

2008 National STD Prevention Conference

Chicago, Illinois | March 10-13, 2008



All Findings Embargoed Until:
Embargo Times Listed Below

CONTACT: Media Information Line
1-866-584-5030
On-Site Press Center
(312) 294-6785
(312) 294-6786

Summaries of Highlighted Research **– Wednesday, March 12, 2008 –**

Syphilis in the United States: Epidemiology and Emerging Issues; Symposium, Tuesday, March 11, 10:00 am Central
[Symposium Abstract A6b – Embargo: Wednesday, March 12, 11:30 am Central (12:30 pm ET)]

Missed Gonorrhea Infections by Anatomic Site among Asymptomatic Men Who Have Sex with Men Attending U.S. STD Clinics, 2002-2006; Oral Session, Tuesday, March 11, 10:00 am Central
[Oral Abstract A1d – Embargo: Tuesday, March 11, 10:00 am Central (11:00 am ET)]

Self-Reported Syphilis and Gonorrhea Testing among Men Who Have Sex with Men (MSM) in the United States, National HIV Behavioral Surveillance System, 2003-2005; Oral Session, Thursday, March 13, 8:30 am Central
[Oral Abstract D5a – Embargo: Wednesday, March 12, 11:30 am Central (12:30 pm ET)]

STD Testing of HIV-Infected MSM at Eight U.S. Clinics; Poster Session; Tuesday, March 11, 5:00 pm Central
[Poster Abstract P143 – Embargo: Tuesday, March 11, 5:00 pm Central (6:00 pm ET)]

Performance of Nucleic Acid Amplification Tests (NAATs) for Chlamydial and Gonococcal Infections of the Oropharynx and Rectum in MSM; Oral Session, Wednesday, March 12, 4:00 pm Central
[Late Breaker Oral Abstract – Embargo: Wednesday, March 12, 11:30 am Central (12:30 ET)]

Examining the Impact of Federally-Funded Syphilis Elimination Activities; Oral Session, Wednesday, March 12, 10:15 am Central
[Oral Abstract C8b – Embargo: Wednesday, March 12, 10:15 am Central (11:15 pm ET)]

Symposium Abstract A6b – Syphilis in the United States: Epidemiology and Emerging Issues

Preliminary CDC Data Show Seventh Consecutive Year of U.S. Syphilis Increases

Preliminary CDC surveillance data indicate that the U.S. syphilis rate increased for the seventh consecutive year in 2007, largely reflecting continued syphilis increases among men who have sex with men (MSM). The syphilis rate among females also increased in 2007 for the third consecutive year, deepening concerns about a potential resurgence of the disease among women.

The new data include cases of primary and secondary (P&S) syphilis in 2007 reported to CDC from all 50 states. CDC researchers stress that the new figures are preliminary and that reporting delays and other factors could lead to small changes in the exact number of syphilis cases and rates as the data are finalized, but are confident in the overall trends. Final 2007 statistics will be published in CDC's annual STD Surveillance Report in late 2008.

Since 2000, when the national syphilis rate reached a low of 2.1 per 100,000, the rate has increased by 76 percent. The preliminary data indicate that the rate of P&S syphilis in 2007 was 3.7 cases per 100,000 population, a 12 percent increase from the rate of 3.3 per 100,000 in 2006. The number of cases increased from 9,756 in 2006 to 11,181 in 2007.

As in recent years, the overall increases in 2007 are largely among males. The preliminary data indicate that the rate for U.S. males in 2007 was 6.4 cases per 100,000 population, representing a 14 percent increase from the rate in 2006 (5.6) and a 146 percent increase from the rate in 2000 (2.6).

Several sources of data indicate that the trend in males largely reflects substantial increases among MSM since 2000. While syphilis rates have increased recently for both men and women, the increases have been considerably larger for men. The rate among men in 2007 was roughly six times higher than that among women. This differs from the pattern seen in the late 1990s when rates among males and rates among females were roughly equivalent. CDC data show that approximately 64 percent of all P&S syphilis cases in 2007 were among MSM, compared to an estimated 5 percent in 1999.

