

Human Immunodeficiency Virus (HIV)

Also known as: HIV/AIDS, Acquired Immune Deficiency Syndrome (AIDS)

Responsibilities:

Hospital: Report cases, deaths of persons with HIV/AIDS, and births by HIV-infected women by mail or phone

Lab: Report results of positive HIV detection tests, cultures, viral loads (any level, including less than the detectable limits of the test), and CD4+ cell counts (any level) by mail or secure electronic transmission.

Physician: Report all new patients and HIV diagnoses, AIDS diagnoses, and deaths of persons with HIV/AIDS (from any cause) by mail or phone.

Local Public Health Agency (LPHA): Follow-up generally not required

Iowa Department of Public Health

HIV Reporting: (515) 242-5141

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Agent

The human immunodeficiency virus is an RNA retrovirus of the lentivirus subgroup, meaning that it contains RNA as its inner core of nucleic acid. Two types of HIV have been identified: type 1 (HIV-1) and type 2 (HIV-2). Although the two types are distinct, they produce similar symptoms and disease. Type 1 predominates in the United States, and it is the most pathogenic. HIV targets and destroys CD4+ T-lymphocyte (helper or T4) cells, leaving a person vulnerable to attack by other organisms and agents, including cancer. Acquired Immune Deficiency Syndrome (**AIDS**) indicates the late manifestation of HIV infection, in which severe immunosuppression is present. A diagnosis of AIDS occurs when the CD4+ cell count falls below 200 cells/microliter or 14% of total lymphocytes, or when one of 26 indicator diseases is diagnosed.

B. Clinical Description

Symptoms: of recent HIV infection, called acute retroviral syndrome, are present in 80 – 90% of people with primary HIV infection. The syndrome is characterized by flu-like symptoms that may include fever, malaise, lymphadenopathy, pharyngitis, headache, night sweats, myalgia, and rash. These may last for 1-2 weeks. Symptoms of advanced HIV disease are variable but may include wasting, candidiasis, persistent generalized lymphadenopathy, pneumococcal and other bacterial pneumonia, Kaposi's sarcoma, and oral hairy leukoplakia.

Onset: of acute retroviral syndrome occurs 2 – 3 weeks after viral transmission, with seroconversion and recovery occurring shortly thereafter. Symptoms of advanced disease occur, on average, 8 – 10 years after infection (without treatment), but this may range from a few months to over 15 years.

Advanced disease: includes increased risk of opportunistic infections and conditions, including active tuberculosis, *Pneumocystis jiroveci* (formerly *P. carinii*) pneumonia, cervical cancer, B-cell lymphoma, disseminated histoplasmosis and coccidioidomycosis, and progressive multifocal leukoencephalopathy. Co-infection with other sexually transmitted diseases or viral hepatitis can substantially alter the course of the illness, shortening the time to diagnosis of AIDS.

C. Reservoirs

Common reservoirs: Humans are the only known reservoir.

D. Modes of Transmission

Spread is person to person through sexual contact; the sharing of HIV-contaminated needles, syringes, and injection paraphernalia; transfusion of infected blood or its components; transplantation of infected tissues or organs; or breastfeeding. Infants may become infected before, during, or after birth to an infected mother. Less than one-fourth of infants carried by infected mothers become infected. With treatment of the mother and newborn infant, this can be lowered considerably. HIV is not transmitted by casual contact, kissing, mosquitoes, or items in the environment.

E. Incubation period

The incubation period is highly variable. Antibodies can generally be detected 3 weeks to 3 months after infection. Without effective treatment, approximately 50% of infected adults will develop AIDS within 10 years. The incubation time for infants is shorter than in adults.

F. Period of Communicability or Infectious Period

The period of communicability begins shortly after transmission and continues throughout life. Epidemiological studies indicate that transmission potential is highest shortly after infection and during late stages of disease. The presence of other STDs can increase infectiousness.

