Streamlined WHO PQ Process: Laboratory evaluations

Industry Briefing
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Why WHO conducts lab evaluation

- **CD4 technology**: Accuracy: Precision, Trueness, Carryover etc.
- **HIV serology**: Sensitivity, Specificity, PPV, NPV, inter-reader variability etc.
- **HIV viral load and EID**: Accuracy: Precision, Trueness, sensitivity
- **Operational characteristics** especially those relevant to resource limited setting

Collect objective information to
- **Use** in the prequalification process
- **Respond** to Member States enquiries
- **Assist** Member States in development of testing algorithms
- **WHO post-market Surveillance**
<table>
<thead>
<tr>
<th>Assays</th>
<th>HIV serology</th>
<th>HIV serology (oral fluid)</th>
<th>Combined HIV/syphilis serology</th>
<th>CD4 technologies</th>
<th>HIV viral load/EID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen type</td>
<td>Plasma or serum</td>
<td>Matched plasma &amp; oral fluid</td>
<td>Plasma or serum</td>
<td>Whole blood</td>
<td>Plasma/Dried blood spots</td>
</tr>
<tr>
<td>Study type</td>
<td>Retrospective</td>
<td>Prospective Clinic settings</td>
<td>Retrospective</td>
<td>Prospective Clinic settings</td>
<td>Retrospective Prospective</td>
</tr>
<tr>
<td>Panes type</td>
<td>Characterized panels</td>
<td>Consecutive plasma + OF fresh exudates</td>
<td>Characterized panels</td>
<td>Consecutive fresh whole blood</td>
<td>Characterized panels including HIV subtypes</td>
</tr>
<tr>
<td>Regional distribution</td>
<td>African, Asia, American, European</td>
<td>African, Asia, American, European</td>
<td>African, Asia, American, European</td>
<td>At least two regions</td>
<td>African, Asia, American, European</td>
</tr>
</tbody>
</table>

Seek ethical clearance for conducting the studies
Laboratory evaluation process

- Dossier assessment completed
- Protocol is sent to manufacturer
- Request to send appropriate number of test to WHO Collaborating Centre
- Draft report sent to the manufacturer
- Final report sent to the manufacturer
- Laboratory performance used in prequalification decisions
Harmonization of evaluation protocols

- WHO has assessed evaluation protocol for HIV serology, CD4, HIV viral load and early infant diagnosis from several institutions including
  - US Centres for Disease Control (CDC)
  - African Society for Laboratory Medicine  London School of Hygiene and Tropical Medicine (ASLM, LSHTM)
  - Clinton Health Access Initiative (CHAI)

- CDC protocols were found to have similar evaluation objectives
  - Discussions are ongoing to ensure that adequate capacity (specimen types, suitable field laboratories, supervision, etc.)
Proposed Streamlined Process

- Planning of prospective studies which require ethical clearance will be done after successful initial dossier screening.

- Laboratory evaluation will be conducted when dossier assessment had been completed.

- WHO will involve CDC in the laboratory evaluation:
  - Use the data generated from evaluation conducted by CDC.
  - Plan together future laboratory evaluations.
Challenges/opportunities

- Prospective studies need fresh specimens, clinic settings and thus will require time (3-4 months) (oral fluid serology, CD4 technologies)

- Ensure manufacturers supply 'non-selected' lots for evaluation

- Need to batch evaluation of several assays together

- Need for multi regional panels of specimens (HIV serology, HIV viral load/EID) in prospective laboratories

- Ensure independent studies
Conclusion

- Laboratory evaluation will be conducted for all products undergoing prequalification assessment.
- Overall process of laboratory evaluation will remain the same.
- There will be earlier planning for assays which requires fresh consecutive specimens (prospective studies).
- WHO will utilize results from other institutions which have their protocol harmonized with that of WHO and adequate capacity to conduct specific evaluations.