TB CARE I
PROGRAM YEAR 4
QUARTER TWO
PERFORMANCE MONITORING REPORT

January 1, 2014 – March 31, 2014
May 15th 2014

TB CARE I Partners:

American Thoracic Society (ATS)
FHI 360
Japan Anti-Tuberculosis Association (JATA)
KNCV Tuberculosis Foundation
Management Sciences for Health (MSH)
International Union Against Tuberculosis and Lung Disease (The Union)
World Health Organization (WHO)
Table of Contents

Abbreviations ................................................................................................................................. 4
Introduction ........................................................................................................................................ 5
Program Management Unit ............................................................................................................. 6
New Publications ............................................................................................................................ 7
Core Projects ................................................................................................................................... 9
Approved Year 4 Core Projects & Completed Year 3 Projects ....................................................... 10

Country Projects ............................................................................................................................ 16
  Afghanistan ................................................................................................................................. 20
  Botswana ..................................................................................................................................... 21
  Cambodia ..................................................................................................................................... 21
  CAR-Kazakhstan ......................................................................................................................... 21
  CAR-Kyrgyzstan ........................................................................................................................ 22
  CAR-Tajikistan .......................................................................................................................... 22
  CAR-Uzbekistan ....................................................................................................................... 23
  Ethiopia ....................................................................................................................................... 24
  Ghana .......................................................................................................................................... 24
  Indonesia ...................................................................................................................................... 25
  Mozambique ............................................................................................................................... 27
  Namibia ........................................................................................................................................ 28
  Nigeria ......................................................................................................................................... 29
  South Sudan ............................................................................................................................... 30
  Viet Nam ...................................................................................................................................... 31
  Zambia ......................................................................................................................................... 32
  Zimbabwe ...................................................................................................................................... 33

Regional Projects ............................................................................................................................ 34
  Center of Excellence (CoE) for PMDT ......................................................................................... 34
  East Africa Supranational Reference Laboratory ....................................................................... 34
  Somalia ......................................................................................................................................... 34
Abbreviations

ACSM  Advocacy Communication Social Mobilization
AFB  Acid Fast Bacilli
ART  Anti-retroviral Therapy
Binfar  Directorate General of Pharmaceutical and Medical Devices (Indonesia)
BPPM  Directorate of Medical Services (Indonesia)
CAR  Central Asian Republics
CB-DOTS  Community-Based DOTS
CTBC  Community-Based TB Care
CDC  Center for Disease Control and Prevention
CoE  Center of Excellence
CDA  Case Detection Rate
CHW  Community Health Worker
CSO  Civil Society Organization
DEWG  DOTS Expansion Working Group
DOT  Directly Observed Treatment
DOTS  Directly Observed Treatment Short Course
DR  Drug Resistance
DRS  Drug Resistance Survey
DST  Drug Susceptibility Testing
EGSA  East, Central and Southern Africa
EQA  External Quality Assurance
ERR  Electronic Recording & Reporting
FIND  Foundation for Innovative New Diagnostics
GDBF  Global Drug Facility
GFATM  Global Fund for AIDS, Tuberculosis and Malaria
GLC  Green Light Committee
GLII  Global Laboratory Initiative
HAART  Highly Active Anti Retroviral Treatment
HCW  Healthcare Worker
HF  Health facility
HRD  Human Resource Development
HSS  Health System Strengthening
IC  Infection Control
IEC  Information, Education and Communication
ICF  Intensified Case Finding
ILEP  International Federation of Anti-Leprosy Associations
IPT  Isoniazid Preventive Therapy
IQC  Internal Quality Control
ISTC  International Standards of Tuberculosis Care
JATA  Japan Anti Tuberculosis Association
JSK  Joint Strategic Meeting
KANCO  Kenya AIDS NGOs Consortium
KAP  Knowledge, Attitude and Practice
KAPTLD  Kenya Association for Prevention of TB and Lung Diseases
KIT  Royal Tropical Institute
KNCV  KNCV Tuberculosis Foundation
LED  Light Emitting Diode (microscopy)
LPA  Line Probe Assay
MDR  Multi Drug Resistance
MDR-TB  Multi Drug Resistant Tuberculosis
M&E  Monitoring and Evaluation
MGA  Memorandum of Agreement
MoH  Ministry of Health
MOST  Management & Organizational Sustainability Tool
MSF  Médecins sans Frontières (Doctors without Borders)
MSH  Management Sciences for Health
NAP  National AIDS Program
NCE  No Cost Extension
NSG  Non-Governmental Organization
NIHE  National Institute of Health and Epidemics (Viet Nam)
NSP  National Strategic Plan
NTD  National TB Program
NRL  National Reference Laboratory
NTRL  National Tuberculosis Reference Laboratory
OD  Operational District
OIG  Office of the Inspector General
OPD  Out-patient Department
OR  Operations Research
PAC  Patient Centered Approach
PIH  Partners in Health
PTC  Provider-Initiated Treatment and Counseling
PRA  Primary Health Care Center
PPL  Population Living with HIV
PLWHIA  People Living with HIV/AIDS
PMDT  Programmatic Management of Drug-resistant Tuberculosis
PMU  Program Management Unit
PPP  Public Private Partnership
PSS  Psycho-social Support
RUTF  Ready to Use Therapeutic Foods
RF  Rationing
OMR  Quarterly Monitoring Report
SNAS  South Africa National Accreditation System
SES  Sanitation and Epidemiologic Authority
SLL  Second Line Drug
SNRL  Supra National Reference Laboratory
SOP  Standard Operating Procedures
SST  Sputum Smear positive
SSN  Sputum Smear negative
TA  Technical Assistance
TB  Tuberculosis
TB-IC  TB Infection Control
TB-CAP  Tuberculosis Control Assistance Program
TBCTA  Tuberculosis Coalition for Technical Assistance
TOT  Training of Trainers
TFM  Transitional Funding Mechanism
TWG  Technical Working Group
U.S. Agency for International Development
UVGI  Ultraviolet Germicidal Irradiation
WHO  World Health Organization
Halfway through the fourth and final year of the TB CARE I program, there are many achievements to highlight from the 18 country projects, four regional projects and 33 core projects that were implemented this quarter. TB CARE I’s most significant achievements from January-March 2014 and challenges for the next three months are captured below.

Main Achievements:
- The program is working in nearly every TB CARE I country to support Global Fund (GF) concept note development. Two TB epidemiological assessments were conducted (Afghanistan, Nigeria) with TB CARE I support to inform National Strategic Plans (NSPs) and six NSPs (Botswana, Cambodia, Nigeria, South Sudan, Viet Nam and Zimbabwe) were developed with technical support from TB CARE I.
- Based on available 2013 data, diagnosis of MDR-TB in TB CARE I countries increased by 42% compared to 2010 and second line drug (SLD) treatment initiation was even more impressive with 85% more MDR-TB cases started on treatment compared 2010. Initial reporting from January-March 2014 projects a continued increase in both diagnosis (23%) and treatment initiation (6%) compared to preliminary 2013 levels.
- In response to the global and country-driven demand for the costing of TB and MDR-TB services, TB CARE I developed new costing tools (3) and resources (9) that are now available on the program website (links also below).
- Results from a costing study in Ethiopia, Kazakhstan and Indonesia revealed that median (pre)diagnosis and treatment costs for MDR-TB patients ranged from $1,838 in Ethiopia to $2,342 in Indonesia and $3,125 in Kazakhstan. While the financial burden of MDR-TB patients was much higher than that of TB patients in all three countries, all patients experienced substantial socioeconomic impact of TB disease, most importantly due to inability to work and job loss.
- As a component of ambulatory care in Tajikistan, the project started monthly distribution of food and hygienic parcels this quarter to all MDR-TB patients (n=88) and to the poorest TB patients (n=12) registered in nine TB CARE I pilots in order to increase adherence to treatment and to prevent loss to follow-up.
- In Zimbabwe, patients with recorded HIV test results increased from 86% to 97% (705 patients) from Quarter 1 to Quarter 2 of Year 4 in the 23 TB CARE I integrated TB/HIV sites. Cotrimoxazole preventive therapy (CPT) increased from 86% to 98% and antiretroviral therapy (ART) from 67% to 72%.
- In Zambia, the number of people living with HIV (PLHIV) who were successfully tested for TB using GeneXpert MTB/RIF increased from 957 to 1,711 this quarter - a 79% increase.
- In Indonesia, as of this quarter, 94% of HIV positive patients were screened for TB compared to the Year 4 target of 85%; ART usage among HIV positive TB patients increased from 13% in Quarter 1 to 40% in Quarter 2 and 95% of HIV patients with active TB received treatment.

Main Challenges:
- Without a clear picture of what will happen after TB CARE I ends, key staff may look for ‘greener pastures’ and leave the country projects prior to the closure of the program. In some countries the program is already experiencing staff departures.
- All Core projects need to be completed on time; seven projects are currently at risk of not being fully completed and require special attention and close follow-up.
- Similarly, 48 Operations Research (OR) projects need to be completed by the end of the project and the program will be following and supporting these studies closely to ensure timely and full completion.
PMU staff provided technical and managerial assistance and participated in global meetings throughout the quarter (summarized below).

**TB CARE I countries visited by PMU members for technical or managerial purposes, January-March 2014**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>GeneXpert/Laboratories</td>
</tr>
<tr>
<td>Mozambique</td>
<td>PMU Country Project Review</td>
</tr>
<tr>
<td>Nigeria</td>
<td>TB-IC/FAST, TB/HIV Xpert project</td>
</tr>
<tr>
<td>South Africa</td>
<td>GF meeting</td>
</tr>
<tr>
<td>Washington DC</td>
<td>TB/HIV Core Group meeting</td>
</tr>
<tr>
<td>Geneva</td>
<td>Core Group meeting on HAIN Line Probe Assay (LPA)</td>
</tr>
</tbody>
</table>

**Knowledge Exchange**

**TB CARE I website:**
The more than 6,100 visitors to the TB CARE I website this quarter is the highest ever, and the day with the most individual visitors was World TB Day 2014. The number of pages viewed, documents downloaded and visitor countries also reached all-time highs.

**Summary of visitors to the TB CARE I website, January-March 2014**

<table>
<thead>
<tr>
<th></th>
<th>October-December 2013</th>
<th>January-March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Visitors</td>
<td>5,005</td>
<td>6,139 (23% increase)</td>
</tr>
<tr>
<td>Number of Countries Visitors came from</td>
<td>136</td>
<td>142 (74% of 193 countries)</td>
</tr>
<tr>
<td>Number of Pages Viewed</td>
<td>12,002</td>
<td>13,850</td>
</tr>
<tr>
<td>Percentage of New Visitors</td>
<td>70%</td>
<td>74%</td>
</tr>
</tbody>
</table>

**TB CARE I website visitor locations for the quarter**

This quarter, 2,663 (last quarter 2,397) documents were downloaded (21.1Gb of data); the top ten most popular downloads (and number of downloads) were as follows:
1. TB CARE I Annual Report Year 3, Oct 2012-Sept 2013 (223)
2. TB CARE I Publications Complete List (120)
3. International Standards of Tuberculosis Care 3rd Edition (96)
4. Guide to Measure the Incidence of Active TB Disease Among Health Care Workers (72)
5. Systematic Screening for Active Tuberculosis (64)
6. Intensified Implementation of GeneXpert MTB/RIF in 3 Countries (60)
7. Electronic Recording and Reporting for Tuberculosis Care and Control (58)
8. The Roadmap to Successful GeneXpert Implementation (42)
9. Tuberculosis Infection Prevention Procedures - Job Aid (45)
10. Strategic Guide to Building Public-Private Mix Partnerships to Support TB Control (43)
New Publications

**TB CARE I Year 4 Quarter 1 Report:**
The first quarterly report from Year 4, October 2013 to December 2013:

**International Standards of Tuberculosis Care 3rd Edition (English)**
The International Standards for Tuberculosis Care (ISTC) describes a widely accepted level of care that all practitioners, public and private, should seek to achieve in managing patients who have or are suspected of having TB. The Standards are intended to facilitate the effective engagement of all care providers in delivering high-quality care. This is the third edition published in March 2014.

