AUTOMATING TRADITIONAL RAPID PLASMA REAGIN (RPR): CHALLENGES AND BENEFITS.

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- Automated Traditional RPR
- Laboratory & Clinical Challenges
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Figure 24. Trends in regional early syphilis rates compared for 2013-2017, San Francisco vs. Los Angeles MSA, New York MSA, total California and total U.S.
Why Automate Traditional RPR

- San Francisco (SF) has high prevalence of positive syphilis
- SF City Clinic clinicians rely on nontreponemal antibody test to monitor the effect of treatment
- Handle large volume of tests daily
- Reduce turn around time (TAT)
Traditional RPR Automation – AIX1000 System

- RPR screens & titers
- Positive specimen ID/Tracking
- Automated liquid handling
- Software performs result interpretation

FDA Cleared
AIX1000 RPR Results Display
Laboratory Challenges

Verification:

• Manual VDRL vs AIX1000 Automated RPR
• Manual RPR vs AIX1000 Automated RPR
# VDRL/RPR CAP PT RESULTS SPREAD

<table>
<thead>
<tr>
<th>PT Event</th>
<th>RPR</th>
<th>VDRL</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-A-18</td>
<td>1:2 to 1:16</td>
<td>1:1 to 1:8</td>
</tr>
<tr>
<td>G-B-18</td>
<td>1:1 to 1:4</td>
<td>1:1 to 1:4</td>
</tr>
<tr>
<td>G-C-18</td>
<td>1:4 to 1:32</td>
<td>1:2 to 1:16</td>
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<tr>
<td></td>
<td>AIX1000 vs. VDRL</td>
<td>AIX1000 vs. RPR</td>
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<tr>
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</tr>
<tr>
<td>Sensitivity</td>
<td>99.70%</td>
<td>100%</td>
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<tr>
<td>Specificity</td>
<td>99.50%</td>
<td>98.40%</td>
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</table>
Maximum Titers:
• Automated titer is 1:256

External Control:
• Calibrated Control
Clinical Challenges

• Training clinicians to transition patients from manual VDRL to automated RPR titers
• Automated RPR titers are 1-2 dilutions higher than manual VDRL
Benefits – Automated RPR, AIX1000

• Reduces turn around time
• Reduces hands on
• Reduces work load and ergonomic injuries
• Reduces the potential for technique related errors
• Digital results: save data and review on demand
• Less Expensive
Traditional vs Reverse

CDC Recommended Screening

- **RPR** (Non-trypomastigote)
  - **RPR** +
    - TP-PA or other trep. test
  - **RPR** -
- TP-PA
  - Syphilis (past or present)
  - Syphilis unlikely

Reverse Sequence Screening

- **SCREEN**
  - **EIA or CIA** (Filtration)
    - **EIA/CIA** +
      - Quantitative RPR
      - **RPR** +
        - TP-PA
        - Syphilis (past or present)
      - **RPR** -
        - TP-PA
        - Syphilis unlikely
    - **EIA/CIA** -
      - TP-PA
      - Syphilis (past or present)

- **CONFIRM**
  - **EIA/CIA** +
  - **EIA/CIA** -

**RECONFIRM**
Public Health Laboratory

San Francisco Public Health Laboratory

The San Francisco Public Health Laboratory is a CLIA-certified diagnostic testing laboratory that provides infectious disease laboratory testing to over fifty submitters in San Francisco and laboratories across the State of California for diagnostic and public health purposes. The laboratory is part of the Disease Prevention and Control Branch of the Population Health Division of the San Francisco Department of Public Health. The types of testing that we perform range from diagnostic testing of patient specimens to culture and isolation for public health purposes. A list of the types of public health laboratory testing is provided on the website for the laboratory.

PUBLIC HEALTH LABORATORY

> Laboratory Contact Information
> General Specimen Submission Guidelines
> Forms for Specimen and Culture Submission
> Laboratory Test Menu

CMR FORM

Medical providers: download the Confidential Morbidity Report (CMR) form to report a communicable disease

> CMR FORM

MEDICAL PROVIDER HEALTH ALERTS

AUGUST 16, 2018
CDPH HAN (August 2018) Influenza A (H1N2) Variant Virus Confirmed in California
Acknowledgement

- APHL for the opportunity
- SF City Clinic Staff
- SF DPH Lab Staff
- Disease Control and Prevention
THANK YOU!