

Needle Sharing May Play A Major Role in Transmission of Syphilis

Drug-using behavior closely associated with active syphilis infection in female sex workers along U.S./Mexico border

April 28, 2010

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A binational team of researchers led by University of California, San Diego School of Medicine have discovered that active syphilis infections are significantly greater in female sex workers who inject drugs and share needles than those who don't. The findings suggest that injection drug use may play as big a role as risky sexual behavior in the transmission of syphilis. It may also exacerbate the spread of both HIV and syphilis, as syphilis is frequently a co-factor for HIV infection.

The study, headed by Thomas L. Patterson, MD, of UCSD's Department of Psychiatry and the Veterans Administration Health Care System, San Diego, was published online April 27, 2010 in the journal *Addiction*. It focuses on female sex workers in the U.S./Mexico border towns of Tijuana and Ciudad Juarez, which are adjacent to San Diego, California and El Paso, Texas, respectively. Female sex workers operate legally in these two cities which lie on major drug trafficking routes.

In collaboration with Mexican researchers, UCSD investigators interviewed just over 900 female sex workers to determine their sociodemographics, condom and substance use, and male client characteristics. These women were also tested for HIV and sexually transmitted diseases (STDs). The researchers found that female sex workers who did not have HIV, but tested positive for active syphilis infection, were more likely to inject drugs, use illegal drugs before or during sex in the past month, and have U.S. clients who had higher rates of drug-using, including injection, behavior.

"As more than two-thirds of these women have clients from the U.S., our data suggest that U.S. men seeking paid sex across the border in Mexico are at considerable risk of acquiring and transmitting syphilis and other STDs," said co-author Steffanie A. Strathdee, PhD, associate dean for Global Health Sciences and Chief of the Division of Global Public Health at UC San Diego.

Given the sizable overlap between female sex workers and injection drug use in Tijuana and Ciudad Juarez and the consistent associations that were observed between syphilis infection and injection behaviors, STD clinics need to think about providing access to sterile syringes, and needle exchange programs should provide rapid, on-site testing for syphilis, according to Strathdee. "We recommend that rapid testing for syphilis be more widely available in these cities, so that these female sex workers can receive immediate follow-up if they test positive."

Like most countries, STD prevention and drug treatment programs are not well integrated in Mexico. Data from this study suggest that failure to integrate these programs could intensify the course of both HIV and syphilis epidemics.

"Because syphilis is a co-factor for HIV, when an HIV epidemic occurs among drug injection users, high rates of syphilis could be a contributing factor that promotes the HIV epidemic," said Strathdee. "Men who have unprotected sex with female sex workers who have syphilitic sores are much more likely to acquire HIV because the two organisms exacerbate each other."

"Our findings provide not only an important message about syphilis control, but also about HIV prevention," said co-author Hugo Staines-Orozco, director of the Institute of Biomedical Sciences at the Autonomous University of Ciudad Juarez. "Cities that have a lot of HIV among injection drug users also tend to have a lot of syphilis, as the two epidemics are linked."

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This work was funded by grants from the National Institutes of Mental Health and National Institute on Drug Abuse.

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