While MSM remain most affected by syphilis, the preliminary 2007 data indicate that the rate among U.S. females increased 10 percent between 2006 and 2007 (from 1.0 to 1.1 cases per 100,000), and increased 37 percent since 2004. The upward trend among females since 2004 follows more than a decade of syphilis declines among women. While the reasons for increases among women are not yet clear, CDC is analyzing the available data to determine potential factors behind the trend.

Rates among African American men and women remain higher than rates among whites – six times higher for African American men and 13 times higher for African American women. Rates among African American men have increased 25 percent in the past year and 99 percent since 2003. Rates among African American women have increased 12 percent in the past year and 31 percent since 2003.

Since 1999, CDC has been working with public health and community partners on national syphilis elimination efforts aimed at curtailing the sustained transmission of syphilis in the United States. In May 2006, CDC issued an updated National Plan to Eliminate Syphilis, which is designed to sustain the major progress made since the early 1990s in populations traditionally at risk, including African Americans and women of all races, and to support innovative solutions to fight the resurgence of syphilis among MSM. More information on these efforts is available online at: <http://www.cdc.gov/stopsyphilis/>.

Oral Abstract A1d: Missed Gonorrhea Infections by Anatomic Site among Asymptomatic Men Who Have Sex with Men Attending U.S. STD Clinics, 2002-2006

Gonorrhea Infections in Asymptomatic MSM Missed Due to Lack of Testing at All Exposed Anatomic Sites

New data from several STD clinics suggest that more than one-third of rectal gonorrhea infections and more than a quarter of pharyngeal (throat) gonorrhea infections among asymptomatic men who have sex with men (MSM) are missed and not treated because many are not tested at all sites of reported exposure.

Led by CDC's Kristen C. Mahle, researchers evaluated asymptomatic MSM tested for gonorrhea and estimated the proportion of asymptomatic infections that were missed as a result of incomplete testing in STD clinics in eight cities between 2002 and 2006. CDC guidelines recommend that MSM be tested for gonorrhea at all exposed anatomic sites (pharyngeal, urethral, and rectal) on an annual basis, and more frequently if they engage in high-risk behaviors.

The researchers collected data on the care received during 36,926 patient visits at 10 STD clinics in eight cities (Chicago, Denver, Houston, New York City, Philadelphia, San Francisco, Seattle, and Washington, D.C.). Among asymptomatic patients, gonorrhea testing at the urethral site took place in 91 percent of patient visits in which urethral exposure was reported; pharyngeal testing took place at 74 percent of patient visits in which pharyngeal exposure was reported, and rectal testing in 64 percent of patient visits in which rectal exposure was reported. The analysis also found that asymptomatic MSM were tested for gonorrhea at *all* exposed anatomic sites in 52 percent of patient visits.

Based upon the percent of positive tests among those men, researchers estimated that 35 percent of rectal infections, 25 percent of pharyngeal infections, and 9 percent of urethral infections went undiagnosed, with large variations occurring across clinics.

In considering possible reasons that providers do not screen at all exposed anatomic sites, the researchers noted that nucleic acid amplification tests (NAATs) are only FDA-approved for use on specimens from the urethra but not for use on specimens from the pharynx or the rectum. NAATs are frequently the only tests available to diagnose gonorrhea. They are not constrained by strict specimen transport conditions required for bacterial culture tests, which must be used for testing non-genital sites. Furthermore, the urethra may be the only site that is typically associated with symptoms when infection is present. The researchers said that rectal and pharyngeal testing rates may also be lower because the tests require a specimen that is more difficult to collect, the culture tests needed may not be available, and a patient who has no symptoms may be less willing to undergo an uncomfortable test.

Researchers emphasize that these data point to the need for providers to screen for gonorrhea based on reported exposure, rather than symptoms only, since the majority of gonorrhea infections at non-genital sites are asymptomatic. They encourage increased education to ensure that providers are aware of the STD Treatment Guidelines and the prevalence of asymptomatic rectal and pharyngeal gonococcal infection. Providers must also consult with local laboratory directors to determine if gonorrhea culture is available or if the laboratory has taken the necessary regulatory steps to use NAATs for off-label specimen testing.

