

## Herpes-2 drives HIV infection among non-injection drug users in NYC

### Purpose of the studies

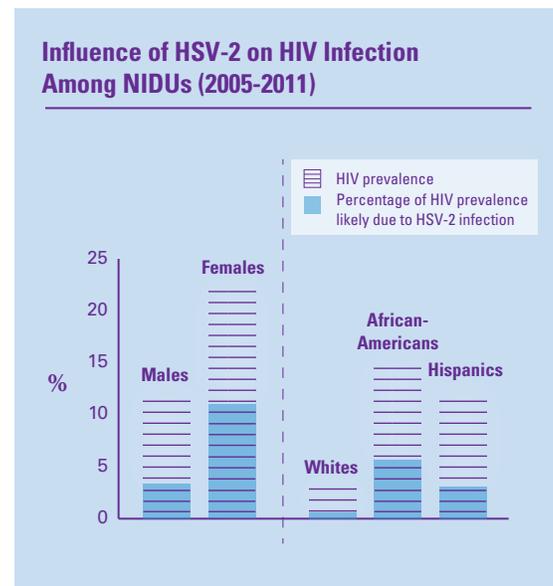
Studies were undertaken to examine the influence of herpes simplex virus 2 (HSV-2) as a contributing factor in: (a) the increase in HIV among non-injecting drug users (NIDUs) (users of heroin and cocaine), and (b) the sexual and race/ethnic disparities in HIV infection among NIDUs (HIV was higher among women and among minorities).

### How were the studies conducted and who was involved?

NIDUs entering Beth Israel drug detoxification programs and methadone maintenance programs, who reported never injecting drugs, were recruited in 1995-99 and 2005-11. Results are from structured questionnaires and blood samples tested for HIV and HSV-2.

### What were some of the findings?

- HIV infection among NIDUs doubled from 1995-1999 to 2005-11, increasing from 7% to 13%.
- HSV-2/HIV co-infection was common in both time periods, and the increase in HIV prevalence was mainly an increase in HSV-2/HIV co-infection.
- Analysis based on the group recruited in 2005-11 found that females had higher HIV prevalence than males (22% vs 12%) and African Americans had the highest prevalence (15%) compared with Hispanics (12%) and Whites (3%).
- Sex and race/ethnic differences in HSV-2 followed the same pattern found in HIV, and disparities in HIV infection were greatly reduced when taking into account the increased biological susceptibility to HIV due to HSV-2 infection. For females, about half of the HIV infections (50%) were attributed to being HSV-2 positive; and for African Americans, more than one-third (38%) was attributed to HSV-2.



### What might this mean for policy makers and funders who plan HIV prevention efforts?

- The findings clearly indicate that interventions to reduce the transmission of HIV due to HSV-2 infection are needed.
- Rather than a single intervention, a combination prevention program would be much more effective, and should include: Pre-exposure prophylaxis (PrEP) for HIV-/HSV-2+ individuals and HIV treatment for HIV+ individuals (treatment as prevention); social marketing programs encouraging condom use; drug treatment programs; and behavioral sexual risk-reduction programs for NIDUs.
- While HSV-2 suppressive therapy has not been found to be effective in reducing the transmission of HIV to date, additional research on HSV-2 suppressive therapy is warranted, including examining higher doses of HSV-2 antivirals.

### Where can you find more information about these findings?

Des Jarlais DC, Arasteh K, McKnight C, Perlman DC, Cooper HL, & Hagan H (2013) HSV-2 infection as a cause of female/male and racial/ethnic disparities in HIV infection. *PLoS One*, 8, e66874.

Des Jarlais DC, Arasteh K, McKnight C, Perlman DC, Feelemyer J, Hagan H, & Cooper HL (2014) HSV-2 co-infection as a driver of HIV transmission among heterosexual non-injecting drug users in New York City. *PLoS One*, 9, e87993.

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