



TB CARE I

TB CARE I—Ghana

Year 4

Quarterly Report

April–June 2014

July 30, 2014

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1. Acronyms

ACF	allocable cost factor
AIDS	acquired immunodeficiency syndrome
APA	annual plan of activities
ART	antiretroviral therapy
ATS	American Thoracic Society
CCM	country coordinating mechanism
CN	concept note
CPT	cotrimoxazole preventive therapy
DHIS2	district health information system 2
DOTS	directly observed treatment, short course
DR-TB	drug-resistant TB
FAST	finding TB cases actively, separating safely, and treating effectively
FLD	first-line drug
GF	Global Fund
HIV	human immunodeficiency virus
HMIS	health management information system
IC	infection control
IPT	isoniazid preventive therapy
JATA	Japan Anti-Tuberculosis Association
KATH	Komfo Anokye Teaching Hospital
KBTH	Korle Bu Teaching Hospital
KNCV	KNCV Tuberculosis Foundation
M&E	monitoring & evaluation
MDR-TB	multidrug-resistant TB
MSH	Management Sciences for Health
MTB	mycobacterium tuberculosis
NACP	national AIDS control program
NFM	new funding model
NSP	national strategic plan
NTP	national TB program
OPD	outpatient department
OR	operations research
PLHIV	people living with HIV/AIDS
PMDT	programmatic management of multidrug resistant TB
PMU	project management unit
RDQA	Rapid data quality assessment
RIF	Rifampicin
SLD	second-line drug
SOP	standard operating procedure
SOW	scope of work

SS+	sputum smear positive
STTA	short-term technical assistance
TA	technical assistance
TB	tuberculosis
TB LAB	TB laboratory
TB IC	TB infection control
TOR	terms of reference
TOT	trainers of trainers
TTH	Tamale Teaching Hospital
USAID	United States Agency for International Development
WHO	World Health Organization
WTBD	World TB Day
XDR-TB	extensively drug-resistant tuberculosis

2. Quarterly Overview

Country	Ghana
Lead Partner	Management Sciences for Health (MSH)
Coalition Partners	KNCV Tuberculosis Foundation (KNCV) and the World Health Organization (WHO)
Other Partners	
Work Plan Time Frame	October 1, 2013–December 31, 2014
Reporting Period	April–June 2014

Most significant achievements:

1. Scale-up of hospital-based tuberculosis (TB) case detection

Since early 2012, TB CARE I has been supporting the implementation of intensified hospital-based TB case detection in six hospitals in the three districts of the Eastern region of Ghana. In addition to improving TB case detection in these districts, TB CARE I aims to learn TB control best practices so interventions can be scaled up to other districts across the country.

Ghana's national TB program (NTP) is currently developing a new national strategic plan (NSP) and a concept note (CN) within the framework of the Global Fund (GF)'s new funding model (NFM). During a stakeholder discussion, which was coordinated by Ghana's country coordinating mechanism (CCM), the NTP presented three priority modular tools for inclusion in the CN, namely, TB care and prevention, multidrug-resistant TB (MDR-TB), and TB-human immunodeficiency virus (HIV). Within the TB care and prevention module, the NTP will intensify the intervention of hospital-based TB case detection. Based on TB CARE I's work in the Eastern region (which demonstrated that intensified hospital-based TB case detection has increased—TB case detection in these six hospitals rose by 53.5% 2012 and 68% in 2013, relative to the baseline year of 2011), it is evident that this intervention has the potential to have a high impact without requiring substantial financial input since the clients and patients to be screened for TB already come to the health facility for various reasons. The work that the NTP implemented in the Accra Metropolis has demonstrated even further supporting evidence. Therefore, the NTP has included hospital-based TB case detection intervention in both the new NSP and CN.

