“TB & HIV programme coordinated roll-out of Xpert MTB/RIF in Nigeria”

6th Global Laboratory Initiative (GLI) Partners Meeting

Geneva
30 April - 2 May 2014

M. Gidado: Country Rep KNCV/TB CARE I project
&
J. O Obasanya: NTP manager Nigeria
Outline

- Introduction
- Partners involved
- Development process
- Results
- Challenges
- Way forward
Background

- DOTS centres: 5,398
- Microscopy centre: 1,515
- Culture/DST lab: 6
- Incidence rate: **338/100,000**
- Total notified cases 2013 all forms: 100,401 (17.5%)
- CNR all forms of TB 2013 (per 100,000) = 57.3
- HIV prevalence of **4.1%**
- ART centres 491 (85% TB/HIV co-located)
- MDR among new cases: **2.9%**
- MDR among previously treated cases: **14.3%**
Partners involved in Xpert roll out

- USAID
- The Global Fund
- CDC
- CCRN
- Arfh
- KNCV
- Federal Ministry of Health
- Institute of Human Virology, Nigeria
- FHI
- MSH
- DOD
- Agbami partners (Private sector)
- TB CARE I
Coordination of Xpert roll out

- C GAT
- Meets quarterly
- Membership (28 persons) among all partners
- Some functions include:
  - Site assessment and selection
  - Trainings manuals, SOP’s and R&R tools
  - M&E including supervision
  - TA needs assessment and implementation
GeneXpert distribution by States

9 sites 2011 TB CARE I

15 sites 2012 TB CARE I

30 sites 2012 among partners

54 sites in 32 States
March 2014

Note: 80% of the machines are within TB/HIV care sites

USAID
From the American People
Transiting from pilot projects to program setting

1. Health system
2. Large scale
3. Complex setting
4. HR issues
5. Inadequate tools
6. Cost/budget
7. Competing priorities
8. Support environment

Pilot/research projects
- Huge investment
- Limited in coverage

Project Staff

Capacity development

Government & facility Staff

TA
Diagnostic algorithms changes over time
Sputum/specimen request forms

Test request (tick any needed): Smear [ ] Xpert/MTB/RIF [ ] Culture [ ] 1st line DST [ ] 2nd line DST [ ]

Test request (tick any needed): Smear [ ] Xpert/MTB/RIF [ ] LPA [ ] Culture [ ] DST [ ]

Tick risk group for the test (Xpert MTB/RIF/LPA/Culture/DST):
A. DR TB suspects: CAT 1 Failure [ ] CAT 2 Failure [ ] Return after default [ ]
   Previously exposed to both first line and second line anti-TB drugs [ ] Relapse [ ] DR TB Contacts [ ]
B. PLI HIV TB suspects [ ]
C. Others [ ]

HIV Results: Pos [ ] Neg [ ] Unknown [ ] (tick as appropriate)

Number of sputum samples sent with this form [ ] Date of collection of first sample [ ]
Name, Signature and Phone no of person requesting examination [ ]

Xpert/MTB/RIF result (tick appropriate result)

<table>
<thead>
<tr>
<th>MTB Detected</th>
<th>MTB Not-Detected</th>
<th>RIF Resistance Detected</th>
<th>RIF Resistance Detected</th>
<th>Not</th>
<th>MTB Detected RIF Resistance Indeterminate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Xpert/MTB/RIF result (tick appropriate result)

<table>
<thead>
<tr>
<th>MTB Detected</th>
<th>MTB Not-Detected</th>
<th>RIF Resistance Detected</th>
<th>RIF Resistance Detected</th>
<th>Not</th>
<th>MTB Detected RIF Resistance Indeterminate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date [ ] Examined by (Name & Signature)
Summary tools

- New one
- Copy of Updated GeneXpert.xlsx

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### NTBLCP/DR TB Form 15

**DR TB laboratory (GeneXpert/MTB Rif) quarterly summary form**

<table>
<thead>
<tr>
<th>Completion Date</th>
<th>Name of Med lab Staff completing the form</th>
<th>Quarter</th>
<th>Year</th>
</tr>
</thead>
</table>

- Click 1: Number of DR TB suspects & PLHIV AFB smear negative examined during the quarter

<table>
<thead>
<tr>
<th>Suspects category</th>
<th>MTB Negative</th>
<th>MTB Positive</th>
<th>MTB Positive</th>
<th>Invalid Results</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No RIF Resistance</td>
<td>No RIF Resistance</td>
<td>RIF Resistance</td>
<td>(Indeterminate)</td>
<td></td>
</tr>
<tr>
<td>DR TB suspects (HIV Positive)</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>DR TB suspects (HIV Negative)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR TB suspects (HIV Unknown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLHIV (AFB smear negative)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other AFB smear negative cases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total spita tested**

- Test failed (Errors)

**Total spita retested**

(subset of total spita tested)

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### Block 2: Stock Status of Cartridges

<table>
<thead>
<tr>
<th>Description of Item</th>
<th>UNIT</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>Earliest Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATRIDGE</td>
<td>PIECE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# National virtual Warehouse