G. Epidemiology

In 2013, CDC estimates that 1.2 million people are living with HIV infection and 1 in 6 people are unaware they are infected. By the end of 2012, over 1.1 million AIDS cases and over 636,000 deaths among persons with AIDS had been reported to CDC for the United States and its dependent areas. HIV infection (without an AIDS diagnosis) is now reportable by name in all 50 states. CDC estimates that approximately 50,000 persons become infected with HIV in the United States each year, and this has been relatively stable since 1990. Globally, 35.3 million people were living with HIV/AIDS in 2012 and approximately 2.3 million people become newly infected with HIV each year.

Iowa averages approximately 115 HIV diagnoses and 75 AIDS diagnoses per year. For additional information, visit: www.idph.state.ia.us/HivStdHep/HIV-AIDS.aspx?prog=Hiv&pg=HivSurv

H. Bioterrorism Potential

None.

2) DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To monitor trends in HIV diagnoses, AIDS diagnoses, and prevalence of persons living with HIV/AIDS so that prevention and treatment funds may be targeted efficiently and prevention programs may be evaluated.
- To interrupt disease transmission chains by providing partner counseling and testing.
- To assure referral services for persons recently diagnosed with HIV infection.
- To monitor perinatal exposures to HIV infection and morbidity in infants born to HIV-infected women.

B. Laboratory and Healthcare Provider Reporting Requirements

Reportable conditions indicative of HIV infection include:

- Confirmed positive results on any HIV diagnostic test, including antibody tests, antigen tests, cultures, and qualitative polymerase chain reaction (PCR) tests.

- **All levels** of quantitative tests (viral loads), including RT-PCR, branched chain DNA, and NASBA viral load assays. Results less than the detectable limit of the test **should** be reported.
- Acquired Immune Deficiency Syndrome (AIDS) and AIDS-defining conditions.
- **All levels** of CD4+ T-lymphocyte cell counts. Values for the absolute count and the percentage of total lymphocytes should be included.
- Birth of an infant to an HIV-infected mother (perinatal exposure) or any (positive, negative, or undetectable) non-antibody detection test (antigen test, viral culture, viral load, or qualitative PCR detection test) on an infant less than or equal to 18 months of age. These are tests indicative of perinatal exposures. Negative antibody tests (EIA, immunofluorescence, or Western blot) should not be reported.
- Death of a person with HIV/AIDS, from any cause.

Physicians or other healthcare providers must report cases within 7 days of a positive HIV test; diagnosis of HIV, AIDS, or AIDS-defining conditions; or upon first examination or treatment for HIV/AIDS (for new patients who have been previously diagnosed elsewhere). Hospitals or care providers should report births of infants to HIV-infected women (i.e., perinatal exposures).

Patient demographics, laboratory information, and patient history should be reported on form CDC 50.42A for adults and adolescents (≥ 13 years of age) and form CDC 50.42B for pediatric HIV or AIDS cases and perinatal exposures to HIV. Case report forms may be obtained from the HIV/AIDS Program at (515) 242-5141.

Laboratory personnel should forward results of tests directly to the Iowa Department of Public Health. Optional, postage-paid envelopes are available at the Clearinghouse. Request "03" envelopes at (319-398-5133) or send reports to the address below.

Case report forms and laboratory results may be addressed directly to:

Iowa Department of Public Health
Bureau of HIV, STD and Hepatitis (03) Confidential
321 East 12th Street
Des Moines, IA 50319-0075

C. Local Public Health Agency Follow-up Responsibilities

Case Investigation

Partner notification and referral services will be provided by disease prevention specialists employed by the Iowa Department of Public Health, or by Black Hawk, Linn, Polk, or Scott county health departments.

3) CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

None.

B. Protection of Contacts of a Case

To protect future contacts, all cases receive education on prevention of further spread.

The Iowa Department of Public Health will initiate the voluntary partner notification program for all persons who are newly diagnosed with HIV infection. Healthcare providers can facilitate this process by describing the program to the patient, providing the patient with the department's brochure entitled, "Partner/Spousal Notification for HIV/AIDS," and encouraging the patient to meet with the department's disease prevention specialist assigned to his or her region.

