WHAT’S NEW?
Effective July 1, 2016, the following changes to the testing algorithm for syphilis:

- Treponema Antibody (Syphilis) IgG (LAB2937) will become the primary screen for syphilis. This test will detect the most clinically relevant IgG antibodies against individual recombinant proteins to T. pallidum, the causative agent of syphilis.

- Rapid Plasma Reagin (RPR) (LAB3323) is available to order for monitoring treatment response to established syphilis infection. Reflex confirmation testing is not performed for a positive RPR result as it is no longer offered as the primary screening test.

- All samples positive for Treponema Antibody (Syphilis) IgG will automatically reflex to the RPR test for confirmation.

- Specimens with discordant Treponema Antibody (Syphilis) IgG and RPR results will also automatically be tested using the TP-PA (Treponema pallidum-Particle Agglutination) test.

BACKGROUND
Syphilis is a systemic disease caused by infection with T. pallidum. Patients tested by serology during the primary phase may be negative for T. pallidum antibodies. As the disease progresses into the secondary phase, antibodies reach peak titers and may remain reactive regardless of disease state or prior treatment.

Treponema (Syphilis) IgG antibodies persist indefinitely, regardless of whether the patient has been treated or not. "Non-treponemal antigens" detected using the RPR test usually correlate with disease activity and may help differentiate between active and past syphilis infection. RPR tests are commonly non-reactive following treatment and during the late/latent forms of syphilis.

RPR is recommended for monitoring treatment response to established syphilis infection. Confirmation testing is not reflexed for the traditional RPR. Patients with a history of syphilis (not primary screen) that are treated and monitored over time require just the RPR (LAB3323).

RESULT INTERPRETATION
Discordant (Treponema IgG positive/RPR negative) results can be caused by previous successfully treated syphilis, early primary syphilis, late/latent syphilis in untreated patients or false-positive IgG testing.

Treponema (Syphilis) IgG antibody testing is highly sensitive and false-positive results will occur in low-risk populations. As recommended by the CDC, discordant specimens (Treponema IgG positive/RPR negative) are confirmed using TP-PA testing. The TP-PA is equally sensitive yet more specific than Treponema (Syphilis) IgG antibody testing. Refer to Table 1 for more information.

A non-reactive (negative) TP-PA result in patients with unknown syphilis history (Treponema IgG positive/RPR negative/TPPA negative) indicates a false-positive Treponema (Syphilis) IgG antibody and no follow-up testing is required unless syphilis remains clinically suspected.

Historical and clinical evaluation is required with a reactive TP-PA confirmatory result (Treponema IgG positive/RPR negative/TPPA positive) which indicates the patient has previous successfully treated syphilis or possible early or latent syphilis.

QUESTIONS?
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**Table 1: Interpretation and Follow-up to Results Using Reverse Syphilis Algorithm**

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<thead>
<tr>
<th>Test and Result</th>
<th>Interpretation</th>
<th>Follow-up</th>
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</thead>
<tbody>
<tr>
<td><strong>Treponema (Syphilis) IgG</strong></td>
<td>RPR*</td>
<td>TP-PA**</td>
</tr>
<tr>
<td>Non-reactive</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Reactive</td>
<td>Reactive</td>
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<tr>
<td>Reactive</td>
<td>Non-Reactive</td>
<td>Reactive</td>
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*Rapid Plasma Reagin
**T. pallidum Antibody by Particle Agglutination

**Figure 1: Automatic Reflex Syphilis Testing (Reverse) Algorithm**

All samples positive for Treponema (Syphilis) IgG will automatically reflex to RPR for confirmation. All samples with discordant Treponema (Syphilis) IgG and RPR results will automatically be tested using TP-PA.