Challenges and Access to Viral Load Testing in Africa: Example of Cote d’Ivoire

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Outline

1. Introduction
2. Barriers to Scaling up Viral Load and Uptake
3. Demand Creation and Monitoring and Evaluation
4. Conclusion
Introduction

90% diagnosed
90% on treatment
90% virally suppressed
Progress in Viral Load Testing

June 2013 WHO Recommendations

Cape Town, South Africa April 2013

July 2014 (20th Int’l Aids Conf)
WHO Technical Guidelines and UNAIDS DAI 90-90-90


U.S. Ambassador Birx’s commitment to scale-up viral load testing
Progress in Cote d’Ivoire

2008 National Guidelines
- Children every 6 months
- Adults on demand

2012 National VL scale-up plan

2013 OppERA

2015 National Guidelines
Viral load for patient monitoring

2015 PEPFAR scale-up

UNAIDS DAI 1998

PEPFAR U.S. Ambassador Birx’s commitment to scale-up viral load testing

July 2014 (20th Int’l Aids Conf)
WHO Technical Guidelines and UNAIDS DAI 90-90-90
Guidelines Matter – Implementation is Challenging

The error of a top-down approach

"I have shared my vision, so now we have a shared vision"
Cartoon by Mark de Koning
Viral Load testing Scale-up
Cote d’Ivoire 2012 National Strategies

• National scale-up plan (identifies role of each stakeholder)
  – PEPFAR and ESTHER (lab, equipment and reagent)
  – Global fund laboratory reagents
  – ESTHER training of physicians
  – PEPFAR training of laboratory technicians
• All regional labs (18) to be equipped with a platform (national access)
• Preferred equipment leasing with reagent rental
• Laboratory training plan mapping the needs per region
• National external quality control program
• National VL database with a quarterly reporting to the central lab (LIS)
Forecasted HIV Viral Load Testing Demand, 2015-2020

Source: WHO/CHAI
Cote d’Ivoire Forecast and Results

- **2015**: 147,947 people on treatment, 50,000 viral load target, 21,000 viral load result, 14% coverage.
- **2016**: 179,045 people on treatment, 108,000 viral load target, 49,341 viral load result, 28% coverage.
- **2017**: 206,000 people on treatment, 151,000 viral load target, 136,200 viral load result, 66% coverage.
- **2018**: 306,000 people on treatment, 228,000 viral load target, 75% projected coverage.

- Start decentralization with 4 new labs at regions.
- Labs only in Abidjan, the capital.
- 6 additional labs at regions.
Barriers to scaling up viral load and uptake
Key Barriers to Scaling up of Viral Load at National Level

1. Viral Load Networks - Sample Referral Systems
2. Demand Creation and Uptake of Results – Role of Clinicians & Patients
3. Financing and Supply Chain Management
4. Monitoring and Evaluation
5. Human Resources

Specific to Cote d’Ivoire (PEPFAR)

1. Laboratory Infrastructure (electricity, equipment, space)
2. Sample transportation
3. Human Resources and demand creation
4. Viral load literacy (Laboratory, clinical and community)
5. Financing, Supply chain and Data collections
Barriers at Site Level

1. Lack of review and analysis of laboratory data (VL test results) for program improvement in most sites.
2. Limited information captured in laboratory requisition forms.
3. Weak implementation of SOPs at clinics and laboratories.
4. Limited optimization of workflows and absence of focal points.
5. Poor understanding of VL test reporting forms by clinicians in some sites:
   - Target not detected
   - Below level of detection and suppression
     - <20 copies/ml
     - <1000 copies/ml
Scale-up of HIV Viral Load Monitoring —
Seven Sub-Saharan African Countries

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Combination and Improved Strategies to Overcome Barriers

- Electronic Dashboard Scorecard
- Innovative Approach for Sample Transportation
- Reduce TAT: Fast Tract Results for Patients Failing ART Demand Creation
- Lab Hubs around Regional Labs
- Use of DBS & POC
- Distance Learning Community
- Lab-Clinical Interface
Improving Efficiencies Across the Viral Load Testing Spectrum
DRIED BLOOD SPOT SAMPLES CAN BE USED FOR HIV-1 VIRAL LOAD TESTING WITH MOST CURRENTLY AVAILABLE VIRAL LOAD TECHNOLOGIES: A POOLED DATA META-ANALYSIS

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Field evaluation of Dried Blood Spots for HIV-1 viral load monitoring in adults and children receiving antiretroviral treatment in Kenya, 2013: Implications for scale-up in resource limited settings

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Submitted to JAIDS for consideration of publication
Demand Creation and Monitoring and Evaluation
Creating the Demand for Viral Load

**Challenge**

- Lack of effective dissemination and translation of the guidelines into accessible job aids
- Awareness campaigns for patients and communities on the benefits of VL testing and its difference from CD4

**Solutions**

- Tools to help countries increase demand for viral load and to educate patients, community and clinicians on the use of viral load
- Identify focal points at each clinics and community with SOPs
- Improve Laboratory reagents supply chain

*Source: Randy Allen*
Even when routine viral load monitoring was in place, around 44% of patients with confirmed virological failure were not switched.