**ISTC Mobile Application**
For the 3rd edition of the ISTC (see above) a mobile app has been developed that features clinical decision algorithms with step by step guidance for diagnosing and managing TB, along with the full text of the ISTC. The app is designed for TB practitioners, providing them with all the essential information for diagnosing and managing TB. The app is available for free. To download it, go to the website and enter your email and a password. The page will redirect you to download the app, titled AgileMD; sign in and wait a few seconds for the app to update.
http://walimu.org/istc

**PPM PMDT Linkage – A Toolkit**
A situational analysis tool to assess the engagement of the private sector in the control of (M)DR-TB.

**Costing Tools and Resources:**
TB CARE I has recognized the importance of sustainable and accurate planning, costing and budgeting for TB control and has invested in several tools and studies to assist National TB Programs (NTPs) and the global TB community. Below is a summary of the numerous TB CARE I-developed resources that are now available on the TB CARE I website. A new category of tools was added to the website for all costing tools: http://www.tbcare1.org/publications/toolbox/tools/costing/.

**MDR-TB Cost-Effectiveness Analysis Tool (Zipped Package)**
The Cost-Effectiveness Tool is a simple, user-friendly, generic tool that is available for countries to use to compare the cost-effectiveness of different diagnoses and treatment methods for MDR-TB. The tool builds on previous studies on cost-effectiveness of MDR-TB, and on WHO guidelines on cost and cost-effectiveness analysis of TB control. It can be used to compare the costs and effectiveness of different treatment strategies from the provider perspective. For outcome measures the tool uses case completion rate, the cure rate and the cost of deaths averted. The intended users are district, provincial and central level TB program managers and planners. This package contains an excel workbook and a ‘read me’ file.

**TB Economic Burden Analysis Model (Zipped Package)**
The TB Economic Burden Analysis Tool is designed to help national and sub-national Program Managers and others calculate the economic burden. Based on treatment numbers and assumptions on dropout rates etc., the tool adds treatment costs, patients' costs, and productivity losses to calculate the total economic burden. The tool is in Microsoft Excel and is designed to be used by TB Program Managers at national and sub-national levels. It has a user guide, is user-friendly and transparent and modifications can be made by the user. Although the tool was developed for TB services, it could be adapted for other vertical programs, such as malaria and HIV/AIDS and it can be used in any country.

**TB Services Costing Tool (Zipped Package)**
The TB Services Costing Tool allows the user to develop 10 year cost projections based on incidence and treatment targets for TB and MDR-TB and more years can be added if necessary. It has been used in Indonesia to develop national cost estimates for national strategic planning and also to develop cost estimates for Central Java Province. The package contains two excel files - one filled example and one empty version.
http://www.tbcare1.org/publications/toolbox/tools/costing/TB_Services_Costing_Tool.zip

**The Economic Burden of Tuberculosis in Indonesia**
Understanding the economic burden to society from a disease like TB is important as it can be used as evidence when advocating for greater investment. This report describes the development of a tool to estimate the economic burden of TB in Indonesia and the results stemming from its use. The development and use of the tool was requested by the Director of the National TB Control Program to assist with advocacy for greater resources.

**Modeling the Cost-Effectiveness of Multi-Drug Resistant Tuberculosis Diagnostic and Treatment Services in Indonesia**
A guide to the creation of a simple, generic and user-friendly model accessible to NTP managers at national and local levels for conducting cost and cost-effective analysis of MDR-TB diagnostic and treatment services. Analyses were conducted in Indonesia, but are applicable a global context.
Costs faced by Multi-drug Tuberculosis Patients During Diagnosis and Treatment - Report from a pilot study in Ethiopia, Indonesia and Kazakhstan

This report summarizes the main findings on (MDR) TB patient costs in the three pilot countries, and recommendations from respective policy workshops.


Costs faced by multi-drug resistant tuberculosis patients during diagnosis and treatment - Report from a pilot study in Ethiopia

Ethiopia has a high prevalence of TB and it is also one of the countries where many people who develop TB every year do not get treated. One of the reasons why infected people delay or do not seek diagnosis and treatment is economic access – the cost to patients and their families. This report documents a pilot study, which was undertaken to determine the financial impact of MDR-TB diagnosis and treatment.


Costs faced by Multi-drug Tuberculosis Patients During Diagnosis and Treatment - Report from a Pilot Study in Kokshetau, Akmola Oblast, Kazakhstan

In most countries, MDR-TB is more prevalent in socially more vulnerable groups, for which the economic impact of the disease may be even bigger. Policy makers such as Ministries of Health and National Tuberculosis Control Programs need to understand patient costs to identify and mitigate potential bottlenecks in access and adherence to (MDR)TB treatment and the negative impact on the economic status of patients and their families.


Costs Faced By Multi-drug Tuberculosis Patients during Diagnosis and Treatment - Report from a Pilot Study in Indonesia

In most countries, MDR-TB is more prevalent in socially more vulnerable groups, for which the economic impact of the disease may be even bigger. Policy makers such as Ministries of Health and National Tuberculosis Control Programs need to understand patient costs to identify and mitigate potential bottlenecks in access to and adherence to (MDR)TB treatment and the negative impact on the economic status of patients and their families.


Coverage of TB Services under Social Health Insurance in Indonesia

An analysis of national claims data obtained from the public health insurance schemes and carried out via interviews with health and insurance managers and non-governmental organizations in three Indonesian provinces – Aceh, Jakarta and West Java.


The Cost of Scaling Up TB Services in Central Java, Indonesia

To assist the Indonesian NTP to analyze and project service delivery costs, a simple, user-friendly costing tool was developed for use by national, district and provincial program managers (see TB Services Costing Tool link above). The tool was developed because there was no existing tool suitable for sub-national levels, and it was tested in Central Java, a large province with 32 million people.


The Cost of Scaling Up TB Services in Indonesia

To facilitate the development and implementation of the exit strategy for TB, it is necessary to have a good understanding of the cost of current and future services at all levels so that the necessary domestic funding can be provided and areas can be identified where greater efficiency and cost-effectiveness might be achieved. To assist the NTP to analyze and project service delivery costs, a simple, user-friendly costing tool was developed for use by national, district and provincial program managers. The tool was developed because there was no existing tool suitable for sub-national levels, and it was tested in Central Java and the resulting model was then used to estimate the projected costs for the whole country.

The program has made considerable investments in core-funded global projects and is making substantial progress in completing all core projects on time. 98% (100/107) of all Year 1-3 projects have been completed (80% of all 133 Year 1-4 projects). As of March 2014, five new projects were approved bringing the total number of ongoing projects to 26 (only two Year 3 projects are ongoing).

All completed tools can be found on the TB CARE I website: http://www.tbcare1.org/publications/
**Approved Year 4 Core Projects & Completed Year 3 Projects**

### UNIVERSAL ACCESS

<table>
<thead>
<tr>
<th>Code</th>
<th>Partners</th>
<th>Title</th>
<th>Expected Deliverable(s) Year 4</th>
<th>Progress to date</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.05</td>
<td>WHO</td>
<td>Layout/print of pediatric guidelines</td>
<td>2000 printed documents of the pediatric guidelines, incl. design, lay-out and 2000 CD ROMS</td>
<td>WHO Guidance for National Tuberculosis Programs on the Management of Tuberculosis in Children: second edition has been completed and is available at <a href="http://www.who.int/tb/publications/en/">http://www.who.int/tb/publications/en/</a>. The training materials have been updated accordingly and will be available soon on the website and CD.</td>
<td>50%</td>
</tr>
<tr>
<td>C1.12</td>
<td>WHO</td>
<td>Manual for TB screening in risk groups</td>
<td>1. Field test, assessment (One summary report from each country case study); 2. Meeting (Meeting report); 3. Tool, Document (Manual including toolbox)</td>
<td>An outline of the manual has been prepared. A mission was conducted to Cambodia (report forthcoming) and a mission to Myanmar is planned for May or June. Partners have started work in Indonesia, Ghana and Uzbekistan (replacing Kazakhstan). The consultation meeting will be held early September 2014. The final manual will be ready by September and it will be disseminated during The Union conference in October.</td>
<td>40%</td>
</tr>
<tr>
<td>C1.16</td>
<td>ATS</td>
<td>Contact investigation guidelines</td>
<td>1. Workshop; 2. Train the Trainers on new WHO Contact Investigation</td>
<td>The workshop on contact investigation was held at the Union Conference and addressed guideline implementation at country level including data collection and performance evaluation.</td>
<td>50%</td>
</tr>
<tr>
<td>1.18</td>
<td>KNCV</td>
<td>Task Force meeting on catastrophic cost</td>
<td>4 attend workshop in Geneva</td>
<td>The meeting is planned for May.</td>
<td>5%</td>
</tr>
<tr>
<td>C1.22</td>
<td>The Union</td>
<td>Childhood TB online training</td>
<td>e-learning training tool</td>
<td>Developed high level design document for 6-module course.</td>
<td>20%</td>
</tr>
<tr>
<td>Code</td>
<td>Partners</td>
<td>Title</td>
<td>Expected Deliverable(s) Year 4</td>
<td>Progress to date</td>
<td>% Complete</td>
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<tr>
<td>C2.07</td>
<td>KNCV</td>
<td>Develop the Benin NRL to join the SRLN</td>
<td>The Benin NRL has achieved an advanced level laboratory quality management system to achieve SNRL status and start the application process for ISO 15189:2012 accreditation.</td>
<td>In February TA was provided for planning and support during the final phase of the quality management system implementation. Pending issues regarding SNRL status are being addressed with KNCV support.</td>
<td>35%</td>
</tr>
<tr>
<td>C2.10</td>
<td>WHO</td>
<td>Xpert Global Forum</td>
<td>1. Meeting (participants share experiences in Xpert MTB/RIF scale-up and implementation); 2. Document (summarizes meeting presentations, discussions and lessons learned)</td>
<td>The Xpert Global Forum will take place May 1-2, 2014 in Geneva, Switzerland as part of the 6th Global Laboratory Initiative (GLI) Partners’ Meeting from April 30-May 2, 2014.</td>
<td>25%</td>
</tr>
<tr>
<td>C2.14</td>
<td>KNCV</td>
<td>Rollout of quality indicators for WHO lab techniques</td>
<td>1. Guide on evaluation &amp; troubleshooting of quality performance indicators for WHO-recommended laboratory techniques (LPA and Xpert); 2. 2 meetings (1 virtual) on product development &amp; roll-out; 3. Presentation of the final product at Geneva GLI meeting</td>
<td>List of published indicators was compiled, reviewed and will be finalized at which point the guide will be developed.</td>
<td>15%</td>
</tr>
<tr>
<td>C2.15</td>
<td>KNCV</td>
<td>GLI Stepwise Process towards TB Laboratory Accreditation</td>
<td>A lessons learned document with experiences from 3 African NRLs and international experts</td>
<td>Methodology was developed, desk reviews were started and country visits are planned.</td>
<td>20%</td>
</tr>
<tr>
<td>C2.17</td>
<td>The Union</td>
<td>Network Accreditation</td>
<td>1. 3 consultants are mentored and assessed during country visits in the use of the microscopy network accreditation tool; 2. Assessment (TB microscopy networks of 3 countries have been assessed and recommendations towards accreditation have been given)</td>
<td>Three country visits have been organized.</td>
<td>15%</td>
</tr>
<tr>
<td>C2.21</td>
<td>The Union</td>
<td>GeneXpert Zimbabwe</td>
<td>14 Gene Xpert machines installed in 14 district laboratories.</td>
<td>Technical assessment visit of Xpert sites completed. All 14 machines are installed and functioning well.</td>
<td>80%</td>
</tr>
<tr>
<td>C2.22</td>
<td>FHI 360</td>
<td>GeneXpert Zambia</td>
<td>1. Supervisory support visits (4); 2. Provincial trainings (4); 3. Strategic Meetings (4)</td>
<td>TB CARE I supported two meetings for the NTP Xpert Technical Working Group (TWG) this quarter. The meeting focused on the preparations for training and supervisory support activities in the four target provinces. Trainings and supervisory visits are planned for the third quarter of 2014.</td>
<td>25%</td>
</tr>
<tr>
<td>C2.23</td>
<td>KNCV</td>
<td>GeneXpert Nigeria</td>
<td>1. Review and updating of Xpert MTB RIF assessment checklist, supervision checklist and calibration SOP; 2. Xpert M&amp;E guidelines &amp; training tools; 3. 1 workshop, 2 ToTs</td>
<td>All existing Xpert R&amp;R tools, SOPs and GLI training documents were reviewed and updated. Stakeholders are providing final feedback. TA was provided on maintenance and module replacements to five Xpert machines. A TOT for laboratory staff and clinicians is planned for next quarter.</td>
<td>45%</td>
</tr>
<tr>
<td>C2.24</td>
<td>KNCV</td>
<td>GeneXpert Ethiopia</td>
<td>1. TA for Xpert DR-TB strategy (including algorithm); 2. ToT training for laboratory personnel &amp; clinicians; 3. TA on mentoring and supportive supervision</td>
<td>Procurement of Xpert machines will be done in collaboration with USAID's SCMS program. Roles and responsibilities of TB CARE I and SCMS are being clarified.</td>
<td>5%</td>
</tr>
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</table>
## INFECTION CONTROL

