

TEG News

1. Rapid TEG is discontinued. It gives only one parameter (ACT time), which doesn't inform about platelets or fibrinogen, or what kind of blood product is needed.

A search showed that most institutions do not perform Rapid TEG. In addition, a review of our Rapid TEG results showed it less reliable than Kaolin TEG (ACT was abnormal when there was no need for massive transfusion and vice versa).

2. Heparinase kaolin TEG should be ordered only on patients who are on unfractionated heparin (ECMO and cardiac surgery patients). This test can assess how their hemostasis would perform without heparin (as it digests the heparin present in the sample). Trauma patients are never on unfractionated heparin, so it shouldn't be ordered in trauma.

3. Kaolin-TEG is the recommended thromboelastographic test in trauma.

4. TEG can be normal in patients treated with warfarin, low-molecular-weight heparin, and oral anticoagulants (apixaban, dabigatran, etc.). It is essential to order PT and PTT if the patient might be on anticoagulant medication.

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Syphilis Disease (SD) Diagnostic Testing Using the Reverse Algorithm

What is Syphilis Disease (SD)?

Syphilis disease is a sexually transmitted disease caused by the intracellular gram negative spirochete bacterium, *Treponema pallidum*. In the primary stage of disease patients may present with a sore or chancre typically located at the site of infection. During the secondary stage patients may show symptoms of rash, fever and general malaise. And in the late or latent stages, there may be organ damage, paralysis or mental status changes.

Who should be tested?

- It is recommended to screen all pregnant women when they first present. CDC and ACOG also recommend repeat screening in the third trimester (28 weeks of gestation) in women at high risk for acquiring syphilis and again at the time of delivery.
- Individuals who engages in high-risk sexual activity, such as unprotected sex with multiple partners.
- Individuals who are at risk of being exposed to syphilis particularly among men who have sex with men .
- Individuals who have another STD such as HIV, gonorrhea.
- Patients infected with HIV who have early syphilis may be at increased risk of neurologic complications and higher rates of treatment failure with currently recommended regimens.
- All recent sexual contacts of people with acquired syphilis should be evaluated for syphilis, partners who were exposed within 90 days preceding the diagnosis of primary, secondary, or early latent syphilis in the index patient should be treated presumptively for syphilis, even if they are seronegative.
- Syphilis may be tested in individuals with signs and symptoms, such as: a chancer on genitals or throat, a skin rash appearing frequently with or without symptoms such as swollen lymph nodules, sore throat, and fever.

Reverse Algorithm: Interpretation Provided with Test Results

Test	Results	Interpretation
Syphilis IgG/IgM screen	Non-Reactive	Non-reactive for treponemal antibodies
	Reactive	Suggestive of prior or current exposure to syphilis. The result does not distinguish between previously treated infection, latent syphilis, and current infection. Reflexed to Rapid Plasma Reagin on the same sample.
RPR	Non-Reactive	No evidence of active infection with syphilis. Reflexed to treponemal antibody test.
	Reactive	Untreated (or recently treated) syphilis infection.
Treponemal Antibody by TP-PA	Non-Reactive	No serologic evidence of exposure to syphilis. Probable false-positive screening IgG/IgM test
	Reactive	Possible latent or early syphilis or previously treated syphilis.
	Indeterminate	Unconfirmed T. Pallidum screening test. Retest in 2 weeks.

What are the available tests to diagnose SD at Upstate?

SD testing can be ordered based on “Reverse Algorithm for Serologic Diagnosis of Syphilis at Upstate” (**see algorithm**).
Screening/ Monitoring :