2. Support for the NTP's epidemiological assessment

In May of 2014, two senior external consultants (Dr. Navindra Persaud and Dr. Belaineh Girma), in collaboration with the NTP and TB CARE I in-country team, successfully provided technical assistance (TA) in performing an epidemiological assessment of tuberculosis (TB) in Ghana. This assessment is an important prerequisite for the development of the new NSP and the CN within the framework of the NFM. Key findings of the epidemiological analysis are as follows:

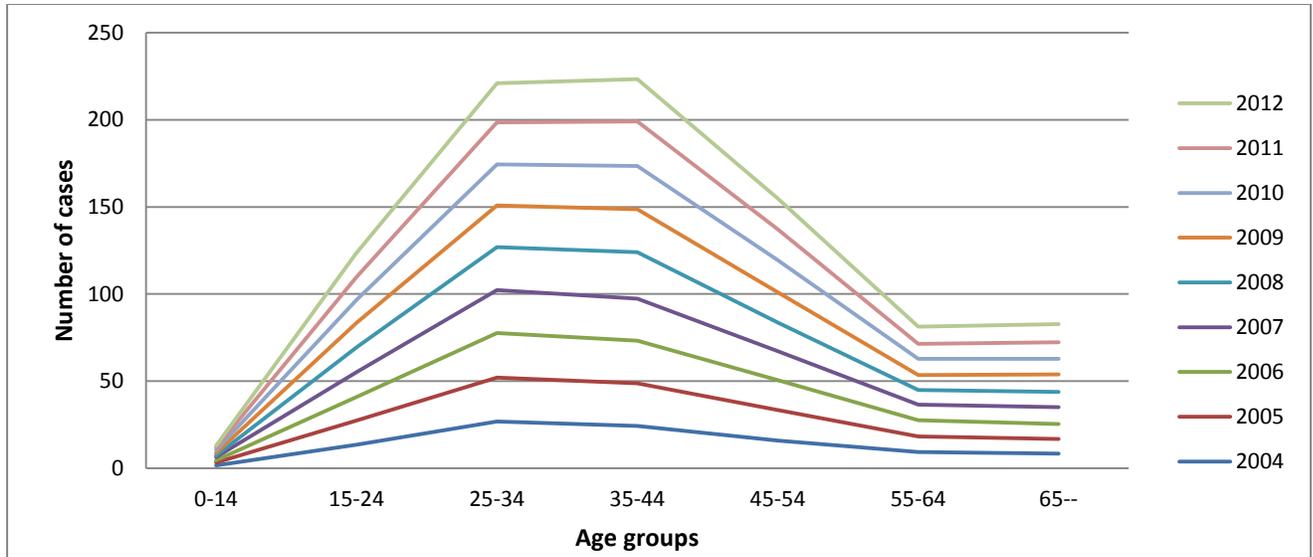
- Two of the ten regions (Ashanti and Northern) currently fall short of the World Health Organization (WHO)'s standard of having one microscopy center for every 100,000 residents (see Table 1). At the national level, there is one microscopy center serving about 88,647 residents, which meets the WHO standards

Table 1: Microscopic Service Coverage by Region, Ghana 2013

Regions	Number of Laboratories	Number of TB Diagnostic Centers	Distribution per 100,000 Population	Population per 1,000 Microscopic Centers
Western	28	26	1	96,978
Central	41	29	1.2	83,208
Upper East	55	22	2	49,303
Eastern	63	34	1.2	82,428
Greater Accra	70	50	1.1	87,893
Volta	65	31	1.3	73,584
Brong-Ahafo	37	30	1.2	82,471
Upper West	17	10	1.3	74,289
Ashanti	66	48	0.9	107,877
Northern	41	20	0.7	135,074
Total	483	300	1.1	88,647

- While the actual number of reported TB cases between 1997 and 2013 has increased, the TB notification rate (CNR) for all forms and sputum smear positive (SS+) cases has declined. The total TB CNR fell from 62/100,000 in 1997 to 58.4/100,000 in 2013 and the SS+ CNR fell from 41.8/100,000 in 1997 to 27.4/100,000 in 2013.
- Between 2008 and 2013, the data show that there are consistently more TB cases (all forms) among males than females. In 2013, females accounted for 35.2% of all cases notified. Volta region had the highest proportion of females notified with TB (41.5%), while Western region had the least (28.2%). Furthermore, the age group that suffers the most from TB includes individuals between the ages of 25 and 44 as per the NTP routine data; these individuals belong to the most economically productive age group (see Figure 1). However, the preliminary analysis of the recently conducted national TB Prevalence survey indicates that almost all the age groups are affected.