<table>
<thead>
<tr>
<th>Code</th>
<th>Partners</th>
<th>Title</th>
<th>Expected Deliverable(s) Year 4</th>
<th>Progress to date</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3.07</td>
<td>PIH</td>
<td>Capacity building in TB-IC</td>
<td>1. Training (Harvard Summer Course); 2. 8 mentored field visits (MFVs), 1 week each, in a country where IC mentors are working and/or providing TA; 3. TB Design Roster on GHDonline.org</td>
<td>One TB CARE I-led MFV took place in Nigeria (mentor Max Meis). Three MFVs are planned for Quarter 3.</td>
<td>20%</td>
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</tbody>
</table>

## PMDT

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<thead>
<tr>
<th>Code</th>
<th>Partners</th>
<th>Title</th>
<th>Expected Deliverable(s) Year 4</th>
<th>Progress to date</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4.05</td>
<td>KNCV</td>
<td>Ambulatory care</td>
<td>1. Comparison framework for best practices on psycho socio-economic support (PSS) for DR-TB patients; 2. Best practices document; 3. Lessons learned for sustainable patient centered PSS systems</td>
<td>Literature review in process.</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>WHO</td>
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<td>MSH</td>
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<tr>
<td>C4.06</td>
<td>PIH / TB CARE II KNCV</td>
<td>Drug-resistant TB Learning Site</td>
<td>1. Webinars (3-4 series); 2. Case Catalog 12-18 new cases from Russia, Peru, Kazakhstan, Haiti, etc.; 3. A self-guided quiz series</td>
<td>New partner within TB CARE I identified (The Union). Two cases were discussed by experts and submitted for inclusion on the site.</td>
<td>20%</td>
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## TB/HIV

<table>
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<tr>
<th>Code</th>
<th>Partners</th>
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<th>Expected Deliverable(s) Year 4</th>
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</tr>
</thead>
<tbody>
<tr>
<td>C5.13</td>
<td>KNCV</td>
<td>Strengthen Xpert use for TB case detection among PLHIV (PEPFAR)</td>
<td>1. Assessment visits to Nigeria &amp; Zimbabwe to determine the requirements for GeneXpert implementation &amp; routine use in HIV settings; 2. Final workplan</td>
<td>Pilot sites in Nigeria and Zimbabwe were selected and engaged in the project. The first training (Nassarawa State) was held in Nigeria. Extra TA will be provided to train pilot site staff on new R&amp;R tools. The second training in Nigeria is planned for Niger State in April with a new Xpert machine to be installed the week before. Trainings in Zimbabwe (including revised R&amp;R tools) will start in Quarter 3.</td>
<td>30%</td>
</tr>
</tbody>
</table>
### HEALTH SYSTEMS STRENGTHENING

<table>
<thead>
<tr>
<th>Code</th>
<th>Partners</th>
<th>Title</th>
<th>Expected Deliverable(s) Year 4</th>
<th>Progress to date</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>C6.1.5</td>
<td>KNCV</td>
<td>3rd Kenya International Lung Health Conference</td>
<td>Participation of 3 TB health professionals in the Kenyatta International Conference.</td>
<td>Completed in Quarter 1.</td>
<td>100%</td>
</tr>
<tr>
<td>C6.1.6</td>
<td>KNCV</td>
<td>Participation in Sondalo workshop</td>
<td>TB CARE I participation in Sondalo workshop</td>
<td>Completed in Quarter 1.</td>
<td>100%</td>
</tr>
<tr>
<td>C6.1.7</td>
<td>KNCV</td>
<td>Workshop TB/HIV</td>
<td>One-day workshop on combined TB/HIV prevalence surveys</td>
<td>The workshop is planned for April 15 in The Hague.</td>
<td>0%</td>
</tr>
<tr>
<td>C6.1.8</td>
<td>KNCV</td>
<td>TB/HIV prevalence RDS course</td>
<td>Two-day Respondent Driven Sampling (RDS) course for consultants who will support countries that may apply the method</td>
<td>The course is planned for April 16-17 in The Hague.</td>
<td>0%</td>
</tr>
</tbody>
</table>

### M&E, OR & SURVEILLANCE

<table>
<thead>
<tr>
<th>Code</th>
<th>Partners</th>
<th>Title</th>
<th>Expected Deliverable(s) Year 4</th>
<th>Progress to date</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>C7.04</td>
<td>WHO</td>
<td>Revised Definitions and Reporting Framework</td>
<td>Training package available in all 6 official WHO languages.</td>
<td>The translations into Chinese, French, Russian, Spanish have been completed and are on the WHO website. The Arabic translation and FAQ document will be available in April. The revised list of indicators is being drafted (expected in June). Nigeria (paper-based system) and Kenya (electronic system) will work with WHO to develop country case studies. The online training module is being drafted (first draft expected in June).</td>
<td>30%</td>
</tr>
</tbody>
</table>

### DRUG SUPPLY & MANAGEMENT

<table>
<thead>
<tr>
<th>Code</th>
<th>Partners</th>
<th>Title</th>
<th>Expected Deliverable(s) Year 4</th>
<th>Progress to date</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8.01</td>
<td>WHO</td>
<td>New TB drug introduction</td>
<td>1. Tools to guide introduction of new TB drugs and adaptation for bedaquiline introduction; 2. Capacity building on use of tools; 3. WHO Expert Group Meeting on delamanid use for MDR-TB treatment &amp; development of a “How-to” document.</td>
<td>The generic Bedaquiline roll-out plan is under review and is informing the draft Viet Nam-specific plan. The plan will then be shared with Indonesia and Kazakhstan. A data tool for the introduction of Bedaquiline is also being drafted. The capacity building workshop is planned for Q3. A WHO Expert Group meeting will take place in Geneva on April 15-16.</td>
<td>30%</td>
</tr>
<tr>
<td>Code</td>
<td>Partners</td>
<td>Title</td>
<td>Expected Deliverable(s) Year 4</td>
<td>Progress to date</td>
<td>% Complete</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>C2.12</td>
<td>The Union, KNCV, MSH, WHO</td>
<td>Update of Tuberculosis Control Assistance Program (TB CAP) lab tools</td>
<td>Updated lab training tools - Microscopy</td>
<td>A Practical Handbook for National TB Laboratory Strategic Plan Development (Updated) is available in print (The Union) or online. CDC plans to translate the handbook into several languages.</td>
<td>100%</td>
</tr>
<tr>
<td>C2.16</td>
<td>KNCV, The Union, WHO</td>
<td>Guide for Xpert training materials</td>
<td>Facilitators', participants' and customization guide for GeneXpert training materials</td>
<td>The guide is complete and is undergoing review by WHO.</td>
<td>100%</td>
</tr>
<tr>
<td>C2.20</td>
<td>WHO, KNCV, MSH</td>
<td>Consultants' manual for TB laboratory consultants</td>
<td>Consultants manual for TB lab consultants</td>
<td>The manual is complete and is undergoing review by WHO.</td>
<td>100%</td>
</tr>
<tr>
<td>C3.06</td>
<td>PIH, KNCV, MSH</td>
<td>FAST Core Package for TB -IC</td>
<td>Final FAST Core Package</td>
<td>The FAST core package is available on the TB CARE I website.</td>
<td>100%</td>
</tr>
<tr>
<td>C4.04</td>
<td>KNCV, MSH</td>
<td>Assessing the costs faced by MDR-TB patients</td>
<td>Consensus workshop to define recommendations for policy</td>
<td>Summary report and detailed reports from Kazakhstan, Indonesia and Ethiopia are available on the TB CARE I website. The median (pre)diagnosis and treatment cost for MDR-TB patients ranged from $1,838 in Ethiopia to $2,342 in Indonesia and $3,125 in Kazakhstan. While the financial burden of MDR-TB patients was much higher than that of TB patients in all three countries, all patients experienced substantial socioeconomic impact of TB disease, most importantly due to inability to work and job loss.</td>
<td>100%</td>
</tr>
<tr>
<td>C4.12</td>
<td>KNCV, WHO</td>
<td>Develop guidance for engaging and implementing PMDT in private sector</td>
<td>Development of guidance for linkage of Public-Private Mix (PPM) and Programmatic Management of Drug-resistant Tuberculosis (PMDT)</td>
<td>PPM PMDT Linkage: A toolkit developed and available on the TB CARE I website.</td>
<td>100%</td>
</tr>
<tr>
<td>C7.05</td>
<td>MSH</td>
<td>Support M&amp;E efforts of NTPs</td>
<td>Five day training in TB surveillance, Training curriculum on TB data management and TB data use developed, in-person TB data training for M&amp;E staff in CAR-region and assessment to four selected countries.</td>
<td>Innovations in TB Data Quality: An M&amp;E Workshop Facilitators Guide and training curriculum available upon request.</td>
<td>100%</td>
</tr>
</tbody>
</table>
### ONGOING YEAR 3 PROJECTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Partners</th>
<th>Title</th>
<th>Expected Deliverable(s) Year 4</th>
<th>Progress to date</th>
<th>Complete %</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4.11</td>
<td><strong>TB CARE II</strong>&lt;br&gt;KNCV&lt;br&gt;The Union&lt;br&gt;WHO</td>
<td>Pocket guide for the Medical Management of MDR-TB</td>
<td>Pocket guide for clinicians treating MDR-TB in English</td>
<td>Extension approved through September to complete guide translation into Russian.</td>
<td>60%</td>
</tr>
<tr>
<td>C7.10</td>
<td><strong>WHO</strong>&lt;br&gt;KNCV&lt;br&gt;MSH</td>
<td>Handbook on analysis of TB surveillance data</td>
<td>Handbook on analysis of TB surveillance data</td>
<td>The handbook is being finalized and will be available by May (extension approved).</td>
<td>80%</td>
</tr>
</tbody>
</table>
TB CARE I implements projects in 18 countries (including Senegal, which has no TB CARE I in-country office). The map above displays the geographic distribution and investment size of TB CARE I country projects.

Global Fund

Collaborating with and supporting Global Fund (GF) implementation in TB CARE I countries and at a global level is an ongoing priority for the program. TB CARE I has been involved in all stages of GF implementation from collaboration, grant application (including epi analyses, strategic planning and concept note development), grant negotiation, implementation, monitoring & evaluation and close out. Currently, most countries are preparing to or are in the process of applying to the GF New Funding Mechanism (NFM). This quarter, two TB epidemiological assessments were conducted (Afghanistan, Nigeria) with TB CARE I support to inform National Strategic Plans (NSPs) and six NSPs (Botswana, Cambodia, Nigeria, South Sudan, Viet Nam and Zimbabwe) were developed with technical support from TB CARE I. Thirteen countries (Afghanistan, Botswana, Cambodia, Ghana, Indonesia, Kazakhstan, Mozambique, Namibia, Nigeria, South Sudan, Viet Nam, Zambia and Zimbabwe) will be writing concept notes with TB CARE I support in the coming months.

