Technical Bulletin

HIV Test Algorithm for Laboratory Diagnosis

TO: Medical Staff and Clients

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SUBJECT: **The CDC HIV test algorithm is key to understanding patient status**

The Centers for Disease Control and Prevention (CDC) recommends a testing algorithm when evaluating patients for HIV infection (https://stacks.cdc.gov/view/cdc/50872). The initial test is an HIV-1/HIV-2 antigen/antibody immunoassay which detects virus proteins, and immune response to those proteins. If this test is positive, the next test is the HIV-1/HIV-2 antibody differentiation assay.

Rarely (0.14%-0.23%) this second test is **negative** for HIV-1 and HIV-2 antibody, **or is indeterminate**. Two explanations are most likely:

1. Usually this is a false-positive initial test, especially in low risk patients. Whenever an ultra-sensitive test such as this is used in a very low risk population (e.g., new OB in which the prevalence of disease approaches zero), statistically speaking the positive is probably false.

2. Infrequently this is an early acute infection in which the test detects antigen but there has not been adequate time for antibody formation.

To best resolve the discrepancy between the first two tests, the next test in the CDC algorithm is HIV-1 Nucleic Acid Test (NAT). An HIV-2 NAT is not performed because HIV-2 is so rare in the U.S. Most of the time this test is negative, which confirms the false-positive initial test result.

For further information on HIV testing and interpretation, please see the CDC website at: (https://stacks.cdc.gov/view/cdc/50872).

Please refer any questions to Susan Krause, Manager - DLS Core Laboratory at 589-5126, Terrie Koyamatsu, Manager - DLS Microbiology Laboratory at 589-5196, or DLS Client Services at 589-5101.