Update: Multistate Outbreak of Monkeypox—Illinois, Indiana, Kansas, Missouri, Ohio, and Wisconsin, 2003

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CDC and state and local health departments continue to investigate cases of monkeypox among persons who had contact with wild or exotic mammals, including prairie dogs, cain’s or xotic mammal pets or persons with monkeypox.1–3 This report updates epidemiologic, laboratory, and smallpox vaccine use data for U.S. cases.

As of June 25, a total of 79 cases of monkeypox had been reported to CDC from Wisconsin (39), Indiana (20), Illinois (16), Missouri (two), Kansas (one), and Ohio (one); these include 29 cases laboratory-confirmed at CDC and 51 cases under investigation by state and local health departments. A total of 19 cases were excluded from those reported in the previous update because they met the exclusion criteria outlined in the updated case definition,2 and 11 were added. Of the 79 cases, 37 (47%) were among males; the median age was 28 years (range: 1-51 years). Age data were unavailable for two patients. Among 75 patients for whom data were available, 19 (25%) were hospitalized. Two patients have had a serious clinical illness. The first patient was a child with a previously reported laboratory-confirmed case of severe monkeypox-associated encephalitis,1; the child subsequently improved and was discharged after requiring hospitalization for 14 days. A second child, who was exposed to three ill prairie dogs, was hospitalized with profound painful cervical and tonsillar adenopathy and diffuse pox lesions, including lesions in the oropharynx. Although the child had difficulty breathing and swallowing, mechanical ventilation was not required. The adenopathy peaked 5 days after rash onset and 7 days after onset of initial prodromal symptoms of general malaise, myalgia, and fever. Preliminary testing of skin rash lesions was positive for orthopox virus; confirmatory testing for monkeypox virus is pending at CDC.

Of the 79 reported cases, 29 (37%) have been laboratory confirmed at CDC for monkeypox by detection of virus in skin rash lesions by using culture, polymerase chain reaction (PCR), immunohistochemical testing, and/or electron microscopy. One patient had monkeypox virus detected by PCR and culture in throat and nasopharyngeal swabs obtained when the patient was ill with prodromal symptoms and a macular rash. In addition, an IgM response to orthopox viral antigen was detected in an acute serum sample. For these laboratory-confirmed cases, dates of illness onset ranged from May 16 to June 11. All confirmed patients reported a rash and at least one other clinical sign or symptom, including fever, respiratory symptoms, and/or lymphadenopathy. The median incubation period (i.e., first exposure date to illness onset date) was 12 days (range: 2-26 days). The majority of confirmed patients reported exposure to wild or exotic mammals, including prairie dogs; some patients also had contact with other persons with monkeypox virus infection in a household setting. No cases of monkeypox that could be attributed exclusively to person-to-person contact have been confirmed.

Use of Smallpox Vaccine
To prevent further transmission of monkeypox, 26 residents of five states have received smallpox vaccine since June 13; recipients included 24 adults and two children. Vaccine was administered to two laboratory workers pre-exposure and to 24 persons post-exposure (11 health-care workers, seven household contacts, three laboratory workers, two public health veterinarians, and one work contact). One adult who was vaccinated as a child did not have a major vaccine reaction or “take” 7 days after vaccination and required revaccination.

CDC has issued updated interim guidance on the use of smallpox vaccine, cidofovir, and vaccinia immune globulin for prevention and treatment in the setting of an outbreak of monkeypox.3 Principal changes in the updated guidance include a revision of the definition of close contact with an ill animal, recommendations for vaccination of clinical laboratory workers handling specimens from ill animals and persons infected with monkeypox virus, and instructions for reporting smallpox vaccine–related serious adverse events to the Vaccine Adverse Event Reporting System (VAERS).

Health-care providers, veterinarians, and public health officials who suspect monkeypox in animals or humans should report such cases to their state and local health departments. State health departments should report suspect cases to CDC, telephone 770-488-7100. Clinical specimens should be submitted for testing after consultation with the state and local health department. Interpretation of laboratory results requires completion of specimen submission forms, which are available at http://www.cdc.gov/ncidod/monkeypox/diagspecimens.htm. Additional information about monkeypox is available at http://www.cdc.gov/ncidod/monkeypox.

Reported by: State and local health departments. Monkeypox investigation team, CDC.