Figure 1: Trend of SS+ TB Cases by Age Groups, 2004–2012



- Data on TB cases among children were only available from 2008. Between 2008 and 2013, cases among children constituted approximately 5% of all notified TB cases and ranged from 4.2% in 2009 to 4.9% in 2013.
- TB treatment success rate for the 2012 cohort was 87%, which is above the global target. The death rate ranged from 6% to 8% between 1997 and 2012. In 2012, seven regions had a death rate higher than the national average; the death rates were highest in the two teaching hospitals of Korle Bu Teaching Hospital (KBTH—14.5%) and Komfo Anokye Teaching Hospital (KATH—25%) (see Figures 2 and 3).

Figure 2: Death Rate among TB Patient Cohorts, 1997–2012

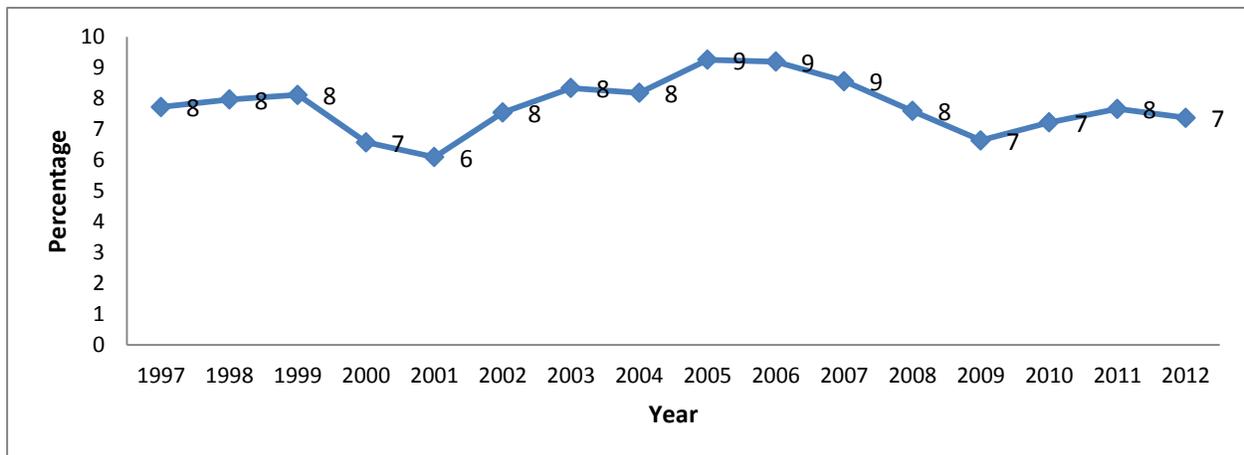
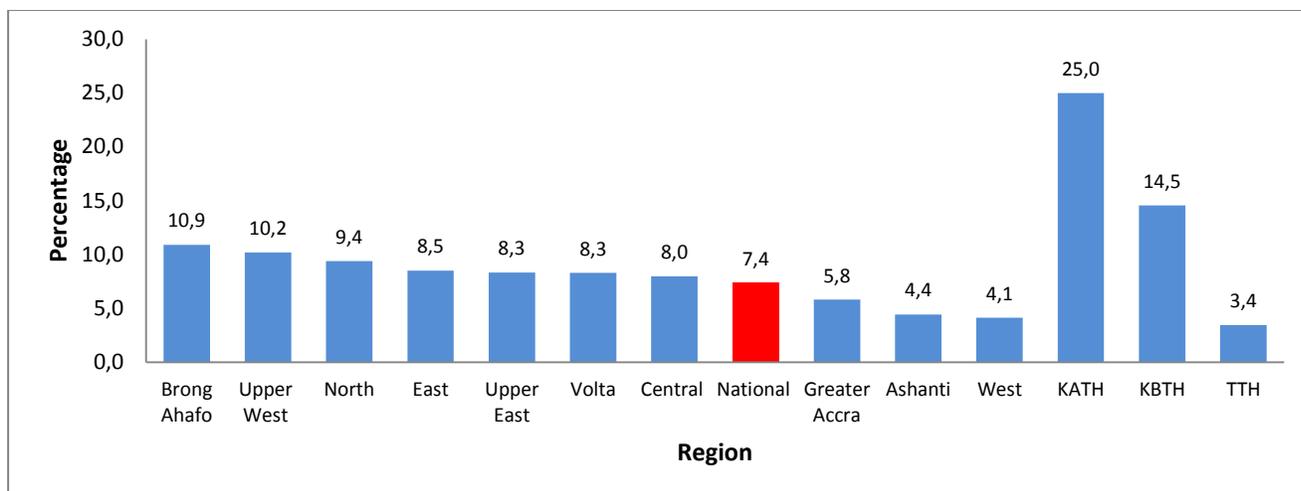


