recommendations. For example, in an analysis of MSM attending 42 clinics that collaborate with the STD Surveillance Network, only around half were screened for rectal CT and NG.<sup>23</sup>

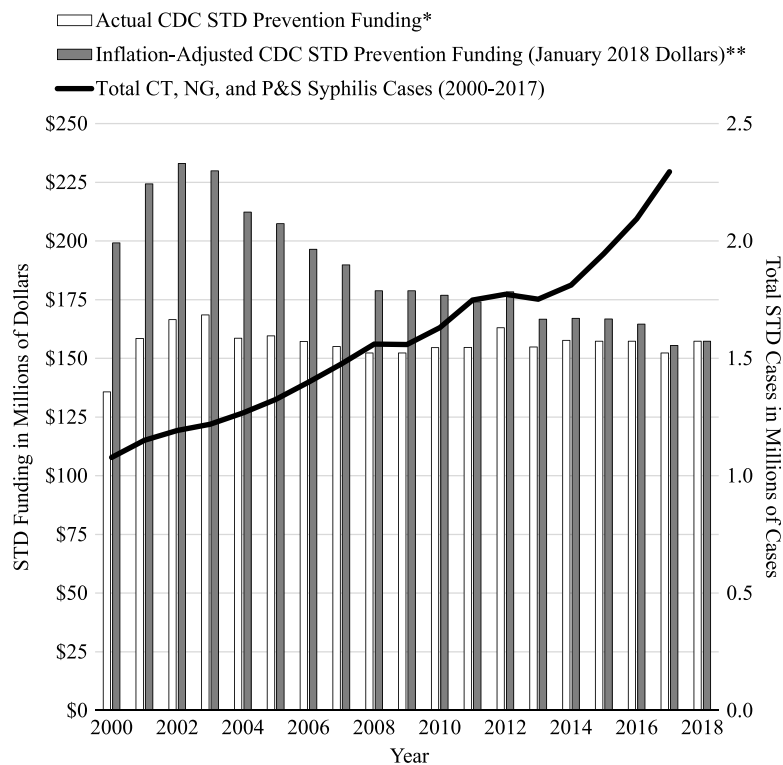
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**Figure 1.** Annual CDC STD Prevention Budget and Total STD Cases by Year, 2000 to 2018.<sup>4,5,7</sup> \*We would like to acknowledge the National Coalition of STD Directors for providing the CDC spending budget for STD prevention presented in the figure. \*\*Inflation is calculated using the Consumer Price Index (CPI) Inflation Calculator available on the US Bureau of Labor Statistics website: <https://data.bls.gov/cgi-bin/cpicalc.pl>.

The CDC guidelines do not include regular extragenital STD testing recommendations for women, despite high rates of extragenital CT and NG infections among sexually active women.<sup>24</sup> In an analysis of 5,499 rectal swabs taken by women between November 2012 and September 2015, 1 in 10 women who underwent rectal testing tested positive for either rectal CT or NG.<sup>25</sup> More concerning, even though many patients have extragenital infections, around half of the reported rectal CT and NG infections among the women in that study would have been missed through urine-only testing.

Given the high proportion of CT and NG site-specific infections in both MSM and women, extragenital STD testing should be offered to everyone who is at risk based on appropriate sexual health assessments and, as discussed in the first recommendation, be administered on an opt-out basis. Many public health laboratories have validated extragenital testing, but it is up to the providers to order them.

