

UPSTATE
UNIVERSITY HOSPITAL
Clinical Pathology - Core Laboratory
5th Floor Cancer Center
750 E. Adams Street
Syracuse, NY 13210

MEMORANDUM

TO: All Physicians at Downtown and Community Campuses

FROM: Katalin Banki, M.D., Medical Director of Pathology Laboratory *WB*

DATE: November 20, 2018

RE: Syphilis Testing with Reverse Algorithm

Effective December 6, 2018, the Upstate Clinical Laboratory will use the reverse algorithm for the serologic diagnosis of syphilis. The algorithm follows the recommendation of the CDC (<https://www.cdc.gov/std/tg2015/syphilis.htm>).

Advantages:

- Most results will be available 7 days a week.
- Untreated late/latent syphilis, early infection, and past, successfully treated infection will be detected.

In the traditional, forward algorithm, only active infection is diagnosed. Testing starts with Rapid Plasma Reagin that detects anticardiolipin antibodies produced during active infection. If this is negative, no further testing is done.

In the reverse algorithm, the first test is the **Syphilis IgG/IgM screen**, an automated, highly sensitive, electrochemiluminescence immunoassay by Roche that detects IgG/IgM antibodies against syphilis. A reactive result is suggestive of current or past exposure to syphilis. Studies show that false positive results are <0.5%.

Reactive samples are reflexed to **Rapid Plasma Reagin** (SureVue® RPR; by iNOVA Diagnostics). Reactive RPR indicates syphilis infection. RPR titer is performed to measure disease activity and allow for monitoring of treatment. An RPR titer $\geq 1:8$ is consistent with current infection. A titer of $< 1:8$ is consistent with either current or past infection.

Non-reactive RPR samples are reflexed to the **Treponemal Antibody Test** (T. pallidum particle agglutination, TP-PA; by Fujirebio). This is a manual, semi-quantitative test detecting agglutination of the T. pallidum extract by serum antibodies. A non-reactive TP-PA test suggests a probable false-positive Syphilis IgG/IgM screen, but if the patient is at risk for recent exposure, retesting in 1 month is recommended. A reactive result indicates either: a) past, treated syphilis, b) early infection, c) late/latent syphilis in patients without a history of treatment.

Diagnosis of Syphilis: Order Syphilis IgG/IgM screen with reflex.

Monitoring: RPR-positive patients should be monitored with RPR to assess response to therapy. This test is available separately.

Syphilis IgG/IgM Ab screen and TP-PA remain reactive after treatment and shouldn't be repeated. These tests cannot be ordered separately.

Performance:

Syphilis IgG/IgM screen: 24/7

RPR: Once a day, 7 days

Treponemal Antibody: Monday through Friday