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Late Versus Early Testing of HIV—16 Sites, United States, 2000-2003


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KNOWLEDGE OF HUMAN IMMUNODEFICIENCY virus (HIV) serostatus has been an important element of HIV-prevention and -treatment efforts. In 2000, among the estimated 850,000-950,000 persons living with HIV in the United States, approximately one fourth (180,000-280,000) were unaware that they were HIV infected. In addition, many persons with HIV are tested late in the course of infection, usually as a result of illness. During 1994-1999, among persons who had HIV diagnosed, 43% were tested late in the infection (i.e., had acquired immunodeficiency syndrome [AIDS] diagnosed within one year of HIV diagnosis). Late testing results in missed opportunities for prevention and treatment of HIV.

To characterize HIV-testing patterns among HIV-infected persons, CDC analyzed data from a multisite interview project. During May 2000–February 2003, persons at 16 U.S. sites who were tested early in the course of HIV disease (early testers) were compared with persons who were tested late in the course of HIV disease (late testers). This report summarizes the results of the analysis, which indicate that late testers were more likely than early testers to be black or Hispanic, less educated, and exposed to HIV through heterosexual contact. Reducing the incidence of both new infections and HIV-associated morbidity and mortality will require earlier testing and improved access to prevention and care services for persons infected with HIV. A new CDC initiative, “Advancing HIV Prevention: New Strategies for a Changing Epidemic,” is aimed at reducing barriers to early diagnosis of HIV infection and increasing access to quality medical care, treatment, and ongoing prevention services. CDC’s Supplement to HIV/AIDS Surveillance (SHAS) project is an ongoing, cross-sectional, multisite interview study that began in 1990. SHAS data collected by 16 state or local health departments were analyzed. Trained personnel conducted face-to-face interviews with persons aged ≥18 years with HIV/AIDS who were reported recently to local or state HIV/AIDS reporting systems. Facility- (eight sites) and population-based (eight sites) methods were used to recruit participants.

The date of AIDS diagnosis was obtained from the HIV/AIDS reporting system. Early testers were defined as persons who reported that they had their first positive HIV test ≥5 years before the diagnosis of AIDS or had ≥5 years without a diagnosis of AIDS after their first positive HIV test. Late testers were defined as persons who had their first positive HIV test ≤1 year before the diagnosis of AIDS. The following groups were excluded from the analysis: persons who tested >1 year after AIDS diagnosis, persons who were not followed for an adequate follow-up time (i.e., <5 years after a positive HIV test without a diagnosis of AIDS being made), and persons for whom the relation between the HIV testing and AIDS diagnosis dates could not be determined.

Among persons interviewed during May 2000–February 2003, characteristics of early and late testers were compared. Chi-square testing was used to examine the association between late testing and sex, age, race/ethnicity, mode of HIV exposure, level of education, history of having an HIV-negative test before the first positive HIV test, reasons for getting tested, and type of testing site where diagnosed initially. Data were not validated by chart review.

Of 7,584 persons invited to participate, 5,980 (79%) completed the interview (range by state: 57-1,071), of which 4,290 (72%) were men, 3,324 (56%) were black, 1,285 (22%) were white, and 1,160 (19%) were Hispanic. Overall, 2,281 (38%) HIV exposures were attributed to men having sex with men (MSM), 2,166 (36%) to heterosexual transmission, 1,010 (17%) to current or former injection-drug use (IDU), and 477 (8%) to MSM/IDU.

Of the 5,980 persons interviewed, 4,127 (69%) had received an AIDS diagnosis, and 1,853 (31%) had HIV that had not progressed to AIDS (HIV [non-AIDS]). Of the 1,853 persons with HIV (non-AIDS), 519 (28%) had HIV diagnosed for >5 years and were classified as early testers; the remaining 1,334 (72%) persons with HIV (non-AIDS) were excluded from the analysis because of inadequate follow-up time. Among the 4,127 persons in whom AIDS had been diagnosed, 1,054 (24%) early testers and 1,877 (45%) late testers were included in the analysis; 860 (21%) persons with AIDS who tested positive for HIV >1 year but ≤5 years before AIDS diagnosis and 336 (8%) persons for whom it was not possible to determine the relation between HIV testing and AIDS diagnosis dates were excluded from the analysis.

Compared with the 1,573 early testers, the 1,877 late testers were significantly more likely to be younger (aged 18-29 years), to be black or Hispanic, to have been exposed to HIV through heterosexual contact, to have a high school or less education, or to have tested negative for HIV previously before their first positive HIV test. When the analysis was restricted to persons from SHAS sites that conduct integrated HIV/AIDS surveillance, the demographic characteristics of participants by sex, race/ethnicity, and mode of exposure were similar to the overall population. The majority of late testers received HIV testing because of illness.