### THE STD SERVICES INFRASTRUCTURE IS IN DIRE NEED OF INNOVATIVE UPGRADES

Many STD clinics still operate within a 20th century infrastructure and may not realize the detrimental effects of such traditional methods. For example, many traditional STD clinics adhere to the no-news-is-good-news slogan—only contacting patients about positive STD test results via telephone call. However, patients may not receive their results due to incorrect phone numbers, straight-to-voicemail encounters, or impacted staff time. Both the Los Angeles LGBT Center and AIDS Healthcare Foundation implemented an online patient engagement platform and smartphone application, to digitally communicate positive and

negative STD test results to patients the instant the results are uploaded to the organizations' electronic health records, leading to faster time-to-treat for positive infections compared to telephone calls.<sup>26</sup>

New point-of-care diagnostic devices that offer fast STD test results can ensure patients receive treatment for a diagnosed infection on the same day as their testing visit. The Dean Street Express clinic in London has demonstrated dramatic success in the efficient management of asymptomatic infections by employing this technology in their streamlined STD testing program.<sup>27</sup> Outside of the clinic setting, mobile and home-based STD testing are effective outreach tools for high-risk populations. Mobile STD testing can successfully reach patients in front of clubs, bars, and populated areas<sup>28</sup>; home test kits are an effective alternative to clinic-based testing.<sup>29</sup> Both testing options may be more convenient for patients and are especially appealing for asymptomatic patients reluctant to seek STD testing services at traditional brick-and-mortar clinics.

Innovations in STD testing do not always require investments in new technologies—just new media. For example, STD clinics can implement digital outreach via geosocial networking phone applications (also referred to as “hookup apps” like Tinder and Grindr) to initiate conversations with local populations. In a study by Lampkin et al., STD counselors' online engagement with MSM via the hookup app Grindr led to a 14-fold increase in providing education, counseling, and testing information compared with traditional outreach methods.<sup>30</sup>

Public health advocates need to think beyond the traditional and outmoded STD services infrastructure. Innovative approaches to prevention, testing, and treatment are demonstrably successful and can be cost-effective. To successfully reach patients in the 21st century, we must use state of the art testing technology and

employ advancements in communication and outreach technology to meet patients where they are, both physically and digitally.

The STD epidemic demands our best response and currently we are falling short. Implementing opt-out testing, extragenital testing, and innovative upgrades may improve our chances to one day restart the dialogue on STD elimination. The best time to address this epidemic was 20 years ago; the second-best time is now.