Figure 3: Death Rates among New Sputum Smear Positive TB Patient Cohorts, by Regions, 2012



- The proportion of TB patients tested for HIV rose from 17% in 2008 to 77.8% in 2012, but declined to 72.7% in 2013. In addition, the percentage of HIV-positive persons with TB to whom antiretroviral therapy (ART) was offered increased from 13.9% in 2008 to 43% in 2013, while cotrimoxazole preventive therapy (CPT) uptake among HIV-positive patients remained steady at around 70% during the past six years.
- Drug resistance, including MDR-TB surveillance, remains weak.
- Vital registration for both birth and death, though in existence, is still weak and needs further strengthening.

TB CARE I made the following recommendations for TB surveillance in line with the general health systems:

- The NTP should consider linking with the national health management information system (HMIS) and using the existing district health information system 2 (DHIS2) architecture for moving summary reports from the facilities to the district and national levels to avoid the operation of parallel systems.
- The NTP team should consider using the electronic system as a mechanism for supporting data collection at the service delivery points of those facilities that have the capacity to do so. The NTP should introduce this system in a phased manner, beginning with those facilities that have the necessary infrastructure to accommodate and use it and then gradually rolling out to other facilities.
- The NTP should consider supporting data analysis and using the data to guide decisions at the district, regional, and national levels.

3. Support for MDR-TB curriculum development and enhanced monitoring & evaluation (M&E), surveillance, recording, and reporting

Between May 19, 2014, and June 6, 2014, Dr. Victor Ombeka and Ms. Marleen Heus conducted short-term technical assistance (STTA) visits to support programmatic management of multidrug resistant TB (PMDT). Following are consultants' key observations:

- The drug-resistant (DR)-TB program is not fully programmatically implemented, but rather managed on a case-by-case basis and in a non-standardized manner.
- M&E and recording and reporting and logistics management are still not integrated into the NTP system. Interim and final treatment outcomes for MDR-TB placed on second-line drugs (SLD) are not systematically collected.
- The infrastructure for drug-resistant TB (DR-TB) management is absent or, if present, is inadequate in some regional hospitals that TB CARE I visited; some patients are admitted into a general ward without proper TB infection control (TB IC) measures and consultation rooms have suboptimal TB IC.
- The number of MDR-TB patients on SLD TB treatment, by June 2014, was 28. About 50 MDR-TB patients have been diagnosed and a number of them are on a waiting list for treatment due to limited SLDs and in-patient admission facilities for the very sick.

The two consultants recommended that the NTP central unit should ensure that the DR-TB suspect and treatment registers are updated and that it should use the DR-TB reporting tools on a quarterly basis alongside the other drug-susceptible reporting tools.