In Indonesia, two notable achievements occurred this quarter. First, an external consultant contracted by TB CARE I developed a plan for GF program management technical assistance (TA) that includes capacity building for financial management, staffing, personnel development, processes and internal controls. Second, in response to historical delays in implementing GF-supported technical assistance, KNCV has been designated as a sub-recipient, and in close collaboration with the government and TB CARE I partners, will execute the TA plan for the GF.

Programmatic Management of Drug Resistant TB (PMDT)

Although timeliness and completeness of MDR-TB data continue to be a challenge, preliminary 2013 and 2014 MDR-TB data obtained from NTPs in 17 active TB CARE I countries (Senegal excluded) indicate a continued steady increase in MDR-TB diagnosis and treatment initiation. Updated 2013 data indicate an estimated 14,600 MDR-TB patients were diagnosed while 14,807 were started on second line treatment (see page 17). Diagnosis increased by 42% and 13% compared to 2010 and 2012 levels respectively. Treatment initiation improved even more dramatically with 85% more diagnosed MDR-TB patients started on treatment compared to 2010 (19% compared to 2012). Initial reporting from January-March 2014 projects a continued increase in both diagnosis (23%) and treatment initiation (6%) compared to estimated 2013 levels.

As reported last quarter, the preliminary 2013/2014 data show that countries are closing the gap between diagnosis and treatment of
MDR-TB. Although data vary country to country, for the first time ever, more MDR-TB patients were put on treatment in 2013 than were diagnosed. This indicates that the backlog of diagnosed MDR-TB cases is beginning to be addressed and countries’ capacity to treat patients is improving. TB CARE I has contributed to these successes and will not only continue to invest heavily in PMDT to further accelerate diagnosis and treatment, but will also improve reporting and data quality so that these gains can be accurately captured. Table 4 summarizes the number of MDR-TB patients diagnosed and put on treatment annually from 2010 to 2013 as well as preliminary data from January-March 2014 in TB CARE I countries.

<table>
<thead>
<tr>
<th>Countries</th>
<th>2010 #dx</th>
<th>2010 # put on trt</th>
<th>2011 #dx</th>
<th>2011 # put on trt</th>
<th>2012 #dx</th>
<th>2012 # put on trt</th>
<th>2013 #dx</th>
<th>2013 # put on trt</th>
<th>Jan-Mar 2014 #dx</th>
<th>Jan-Mar 2014 # put on trt</th>
<th>Data extrapolated for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>19</td>
<td>0</td>
<td>19</td>
<td>21</td>
<td>38</td>
<td>38</td>
<td>49</td>
<td>48</td>
<td>7</td>
<td>7</td>
<td>2013; Jan-Mar dx</td>
</tr>
<tr>
<td>Botswana</td>
<td>106</td>
<td>114</td>
<td>46</td>
<td>46</td>
<td>53</td>
<td>58</td>
<td>58</td>
<td>53</td>
<td>17</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>31</td>
<td>38</td>
<td>56</td>
<td>57</td>
<td>75</td>
<td>110</td>
<td>131</td>
<td>122</td>
<td>29</td>
<td>33</td>
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<tr>
<td>Ethiopia</td>
<td>140</td>
<td>129</td>
<td>212</td>
<td>199</td>
<td>284</td>
<td>289</td>
<td>384</td>
<td>384</td>
<td>81</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>20</td>
<td>2</td>
<td>38</td>
<td>23</td>
<td>10</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>182</td>
<td>142</td>
<td>383</td>
<td>260</td>
<td>428</td>
<td>426</td>
<td>1,074</td>
<td>819</td>
<td>775</td>
<td>804</td>
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<tr>
<td>Kazakhstan</td>
<td>7,387</td>
<td>5,705</td>
<td>7,408</td>
<td>7,408</td>
<td>7,608</td>
<td>7,213</td>
<td>7,076</td>
<td>6,913</td>
<td>1,646</td>
<td>1,641</td>
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<tr>
<td>Kyrgyzstan</td>
<td>566</td>
<td>556</td>
<td>806</td>
<td>492</td>
<td>958</td>
<td>775</td>
<td>1,124</td>
<td>1,107</td>
<td>310</td>
<td>303</td>
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</tr>
<tr>
<td>Mozambique</td>
<td>165</td>
<td>87</td>
<td>283</td>
<td>146</td>
<td>266</td>
<td>213</td>
<td>128</td>
<td>297</td>
<td>66</td>
<td>103</td>
<td></td>
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<tr>
<td>Namibia</td>
<td>214</td>
<td>214</td>
<td>192</td>
<td>242</td>
<td>210</td>
<td>288</td>
<td>226</td>
<td>218</td>
<td>57</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>21</td>
<td>23</td>
<td>95</td>
<td>38</td>
<td>107</td>
<td>125</td>
<td>310</td>
<td>310</td>
<td>78</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>South Sudan</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Tajikistan</td>
<td>333</td>
<td>245</td>
<td>604</td>
<td>380</td>
<td>694</td>
<td>535</td>
<td>1,065</td>
<td>666</td>
<td>126</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>1,023</td>
<td>628</td>
<td>1,385</td>
<td>855</td>
<td>1,728</td>
<td>1,491</td>
<td>1,728</td>
<td>2,611</td>
<td>432</td>
<td>653</td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>101</td>
<td>101</td>
<td>601</td>
<td>578</td>
<td>273</td>
<td>713</td>
<td>918</td>
<td>943</td>
<td>234</td>
<td>236</td>
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<tr>
<td>Zambia</td>
<td>0</td>
<td>0</td>
<td>80</td>
<td>97</td>
<td>80</td>
<td>97</td>
<td>80</td>
<td>97</td>
<td>20</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>17</td>
<td>27</td>
<td>118</td>
<td>64</td>
<td>149</td>
<td>105</td>
<td>209</td>
<td>196</td>
<td>52</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10,402</td>
<td>8,030</td>
<td>12,292</td>
<td>8,648</td>
<td>13,056</td>
<td>12,519</td>
<td>14,600</td>
<td>14,807</td>
<td>3,953</td>
<td>4,250</td>
<td></td>
</tr>
</tbody>
</table>

† Data for countries where TB CARE I is no longer working have been removed (Dominican Republic, Djibouti, Kenya & Uganda)

*Indonesia 2013/2014 data include Rif-resistant patients
TB CARE I is building, developing and supporting the systems for providing social and economic support to TB or MDR-TB patients in several countries. During Year 4, ten countries are implementing patient support activities ranging from the introduction of national policy documents on outpatient care (Kazakhstan) or the provision of socio-economic support for MDR-TB patients (Ethiopia, Indonesia, Nigeria) to trainings on outpatient care (Tajikistan, Uzbekistan). Examples of country-specific achievements can be found in the country highlight section below.

**GeneXpert**

TB CARE I continues to invest financially and technically in GeneXpert scale-up in 14 TB CARE I countries with the greatest investment occurring in Indonesia, Kazakhstan, Nigeria, Viet Nam and Zambia (76% of TB CARE I machines). As of March 2014, a total of 91 Xpert machines have been procured by TB CARE I and are fully operational (20 machines were newly procured in Year 4).

Most noteworthy is the acceleration in use of TB CARE I-supported machines. Across ten TB CARE I countries, almost 28,000 tests were run between October 2013 and March 2014 – nearly the same number of tests conducted in all of Year 3 (30,188) and more than double the testing in the first 24 months of TB CARE I. The graph below shows the scale up of testing from Year 1-4, as well as an increase in number of samples that were TB positive (MTB+) and Rif-resistant (RR-TB). Although data stratified by risk group (i.e. presumptive TB or MDR-TB) are not presented here, roughly 36% of Q1-Q2 Year 4 Xpert tests were MTB+ and 26% of those were RR-TB. By the end of Year 4 the project anticipates surpassing the TB positivity and Rifampicin resistance rates of Year 3.

When reflecting on the successes of this scale up, it is important to note that 90% of the ten reporting countries have a functioning Xpert Technical Working Group, all ten have an Xpert strategy in place and have implemented trainings and TOTs to scale up Xpert use. However, only two countries are implementing Xpert-specific monitoring and evaluation activities, highlighting the importance of strengthening M&E to ensure results from Xpert are accurately captured and used for decision-making.
TB CARE I has supported the implementation of 102 OR studies in 14 countries (Years 1-4). Excluding 18 projects that were cancelled or did not get ethical approval, 43% (36) of OR studies have been completed by the second quarter of Year 4; 57% of studies (48) continue to be implemented. The most common fields of research are universal access (48%), PMDT (14%), and TB/HIV (13%) covering topics such as case-finding, childhood TB, prisons, drugs, diagnosis and PPM. The following table presents the key results from eight studies completed in the first or second quarter of Year 4.

### OR study results (completed October 2013-March 2014)

<table>
<thead>
<tr>
<th>Country</th>
<th>Title</th>
<th>Study Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>Incidence of smear positive TB in Dabat, Northwest Ethiopia</td>
<td>The incidence rate of smear positive (SS+) TB was 311/100,000, and about 60% of the SS+ were detected during the dry season.</td>
</tr>
<tr>
<td></td>
<td>Treatment success rate of TB patients in Dabat, Northwest Ethiopia</td>
<td>The treatment success rate was 87.8% from 2007-2012 for 1,305 TB patients evaluated for treatment outcomes (89.1% for males and 86.7% for females).</td>
</tr>
<tr>
<td></td>
<td>Appropriate health-seeking behavior &amp; associated factors among people who had cough for at least two weeks in Northwest Ethiopia</td>
<td>Out of 25,701 surveyed adults (&gt;15 years), 3.3% (843) reported having cough for at least two weeks of which 80% (674) reported appropriate health-seeking behavior for TB.</td>
</tr>
<tr>
<td></td>
<td>Evaluation of routine contact investigation in Ethiopia: a missed opportunity in preventing childhood TB</td>
<td>A total of 230 children were living in a household with a smear positive TB patient and 152 (66.1%) of these children were not screened for TB. Among the 78 (33.9%) children screened, 2 had TB, 76 screened negative and only 3 (3.8%) were put on IPT.</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Evaluation of routine contact investigation in Ethiopia: a missed opportunity in preventing childhood TB</td>
<td>A total of 230 children were living in a household with a smear positive TB patient and 152 (66.1%) of these children were not screened for TB. Among the 78 (33.9%) children screened, 2 had TB, 76 screened negative and only 3 (3.8%) were put on IPT.</td>
</tr>
<tr>
<td></td>
<td>Improving the implementation of the Indonesian childhood TB scoring system in DKI Jakarta Primary Health Care</td>
<td>The study revealed that basic knowledge and practice about the scoring system were suboptimal and that the average accuracy score of general practitioner diagnosis is 73%. The items with the lowest accuracy in the scoring system are chest X-ray, chronic cough, and nutritional status.</td>
</tr>
<tr>
<td></td>
<td>The association of participation credit points (PCP) awarded for private practitioners and TB cases finding in Denpasar, Bali, Indonesia</td>
<td>Introducing a PCP program for private providers in Bali resulted in an encouraging increase in contributions by private providers to both referral of presumptive TB cases and diagnosis of active TB. Steps are being taken to extend the PCP program to eight more districts in Bali, Indonesia.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Obstacles to access health insurance for TB care (targeting the poor &amp; vulnerable)</td>
<td>1. The average cost of the diagnostic package for TB (including sputum test, x-ray) was $7-9 USD both at district and provincial level. However, with additional tests and medicines, the average cost for TB diagnosis was as high as $94 at the provincial level in Dong Nai, and especially high (up to $216) at the provincial level in Hai Phong. 2. Co-payments for insured patients were significant at the provincial level ($47 in Hai Phong, $24 in Dong Nai). 3. District TB Units located in district health centers are not allowed to provide health insurance services - a significant structural barrier for insured TB patients.</td>
</tr>
</tbody>
</table>

Raising Awareness of TB with School Children, Bamyan, Afghanistan
MSH is the lead partner in Afghanistan with collaboration from WHO and KNCV; community-based DOTS activities are subcontracted to BRAC. The project works in four technical areas (universal and early access (UA), infection control (IC), health system strengthening (HSS) and M&E).