Patients' names and times of exposures are not used in the notification of partners. HIV testing is offered to all partners free of charge and appropriate referrals to other services are provided during the partner counseling sessions. Partner notification brochures are available in English and Spanish from the Clearinghouse at (319) 398-5133.

Physicians may assist the disease prevention specialists with the collection of partner notification information. In such cases, the physician should collect the following information: Partner name, address, home phone number, age and/or date of birth, race, sex, partner/marital status, height, size/build, general description of the partner, and dates of first and last exposure. Any other information that may help in locating and counseling the partner may also be included, such as medical conditions, place of employment, cell phone numbers, or other unusual circumstances/situations.

Iowa code also allows for direct notification of an identifiable sexual or needle-sharing partner when the partner is deemed to be in imminent danger of infection and the HIV-infected client will not agree to participate in voluntary partner notification. Healthcare providers may contact the HIV/AIDS Program's surveillance office (515-242-5141) for more information or to request assistance with partner notification or the direct notification of a third party. Physicians may also notify identifiable third parties directly. The *Iowa Administrative Code* 641-11.18 outlines procedures for direct notification by physicians.

C. Managing Special Situations

Occupational Exposures in Non-clinical Settings

If a care provider (including EMT, fire fighters, peace officers, and volunteers) sustains a significant exposure to blood or other potentially infectious fluids from an individual, that individual is deemed to consent to a test to determine the presence of HIV infection (or other infectious blood-borne pathogens) upon certification of a *Report of Exposure to HIV or Other Infectious Disease* form [See *Iowa Code 139A.19* and *Iowa Administrative Code* 641-11.21 to 11.26]. The individual is also deemed to consent to notification of the care provider of the test results. These consents are contingent upon submission of a significant exposure report by the care provider and its certification by an infection preventionist or physician. [Significant exposure report forms are available from the Clearinghouse at (319) 398-5133].

The hospital or clinic to which the individual was delivered shall conduct the testing. If the individual is delivered to an institution administered by the Iowa Department of Corrections, testing shall be conducted by the staff physician of the institution. If the individual is delivered to jail, testing shall be conducted by the attending physician of the jail or the county medical examiner. The sample and test results shall only be identified by a number.

If the test results are positive, the hospital or other person performing the test shall notify the subject of the test and ensure the performance of counseling and reporting requirements in the same manner as for an individual from whom consent was obtained. The report to the department shall include the name of the individual tested along with other required demographic information. The hospital or other person performing the test shall notify the care provider or the designated representative of the care provider who shall then notify the care provider who sustained the exposure.

Occupational Exposures in Clinical Settings

If a care provider sustains a significant exposure to blood or other potentially infectious fluids from an adult patient in a clinical setting (including home-health settings), a previously signed general consent for medical care shall include testing to determine the presence of HIV (or other infectious blood-borne pathogens) and notification of the care provider of the test results. Minors should be handled in the same way as an exposure that occurred in a non-clinical setting (see above). The adult patient shall be informed of the exposure and of the test(s) performed.

If the test results are positive, the hospital or other person performing the test shall notify the adult patient of the results and ensure the performance of counseling and reporting requirements in the same manner as for an individual from whom consent was obtained. The report to the department shall include the name of the individual tested along with other required demographic information. The hospital or other person performing the test shall notify the care provider or the designated representative of the care provider who shall then notify the care provider who sustained the exposure.

Information on post-exposure prophylaxis protocols is available 24 hours a day at the National Clinicians' Post-Exposure Prophylaxis Hotline at (888) 448-4911.

Reported Incidence Is Higher than Usual/Outbreak Suspected

Report to the Iowa Department of Public Health at (515) 242-5141.

D. Preventive Measures

Preventive Measures/Education (Iowa Code 141A.4)

Testing and education shall be offered to all persons who are at risk for HIV infection. Risk factors include male-to-male sex; injection drug use; testing positive for an STD; exchange of sex for money or drugs; blood transfusion before 1986; immigration from a high-incidence country; or having a sex partner who is HIV positive or who is in one of the previous risk groups.