Oral Abstract D5a – Self-Reported Syphilis and Gonorrhea Testing among Men Who Have Sex with Men (MSM) in the United States, National HIV Behavioral Surveillance System, 2003-2005

Poster Abstract P143 – STD Testing of HIV-Infected MSM at Eight U.S. Clinics

STD Testing Among MSM Less Frequent than Recommended by Public Health Guidelines

Two CDC studies of STD screening among men who have sex with men (MSM) found that testing rates are significantly lower than recommended in public health guidelines. For sexually active MSM, CDC recommends annual HIV and syphilis blood testing, annual chlamydia testing, as well as annual gonorrhea testing at all anatomic sites of exposure (pharyngeal, urethral, and rectal) – with more frequent testing for MSM who are engaged in high-risk behavior.

Few MSM Report Annual Syphilis and Gonorrhea Screening

A study led by CDC's Eric Tai found that fewer than half of HIV-negative MSM report annual syphilis and gonorrhea testing. These investigators identified a range of factors associated with an increased likelihood of an individual being tested.

In the largest study of its kind to date, the researchers analyzed data from more than 10,000 HIV-negative MSM (n=10,030) in 15 cities collected by the National HIV Behavioral Surveillance System from 2003 to 2005. They found that, within the previous year, just 39 percent reported having been tested for syphilis and 36 percent reported having been tested for gonorrhea.

The study identified four factors that were associated with having been tested for syphilis or gonorrhea:

- **Age:** MSM aged 18-24 years were more than twice as likely as MSM aged 45 years or older to be tested for syphilis (odds ratio (OR)=2.2) and gonorrhea (OR=2.7)
- **Race:** Black MSM were 1.3 times and 1.4 times as likely to be tested for syphilis and gonorrhea, respectively, than white MSM
- **Insurance:** Those with private health insurance were 1.3 times as likely to be tested for both syphilis and gonorrhea as MSM with no health insurance
- **Disclosure:** Men who reported telling a health care provider about having sex with other men were more than twice as likely to be tested for syphilis (OR=2.2) and gonorrhea (OR=2.1)

In order to increase annual STD testing among sexually active MSM, as recommended in CDC's STD Treatment Guidelines, the researchers recommend that health care providers routinely assess the risks of STDs among male patients through inquiries about sexual activity.

Low STD Screening Rates among HIV-infected MSM Pose Challenge to STD and HIV Prevention

A study led by CDC's Karen Hoover found that HIV-infected MSM are infrequently tested for STDs. Because HIV infection increases the risk of contracting other STDs, and because having an STD increases the risk of HIV transmission, diagnosing and treating STDs is critical – both for the health of HIV-infected individuals and for HIV prevention efforts. CDC recommends at least annual screening for STDs among asymptomatic HIV-infected MSM.

The study examined data from HIV-infected MSM receiving care at eight HIV clinics in six U.S. cities (Chicago, New York, Miami, Atlanta, San Francisco, and Los Angeles) from 2004 through 2006. The study included three components: a survey that asked providers how often they questioned patients about consistent condom use and how often they tested asymptomatic patients for STDs if they reported unprotected sex; a survey that asked patients if they had been

tested for an STD in the past year when asymptomatic; and a review of medical records from patient visits to determine actual STD testing rates.

The survey of 128 providers found that almost all (96%) reported that they asked (80% always and 16% sometimes) their HIV-infected MSM patients about condom use. Among these providers, 89 percent reported that they would test (73% always and 16% sometimes) for syphilis in asymptomatic HIV-infected MSM reporting unprotected sex, while 88 percent said they would test (49% always and 39% sometimes) for gonorrhea, and 84 percent reported they would test (45% always and 39% sometimes) for chlamydia.

The patient survey results differed from provider responses. Less than half (49%) of 507 asymptomatic patients reported being offered a syphilis test within the last year, and even fewer reported being offered a gonorrhea (35%) or chlamydia (32%) test.

To estimate actual, annual STD screening rates, the researchers also examined patient medical records for each year of the study. As illustrated in the chart below, a preliminary analysis of medical records from 1,506 patients in 2005 (most recent data) found that although annual syphilis screening was relatively common, annual chlamydia and gonorrhea screening of asymptomatic patients was done infrequently.