**Case Notification Increased**
As seen in graph below, the historic data analysis from 2006-2013 shows significant contribution of USAID TB projects (TB CAP and TB CARE I) to TB case notification (all forms). For example, in the intervention provinces, between 2009 and 2013, presumptive TB case identification increased by 118% (p=0.009), case notification for all forms of TB rose by 35% (p=<0.00001), SS+ TB case detection increased by 22% (p=0.0001), and the treatment success rate (TSR) improved by 7%. In the 21 control provinces during the same period presumptive TB case identification improved by just 84%, case notification for all forms of TB increased by 14%, SS+TB case detection increased just 2%, and TSR increased by 3%.

**TB case notification (all forms) in 13 TB CARE I-supported provinces compared to 21 provinces not receiving project support**

![Graph showing TB case notification increase](image)

**Epidemiological Assessment Conducted**
TB CARE I conducted an epidemiological assessment of national TB data from 2006 to 2013 to the NTP in developing its national strategic plan and an application for the GF’s New Funding Mechanism (NFM). Results showed that there was a higher proportion of TB cases among women than men and a low TB case notification rate of just 52 percent. TB CARE I also suggested that the NTP update the NSP’s situational analysis and country context in a manner that addresses critical issues such as MDR-TB control, new technologies (e.g. GeneXpert), gender issues, and human right issues.

**TB Services Expanded**
TB CARE I helped the NTP conduct four trainings on SOPs for TB case detection and treatment, as well as a training of laboratory technicians in Kabul on sputum collection and slide reading. This resulted in expansion and enhancement of TB case detection and diagnosis at 45 health facilities. In total, the SOPs are being implemented in 370 health facilities in 13 TB CARE I intervention provinces.

**Data Used for Decision-Making**
TB CARE I also helped the NTP conduct quarterly review workshops in each of the 13 provinces (737 attendees). During the workshops, staff members reviewed the previous quarter's TB data and used it to analyze the current quarter's data and set targets for the upcoming quarter. The workshops also gave the NTP an opportunity to provide feedback to health care staff, NGOs, and provincial public health offices (PHOs) on how to increase TB case notification. Through these workshops, TB CARE I and the NTP aimed to help staff at local decision-making levels identify TB service delivery gaps and prepare plans to address these gaps.

**OR Conducted**
TB CARE I assisted the NTP to conduct OR on the gender distribution of presumptive TB cases in six provinces of Afghanistan. Among the 21,963 reviewed records, 14,712 (67%) were from female patients. The proportion of SS+ TB cases among the female presumptive TB cases was 6.8%, compared to 6.6% among the male presumptive TB cases (p=0.57), which indicates that the proportion of SS+ pulmonary TB cases diagnosed among the presumptive TB cases was equally distributed among women and men at the study sites. The higher number of reported TB cases among women was due to a higher proportion of women attending health facilities and being screened for TB. The NTP and TB CARE I recommend that the MoH conduct a comprehensive cross sectional study in all provinces of Afghanistan to further explore why fewer men than women attend health facilities as presumptive TB patients. This research will inform future interventions to enhance TB screening among Afghan men.
**Botswana**

KNCV is the lead partner and sole implementer in Botswana. In Year 4 the project focuses on three technical areas (UA, laboratories and PMDT). The TB CARE I-Botswana Country Director, Obert Kachuwaire, has left KNCV this quarter and will be replaced by Valentina Anisimova.

**Community TB Care (CTBC) Assessment Conducted**
The in-country Senior Technical Advisor supported the evaluation of a CTBC research project. The study aims to evaluate the effectiveness and acceptability of community TB care models implemented in the country and explore their sustainability and document lessons learnt regarding their implementation. The research results will guide the NTP/MoH to adopt an appropriate CTBC approach to be scaled up, taking into consideration the declining funding in the near future.

**National Strategic Plan (NSP) Supported**
TB CARE I supported the NTP to update the current TB Strategic Plan (2013 – 2017) to align with the WHO post-2015 TB strategic plan and the GF-NFM requirements. The updating of the strategic plan will be finalized in the next quarter to be used for concept note development and GF application.

**Laboratory Procedures Strengthened**
A TB CARE I regional laboratory consultant supported the review of drug sensitivity testing (DST) SOPs with major input on drug preparation; the consultant also reviewed the NRL testing algorithm.

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**Cambodia**

JATA is the lead partner in Cambodia, with collaboration from FHI 360, KNCV, MSH and WHO. The project has activities in seven technical areas (UA, laboratories, IC, PMDT, TB/HIV, HSS and M&E).

**Cambodia Honored by USAID Award**
As a part of World TB Day events in Washington DC, the MOH of Cambodia was recognized by USAID for extraordinary progress in TB diagnosis, treatment and care in the country and for reaching its Millennium Development Goal target of cutting both TB mortality and prevalence in half prior to 2015.

**Public-Private Mix (PPM) Assessed**
An assessment of the PPM project in Cambodia was conducted by a team from CENAT, USAID, FHI 360, JATA, WHO and RHAC. Between 3.6 to 4.1% of TB cases notified in PPM implementing sites from 2007 to 2013 were through referrals made by private practitioner (PPs) engaged in the PPM project. A significant proportion of clients referred by PPs did not arrive at the public health facilities they are referred to (55% in 2008 reduced to 39% in 2013). However, this may not present the real picture since PPM referrals are undercounted for various reasons. The PPM initiative together with the Government ban on sales of anti-TB drugs greatly reduced (almost eliminated) TB treatment from the private sector. PPs are engaged in various ways by TB, malaria and EPI programs. But these are vertically implemented and there are missed opportunities for collaboration.

**HIV Testing of TB Patients Expanded**
This quarter about 2,000 TB patients were tested for HIV as a result of TB CARE I support. TB CARE I supports HIV testing of TB patients in 21 (27%) of the total 77 ODs in the country. In 2013, 83% of the TB patients notified to the NTP were tested for HIV, compared to 80% in 2012.

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**CAR-Kazakhstan**

KNCV is the lead and sole implementer of TB CARE I activities in Kazakhstan where activities are carried out in six technical areas (UA, laboratories, IC, PMDT, HSS and M&E).

**Prison and TB Service Databases Linked**
The national online TB database for the prison system is now synchronized with the online database of the general TB service. The consolidated TB database will now allow for the instant exchange of data between prison and general TB services. TB CARE I developed software for the Prison Service and trained Prison Service staff from all regions of country on the use of the new consolidated TB database.

**MDR-TB Guidelines Adopted**
TB CARE I provided technical assistance in the development of National MDR-TB Guidelines. The newly developed National MDR-TB Guidelines were adopted by the NTP scientific council in March 2014, and submitted to MoH.

**Outpatient Coverage Expanded**
Akmola region continues successful implementation of full outpatient care for TB and MDR-TB patients (including children) in TB and primary health facilities. Outpatient coverage for TB and MDR-TB patients increased from 23% between July-September 2013 to 28% between October-December 2013.
CAR-Kyrgyzstan

As the lead and sole implementer of TB CARE I activities in Kyrgyzstan, KNCV implements activities in six technical areas (UA, laboratories, IC, PMDT, HSS and M&E).

**Prison Reporting Improved**
TB CARE I supported the prison TB service in organizing roundtable meetings with the MoH, the general TB service and international organization representatives to assess reasons for the low level of treatment success among MDR-TB patients in the penitentiary system. Participants recognized that the use of outdated recording and reporting (R&R) forms that were not in line with the latest WHO definitions or reporting guidelines may be affecting accurate reporting. Once forms were updated, treatment success for the most recent cohort of prisoners with MDR-TB to complete treatment was calculated as 74%, compared to only 54% for previous cohorts that used the old definitions and forms.

**GeneXpert Management Plans Developed**
TB CARE I provided assistance in developing the GeneXpert M&E plan and Xpert maintenance plan. In accordance with the plans, the project organized trainings for the laboratory specialists of the national reference laboratory and oblast-level laboratories. The National Laboratory Plan was updated and aligned with the Xpert M&E and Xpert maintenance plans and submitted to the NTP and WHO experts for review.

CAR-Tajikistan

KNCV is the lead and sole implementer in Tajikistan where it implements activities in six technical areas (UA, laboratories, IC, PMDT, HSS and M&E).

**Patient Support Systems Strengthened**
TB CARE I continued its close collaboration with local government officials and decision makers to raise awareness about TB in the community and the importance of outpatient care. Consequently, local government authorities in nine project pilot districts, including two new pilots, issued official orders and statements of social support of TB/MDR-TB patients to assure the sustainability of patient support systems. One example of support from local municipal authorities is allocation of land plots to nine TB/MDR-TB patients in Dangara district. Every patient received half an acre of land to establish a vegetable garden and orchard. Also this quarter, 24 MDR-TB patients in Dangara, Farhor and Baljuvan received social support, such as exemption from property taxes and utility payments, as well as the provision of food packages. The treatment outcomes of these supported patients will be reported on next quarter.

**Patient Support Parcels Distributed**
Starting this quarter, within implementation of ambulatory care, TB CARE I started monthly distribution of food and hygienic parcels to all (n=88) MDR-TB and to the poorest TB patients (n=12) registered in nine TB CARE I pilots to increase adherence to treatment and to prevent loss to follow up.

**Access to Xpert Testing Expanded**
As a result of the TB CARE I sample transportation system, regular sputum collection is organized at every TB CARE I pilot site and transported to the nearest GeneXpert laboratory. Thus, during this quarter, 893 samples were collected and tested with Xpert; 16 MDR-TB patients were detected in nine TB CARE I pilots, and all of them were enrolled on SLD treatment. In comparison with Jan-Mar 2013 (when the sample transportation system was just being established), only 2 MDR-TB patients were diagnosed in the pilot sites.

**Second Line Drug (SLD) Supply Maintained**
TB CARE I supported custom clearance procedures of two shipments of SLDs delivered within this quarter, which contributed to an uninterrupted SLD drug supply. This is a significant improvement following the shortage of SLDs for most of 2013.

Children’s TB Hospital Event, World TB Day, Dushanbe, Tajikistan
WHO is the lead partner in Uzbekistan with KNCV as a close collaborating partner. Activities in Year 4 cover six technical areas (UA, Laboratories, IC, PMDT, HSS, and M&E).

**Infection Control Specialists Trained**
TB-IC trainings were held for two groups of specialists from the TB service, the Sanitary Epidemiologic Services (SES) and penitentiary sector from the four new pilot regions (Bukhara, Kashkadarya, Khorezm and Navoi regions) to develop participants’ ability to become competent specialists in TB-IC. The first training was aimed at strengthening competencies of local health care managers; the second training was a specialized training on using TB-IC measurement tools for local TB and SES specialists.

**TB-IC Assessed**
TB CARE I and the NTP performed an assessment mission on IC in February. The team assessed TB-IC at the regional TB dispensary in Kashkadarya region and the TB hospital in Kitab City. In some facilities, the TB-IC implementation was never assessed before, so specific recommendations were provided for each facility on improving IC. Additionally, consultants made recommendations on how to apply administrative and environmental measures in buildings where reconstruction and renovations are occurring or planned. One of the common recommendations made for visited facilities was to establish TB-IC committees and assign TB-IC focal points in the facilities. Assessment results will be used for further project interventions in Year 4.

**PMDT Assessed**
Implementation of the MDR-TB program in three new TB CARE I pilots (Kashkadarya, Bukhara and Navoi regions) was assessed this quarter. The mission evaluated MDR-TB case finding and treatment strategies, administration and follow-up as well as the plan for further capacity building on DR-TB case management. Key recommendations were to: (1) Change the MDR-TB case detection strategy, ensuring DST tests for all TB patients who start TB treatment; (2) Use rapid molecular testing for patients at high risk for MDR-TB (all smear positive patients, all retreatment patients, smear negative patients at risk for MDR-TB, HIV positive patients, and children); and (3) To strengthen supportive supervision from Central level to ensure that PMDT management is accurate (on the spot training component should be included).