22% of patients under routine viral load monitoring and 30% of those receiving targeted viral load monitoring switched regimen without any evidence of virological failure.
## CDC VL/EID Laboratory Weekly Monitoring and Reporting Tool

### Week of September 20th

<table>
<thead>
<tr>
<th>VL/EID Laboratory Name</th>
<th>VL # Sample Received</th>
<th>VL # Sample Tested</th>
<th>VL Pending</th>
<th>EID # Sample Received</th>
<th>EID # Sample Tested</th>
<th>EID # Sample Pending</th>
<th>Stock VL Kits</th>
<th>Stock EID Kits</th>
<th>Number Kit used this week</th>
<th>VL Pending</th>
<th>EID Pending</th>
<th>EID Kit used this week</th>
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</thead>
<tbody>
<tr>
<td><strong>TOTAL</strong></td>
<td>4919</td>
<td>7032</td>
<td>22065</td>
<td>379</td>
<td>460</td>
<td>483</td>
<td>1612.5</td>
<td>158</td>
<td>218</td>
<td>1612.5</td>
<td>158</td>
<td>218</td>
</tr>
</tbody>
</table>

### Quality Indicators

#### Quality Indicator 1: TAT
- **RETROCI**: EID: 5 days, VL: 45 days
- **CHU YOP**: 18.5 days
- **CHU Bouake**: Non applicable: Pas de tests réalisés cette semaine
- **CHR Abengourou**: CV= 10 days
- **CHR SAN-PEDRO**: 4 Jours
- **CHR Yamoussoukro**: EID 7 jours / CV 10jours
- **CePRef Yopoungon**: 47 days
- **CHR Korhogo**: TAT=47.7
- **HOPITAL Soubre**: 3 days
- **HOPITAL Gagnoa**: 31 jours ouvrables
- **CHR Man**: 0 days
- **INSP Adjame**: NON RENDU
- **IPCI**: 19 days

#### Quality Indicator 2: Sample rejection rate
- **RETROCI**: 0 rejets
- **CHU YOP**: 0 rejets
- **CHU Bouake**: 37 rejets dont 10 insuffisants, 2 codes discordants, 6 VIH2, 5 coagulés, 3 hémolysés, 2 éch. sans fiches, 2 fiches sans éch.
- **CHR Abengourou**: 4 rejetés dont 2 échantillons insuffisants et 2 VIH 2
- **CHR SAN-PEDRO**: 0 rejets
- **CHR Yamoussoukro**: 0 rejets
- **CePRef Yopoungon**: 0 rejets
- **CHR Korhogo**: 23 rejets dont 5 échantillons insuffisants / 13 coagulés / 1 VIH2 / 4 prélèvements non parvenus
- **HOPITAL Soubre**: 0 rejets
- **HOPITAL Gagnoa**: 2 rejet dont 1 pour discordance de numéro entre le tube et le bulletin / 1 pour retard d'acheminement au labo
- **CHR Man**: 0 rejets
- **INSP Adjame**: 9 Rejets dont 2 insuffisants/ 3 coagulés/ 1 hémolysé/ 3 de statut VIH non renseigné
- **IPCI**: 5 rejets (2 échecs QS invalide et 3 éch coagulés)

#### Quality Indicator 3: Out of service due to reagent stockout
- **RETROCI**: Echec : CAP/CTM : 2 plaques EID C6800 : 2 plaques
- **CHU YOP**: RAS
- **CHU Bouake**: Panne AmpliPrep depuis le 06/09/2017
- **CHR Abengourou**: RAS
- **CHR SAN-PEDRO**: RAS
- **CHR Yamoussoukro**: RAS
- **CePRef Yopoungon**: RAS
- **CHR Korhogo**: RAS
- **HOPITAL Soubre**: Equipement en panne: AMPLIPREP
- **HOPITAL Gagnoa**: blocage du S tube dans le griper occasionnant la perte d'une plaque
- **CHR Man**: RAS
- **INSP Adjame**: RAS
- **IPCI**: RAS

**Others Human ressources; Equipment Breakdown; Electricity Issues; Others consumables stock out**
It's not my problem, the hole is in their side of the boat!
Operational laboratories: 8 in Abidjan

9 of VL labs in regions

Planned by Global fund 2018: 6 labs at regions

Conclusion
Conclusion

• Country National Plan
• Collaborative and multidisciplinary approach to scaling up viral load in National Plan
• Strong laboratory Network and Networking and best strategy for equipment and electricity management
• Focus on improving efficiencies
• Demand creation - Clinicians, Community, Laboratory Personnel and Patients as drivers
• Scorecard or Tools to measure progress
• Strong Monitoring System