4. Support for the development of the GeneXpert guidelines and scale-up plan

In June 2014, Dr. Alaine Nyaruhirira (senior laboratory advisor, based in Pretoria, South Africa) undertook high-quality external TA to support Ghana's NTP in developing GeneXpert guidelines and a scale-up plan. Key accomplished activities included the following:

- Ten new laboratory trainers of trainers (TOT) trained on GeneXpert machine utilization. The training included the installation of the GX4, instructions for running the system, essential components of carrying out the assay at the site level, and necessary steps for performing preventive maintenance. These TOTs will support all existing and new GeneXpert sites, meaning there is now local capacity to support GeneXpert roll-out, which will significantly reduce dependence on external consultants.
- The team developed the following key documents:
 - National guidelines for GeneXpert mycobacterium tuberculosis/Rifampicin (MTB/RIF);
 - A GeneXpert scale-up plan for 2015–2020;
 - A TB laboratory (TB LAB) strategic budget for 2015–2020;
 - Maps of GeneXpert sites and methodology for site selection and placement; and
 - A laboratory diagnostic algorithm in line with GeneXpert.

According to the scale-up plan, Ghana will have an additional 38 GeneXpert machines in the next five years. At the end of the five-year period, there will be a total of 53 GeneXpert machines in Ghana, as 15 machines are already in the country. Ghana has considered the cheapest GX4 machine, meaning that in the next five years Ghana will need US\$3,330,250 to operate the 53 machines. This translates to US\$36,208 to own and operate one machine per year.

Some of the consultants' recommendations included the following:

- Clinicians from all existing GeneXpert sites should be trained using the NTP's GeneXpert guidelines to maximize GeneXpert utilization.
- All GeneXpert training materials and algorithms should be disseminated to health facilities throughout Ghana and the National AIDS Control Program (NACP) should be more involved in this process.
- A strong referral and transport system of samples for early detection of TB and MDR-TB cases should be in place.
- The recording and reporting system for GeneXpert should be strengthened.



The consultant, Dr. Alaine Nyaruhirira, training laboratory staff on the use and installation of GeneXpert machines

5. Support for the development of a priority research agenda.

Dr. Eveline Klinkenberg provided TA to the NTP, which aimed at supporting the NTP in developing a research road map for inclusion in the new NSP. As per the guidance by the NTP manager, the focus will be on implementation research and impact evaluation. Following the consultative process with various stakeholders, including the Ghana Health Service Research Unit, a total of 60 research topics comprised the list. The plan is that by the end of July 2014, the stakeholders will meet to prioritize the research list so that it will include only those topics that the stakeholders believe can be included in the research road map and in the NSP.

TECHNICAL AND ADMINISTRATIVE CHALLENGES:

- TB CARE I is implementing intensified TB case detection at six hospitals in three districts of the Eastern region. During the quarter under review, TB CARE I expected to detect 160 TB cases, but

detected just 85% of this target (136 cases). The potential reasons for not achieving the quarterly target include the following:

- Misconceptions and negative perceptions about TB led to presumed TB patients shunning early TB diagnostic services or coming late to the hospitals. Typically, patients who visit the hospitals arrive very sick and require hospitalization (see photos below).
 - In most of the hospitals, there were still reported stock outs of sputum containers and slides.
 - The Eastern region is one of the regions that have the highest HIV rates in Ghana, making it more difficult to diagnose TB among people living with HIV/AIDS (PLHIV) because the main diagnostic tool remains the light microscopy. There is only one GeneXpert machine in the region, and an effective system for transporting sputum samples to the GeneXpert site has not been established.
 - Not all clients and patients accessing health services—especially at the outpatient department (OPD)—are systematically screened for TB due to competing priorities among health care workers.
 - Contact tracing among households of index TB patients is still not a routine activity.
- While it is appreciated that TB CARE I successfully completed a number of STTA missions during the quarter under review, the activities that are supposed to be implemented in collaboration with the NTP slowed down because the NTP staff members are now busy with the development of the NSP and the CN.
 - According to the preliminary results of the TB prevalence survey, the burden of TB is much higher than currently estimated by WHO. The preliminary results show that Ghana has a TB prevalence rate of 286/100,000, which is much higher than the estimated 92/100,000, and that the TB case detection rate is 21%, which is substantially lower than the WHO's estimate of 81%. This level of the TB burden requires more resources than what is currently being allocated.