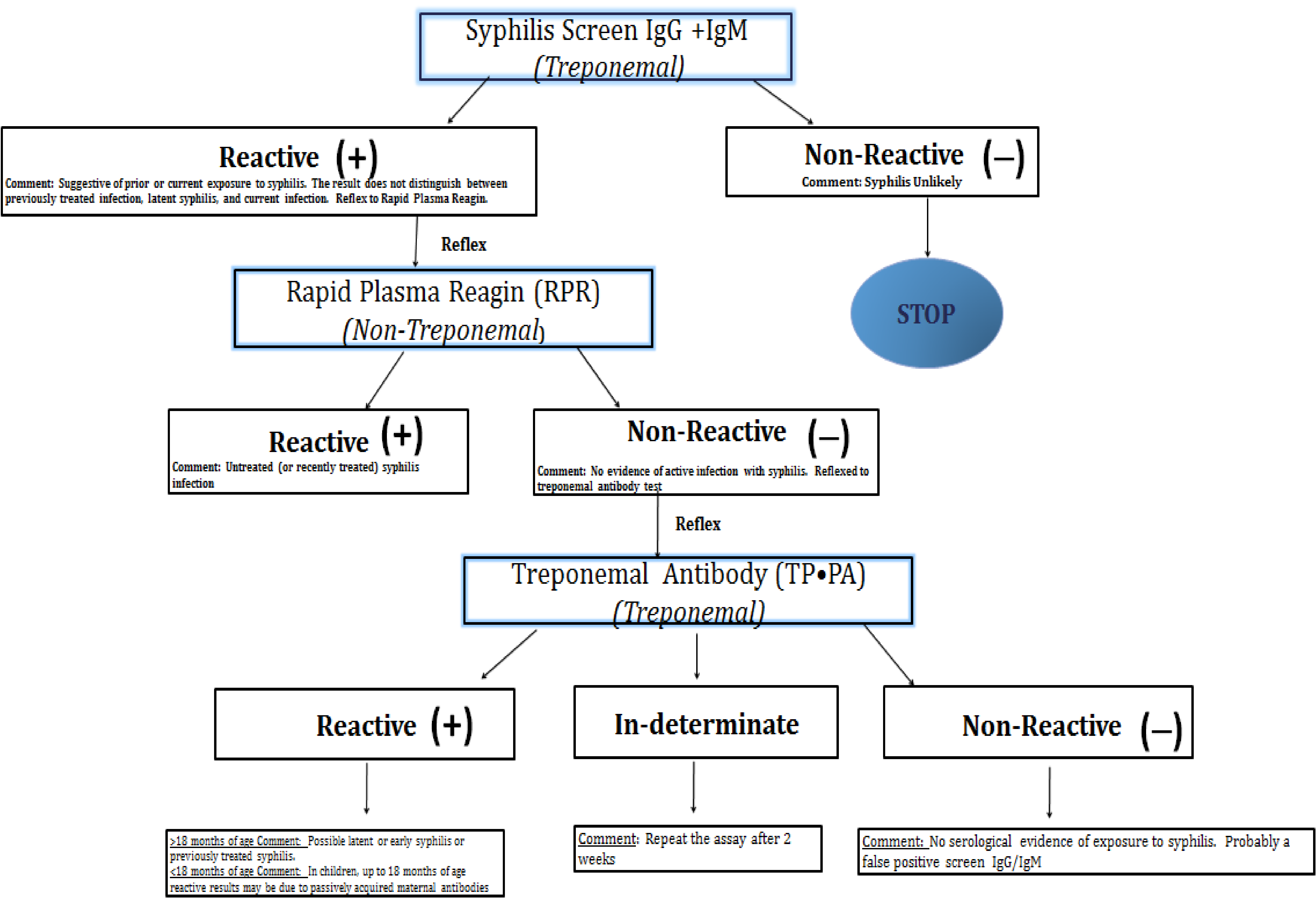
- **Syphilis IgG/IgM Treponemal Screen with Reflex** (Roche). It is an automated, highly sensitive, electrochemiluminescence immunoassay that detects IgG/IgM antibodies against syphilis. A reactive result is suggestive of current or past exposure to syphilis.
Test available 7 days a week, Mon-Sun. **(Epic Test Code: CSYP LAB8961).**
- **RPR with reflex to titer or monitoring** (Sure Vue®RPR; by iNOVA Diagnostics). Reactive RPR indicates syphilis infection. RPR titer is performed to measure disease activity and allow monitoring of treatment. An RPR titer ≥1:8 is consistent with current infection. A titer <1:8 is consistent with current or past infection. Test performed once a day 7 days a week, Mon-Sun. **(EPIC Test Code: LAB494).**
- **Treponemal Antibody by TP-PA** (By Fujirebio). This is a manual, semi-quantitative test detecting agglutination of *T. pallidum* extract by serum antibodies. A non-reactive TP-PA test suggest a 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 a)past treated syphilis, b) early infection, c) late/latent syphilis in patients without history of treatment. Test available 2 times a week. Test available twice a week, Tue & Thur. Samples sent late Friday/Saturday/Sunday/holidays batched and run on Monday **(EPIC Test Code: LAB866).**

Other Tests Available

VDRL - CSF syphilis testing: offered by Immunology lab

Test available 7 days a week, Mon-Sun. **(EPIC Test Code: LAB207)**

Reverse Algorithm for Serologic Diagnosis of Syphilis Disease at Upstate Pathology



Diagnosis of Folate Deficiency at Upstate Pathology

- Folate deficiency is associated with megaloblastic anemia, congenital neural tube defects and, other neurological manifestations.
- The mandatory fortification of food grains with folic acid by FDA has resulted in a significant increase in serum and red blood cell (RBC) folate, therefore folate deficiency in the United States and Canada is very rare. This has ultimately affected the utility of folate measurements. Although there is no gold standard to measure folate deficiency, historically RBC folate and serum folate has been used to assess folate status.
- RBC folate is costly, influenced by analytical issues due to sample pretreatment, oxygen saturation, hemoglobin, and hematocrit. RBC folate is an indicator of tissue stores, less susceptible to diet and responds very slowly to folate intake. Additionally, this test is sent out to LabCorp, increasing the turn-around time.
- The serum folate assay provides the same information as that of red cell folate measurement and the evidence from the literature strongly suggests that the serum folate assay should be the method of choice. RBC folate provides no additional information beyond what serum folate assay provides.
- Therefore, Upstate Pathology Department **discontinued the RBC folate test** (Epic code –LAB69) on **April 11th, 2019**. Serum folate (Epic code –LAB70) is be available for all providers. For any questions or concerns, please feel free to email (alima@upstate.edu) or call (315-464-9175).



References:

1. Red cell or serum folate: what to do in clinical practice? Christopher-John L. Farrell, Susanne H. Kirsch, Markus Herrmann, *Clinical Chemistry and Laboratory Medicine*. 2013 Mar, Volume 51, Issue 3, Pages 555–569.
2. Daly LE, Kirke PN, Molloy A, Weir DG, Scott JM. Folate levels and neural tube defects. Implications for prevention. *JAMA* 1995;274(21):1698-702
3. Jesse Theisen-Toupal, Gary L. Horowitz, Anthony C. Breu. Utility, charge, and cost of inpatient and emergency department serum folate testing. *J. Hosp. Med.* 2013 February;8(2):91-95