## Module One

### National FEFO Warehouse

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Source</th>
<th>Store Location</th>
<th>Expiry date (dd/mm/y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,351</td>
<td>MSH</td>
<td>Bomo, Konduga</td>
<td>17-May-14</td>
</tr>
<tr>
<td>542</td>
<td>SIDHAS</td>
<td>Plateau, Jos</td>
<td>22-May-14</td>
</tr>
<tr>
<td>300</td>
<td>SFH</td>
<td>FCT, Gwagwalada</td>
<td>28-May-14</td>
</tr>
<tr>
<td>456</td>
<td>SFH</td>
<td>FCT, Gwagwalada</td>
<td>03-Jun-14</td>
</tr>
<tr>
<td>980</td>
<td>URC</td>
<td>Imo, Owerri</td>
<td>26-Jun-14</td>
</tr>
<tr>
<td>700</td>
<td>APIN</td>
<td>Oyo, Ibadan</td>
<td>05-Aug-14</td>
</tr>
<tr>
<td>120</td>
<td>SFH</td>
<td>FCT, Gwagwalada</td>
<td>13-Aug-14</td>
</tr>
<tr>
<td>345</td>
<td>SFH</td>
<td>FCT, Gwagwalada</td>
<td>21-Aug-14</td>
</tr>
<tr>
<td>320</td>
<td>IHVN</td>
<td>Abuja, Wuse 11</td>
<td>24-Aug-14</td>
</tr>
<tr>
<td>600</td>
<td>MSH</td>
<td>Bomo, Konduga</td>
<td>29-Aug-14</td>
</tr>
<tr>
<td>4,963</td>
<td>FHI</td>
<td>Niger, Minna</td>
<td>15-Sep-14</td>
</tr>
<tr>
<td>5,363</td>
<td>IHVN</td>
<td>Abuja, Wuse 11</td>
<td>20-Sep-14</td>
</tr>
</tbody>
</table>

## Module THREE

### On top of issues

<table>
<thead>
<tr>
<th>Month Begins</th>
<th>Month Ends</th>
<th>Quantity Available</th>
<th>NEADS Per Month</th>
<th>Covered</th>
<th>EXPIRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-Jan-14</td>
<td>31-Jan-14</td>
<td>19,293</td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Feb-14</td>
<td>28-Feb-14</td>
<td>19,235</td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Mar-14</td>
<td>31-Mar-14</td>
<td>10,177</td>
<td>56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Apr-14</td>
<td>30-Apr-14</td>
<td>19,110</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-May-14</td>
<td>31-May-14</td>
<td>17,986</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Jun-14</td>
<td>30-Jun-14</td>
<td>16,306</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Jul-14</td>
<td>31-Jul-14</td>
<td>16,231</td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Aug-14</td>
<td>31-Aug-14</td>
<td>14,312</td>
<td>75</td>
<td></td>
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</tr>
<tr>
<td>01-Sep-14</td>
<td>30-Sep-14</td>
<td>13,153</td>
<td>75</td>
<td></td>
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</tr>
<tr>
<td>01-Oct-14</td>
<td>31-Oct-14</td>
<td>12,746</td>
<td>82</td>
<td></td>
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</tr>
<tr>
<td>01-Nov-14</td>
<td>30-Nov-14</td>
<td>10,946</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Dec-14</td>
<td>31-Dec-14</td>
<td>8,382</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Jan-15</td>
<td>31-Jan-15</td>
<td>7,943</td>
<td>71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Feb-15</td>
<td>28-Feb-15</td>
<td>7,872</td>
<td>71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Mar-15</td>
<td>31-Mar-15</td>
<td>7,499</td>
<td>71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Pipeline Monitor

<table>
<thead>
<tr>
<th>Possible Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,079</td>
</tr>
<tr>
<td>1,613</td>
</tr>
<tr>
<td>1,843</td>
</tr>
<tr>
<td>1,984</td>
</tr>
<tr>
<td>325</td>
</tr>
<tr>
<td>1,718</td>
</tr>
<tr>
<td>2,482</td>
</tr>
<tr>
<td>368</td>
</tr>
</tbody>
</table>

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[USAID Logo]

**TB CARE I**
Results (KNCV/TB CARE I sites)---1

Performance of Xpert machines over 2 years (machines installed at different periods)

Trend of Xpert performance for 2 years

2013- 8,734
Results (KNCV/TB CARE I sites)---

1. Average utilization per machine/year of <450
2. 6% Rif resistance among all tested
3. 14.6% MTB Pos Resistance are HIV positive (119)
4. 7.4% overall unfavorable results among all tested (error, invalid & no results)
5. Average error rate of 5.5% (frequent error [65%] code 5007 & 2008) & error code 2127 about 17%
6. Proportion of invalid results 1.3%
1. 3,345 MTB positive cases (27%)
2. 573 notified Rif resistance
3. 335 enrolled for DR TB care (58%)
Challenges----1

- Maintenance among 31 machines in 2 years:
  - 14 sites (45%) had one episode of fault
  - 4 sites (13%) recorded 2-4 episodes of fault
  - Faults in order of frequencies:
    - Modules failure or stuck doors
    - Inverter/battery
    - CPU
    - Barcode scanner failure
    - Complete equipment failure (mother board, power panel & fan

Average service interruption 2-4 weeks
Challenges---2

- Frequent reviews of algorithms and guidelines
- Dealing with paper based R&R system
- Programmatic turnaround time (in weeks)
- Still low utilization of Xpert among PLHIV (<25% of total test)
  - Low symptomatic screening of PLHIV for TB
  - Non documentation & referral
- Delay replacement of failed modules after calibration (procurement process —No buffer stock)
Challenges---3

- Capacity for enrollment of DR-TB
- Coordination of procurement and distribution of cartridges among all partners
- Adherence to Xpert roll out plan by partners
- Aligning Xpert roll out plan with culture DST labs
- Sample transport
Opportunities

- Electronic R&R system (e.g., GxAlert)
- TA plan by USG ($200,000)
- Decentralization of PMDT services (ambulatory DR TB care)
- Combine concept note for GF NFM (TB/HIV)
- TB TA to HIV programme (multi-sectorial)
- Establishment of basic Xpert local service provision e.g., installation, trouble-shooting
- Revision of all TB & TB/HIV training manuals,
Acknowledgement

- USAID
- KNCV team
- NTP & NACA/NASCP
- Lab colleagues in Nigeria

Thank You