## REFERENCES

1. Aral S. Elimination and reintroduction of a sexually transmitted disease: Lessons to be learned? *Am J Public Health* 1999; 89:995–997.
2. National Center for Health Statistics. Healthy People 2000 Final Review. Hyattsville, Maryland: Public Health Service, 2001: Available at: <https://www.cdc.gov/nchs/data/hp2000/hp2k01.pdf>. Accessed September 18, 2018.
3. Centers for Disease Control and Prevention. The National Plan to Eliminate Syphilis from the United States - Executive Summary. Syphilis elimination effort (SEE); 1999. Available at: <https://www.cdc.gov/stopsyphilis/exec.htm>. Accessed September 18, 2018.
4. National Coalition of STD Directors. Annual CDC - STD Prevention Budget FY 2003 - FY 2018; 2018.
5. Bureau of Labor Statistics. CPI Inflation Calculator. Available at: <https://data.bls.gov/cgi-bin/cpicalc.pl>. Accessed September 18, 2018.
6. Tanne JC. Sexually transmitted diseases reach record highs in US. *BMJ* 2018; 362:k3747.
7. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2017. Atlanta: US: Department of Health and Human Services, 2018.
8. Leichter JS, Heyer K, Peterman TA, et al. US public sexually transmitted disease clinical services in an era of declining public health funding: 2013-14. *Sex Transm Dis* 2017; 44:505–509.
9. Chen A. STD infections rise to new highs after states close health clinics. NPR 20, 2016. Available: <https://www.npr.org/sections/health-shots/2016/10/20/498719092/std-infections-rise-to-new-highs-after-states-close-health-clinics>. Accessed September 18, 2018.
10. Centers for Disease Control and Prevention. Screening recommendations and considerations referenced in treatment guidelines and original sources. 2015 Sexually Transmitted Diseases Treatment Guidelines; 2015. Available at: <https://www.cdc.gov/std/tg2015/screening-recommendations.htm>. Accessed September 18, 2018.
11. Kushner M, Solorio MR. The STI and HIV testing practices of primary care providers. *J Natl Med Assoc* 2007; 99:258–263.
12. Lanier Y, Castallanos T, Barrow RY, et al. Brief sexual histories and routine HIV/STD testing by medical providers. *AIDS Patient Care STDs* 2014; 28:113–120.
13. Salomon SG, Torrene E, Nakatsukasa-Ono W, et al. Missed opportunities for chlamydia screening in title X family planning clinics. *Sex Transm Dis* 2017; 44:519–523.
14. Burstein GR, Lowry R, Klein JD, et al. Missed opportunities for sexually transmitted diseases, human immunodeficiency virus, and pregnancy prevention services during adolescent health supervision visits. *Pediatrics* 2003; 111:996–1001.
15. Tao G, Irwin KL, Kassler WJ. Missed opportunities to assess sexually transmitted diseases in U.S. adults during routine medical checkups. *Am J Prev Med* 2000; 18:109–114.
16. Kidd S, Bowen VB, Torrone EA, et al. Use of National Syphilis Surveillance Data to develop a congenital syphilis prevention cascade and estimate the number of potential congenital syphilis cases averted. *Sex Transm Dis* 2018; 45(9S):S23–S28.
17. Rahman MM, Hoover A, Johnson C, et al. Preventing congenital syphilis—opportunities identified by congenital syphilis case review boards. *Sex Transm Dis* 2018.
18. Warren HP, Cramer R, Kidd S, et al. State requirements for prenatal syphilis screening in the United States, 2016. *Matern Child Health J* 2018; 22:1227–1232.
19. Wallin J. Gonorrhoea in 1972: A 1-year study of patients attending the VD unit in Uppsala. *Brit J Vener Dis* 1974(51):41–47.
20. Farley TA, Cohen DA, Elkins W. Asymptomatic sexually transmitted diseases: The case for screening. *Prev Med* 2003; 36:502–509.
21. Korenromp EL, Sudaryo MK, de Vlas SJ, et al. What proportion of episodes of gonorrhoea and chlamydia becomes symptomatic? *Int J STD AIDS* 2002; 13:91–101.
22. Owusu-Edusei K Jr, Hoover KW, Gift TL. Cost-effectiveness of opt-out chlamydia testing for high-risk young women in the U.S. *Am J Prev Med* 2016; 51:216–224.
23. Patton ME, Kidd S, Llata E, et al. Extragenital Gonorrhoea and chlamydia testing and infection among men who have sex with men—STD surveillance network, United States, 2010–2012. *Clin Infect Dis* 2014; 58:1564–1570.
24. Workowski KA, Bolan GA. Sexually transmitted diseases treatment guidelines, 2015. Centers for Disease Control and Prevention *MMWR* 2015; 64(RR3):1–137.
25. Tao G, Hoover KW, Nye MB, et al. Infrequent testing of women for rectal chlamydia and gonorrhoea in the United States. *Clin Infect Dis* 2018; 66:570–575.
26. Cohen AC, Zimmerman F, Prellip M, et al. A smartphone application to reduce time-to-notification of sexually transmitted infections. *Am J Public Health* 2017; 107:1795–1800.
27. Whitlock GG, Gibbons DC, Longford N, et al. Rapid testing and treatment for sexually transmitted infections improve patient care and yield public health benefits. *Int J STD AIDS* 2018; 29:474–482.
28. Kahn RH, Moseley KE, Thilges JN, et al. Community-based screening and treatment for STDs: Results from a mobile clinic initiative. *Sex Transm Dis* 2003; 30:654–658.
29. Smith KS, Kaldor JM, Hocking JS, et al. The acceptability and cost of a home-based chlamydia retesting strategy: Findings from the REACT randomised controlled trial. *BMC Public Health* 2016; 16:83.
30. Lampkin D, Crawley A, Lopez TP, et al. Reaching suburban men who have sex with men for STD and HIV services through online social networking outreach: A public health approach. *JAIDS* 2016; 72: 73–78.