(Left) TB patients admitted at St. Dominic's hospital. Most of them are underweight and very sick, indicating late presentation to the hospital



(Right) DOTS center nurse with hospitalized TB patient, showing support for the patients as a way of teaching others not to stigmatize TB patients

3. Year 4 Technical Outcomes and Activity Progress

3.1 Universal Access

Code	Outcome Indicators and Results	Actual Year 3 or Baseline Result	Expected End of Year 4 Result	Result to Date ¹	Comments
1.2.4	Children younger than 5 (contacts of SS+ adults) who were put on Isoniazid Preventive therapy (IPT)	Data not routinely collected	IPT data among children aged <5 years who are contacts of SS+ adults in 6 districts supported by TB CARE I are reported	Not yet measured	Contact investigation not routinely conducted. In the next 3 months, specific activities will be conducted toward ensuring that contact investigation is systematically implemented.
1.2.5	Childhood TB approach implemented	Capacity of HCWs to diagnose TB in children improved in the 3 districts in Eastern region	9 health facilities in 6 districts implementing childhood TB approaches	8	Based on the new guidelines for diagnosis and managing TB in children, a consultant will be hired to build the capacity of clinicians in these districts.
1.2.6	Number of TB cases (all forms) diagnosed in children 0–4	NTP figure children 0–14 in 2012 = 820 (14 TB CARE I)	50 TB cases diagnosed in children aged 0–14 years (up from 14 in 2012 in TB CARE I supported areas)	23	A weak capacity among clinicians to diagnose and manage TB in children remains.
1.2.11	Number of health facilities implementing intensified TB case detection Description: Number of TB cases notified between October 1, 2013, and September 30, 2014, in 9 facilities in 6 old and new districts relative to 2012 results	793 from 6 hospitals	1,000 TB cases notified in the 9 TB CARE I supported districts	469	In 2 of the hospitals, depleted stock of sputum containers and slides was reported. In most of the hospitals, not all OPD attendees are screened for TB. In the next 3 months, the hospitals will be supported to allocate 1 person to be responsible for TB screening at the OPD on daily basis and ensure all presumed TB cases have their sputum samples examined.
1.2.12	Proportion of prison inmates at Nsawam Prison screened for TB Numerator: Number of prisoners screened for TB during the specified period Denominator: Total number of prisoners during the specified period	No data available	80% of inmates screened for TB	Measured annually	Training not conducted due to protracted processes to seek approval from senior prison authorities. The training is scheduled to take place in July–August 2014.

¹ If results are not available, write “Measured annually” or “Not yet measured” and say when the data are estimated to be available. Not all indicators can be measured quarterly.

Activity Code (***)	Lead Partner	TB CARE Year 4 Planned Activities	Cumulative Progress as of the Quarter's End	Planned Month		Status ²
				Start	End	
1.2.1	MSH	Launch the documentary on TB case detection	The TB documentary was launched on May, 15. The guest of honor was the Chief Executive Officer for the National Health Insurance Scheme. Others who spoke at the launch were the NTP Manager, The TB CARE I Activity Manager at the USAID mission, the Regional Director for Greater Accra region and the TB CARE I Country Director	Oct 13	May 15, 2014	Completed
1.2.2	MSH	Support in-service training for districts implementing intensified TB case detection	Planned for July/August 2014	Oct 13	Sep 14	Completed
1.2.3	MSH	Support prison HCWs and officers at Nsawam prisons in performing TB screening among new/old inmates	Planned for July/August 2014	Oct 13	Sep 14	Pending
1.2.4	MSH	Develop and disseminate scale-up plan for the implementation of intensified health TB case detection including clinical care of TB patients	This intervention has been selected as one of the key activities to include in the CN. This means the intervention will go to scale	Jan 14	Mar 14	Ongoing
1.2.5	MSH	Conduct district review meetings in 3 districts implementing hospital-based TB case detection activities	District review meetings have been conducted to evaluate the implementation of 2013 activities and develop 2014 activities and targets	Oct 13	Sep 14	Completed
1.2.6	MSH	Conduct regional quarterly review meetings	Two review meetings for the Western and Eastern regions conducted	Oct 13	Sep 14	Completed
1.2.7	MSH and KNCV	Implement TB mortality audit	Based on the TB CARE I guide on conducting TB mortality audit, a simple training guide developed in consultation with Dr. Pedro Suarez. Training of clinicians and nurses from regions and hospital that report high TB deaths scheduled for July/August or September.	Oct 13	Sep 14	Ongoing
1.2.8	MSH	2014 WTBD national launch	TB CARE I actively participated in the World TB launch. The launch of the TB documentary was based on the WTBD will be conducted during the April-June quarter.	Jan 14	Mar 14	Completed

