

Council of State and Territorial Epidemiologists Position Statement

03-ID-09

Committee: **Infectious Disease**

Title: **The impact of new technologies and therapies on HIV/AIDS surveillance:
surveillance of antiretroviral resistance**

Statement of Problem:

Over the course of the HIV/AIDS epidemic, surveillance practices have reflected changes in understanding of HIV disease and evolving medical practices for diagnosis and treatment of HIV infection and AIDS. The HIV/AIDS surveillance case definitions have been revised periodically to ensure that surveillance programs accurately monitor the extent of morbidity and mortality associated with HIV in the U.S.

Surveillance programs should consider the new technologies used in clinical HIV management for monitoring drug resistance in HIV-infected persons. Recently updated guidelines on clinical practices for the treatment of HIV infection, entitled "Guidelines for the Use of Antiretroviral Agents in HIV Infected Adults and Adolescents." provided by the U.S. Department of Health and Human Services and the Henry J. Kaiser Family Foundation state that both genotyping and phenotyping of the HIV genome to evaluate antiretroviral drug resistance (ARVDR) are recommended in specific circumstances.

Testing for ARVDR is recommended by current US guidelines to inform the choice of a new regimen when a current regimen is failing. In addition, current US guidelines also recommend consideration of ARVDR testing in individuals recently infected with HIV. Recommendations for more widespread ARVDR testing at diagnosis have also been made by researchers who have shown that transmitted mutations associated with ARVDR can increase the chance of failure of the first regimen both in the recently and chronically infected. European guidelines on ARVDR testing recommend testing at HIV diagnosis in any area in which ARVDR prevalence is greater than 10%. In Canada, routine surveillance for HIV routinely includes genotyping of virus found in diagnostic sera for the purposes of antiretroviral drug resistance surveillance of all newly-diagnosed individuals. Over time, testing at diagnosis is likely to become the standard of care for infected persons in the US.

No specific recommendations have been made regarding a list of mutations that should be used specifically for surveillance purposes either in newly diagnosed or in treated patients. Epidemiologic studies on prevalence of ARVDR vary widely in the sets of mutations used for analysis. CDC is involved in ongoing discussions with the International AIDS Society, Health Canada's antiretroviral drug resistance surveillance program, and the European-Union-sponsored antiretroviral drug resistance surveillance program to standardize the set of mutations used for data analysis in surveillance projects.

There is already a need for more data to describe the impact of ARVDR on the HIV epidemic in the United States. CDC is piloting surveillance of antiretroviral drug resistance among individuals newly diagnosed with HIV using diagnostic sera in four areas, and is providing resources to extend ARVDR surveillance to some states involved in incidence surveillance. CDC is also developing data specifications and electronic reporting procedures which would allow states to incorporate ARVDR viral genotyping information into HIV surveillance databases.

A consultation on antiretroviral drug resistance surveillance for state and local health departments involved in HIV incidence surveillance was held in March 2003.

Council of State and Territorial Epidemiologists Position Statement

Statement of the desired action(s) to be taken:

CSTE Recommends:

- 1) States which are already incorporating surveillance of HIV incidence into routine surveillance by means of the serologic testing algorithm for recent HIV infection should consider incorporating surveillance of antiretroviral drug resistance among recently infected individuals.
- 2) States should consider laboratory reporting of tests of antiretroviral drug resistance for persons reported with HIV infection or AIDS. In addition, states in the process of revising HIV reporting requirements should consider the use of broad language that will allow reporting of additional tests that may become important in the management of HIV infection in the future.
- 3) CDC should provide assistance with testing, technical assistance, and funding to states to standardize data elements for drug resistance. In addition, CDC should provide guidance on implementing electronic reporting procedures and enhance the capacity of state surveillance programs to manage electronic laboratory data.

Fiscal impact:

Initiation of laboratory reporting in some areas may result in a data management burden on surveillance staff. Electronic reporting can ease the paper burden and assist areas in handling large numbers of test results more efficiently. Some programs may need additional computer or personnel support to implement a laboratory reporting system.

Probable impact on Public Health:

Public health programs will benefit from the data available for planning for treatment and care services as well as additional epidemiologic data for describing the spectrum of HIV infection in infected individuals in the U.S. and estimating HIV in states and nationally. In addition to informing choice of regimens in some circumstance, prevention programs may use information on transmitted ARVDR to evaluate risk prevention programs targeted to persons with HIV receiving treatment.

References:

CSTE. 2002. Surveillance for HIV incidence. CSTE Position Statement 2002-ID-07.

CSTE. 2001. Improved laboratory surveillance for HIV. CSTE Position Statement 2001-ID-03.

CDC. Guidelines for National Human Immunodeficiency Virus Case Surveillance, Including Monitoring for Human Immunodeficiency Virus Infection and Acquired Immunodeficiency Syndrome. MMWR 1999; 48(RR-13): 1-13.

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Council of State and Territorial Epidemiologists
Position Statement

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