**Revised Recording and Reporting Forms Rolled Out**
Two four-day trainings were held on the revised national guidelines on M&E in TB control for 44 specialists responsible for recording and reporting. National M&E specialists were informed about all key updates to the national M&E system, including revised reporting forms, which were adjusted according to the revised WHO case definitions and reporting forms from 2013.
Ethiopia

KNCV is the lead partner in Ethiopia, working closely with collaborating partners MSH, WHO and The Union, as well as subcontractor German Leprosy and TB Relief Association. The Year 4 workplan has activities in all eight technical areas.

National Research Conference Supported
The 9th National TB Research Advisory Committee (TRAC) conference, was held in March with TB CARE I support. The conference continues to be a key national forum for researchers, TB and HIV program managers, partners and donors to come together and discuss key TB control strategies and challenges. During the conference TB CARE I presented key results from six OR papers, the project’s success with engaging civil society, and the role of media in strengthening TB awareness.

Standards for Health Facility Design Developed
National guidelines for setting norms for building design were drafted and improved through a consultative meeting supported by TB CARE I. The document will be a key guiding tool to streamline the standards of renovation and construction of health facilities.

Contact Investigations Piloted
TB CARE I-supported TB contact investigations, piloted in 21 health facilities in North Showa, are progressing well. From October 2013-March 2014, among 3,527 household contacts, 27 patients (0.08%) were found to have active TB and all were started on treatment. This finding suggests a prevalence of 766 active TB cases per 100,000 contacts, which is three times higher than the prevalence in the general population. These positive results may help the NTP to prioritize and scale up the implementation and monitoring of contact investigations in Ethiopia.

National Laboratory Strategy Developed
The national laboratory strategy was drafted by the national task force with support provided by international and local TB CARE I laboratory experts. The latest version is under review.

Ghana

MSH is the lead partner in Ghana with support from KNCV and WHO as collaborating partners. The Year 4 workplan focuses on seven technical areas (UA, laboratories, IC, PMDT, TB/HIV, HSS and M&E).

Hospital-Based TB Case Notification Increased
TB CARE I is supporting the implementation of intensified hospital-based TB case detection at six hospitals in three districts of Ghana's Eastern Region. In 2013, the hospitals detected 569 TB cases – 96% of the 592 cases targeted for the year. The hospitals would have achieved or even exceeded the target, had it not been for countrywide stock outs of sputum containers (which are now available in all health facilities). Despite this challenge, the pilot hospitals detected 10% more TB cases in 2013 than they had in 2012 and 54% more than in 2011.

Guide on Quality Clinical Care to Reduce TB Mortality Developed
To address the high rate of TB mortality in Ghana, TB CARE I supported the project team in developing a short, step-by-step guide designed to build the capacity of clinicians to provide quality care for TB patients. TB CARE I will use this guide to conduct a training of trainers for clinicians from the regions and hospitals that consistently report a high rate of TB deaths. The project team will then select master trainers to help roll out this training to other regions and hospitals.

Supportive Supervision Provided
TB CARE I supported technical supportive supervision in eight districts in the Eastern Region. The monitoring team investigated one hospital in Upper Manya Krobo District where 87% of TB patients (14/16) were lost to follow-up. The team visited one of the communities in the district to learn more about the causes of TB patient loss to follow-up. During this visit, some of the villagers told the monitoring team that the community does not believe in modern medicine. These findings helped to explain the cause of high TB patient loss to follow-up at the hospital. The monitoring team recommended that the NTP and its partners develop a targeted community sensitization campaign to mitigate the impact of these misconceptions and beliefs about TB.

Joint National TB/HIV Policy Guidelines Developed
The NTP and the National AIDS Control Program (NACP) will be submitting a single concept note to the GF. As a result, both programs will develop and update their national strategic plans (NSP) and develop joint TB/HIV policy guidelines. To support these efforts, TB CARE I helped to update the 2007 TB/HIV policy guidelines. A first draft of these guidelines is currently being reviewed by the TB/HIV Technical Working Group. The NTP and NACP will have their NSPs ready by August 2014 and plan to submit the concept note to the GF in October 2014.
Indonesia

Indonesia is the largest of the TB CARE I countries in terms of financial investment; KNCV is the lead partner with collaboration from all other Coalition partners; TB CARE I-Indonesia works in all eight technical areas.

PPM Tools Developed
TB CARE I efforts to expand the engagement of private practitioners during this period have resulted in the finalization of the ‘Manual for Engagement of Private Practitioners’, including a set of SOPs based on best practices on engagement of private pulmonologists in three provinces. In addition, guidelines for implementing the national provider certification system were completed in collaboration with Indonesian Medical Association.

PPM Expanded
PPM teams were established in seven districts, resulting in a total of 33 districts throughout TB CARE I areas (26 PPM teams had already been established). These PPM teams have developed and implemented annual work plans. A PPM team in one Central Java district established 26 patient support groups using local government funding. These patient groups undertook active TB case finding, which resulted in an increase in case notification of 35% compared to the total case finding in the previous year. The involvement of the Pharmacists Association in one PPM district in West Java resulted in improved monitoring of TB drugs prescriptions and recording & reporting of TB patients visiting the local pharmacists. Another PPM team in Jakarta has built strong referral linkages between five prisons and a local PMDT referral center.

Culture and DST (C/DST) Coverage Expanded
TB CARE I completed the renovation work of BBLK Surabaya and handed it over to the NTP in February. This laboratory has now started functioning as a National Reference Laboratory (NRL) for C/DST and has sent external quality assurance (EQA) panel tests to six other reference laboratories (BBLK Jakarta, BLK Semarang, Microbiology UGM, BLK Jayapura, RS Adam Malik and BBLK Palemberg). Also in February BBLK Jakarta was certified by the SRL in Adelaide, bringing the total number of quality assured reference laboratories for first line DST in Indonesia to eight.

Intermediate Laboratories Established
This quarter the NTP mandated implementation of the lot quality assurance sampling (LQAS) method for smear microscopy quality assurance for all laboratories in the country. TB CARE I lab experts assisted in establishing ten new intermediate laboratories in two provinces (East Java and North Sumatra). These labs will support the provincial reference laboratories in expansion of LQAS.

Xpert Expanded
Implementation of Xpert remains a high priority for TB CARE I. This quarter six additional Xpert machines procured through the GF were installed with TB CARE I support and are fully functioning. The other 18 machines will be installed in the next quarter. Between January-March 2014, 3,682 tests were successfully conducted (both for presumptive MDR-TB patients and PLHIV), compared to 3,683 tests run in all of 2013. Patient enrolment delays have been significantly reduced; in Year 3, only 2% of all patients diagnosed as Rif-resistant were started on treatment within seven days, compared to 18% this quarter. TB CARE I will strengthen and expand peer educator groups and peer counselling in PMDT sites in order to accelerate initiation of treatment.

FAST Strategy Integrated Locally
TB CARE I has successfully integrated the FAST strategy (“TEMPO”) into the National Implementation Guidelines for TB-IC at the primary health care level. In Indonesian TEMPO stands for TEMukan pasien secara aktif (Finding TB cases Actively), Pisahkan secara aman (Separating Safely), Obati secara efektif (Treating effectively). The TEMPO module and booklet were developed as a basis for IC training. This is an important step forward since in the past the focus of TB-IC was mainly on environmental controls, which has considerably delayed the expansion of PMDT as new sites were postponing MDR-TB patient enrolment while awaiting lengthy and often costly facility renovations.

PMDT Coverage Expanded
The project has assisted the NTP in establishing four new PMDT sites, bringing the total to 17 PMDT referral hospitals and two PMDT sub-referral hospitals fully operational in 15 provinces. In addition, another 74 PMDT satellites were established, resulting in a total of 487 PMDT satellites in 10 TB CARE I provinces. From January to March 2014, the sites succeeded in screening 1,488 presumptive MDR-TB cases, of whom 271 were found to be positive and 226 were put on treatment. TB CARE I developed a pocket guide for MDR-TB case management at PMDT satellites. The booklet contains a set of instructions and SOPs for case holding at the peripheral level, based on best practices in these PMDT sites. This pocket guide will be introduced in all other PMDT sites to ensure the standardization of services at the peripheral level in an effort to reduce loss to follow up and/or treatment failure.

PMDT in Prisons Expanded
TB CARE I, in collaboration with the Ministry of Law and Human Rights and Provincial Health Offices, established three additional prisons for the treatment of MDR-TB inmates in three new provinces. Overall, there are now nine designated prisons serving as satellites for PMDT. In this quarter three new MDR-TB patients were confirmed in two prisons. All are being treated with a standardized regimen and have been transferred to a PMDT prison satellite hospital.

Clinical Cohort Review Conducted
The first clinical cohort review, using a standard format and tools, was successfully piloted at Persahabatan Hospital with TB CARE I support. In this pilot review each MDR-TB patient in the cohort was carefully evaluated to decide on any necessary corrective actions, in particular with regard to programmatic aspects. As result, recommendations were made, including improving patient care at the hospital and satellites as well as improving case holding to prevent loss to follow up. Treatment data for the Quarter 1 2013 cohort (6-month interim status) was analysed, with 72% of patients on treatment at six months, a death rate of 7% and loss to follow-up of 19%; the Quarter 3 2011 cohort (24-month/end of treatment status) data showed 46% of patients successfully completed treatment, 4% with treatment failure, 27% died, and 23% were lost to follow-up. The process was the first in depth cohort analysis and feedback of outcomes at Persahabatan Hospital, revealing significant quality issues and challenges to be addressed, in particular, the higher than anticipated rates of loss to follow-up.
Preventive Therapy Rolled Out
TB CARE I has successfully assisted the NTP and National AIDS Program (NAP) in promoting isoniazid preventive therapy (IPT) as national policy. Roll out of IPT in eight provinces (target of 1,600 PLHIV) will start next quarter.

TB/HIV Services Expanded
As of this quarter, 94% of HIV positive patients were screened for TB compared to the Year 4 target of 85%; ART usage among HIV positive TB patients increased from 13% in Quarter 1 to 40% in Quarter 2, compared to the Year 4 target of 50%. Moreover, 95% of HIV patients with active TB received TB treatment.

TB Financing Results Presented
TB CARE I conducted five presentations at the first Indonesian Health Economic Association Congress, disseminating TB CARE I research and results broadly among in-country partners (universities, civil society organizations (CSOs), international non-governmental organizations (NGOs), UNAIDS) as well as Asia Pacific and Mediterranean country participants.

Innovative World TB Day Event Conducted
TB CARE I supported the World TB Day commemoration at national and provincial level. A national TB blogging competition was launched, which was joined by more than 100 bloggers. The competition is ongoing, with winners to be announced in June 2014.

Electronic Recording and Reporting Strengthened
Phase 2 of the web-based Integrated Information System for TB (SITT-2) was launched in January 2014 and has now been rolled out nationwide as the formal reporting and recording system. TB CARE I provided intensive technical assistance in roll out at national, provincial, district and health facility level.

Quality of e-TB manager Maintained
e-TB Manager is running well in all 17 PMDT sites. TB CARE I provides a local consultant to strengthen the e-TB Manager team and ensure the smooth implementation of e-TB Manager. A new website has been developed with TB CARE I assistance (http://etbindonesia.com/). The site is open to the public, contains instructions on the use of e-TB manager, is used as a resource for experience and information sharing about e-TB manager or PMDT, and stores publications related to e-TB manager in Indonesia.
FHI 360, the lead partner for Mozambique, works with collaborating partners KNCV and MSH on a dual TB/malaria workplan. The Year 4 workplan has activities in all eight TB technical areas, as well as malaria control.

**TB Patients Diagnosed as a Result of Community-Based Referral**
Community health workers trained in CB-DOTS referred 10,564 presumptive TB patients to health facilities in the 53 project target districts, 94% of whom successfully reached the health facilities for TB diagnosis. As seen in graph below, from the 9,927 presumptive TB cases that reached the health facilities for TB screening, 13% (1,274) were diagnosed as bacteriologically confirmed TB/sputum smear positive (SS+), and 5% were clinically diagnosed or extra-pulmonary (EP) cases, bringing the total number of diagnosed TB cases (all forms) to 1,827 or 18% of all presumptive TB patients that reached the health facilities. These data suggest that community referral of presumptive TB cases is functioning and effective at capturing active TB patients.

