

**California Department of Public Health  
Office of AIDS  
Talking Points**

**August 3, 2008**

**Journal of the American Medical Association Article  
on National HIV Incidence Estimates**

**METHODOLOGIC BACKGROUND**

1. Until recently, technology that accurately distinguished between recent and long-standing HIV infection was not available. In the absence of such technology, estimates of HIV incidence (recent infections) relied on routine HIV/AIDS case reporting, which does not account for duration of HIV infection and can include individuals infected many years before their diagnosis.
2. Current HIV incidence surveillance strategies utilize the recently developed Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS). The assay currently used in STARHS is the BED HIV-1 Capture Enzyme Immuno Assay (BED assay).
  - The ratio of HIV-specific antibody to total antibody increases with time after HIV infection.
  - The BED assay is used with the diagnostic HIV-positive specimen to detect the approximate length of time of the infection (i.e., antibody level present).
  - It distinguishes early (less than 156 days) versus late infection.
  - STARHS was developed for use at the population level and is not useful for individual-level clinical or diagnostic purposes.
3. Population-based HIV incidence estimates are calculated using a statistical method that combines STARHS test results with information from newly diagnosed HIV cases and patient HIV testing history.

**HIV INCIDENCE AND AIDS CASE TRENDS IN CALIFORNIA**

**1. The Centers for Disease Control and Prevention (CDC) HIV Incidence Estimates and California – Now.**

- California's incidence data were not used in the calculation of the national estimate published in the August 3, 2008, issue of Journal of the American Medical Association (JAMA) that showed an approximate 40 percent increase in national incidence estimates compared to previous estimates (56,300 versus 40,000 annual cases).

- Although California has implemented HIV Incidence Surveillance using the CDC-developed STARHS methodology,<sup>1</sup> name-based HIV reporting was not implemented by the cut-off date necessary to produce the 2006 incidence estimate (name-based reporting was initiated in April 2006).
- The number of new HIV infections each year in California has previously been estimated to be between 5,000 and 7,000. This number is based on the following:
  - A series of “Consensus Conferences” convened in California in 2000 that developed population estimates of HIV incidence.
  - Downward adjustment based upon observed reported HIV cases in the code-based HIV surveillance system.
- It is not possible to estimate the California contribution to the new national estimates at this time. Additionally, neither the code-based or name-based HIV surveillance systems reached adequate maturity to generalize the annual reported cases as HIV incidence.
- Until more data are available for California, the California Department of Public Health, Office of AIDS (CDPH/OA) is comfortable continuing to use the 5,000-7,000 annual incidence estimate for planning purposes, even in light of the new CDC national estimate.
  - The 5,000-7,000 range was developed independently of the previous CDC estimate, as described above, thus there is not necessarily a need to adjust it in response to CDC’s national estimate.
  - Assuming an increased national estimate and a constant California estimate, the California contribution to national annual HIV infections would be lower than previously assumed.
  - The above would be consistent with CDC reports that the highest growth of new HIV infections nationally is among African Americans.
    - Nationally, about 45 percent of new infections are occurring among African Americans, while in California it is less than one-half this number (18-20 percent).
    - This lower percentage is due to the lower representation that African Americans have in the California population (less than 7 percent) compared to the rest of the United States (over 11 percent).
    - Thus, because California has less African American representation in its population than the rest of the United States, and HIV infections are currently growing fastest among African Americans, California representation among new HIV infections would be expected be lower now when compared to 10-15 years ago.

## **2. CDC HIV Incidence Estimates and California – in the Future.**

- CDPH/OA is working with local health jurisdictions and CDC to assess whether a sufficient amount of name-based HIV surveillance data has been collected to produce preliminary incidence estimates for California for 2007.
- In the future, CDC’s new methods will be routinely used when CDPH/OA is confident that a reliable estimate can be made.

- Reliable HIV incidence estimate trends may not be available until approximately 2010.

### **3. Trends in California AIDS Cases.**

- The only measure available to assess trends in HIV disease in California is reported AIDS cases. (“AIDS incidence rates” are newly reported AIDS cases/100,000 population.)

#### Sex

- AIDS incidence rates were markedly higher in men than in women (three to ten times depending on ethnicity) and this relationship remained stable over time between 2000–2006.

#### Race/ethnicity

- AIDS incidence rates were markedly higher in African Americans than in any other race-ethnicity group from 2000–2006.
  - Latino and White were both about 30 percent of African Americans.
  - Native American were 10-20 percent of African Americans.
  - Asian/Pacific Islander were somewhat less than Native Americans.
- AIDS incidence rates have decreased slightly between 2000–2006 for all race-ethnicity groups except Asian/Pacific Islanders, in whom the rate remained stable.

