



NYC DOHMH Health Advisory #28
Diagnostic Testing for HIV-2
July 20, 2009

Diagnosis of HIV-2 Infection

- HIV-2 is a retrovirus that is distinct from but related to HIV-1. HIV-2 is found primarily in West Africa and in countries with large populations of West African immigrants.
- Clinicians in New York City should consider HIV-2 in the differential diagnosis of any patient from a West African country of origin that presents for HIV testing and/or with signs and symptoms of unexplained immunodeficiency.
- Most enzyme immunoassays (EIAs) currently in use can detect antibody to HIV-2 as well as HIV-1. However, confirmatory HIV-1 Western blot testing may be negative or indeterminate, and repeat testing may fail to resolve the diagnosis. Commercial HIV-1 viral load assays do *not* detect HIV-2. HIV-2 Western blot tests are offered by some laboratories; however, they are not FDA-approved for diagnosis of HIV-2. Definitive diagnosis requires detection of virus by DNA PCR, isolation of virus by culture, or genotyping.
- The NYC DOHMH Public Health Laboratory offers a multi-step diagnostic testing protocol for HIV-2. Clinicians wishing assistance with diagnosis of HIV-2 should call:

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Dear Colleagues:

HIV-1 is responsible for the majority of cases of HIV/AIDS in the US and throughout the world. A related but distinct virus, HIV-2, was first isolated in 1985 in patients from Senegal.¹ Since that time it has become endemic to West Africa. It has also been found in other African countries such as Mozambique and Angola, India, Brazil, and countries with large West African immigrant populations such as France and Portugal.²

NYC is an immigration gateway. Immigrants from Africa constitute a growing proportion of the foreign-born population of NYC as well as a growing proportion of new HIV diagnoses. Blood testing to rule out HIV-2 should be performed in persons originating in or traveling to Africa and other HIV-2 endemic countries who present with risk factors for HIV and/or clinical signs suggestive of HIV infection or unexplained immunosuppression, particularly among patients who test negative or indeterminate by HIV-1 Western Blot.

Most enzyme immunoassays (EIAs) currently used for HIV screening detect antibodies to both viruses. Supplemental Western Blot (WB) testing for HIV-2 is also offered by many laboratories. However, none of the WB platforms in use is FDA-approved for diagnosis of HIV-2. Their sensitivity and specificity vary widely,³ interpretation is not standardized, and dual and cross-reactivity are common. Therefore, additional testing is needed to distinguish between HIV-1 and HIV-2 infection.

The NYC DOHMH Public Health Laboratory offers a comprehensive testing algorithm to assist clinicians to distinguish between infection with HIV-1 and HIV-2 and to confirm the diagnosis. To request assistance with testing for HIV-2, call the HIV Epidemiology and Field Services Program at 212-442-3461/3388 or the NYC DOHMH Public Health Laboratory (PHL) at 212-447-2881/2864. Health Department personnel will provide instructions on specimen collection and handling and will come to your office or clinic to pick up the blood for rapid transport back to the PHL.

Attached for your reference is a list of the most Frequently Asked Questions (FAQs) about diagnosis of HIV-2.

Sincerely yours,

Lucia V. Torian

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Robert Pirillo

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References

1. Clavel F, Guetard D, Brun V, Aezinet F, et al. Isolation of a new human retrovirus from West African patients with AIDS. *Science* 1986;233:343-6.
2. Kanki PJ, DeCock K. Epidemiology and natural history of HIV-2. *AIDS* 1994;8:S85-93.
3. Acquired immunodeficiency syndrome (AIDS). Proposed WHO criteria for interpreting results from Western blot assays for HIV-1, HIV-2, and HTLV-1/HTLV-II. *Wkly Epidemiol Rec* 1990;65:281-3.