**TB case notification among presumed TB cases in 53 TB CARE I target districts**

<table>
<thead>
<tr>
<th>Number of referred presumptive TB cases</th>
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<tbody>
<tr>
<td>9,927</td>
</tr>
<tr>
<td>Number of diagnosed bacteriologically-confirmed TB cases</td>
</tr>
<tr>
<td>1,274 (13%)</td>
</tr>
<tr>
<td>Number of diagnosed TB cases (all forms)</td>
</tr>
<tr>
<td>1,827 (18%)</td>
</tr>
</tbody>
</table>

**Contact Tracing Expanded**
Contact tracing improved slightly by 4% in Quarter 2 (1,282 contacts referred) compared to Quarter 1. At least one contact per bacteriologically-confirmed patient was referred (a ratio of 1/1.01) for TB screening, which demonstrates improvements over previous quarters when no contacts were referred.

**Training on Laboratory Quantification Conducted**
With technical and logistical support from the project, the central laboratory department conducted a training to build the capacity of laboratory personnel from central and provincial level laboratories to correctly quantify consumables and reagents, and adequately meet quantification needs, thus preventing stock outs in the process (47 participants). Test scores increased by 39% from pre- to post-test among the 35 participants who completed the exams.

**Laboratory Coverage Expanded**
The project is supporting the expansion of the microscopic laboratory network through the identification and rehabilitation of usable space within health facilities that have no laboratories. Four health facilities (HFs) were rehabilitated in Year 3 and seven additional HFs are being refurbished and equipped in TB CARE I target provinces.

**Provincial Management Supported**
TB CARE I project officers in Zambézia, Gaza and Nampula Provinces provided logistical and technical support in the planning and implementation of monthly taskforce meetings, provincial evaluation meetings and supportive supervision visits. The support has been highly rated by the provincial NTP departments and CB-DOTS implementing agencies (IA). A substantial difference was noted between results from provinces with TB CARE I support and those without; data will be presented next quarter to illustrate the difference in performance between provinces.

**Data Quality Improved**
Data verification is an integral component of Data Quality Assessment (DQA) and an ongoing process designed to build the capacity of IAs and improve data quality at all levels. An internal (FHI 360) data verification tool was used in which preselected indicators were reviewed and analyzed for variation. The variability in results during the first DQA verification exercise was higher than +/-5%; with frequent verifications, it is expected that this variability will decline. Data verification produced zero variance for one IA that had already received several DQA visits and was now regularly conducting DQA on its own.

**Financial Gap Analysis Conducted**
The financial gap analysis for the country’s anti-TB drug supply was finalized with TB CARE I support; approximately $24 million will be necessary between 2014 and 2016. The analysis identified a gap of roughly $1.9 million, which needs to be filled to avoid TB drug shortages or stock outs.
KNCV is the lead partner in Namibia and collaborates with WHO and The Union. Activities are implemented in six technical areas (UA, IC, PMDT, TB/HIV, HSS and M&E); TB CARE I also plays a role in the 3 Is project being implemented in Namibia.

District and Regional Forums Supported
The annual District TB and Leprosy Coordinators’ (DTLC) Forum was held with support from TB CARE I. All thirty-four districts of the country were represented and reviewed the work of the previous year. The forum also allowed for interaction between health care workers involved in TB work and enhanced communication between peripheral and national level staff with the ultimate aim of improving patient care and data quality. TB CARE I also participated in and facilitated the regional managers’ forum. The regional managers reviewed, finalized and submitted region-specific annual reports to the national M&E team for inclusion in the national annual report. The meeting also was crucial for information sharing and the assessment of data quality between regions.

M&E Manual Drafted
TB CARE I supported a consultative workshop to solicit inputs on the draft TB and leprosy M&E manual. Workshop participants included CDC, USAID, GF, Project Hope, MSH, Penduka, all 13 regional directorates, several ministries and KNCV.

OR Reports Drafted
During this quarter ten participants from three OR studies (turnaround time, contact investigation and ecological study) participated in a workshop to analyze data and develop draft study reports and abstracts. All three research studies are finalizing reports and will write manuscripts for publication.

3Is Project
TB CARE I is a key partner in Namibia’s TB/HIV initiative, also known as the 3Is project. Key achievements from this quarter to which TB CARE I has contributed include the following:

• Community health worker recruitment guidelines have been finalized and the first review of the CHW TB/HIV training curriculum was conducted with inputs from all stakeholders.

• A task force has been established to review existing TB/HIV information, education and communication (IEC) materials and develop TB/HIV IEC messages.

• A total of 12 health facilities and one laboratory in Windhoek district that will be involved in the project were assessed for implementation of TB-IC measures. In addition, the TB-IC support visits were included in an overall TB-IC assessment of Windhoek district to provide on-site support and advocate for the implementation of policies, tools and procedures to promote effective TB infection control in all facilities (not just project-supported facilities).

• The GeneXpert testing algorithm has been completed and will be incorporated into the CHW training curriculum in line with the current national TB guidelines.
KNCV is the lead partner for Nigeria and works closely with collaborating partners, FHI 360, MSH and WHO. The Year 4 workplan addresses all eight technical areas using both PEPFAR and Child Survival and Health (CSH) funds.

**Ambulatory Care for MDR-TB Patients Launched**
Nigeria currently has only 10 MDR-TB treatment sites with a limited intake of patients. As a result, Nigeria approved the implementation of ambulatory PMDT in the community. TB CARE I is supporting the NTP to roll-out ambulatory PMDT in eight selected states (Benue, Gombe, Akwa Ibom, Kaduna, Abia, Lagos, Ogun and Kano states). The approach relies on state consilium (advisory) members whose responsibilities include providing quarterly mentoring and supervisory visits to all patients on community care, reviewing patient care, advising HCWs on field-based care, and investigating adverse drug reactions. This quarter 91 state consilium members, including state physicians, local government supervisors and PMDT focal persons, were trained. As a result, with TB CARE I support, 32 patients were enrolled on ambulatory PMDT care.

**Intensified Case Finding Approach Assessed**
Since Year 1, TB CARE I has been implementing an innovative case detection practice using Standard Operating Procedures for TB screening and diagnosis at various service points within pilot health facilities. To inform the scale-up to new additional facilities in four states, the project conducted a survey to assess the effectiveness of using SOPs for intensified case finding in health facilities. Findings indicate an improvement in presumptive TB case finding and bacteriologically-confirmed TB case notification; for example, a total of 1,379 TB cases were notified this quarter - a 13% increase over January-March 2013 data. There was also a high awareness of TB among health workers that were trained on the SOPs. Partners have agreed to scale-up the SOPs approach. In addition 2,000 copies of the SOPs were distributed and shared with states during the quarter.

**TB Screening Conducted**
TB CARE I also joined the NTP and other stakeholders in the celebration of World TB Day with the theme “Tuberculosis-free Nigeria: Find. Treat. Cure TB”. TB CARE I participated in the Ministerial press briefing on the state of TB control in Nigeria. Across the local government areas (LGAs), the mobilizers conducted rallies to disseminate information about TB. In Badagry LGA community members were mobilized for on-the-spot sputum collection.

**National Strategic Plan Drafted**
Local and international project consultants assisted the NTP in conducting an evidence-based and data-driven epidemiological review of TB in the general population and vulnerable groups, including trends in disease burden and mortality. The results are being used to inform the revision of the National Strategic Plan 2014-2018, which will aim to address very low case detection rates based on the new prevalence data. Key interventions will address the low community awareness and engagement, the introduction of new laboratory technologies like Xpert, and the need to strengthen childhood TB. TB CARE I and other stakeholders participated in the development and review of the zero draft of the NSP 2014-2018. Additionally, technical assistance was provided to the NTP, the National AIDS and STI Control Program and the National Agency for the Control of HIV/AIDS in the development of the road map for the writing of the single TB/HIV concept note for the GF New Funding Mechanism. The production of first draft of the concept note will be ready in June 2014.
Senegal

The Union is the sole implementer of this small project. A consultant plans to visit in April to elaborate the Extension Plan (2014-2017) for MDR-TB patient management in Senegal.

South Sudan

MSH is the lead partner in South Sudan and works closely with collaborating partners KNCV and WHO. The project implements activities in seven technical areas (UA, laboratories, IC, PMDT, TB/HIV, HSS and M&E).

Access to TB Services Improved
This quarter, TB CARE I operationalized SOPs for TB case detection at Juba Teaching Hospital (JTH). During a two-day workshop, the TB CARE I staff introduced HCWs and department heads to the SOPs, trained them on the basics of TB, and helped them develop action plans for SOP implementation within their respective departments. After the workshop, the TB CARE I conducted follow-up visits to the facility to ensure they were implementing the action plans. In the first month of SOP implementation, hospital identified 20 new TB cases and enrolled them on treatment compared to zero TB cases from the previous quarter. TB CARE I has also introduced the SOPs in Munuki and Kator primary health care centers in Juba.

TB Diagnostic Services Improved
EQA supervisory visits were conducted by TB CARE I at three health facilities in Juba. During these visits, the Senior Technical Officer mentored seven laboratory staff and retrained them on quality TB diagnosis. The officer also collected a sample of sputum slides and these will undergo blinded rechecking in Juba. The project is also currently revising the national EQA guidelines and will share these with the NTP’s Laboratory TWG by the end of April 2014.

NSP Reviewed
At the request of the NTP, a TB CARE I consultant reviewed the NSP to inform the GF NFM concept note. In addition, TB CARE I supported and contributed to an NSP review meeting in Nairobi during which a zero draft of the NSP was developed.
KNCV is the lead partner in Viet Nam and works with collaborating partners MSH and WHO. The Year 3 workplan has activities in all eight technical areas.

**National TB Strategy Developed**
The National TB Strategy for 2020 with vision to 2030 (NSP 2020-2030) has been approved by the Viet Nam Government in March 2014. The strategy was developed with input from national stakeholders and technical partners, in particular TB CARE I. The strategy is in line with the Global post-2015 TB strategy.

**Childhood TB Approach Disseminated**
With technical and financial support from TB CARE I, Viet Nam is among the first countries in the region to implement and scale up the WHO recommended approach to management of TB in children. The preliminary results and lessons learnt from four pilot provinces in Viet Nam have been presented and highly appreciated in a regional childhood TB action plan development workshop for countries of the Western Pacific Region. The priorities and childhood TB action plans for strengthening child TB initiatives were discussed, developed and presented by the participating countries. In the action plan, the Viet Nam NTP has proposed scale-up of the innovative TB CARE I approach to 21 new provinces with GF support between 2014 and 2015.

**Xpert Use Accelerated**
Four Xpert acceleration workshops were organized for 14 provinces including GeneXpert sites and referral sites that send samples for GeneXpert testing. The workshops provided a good opportunity for NTP and HIV staff at provincial and district level to: (1) practically identify targeted groups who are eligible for the test; (2) discuss the root causes of the low uptake of Xpert testing (fish bone analysis), and; (3) develop a plan for improving the uptake of Xpert testing for each site. After the workshops, Xpert usage increased dramatically; in the first quarter of 2014, 56% more presumptive TB and MDR-TB patients were tested by Xpert than in the previous quarter (3,005 vs. 1,924). Among the 2,329 presumptive MDR-TB patients, 1,215 (52.2%) were MTB+ and 289 (23.8%) were RR-TB. Among 676 presumptive TB patients (PLHIV and children), 107 (15.8%) are MTB+ and 20 (18.7%) were RR-TB. The prevalence of MDR-TB among new patients is estimated to be 23% [CI: 18-29%] and 62% [52-71] among retreatment patients (WHO Global TB Report 2013).

**PMDT Standardized**
Three workshops on strengthening the management, coordination, communication and action plan development for 16 PMDT sites (one site per province) were conducted in three regions. SOPs covering the management, coordination and communication of PMDT were discussed and agreed to. PMDT action plans for 2014 were developed for each province.