² Status options: Pending (the activity has not yet started, but is not delayed); Ongoing (the activity has started and is in process); Completed (all sub activities and outputs are complete); Postponed (the start or completion of this activity has been delayed, but will still be completed by the end of the work plan year); Cancelled (the activity, which may or may not have started, will not be completed by TB CARE I.)

3.2 Laboratories

Code	Outcome Indicators and Results	Actual Year 3 or Baseline Result	Expected End of Year 4 Result	Result to Date	Comments
2.3.2	Rapid tests conducted			951 (GeneXpert)	
2.3.3	Patients diagnosed with GeneXpert	22 MTB positive and 3 Rifampicin Resistant (as of end of June 2013)	100	191 MTB+ and Rifampicin sensitive and 18 Rifampicin resistant	This data up to April 2014. Th May and June data will be updated in the next quarterly report
2.2.3	GeneXpert national rollout plan Description: National rollout plan for GeneXpert developed and incorporated into the new strategic plan	No	Yes	Expert guidelines and costed scale-up plan developed	The scaled-up plan has informed the GeneXpert section in the new strategic plan and the CN.

Activity Code (***)	Lead Partner	TB CARE Year 4 Planned Activities	Cumulative Progress as of the Quarter's End	Planned Month		Status
				Start	End	
2.3.1	MSH	Develop GeneXpert national rollout plan	GeneXpert guidelines and costed scale up developed. It is expected that by the end of 2019 Ghana will have 53 machines. 15 are already in the country and are deployed in high TB and HIV districts and hospitals	Jan 14	Jun 14	Completed
2.3.2	MSH	Review the uptake of GeneXpert technology	During the quarter under review one monitoring and support supervision was supported	Oct 13	Sep 14	Ongoing
2.3.3	MSH	Train staff in evaluating the implementation of the GeneXpert technology	Participants included all the 10 regional biomedical scientists across the country. The training comprised 40 participants (6 F and 34 M)	Jan 14	Mar 14	Completed

3.3 Infection Control

Code	Outcome Indicators and Results	Actual Year 3 or Baseline Result	Expected End of Year 4 Result	Result to Date	Comments
3.2.1	The TB-IC approach 'The Finding TB cases Actively, Separating safely, and Treating effectively (FAST) strategy has been put into place	0	Yes	Not yet measured	This will be completed when external consultant comes to Ghana to make inputs in the new strategic plan. Mrs. Rose Pray will undertake this mission.
3.2.2	Facilities implementing national TB infection control (IC) measures with TB CARE I support	9	9	8	
3.1.3	Availability of a guide on the monitoring of TB disease incidence among health care workers Description: A guide on the monitoring of TB disease incidence among health care workers incorporated into the national strategic plan	No	Yes	Not yet measured	This will be completed when external consultant comes to Ghana to make inputs in the new strategic plan. Mrs. Rose Pray will undertake this mission.

Activity Code (***)	Lead Partner	TB CARE Year 4 Planned Activities	Cumulative Progress as of the Quarter's End	Planned Month		Status
				Start	End	
3.3.1	MSH/project management unit (PMU)	Incorporate a guide on monitoring TB disease incidence among health care workers into the national strategic plan	This will be linked with the TA to support the finalization of the NSP and is likely to take place in July/August 2014.	Jan 14	Sep 14	Ongoing
3.3.2	MSH/PMU	Adopt FAST strategy	This will be linked with the TA to support the finalization of the NSP and is likely to take place in July/August 2014.	Jan 14	Sep 14	Ongoing