All pregnant women shall be tested for HIV infection as part of the routine panel of prenatal tests. A pregnant woman shall be notified that HIV screening is recommended for all prenatal patients and that she will receive an HIV test as part of the routine panel of prenatal tests unless she declines the test. A declination shall be documented in her medical record. Information about HIV prevention, risk reduction, and treatment opportunities to reduce the possible transmission of HIV to the fetus shall be made available to all pregnant women.

Free HIV counseling, testing, and referral sites are available across the state for persons with risk factors. Visit: www.idph.state.ia.us/HivStdHep/HIV-AIDS.aspx?prog=Hiv&pg=HivPrev for a current list of places and times.

Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings

The CDC issued revised recommendations for HIV testing in health care settings in September 2006. They recommend routine opt-out testing for HIV for all patients aged 13 to 64 years of age unless the prevalence of undiagnosed HIV infection in the patient population has been determined to be less than 0.1 percent (1 per 1,000 patients). They also recommend that separate written consent for HIV testing should not be required; general consent for medical care should be considered sufficient. The full recommendations can be found at: www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm

4) ADDITIONAL INFORMATION

Consent and Education Requirements for HIV testing (Iowa Code 141A.6)

Prior to undergoing an HIV test, information concerning testing and any means of obtaining additional information regarding HIV infection and risk reduction shall be made available to the subject of the test.

Testing of Adults

If an individual signs a general consent form for the performance of medical tests or procedures, the signing of an additional consent form for the specific purpose of consenting to an HIV-related test is not required during the time in which the general consent form is in effect. If an individual has not signed a general consent form for the performance of medical tests and procedures or the consent

form is no longer in effect, a health care provider shall obtain oral or written consent prior to performing an HIV-related test. If an individual is unable to provide consent, the individual's legal guardian may provide consent. If the individual's legal guardian cannot be located or is unavailable, a health care provider may authorize the test when the test results are necessary for diagnostic purposes to provide appropriate urgent medical care.

Testing of minors

Minors have the legal capacity to act and give consent for diagnosis and treatment of sexually transmitted diseases, including HIV, without the consent of a parent, custodian, or guardian (see Iowa Code 139A.35).

Before undergoing an HIV test, however, a minor must be informed that the legal guardian will be notified by the testing facility if the test is confirmed as positive. Minors must give written consent for HIV testing and treatment services (see Iowa Code 141A.7 (3)). The consent form should indicate that the minor understands that his or her legal guardian will be notified if the test is confirmed as positive.

Surveillance Case Definitions

The Council of State and Territorial Epidemiologists (CSTE) surveillance case definitions for HIV/AIDS can be found at: www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis.htm#top

CSTE case definitions should not affect the investigation or reporting of a case that fulfills the criteria in this chapter. (CSTE case definitions are used by the state health department and the CDC to maintain uniform standards for national reporting.)

Iowa Epidemiological Profile of HIV/AIDS and Sexually Transmitted Diseases

Visit: www.idph.state.ia.us/HivStdHep/HIV-AIDS.aspx?prog=Hiv&pg=HivSurv

References

- Bartlett, J.G., and J.E. Gallant. *Medical Management of HIV Infection, 2012*. Johns Hopkins University, 2001. www.mmhiv.com/
- Centers for Disease Control and Prevention. HIV/AIDS website www.cdc.gov/hiv/dhap.htm
- Centers for Disease Control and Prevention. *Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings*, MMWR 2006; 55(No.RR-14); 1-17. www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm
- Heymann, D.L., ed. *Control of Communicable Diseases Manual, 20th Edition*. Washington, DC, American Public Health Association, 2015.
- World Health Organization. HIV/AIDS website. www.who.int/hiv/en/

Additional Resources

HIV/AIDS Program web site, Iowa Department of Public Health.
www.idph.state.ia.us/HivStdHep/HIV-AIDS.aspx?prog=Hiv&pg=HivHome