**Bedaquiline TWG Established**
Viet Nam is one of countries selected to be an early implementer of a new MDR-TB regimen that includes Bedaquiline. The Bedaquiline Technical Working Group (BDQ TWG), with support from TB CARE I, has been established to lead the development and guide the implementation of the National Implementation Plan for bedaquiline including members of the NTP, involved hospitals (Pham Ngoc Thach Hospital, Can Tho TB and Lung Hospital and Hanoi Lung Hospital) and international partners including KNCV, WHO and CHAI. The first meeting of the BDQ TWG is planned for April to discuss and agree on the selection of provinces involved in the new drug introduction, get political commitment from the involved hospital leaders and agree on the outline of the National Implementation Plan of BDQ.

**Drug Supply Chain System Assessed**
The project assisted with the TB pharmaceutical supply chain system performance assessment in seven target provinces. A draft assessment report is available, which indicates that no site currently qualifies as being fully compliant with good storage practices (GSP) and good distribution practices (GDP), but numerous sites are close to the target. Relatively small changes and strengthening activities could bring them in compliance. Areas of particular weakness in logistics across the surveyed sites are: 1) Distribution: many provinces are not undertaking the distribution themselves; districts and treatment sites come to collect the medicines themselves and thus Provinces feel little responsibility for the process; 2) Provinces are unaware of budgets for or costs of TB drugs; 3) Lack of written procedures (SOPs) at provincial level (Average Score 20%).
FHI 360 is the lead partner in Zambia and works closely with collaborating partners KNCV, WHO and MSH. Two workplans are being implemented in Zambia: a CSH-funded workplan (consisting of UA, laboratories, IC, PMDT, HSS and M&E) and a 3Is workplan (UA, laboratories, IC, TB/HIV, HSS and M&E).

Prevalence Survey Supported
A TB CARE I consultant provided technical assistance to the prevalence survey throughout the quarter. The consultant provided monitoring support for the survey data management processes and procedures at the central data management unit, the three reference laboratories, the chest X-ray unit and the field teams. In general, the prevalence survey data is managed well and the quality of the data that has been monitored is good. The participation rate continues to increase with a 98% rate among the clusters processed in April; this brings the average participation rate to 80%. Of the 68,583 participants recorded in the database 37,501 were eligible from which 29,893 (80%) have agreed to participate. The survey fieldwork is 70% complete.

TB-IC Activities Maintained
Baseline assessments of existing infection control activities were carried out in eight health facilities and two prison sites. The facilities that participated in the Ndola District TB-IC demonstration project, without further intervention, had continued implementing IC activities compared to facilities that had not had any TB-IC activities introduced at their sites.

3Is Project
The 3Is project in Zambia is on track and already producing some notable results. Below are some of this quarter’s achievements:

Community Engaged in TB Control
TB CARE I has intensified support for community TB control through the empowerment of 125 community volunteers in five districts across two provinces (Copperbelt and Central). These volunteers have taken a lead in collecting on-the-spot sputum samples for Xpert testing from individuals with presumptive TB at health facilities designated as sputum collection points. The volunteers have also conducted contact tracing for bacteriologically-confirmed TB patients. Seven community volunteers were also trained this quarter to transport sputum samples (using motorbikes) from non-diagnostic satellite facilities to the diagnostic ‘hubs’ where Xpert machines have been installed. This support is expected to contribute to increased case detection both at facility and community levels and improved treatment success at community level.

Xpert Usage Increased
After the introduction of seven Xpert machines in TB CARE I supported sites, 3,655 samples were successfully tested; 630 (17%) were MTB+, out of which 45 (7%) were rifampicin resistant. The number of PLHIV who were successfully tested for TB using Xpert increased from 957 to 1,711 - a 79% increase. There were 165 prisoners and 28 HCWs among the individuals tested this quarter.

Infection Control Plans Developed
Four 3Is-supported health facilities in Ndola District (Ndola Central Hospital, Lubuto Clinic, New Masala Clinic and Chipokota Mayamba Clinic) drafted site-specific infection control plans to support implementation of infection control measures.

3Is Project Monitoring and Evaluation Strengthened
A TB CARE I consultant reviewed the 3Is project team progress on completing the project database and entering data on agreed upon project indicators. The consultant worked with the project team to formulate evaluation questions and identify the appropriate evaluation design, methods, and data sources for these questions. A draft evaluation protocol will be circulated to the 3Is in-country team in late April for review.
Zimbabwe is led by The Union and has KNCV and WHO as collaborating partners. The Year 4 workplan focuses on seven technical areas (UA, laboratories, IC, PMDT, TB/HIV, HSS and M&E).

**TB/HIV Addressed in Patient’s Charter**
Zimbabwe has updated the Patients’ Charter of the MoH and Child Care to address TB/HIV issues with support from TB CARE I. Printing of 12,000 pamphlets and 4,000 posters was also supported by the project. It is envisioned that this will contribute to strengthening patient-centeredness in patient care, including TB and TB-HIV patients. The Patients’ Charter will be incorporated into TB and TB/HIV training materials.

**Xpert Coverage Expanded**
Six Xpert machines were installed, bringing the total number of machines in country to 58. Additional Xpert machines have contributed to the overall increase cases diagnosed with drug-resistant TB (DR-TB). A total of 114 patients with Rifampicin-resistant strains were diagnosed in the second quarter of Year 4 and referred for treatment, compared to 87 diagnosed in the previous quarter, representing an increase of 30%.

**CD4 Count Monitoring Increased**
Twenty three point of care (POC) CD4 machines were maintained at the Integrated TB/HIV Care (ITHC) sites. These machines have led to a turn-around time of less than 24 hours compared to previous delays of more than a week. A total of 5,496 tests were done in the second quarter of Year 4, compared to 994 done in the previous quarter. Notably, CD4 count is not required for the initiation of antiretroviral therapy (ART) for HIV-positive TB patients. It is performed to establish a baseline for treatment monitoring. A total of 1,600 POC machine cartridges were procured through TB CARE I to bridge national stock outs.

**Integrated TB/HIV Care Strengthened**
The national target is to test all registered TB patients for HIV, and commence all HIV positive TB patients on both CPT and ART. At the 23 ITHC sites, there has been a progressive improvement with time due to on-going mentorship and training activities. Patients with recorded HIV test results increased from 86% to 97% (705 patients) from Quarter 1 to Quarter 2 of Year 4. Similarly, CPT increased from 86% to 98% (524) and ART from 67% to 72% (383). A total of 43,739 HIV positive patients were screened for TB in HIV care settings at the ITHC sites. Among those screened, 82 (0.2%) were diagnosed with TB and initiated on treatment. A total of 167 HCWs from all ITHC sites were screened for TB from which two (1.2%) were diagnosed with TB and initiated on treatment.

**National Strategic Plan Drafted**
In collaboration with other partners, TB CARE I provided technical support in the development of the M&E framework and the HSS component of the National TB Strategic Plan (NSP) [2015 – 2017]. An NSP operational plan was developed and it is ready for costing in April 2014, with technical support from TB CARE I. The new NSP will be used to develop the country’s GF concept note.

**Sputum Transport System Expanded**
The motorcycle sputum transport system that increases access to TB diagnosis was expanded to 15 additional districts in four provinces. Between January-February 2014, a total of 26,535 specimens (all types) were transported through this system, of which 7,439 (28%) were sputum specimens. In the previous quarter, 35,944 specimens (all types) were transported, of which 10,772 (30%) were sputum samples. A total of 1,208 confirmed TB cases were diagnosed from the supported geographic areas in the first quarter of Year 4. Case notification increase by 11% in the three major cities that started receiving transport support in 2010 from the first quarter of Year 3 (796) to the first quarter of Year 4 (886).

**Electronic Recording and Reporting System Developed**
Following technical assistance and a learning tour to Kenya, the electronic TB register (ETR) was introduced. TB CARE I has supported customization of the ETR to the local context, with technical support and expertise from the National University of Science and Technology (NUST) for long term sustainability. An electronic recording and reporting system has been developed, incorporating the following modules: Presumptive TB register, Laboratory register, DR-TB register, and Health facility TB register. A desktop software testing was done with key stakeholders to verify that the system captures all NTP recording and reporting parameters (Alpha testing). Field testing of the system with users (Beta testing) is planned to start in April 2014. A total of 47 tablet computers were procured to enable real time reporting in the four initial provinces. The phased roll out will commence in May 2014.

**R&R Tools Updated**
Recording and reporting tools have been updated to align them with the 2013 revised WHO TB case definitions and reporting guidelines. Provincial teams have been trained on the revised recording and reporting tools and trainings in all districts will take place during the third quarter of Year 4.
Regional Projects

Center of Excellence (CoE) for PMDT

The CoE for PMDT project is implemented by KNCV. A fourth international training on basic TB infection control was held March 10-14, 2014 at the School of Public Health of the University of Rwanda. Twenty four participants from Ethiopia, Tanzania, Uganda, Kenya, Burundi, Democratic Republic of Congo and Rwanda (16) attended (21% female). Two participants paid for the course while the rest were supported by the CoE. Training materials were updated according to the recommendation of facilitators and participants during the last TB-IC training. TB-IC in correctional settings was included as well as an introduction to the Find Actively, Separate Safely and Treat effectively (FAST) strategy. The average score of participants improved from 46% in the pre-test to 71% in the post-test. Two types of certificates were issued depending on performance: Certificate of attendance (50-69% on the post-test) and achievement (70% and above on the post-test). Twelve participants (50%) received certificates of achievement (>70% on the post-test), 11 participants (46%) received certificates of attendance (50-69% on post-test) and one (4%) participant did not receive a certificate, likely explained by a language barrier.

A significant success within the context of this training was that the Rwandese prison authorities attended. This is significant because TB-IC and a high prevalence of TB in Rwandan prisons have not yet been systematically addressed. They now better understand the need for TB-IC measures in prisons and proposed to train other health personnel working in different prisons in Rwanda. They promised to start advocacy at the Ministry of Internal Security to take into account IC measures when building new prisons.

An international PMDT training is planned for next quarter.

Center of Excellence (CoE) for PMDT

The Union, the lead partner, works closely with KNCV and the Royal Tropical Institute (KIT) on the SNRL project. Blue Edge, a business consultancy firm, is subcontracted to develop and implement a business plan for the SNRL. Year 4 technical activities began in January 2014.

The main activity of the quarter was a Stakeholder Mapping Meeting, which brought together 17 participants (e.g. donors, partners, government experts and specialists). Thirty stakeholders that would influence key people and affect commercial decisions within the SRL network were mapped by their level of interest in supporting the SRL versus influence in decision making (i.e. allocation of resources). Those with potentially high influence but currently low interest will need to be involved by increasing their level of interest and support. Stakeholders that should be further engaged (high influence but low interest) include the MoH, Uganda AIDS Commission, regional bodies (i.e. ECSA) and CSOs. An organogram, HR manual and a chart of accounts and cost structure for the SNRL are being developed.

East Africa Supranational Reference Laboratory

The ECSA project is led by KNCV. The ECSA strategic plan was finalized, printed and successfully launched at the 58th ECSA Health Ministers Conference (HMC). Country missions have been conducted to two member states (Swaziland and Uganda) to support implementation of HMC resolutions. Priority actions for implementation were agreed upon. Next quarter, a cross-border TB strategy will be developed and an assessment of the nursing curricula will be conducted.

Somalia

New in January 2014, KNCV and The Union are providing technical assistance to the NTP in Somalia on infection control and childhood TB respectively.

A TB-IC situational analysis will be conducted, TB-IC standard operating procedures will be developed and a training of trainers will be held for NTP and health facility staff. The USAID East Africa mission facilitated initial contact between TB CARE I, WHO and World Vision International (WVI), the implementers of the Somalia GF grant.

In addition, guidelines for the management of MDR-TB in children will be developed and training of trainers will be conducted on TB and MDR-TB in children. The project is performing a situational analysis and engaging partners to participate in guideline development (i.e. WHO, WVI, the NTP, pediatricians the Regional Center for Quality Health Care in Kampala, Uganda).
We would like to acknowledge all the people across the world who make TB CARE I possible; our gratitude and thanks go out to all our partners and everyone in the field.

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