#### Transmission Risk Groups

- The majority of AIDS cases have occurred among men who have sex with men, with the proportion of annual cases in this exposure category varying between 56.7 and 58.7 percent between 2003 and 2007.
- The proportion of annual AIDS cases reported in the injection drug using category has generally decreased, from over 13 percent for each year during 1998–2001, to less than 10 percent for 2006 and 2007 (with a steady decrease between 2002 and 2005).
- The proportion of annual AIDS cases reported in the heterosexual risk category increased between 1993 and 1999. Although there was a slight increase from the 10-11 percent range during 1999–2005 to over 12 percent in 2006 and 2007, the trend between 2000–2006 was not statistically significant ( $p=.22$ ).
- AIDS cases attributed to perinatal exposure have remained a very small proportion of total cases (less than 1 percent). Annual number of cases varied between 8-15 between 2000–2006. These rates are approximately 20 percent of the number reported 1992–1995.

## REFERENCES

JAMA Article: <http://jama.ama-assn.org/cgi/reprint/300/5/520.pdf>.

CDC Information: <http://www.cdc.gov/hiv/topics/surveillance/incidence.htm>.

CDPH/OA HIV/AIDS statistics:

<http://www.cdph.ca.gov/data/statistics/Documents/OA-2008-06HIVAIDSMerged.pdf>.

<http://www.cdph.ca.gov/data/statistics/Pages/OAHIVAIDSStatistics.aspx>.

<sup>1</sup>**Abstract PS08-802**  
**HIV/AIDS Incidence Surveillance in California**  
**Fiscal Year January 1, 2008 – December 31, 2008**

The California Department of Public Health, Office of AIDS (CDPH/OA) conducts HIV/AIDS surveillance activities consistent with the guidance and in collaboration with the Centers for Disease Control and Prevention (CDC). The HIV/AIDS surveillance activities conducted by CDPH/OA include the systematic collection, analysis, interpretation, dissemination, and evaluation of population-based information about persons diagnosed with HIV disease. These activities are necessary to provide precise and timely information necessary to identify ongoing patterns of infection and to measure the burden of disease within California. Analysis of HIV/AIDS case records collected through HIV/AIDS surveillance activities provides the information needed to describe and monitor health trends, allocate resources, and to facilitate research. HIV/AIDS surveillance data are routinely used for surveillance reports, HIV epidemiologic profiles, and HIV prevention grant applications. HIV/AIDS cases collected by CDPH/OA through HIV/AIDS surveillance activities are routinely reviewed and evaluated for accuracy and completeness as published in the Technical Guidance by CDC.

**Part 1 – Core Surveillance**

HIV/AIDS surveillance in clinical settings that involves the reporting of confidential HIV tests and AIDS diagnoses is referred to in this Funding Opportunity Application as core HIV/AIDS surveillance. The goals HIV/AIDS core surveillance are to: 1) plan and conduct core HIV/AIDS surveillance activities in collaboration and coordination with CDC; 2) perform active case finding procedures to investigate and report HIV/AIDS cases from potential reporting sources; 3) execute follow-up investigations of cases and populations of special epidemiologic significance; 4) routinely evaluate the performance of the HIV/AIDS case surveillance system, per the standards and outcomes outlined in the Technical Guidance published by CDC; 5) monitor the number of cases diagnosed and reported annually, the prevalence of persons living with HIV disease, risk factors associated with HIV infection and HIV disease-related morbidity; and 6) analyze and disseminate HIV/AIDS surveillance data for prevention and health services planning and evaluations.

**Part 3 – Incidence Surveillance**

The current HIV/AIDS case surveillance system is being expanded to include a measure of the number of new HIV infections/year. Since HIV can be asymptomatic for many years tracking new HIV diagnoses alone does not accurately reflect current trends in HIV transmission. In March 2005, CDPH/OA began monitoring new HIV infections by applying the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS, currently Calypte® BED HIV-1 Capture EIA) to left over diagnostic sera of newly reported HIV cases to distinguish between recent and long-term infections. STARHS results indicating probable recent infection will be statistically weighted using patient

HIV testing and treatment history in order to estimate the number of new HIV infections in the population. The goals of HIV Incidence surveillance are to: 1) routinely collect and forward remnant diagnostic blood specimens from all newly diagnosed cases; 2) collect HIV testing and treatment information needed for statistical estimation; 3) calculate population-based estimates of HIV incidence; and 4) use HIV incidence data to monitor trends in transmission, target prevention resources to populations most heavily affected, and evaluate HIV prevention programs.