Yale NewHaven Health
Yale New Haven Hospital

Clinical Microbiology and Virology Update

New Syphilis Testing Algorithm

July, 2016

- Traditionally, syphilis test algorithms have started with a non-treponemal assay (e.g. VDRL or RPR) that detects antibodies to lipoidal antigens.
- Positives are reflexed to a treponemal assay (e.g FTA-ABS, or TP-PA) that detects *Treponema pallidum*-specific antigens.
- However, non-treponemal tests have inherent limitations: they lack sensitivity in primary and late syphilis, are not specific to syphilis, and are manual, labor-intensive tests.
- Thus, YNHH will implement a new **"reverse" syphilis test algorithm** on the evening of **July 29, 2016**, as shown in figure below.
- Initial screening will be done with the "**Liaison® Treponema Assay**", a chemiluminescence immunoassay that looks for total antibodies (both IgG and IgM) to *T. pallidum*. This screening test will be performed **6 days a week, Sun-Fri**.
- "Reactive" specimens will be reflexively tested the following day by **RPR**, a non-treponemal test, to assess disease activity.
- Discordant samples (Liaison+/ RPR-) will be tested using a second *T. pallidum* assay, **TP-PA**, to confirm screen specificity.
- Both internal testing at YNHH and large published studies have demonstrated excellent performance of the Liaison assay for syphilis testing (Park, et al, *J Infect Dis* 2011; 204:1297-1304; *Manual of Clinical Microbiology*, 11th Edition, p.1071).
- Testing of serum will be performed in the Clinical Virology Laboratory. Testing of CSF for suspected cases of neurosyphilis will remain unchanged (i.e. VDRL with reflex to FTA-ABS).

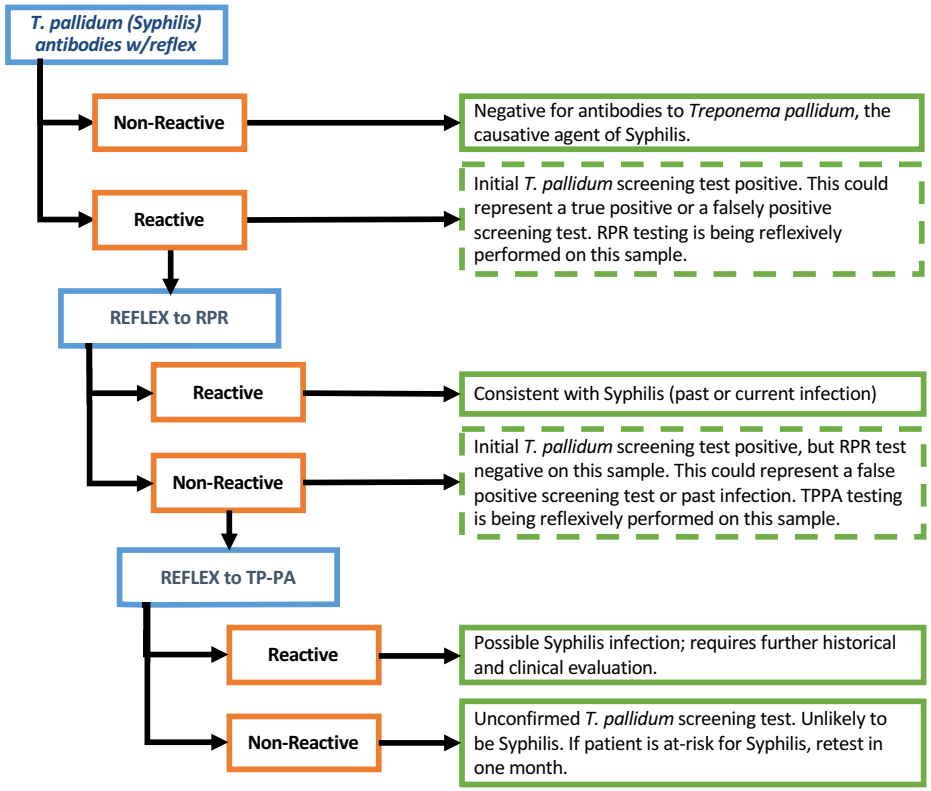

Figure 1: Reverse syphilis testing algorithm to be performed at YNHH. Comments corresponding to test results are shown on the right. Temporary comments reported while reflex testing is ongoing are shown in dashed boxes. Final comments are in solid boxes.

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