Researchers also investigated whether there were differences in screening by race. About 59 percent of the patient medical records reviewed were from minority populations. As the chart below indicates, while similar proportions of black and white MSM were tested for chlamydia and gonorrhea, fewer Hispanic patients were tested. The authors note that STD screening of patients in *all* racial and ethnic populations was less frequent than recommended by guidelines.

Six-City Study of HIV-Infected MSM

Percent of asymptomatic HIV-infected MSM screened for syphilis, chlamydia, and gonorrhea in 2005*

	Syphilis	Chlamydia		Gonorrhea		
		Urethral	Rectal	Urethral	Rectal	Pharyngeal
Total	82%	21%	5%	22%	5%	2%
White, non-Hispanic	74%	25%	1%	27%	1%	1%
Black, non-Hispanic	71%	26%	4%	29%	4%	3%
Hispanic	90%	11%	12%	12%	12%	2%

**Patients were tested at least once during year when asymptomatic (data obtained from medical chart review)*

The researchers hypothesize that although results from the provider survey indicate that providers understand the importance of STD screening for HIV-infected patients, actual screening rates for chlamydia and gonorrhea may be low because there are multiple barriers that prevent physicians from following the guidelines. Barriers may include too few laboratories that perform pharyngeal and rectal testing, provider discomfort with detailed sexual risk assessment, and competing counseling and testing priorities during a brief office visit. The researchers suggest that the development of provider-focused interventions to facilitate testing could improve STD screening rates in HIV-infected MSM, as would better dissemination of screening guidelines.

Late-Breaker Oral Abstract: Performance of Nucleic Acid Amplification Tests (NAATs) for Chlamydial and Gonococcal Infections of the Oropharynx and Rectum in MSM

DNA Testing Method Can Identify Twice as Many Throat and Rectal Gonorrhea and Chlamydia Infections as Traditional Bacterial Culture

A new study shows that a more efficient STD screening method – called a nucleic acid amplification test (NAAT) – can detect at least twice as many oropharyngeal (throat) and rectal gonorrhea and chlamydia infections as a bacterial culture test, the standard means of diagnosing gonorrhea and chlamydia infections in extra-genital sites.

Culture testing requires that bacteria be grown in a controlled laboratory setting before the infection can be identified. Because NAATs can detect bacterial DNA directly from a patient sample, they are generally more accurate, easier to use, and provide results faster than culture tests.

Diagnosing and treating infections at all exposed anatomic sites (i.e., genitals, throat, rectum) is essential for preventing the spread of STDs. To date, three NAATs are cleared by the Food and Drug Administration (FDA) to screen for both chlamydia and gonorrhea infections in the urogenital tract. These tests have replaced traditional bacterial culture for those infections in many medical settings. However, none of these NAATs has been cleared by the FDA to screen for infections in the throat or rectum, which are relatively common among men who have sex with men (MSM). FDA clearance of NAATs for use at extra-genital sites would require submission of additional data to verify their effectiveness.

To assess whether NAATs already approved for urogenital use are effective in identifying chlamydia and gonorrhea infections in the throat and rectum, researchers from the University of California, San Francisco (UCSF) and the San Francisco Department of Public Health, led by UCSF's Julius Schachter, tested oropharyngeal and rectal swab specimens from 1,110 MSM attending San Francisco's public STD clinic between October 2005 and May 2007. Forty percent of the men had no symptoms for either disease. All collected samples were tested with a traditional culture test, as well as two different NAATs currently FDA-approved for urogenital use.

Among the MSM participating in the study, the tests indicated that chlamydia prevalence was 0.8 percent in the throat and 6.1 percent in the rectum; gonorrhea prevalence was 8.3 percent in the throat and 8.2 percent in the rectum. Dr. Schachter and colleagues found that both NAATs identified a significantly larger number of chlamydia and gonorrhea infections in the throat and rectum than traditional bacterial culture tests. NAATs were statistically similar in identifying the majority of all chlamydia and gonorrhea infections in the throat and rectum (range: 63%-100%), while culture tests identified significantly fewer proportions of infections in extra-genital sites (range: 27%-44%). Both NAATs also had greater sensitivity (the ability to correctly identify those who are infected) than traditional culture tests, and comparable specificity (the ability to correctly identify those who are not infected).

