

HIV Incidence Estimation Consultation February 2007

On February 23, 2007, CDC, CCID, NCHHSTP, Division of HIV/AIDS Prevention, will host a meeting of statistical consultants to review the methods and available data to estimate HIV incidence in 2005.

Monitoring new infections is methodologically challenging. In the early 1990s back-calculation models based on AIDS incidence data provided a range of HIV incidence estimates. Anti-retroviral therapy arrests the progression of HIV immunosuppression. Therefore, back-calculation approaches derived exclusively from AIDS incidence are no longer valid. The availability of HIV, non-AIDS surveillance systems throughout the U.S., and the development of assays that differentiate recent versus long-standing infections make it possible to develop improved estimates for the annual infection incidence.

CDC funds 34 areas to conduct HIV incidence surveillance. The serologic testing algorithm for recent HIV seroconversion (STARHS) is performed on remnant serum specimens from confirmed HIV antibody positive tests and consists of a series of two tests: a standard, sensitive, HIV antibody test followed by the BED HIV-1 Capture EIA manufactured by Calypte Biomedical Corporation. STARHS distinguishes between recent and long-standing HIV-1 infections on a population level. In addition, information on HIV testing frequency in the population is required to estimate HIV incidence.

HIV incidence estimates for 2005 are derived based on data from a limited number of states for 2005 and new and complex estimation methodologies and extrapolation procedures. Therefore, CDC requests expert review of and advice on HIV incidence estimation for the U.S.

Charge to the Consultants

1. Evaluate the validity of several HIV incidence estimation methods developed by DHAP personnel and collaborators.
2. Review available HIV incidence, surveillance, and other data and subsequent results.
3. Evaluate the validity of 2005 HIV incidence estimates based on the different estimation methods.
4. Identify limitations and/or uncertainties.