The authors note that FDA clearance of NAATs to screen for chlamydia and gonorrhea infections in the throat and rectum would clear the way for their widespread use in medical settings, identify more infections, and help stop the continued spread of these diseases – particularly among MSM.

CDC is working with the FDA and test manufacturers to gather, analyze, and coordinate the submission of relevant data to the agency. In the interim, laboratories may use NAATs to test for chlamydia and gonorrhea in the throat or rectum, provided they first perform in-house studies to verify the accuracy of their testing methods in accordance with established federal regulations. The San Francisco Department of Public Health, for example, has performed such a study and now uses NAATs in its laboratory to screen for chlamydia and gonorrhea at all three anatomic sites. CDC encourages dialogue among public health professionals to determine whether their local patient populations are at risk for chlamydia and gonorrhea infections at extra-genital sites, and advises local health departments to work with laboratory directors to ensure the development of diagnostic capacity for such testing if it is needed.

Oral Abstract C8b – Examining the Impact of Federally-Funded Syphilis Elimination Activities

Data from 28 States Suggest Federal Syphilis Elimination Efforts Have Had Significant Impact on Syphilis Rates

In 1998, following a decade of declining syphilis rates, CDC provided the first funding for syphilis elimination to 25 states and three cities¹ with the highest remaining syphilis rates or with a high probability for a resurgence of the disease. One year later, CDC formally launched its *National Plan to Eliminate Syphilis from the United States* to guide the nation's efforts to end the sustained transmission of syphilis. Now, a new study suggests that federal syphilis elimination funding significantly impacted syphilis rates in the areas that first received funding in 1998 or 1999 and have continued to receive funding over the past decade.

Led by CDC's Harrell Chesson, researchers first compared syphilis trends in the 28 initially funded states² to trends in other states. The analysis focused specifically on rates of early syphilis (primary, secondary, and early latent syphilis), which were obtained from CDC's annual STD surveillance reports (2000-2005). They found that the initially funded states had larger decreases, or smaller increases, in syphilis rates from 2000 to 2005 compared to states that received no syphilis elimination funding or that did not receive such funding until later years. In aggregate, the annual change in syphilis rates for the 28 initially funded states ranged from a decline of 16 percent to an increase of 6 percent. In states that did not initially receive funding, the rates increased in every year, with increases ranging from 1 percent to a high of 43 percent.

To examine whether these trends might be attributable to federal syphilis elimination funding, the researchers developed two related mathematical models. One model estimated the impact of funding levels on the magnitude of states' syphilis rates, and the second estimated their impact on year-to-year *changes* (increases or decreases) in state syphilis rates. Inputs to the models included funding allocations to the 28 individual states from 1998 through 2005, as well as state-specific syphilis data from CDC's annual surveillance reports.

Both models found an association between funding levels and changes in syphilis rates. In the 28 initially funded states, syphilis elimination funding in a given year was associated with subsequent declines (over the following two years) in state-level syphilis rates. The greater a state's per capita syphilis elimination funding in a given year, the greater the decline in syphilis rates in subsequent years. While this type of analysis cannot confirm a causal relationship between syphilis elimination funding and declining syphilis rates, the results suggest that such funding is having a notable impact.

In assessing the significance of their findings, Dr. Chesson and colleagues point out that syphilis rates among African Americans and women of all races have generally declined since the onset of syphilis elimination activities. Since 2001, however, overall syphilis rates have increased due to substantial increases in syphilis among men who have sex with men (MSM), who now account for the majority of syphilis cases. The researchers believe that the overall increases in syphilis rates nationally would have been greater in the absence of federal syphilis elimination funding. They also note that in 2006, CDC launched an updated *National Plan to Eliminate Syphilis* in order to sustain progress in the populations traditionally at risk and to reverse the recent syphilis increases among MSM.

¹ The initially targeted states are: Alabama, Arizona, Arkansas, California, Connecticut, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and Wisconsin. Washington, DC is also included as an initially targeted "state." Pennsylvania and New York are included as "initially-targeted states" because cities in these states (Philadelphia and New York City, respectively) received funding beginning in 1998 and 1999.

² Note: For the three funded cities, this analysis examined their respective state-level syphilis rates.