3.4 PMDT

Code	Outcome Indicators and Results	Actual Year 3 or Baseline Result	Expected End of Year 4 Result	Result to Date	Comments
C6	Number of MDR cases diagnosed	50	100	9	Data on MDR-TB still weak and difficult to report with accuracy.
C7	Number of MDR cases put on treatment	20	50	0	Data on MDR-TB still weak and difficult to report with accuracy
4.1.2	MDR TB patients who are still on treatment and have a sputum culture conversion 6 months after starting MDR-TB treatment	No data available	20		Data on MDR-TB still weak and difficult to report with accuracy
4.1.4	A functioning national PMDT coordinating body	A functioning national PMDT coordinating body a key component of the MDR-TB curriculum	Yes (MDR-TB subgroup meeting conducted and MDR-TB clinical team supported)	The core team met when the PMDT external consultants visited Ghana in May and June, 2014. They contributed to the finalization of the MDR-TB training curriculum	

Activity Code (***)	Lead Partner	TB CARE Year 4 Planned Activities	Cumulative Progress as of the Quarter's End	Planned Month		Status
				Start	End	
4.1.1	MSH	Hold MDR-TB subgroup meeting	The core team met when the PMDT external consultants visited Ghana in May and June, 2014.	Oct 13	Dec 13	Completed
4.1.2	MSH/KNCV	Train doctors and nurses in managing MDR-TB patients	One more training planned after completing the MDR-TB training curriculum	Apr 14	Sept	Ongoing
4.1.3	MSH	Train community and family members in the care of MDR-TB patients	Training planned after completing the MDR-TB training curriculum	Oct 13	Sept 14	Ongoing

The two consultants on PMDT reported in the significant achievement section above in collaboration with the in-country team, accomplished the following tasks:

- Reviewed recording and reporting tools and procedures for PMDT, identified gaps, and developed missing tools and procedures;
- Reviewed the standard operating procedures (SOPs) for PMDT, identified gaps, and developed SOPs for recording and reporting (sputum request form for molecular and culture TB06, MDR/extensively drug-resistant tuberculosis [XDR-TB], suspect register, MDR-TB treatment register, report on DR-TB detection and enrollment, treatment outcomes); the PMDT training curriculum now includes the SOPs; and
- Finalized the supervisory checklist for PMDT.

3.5 TB/HIV

Code	Outcome Indicators and Results	Actual Year 3 or Baseline Result	Expected End of Year 4 Result	Result to Date	Comments
5.2.1	HIV-positive patients who were screened for TB in HIV care or treatment settings	1,216 TB CARE I geographical area in 2012	2,000	751 PLHIVs screened for TB and 89 (12%) diagnosed with active TB	From TB CARE I project area
5.2.2	TB patients (new and re-treatment) with an HIV test result recorded in the TB register	77%	85%	73%	2013 National Data
5.2.3	TB patients (new and re-treatment) recorded as HIV-positive	21%	No target	21%	2013 National Data
5.3.1	HIV-positive TB patients started or continued on ART	37%	50%	43%	2013 National Data
5.3.2	HIV-positive TB patients started or continued on CPT	80%	85%	75%	2013 National Data; Since 2012 there has been a problem of funding for HIV services and this affected the TB-HIV services as well

Activity Code (***)	Lead Partner	TB CARE Year 4 Planned Activities	Cumulative Progress as of the Quarter's End	Planned Month		Status
				Start	End	
5.1.1	MSH/WHO	Conduct a meeting to review terms of reference (TORs) for the National TB-HIV Technical Working Group	TB CARE I coordinated the revision of the Joint TB-HIV policy guidelines. The Joint TB-HIV strategy includes the TORs for the TB-HIV working group	Jan 14	Mar 14	Completed
5.3.1	MSH/WHO	Advocate for early initiation of ART in HIV-TB co-infected patients	This is being discussed with NACP/NTP	Jan 14	September 14	Ongoing

3.6 HSS

Code	Outcome Indicators and Results	Actual Year 3 or Baseline Result	Expected End of Year 4 Result	Result to Date	Comments
6.1.1	Government budget includes support for anti-TB drugs	57% of the total budget for first-line drug (FLD) and SLD expected to come from Ghana. Likely will come from GF.	25% of the budget for FLD and SLD comes from the government)	Not yet measured	
6.1.2	CCM and/or other coordinating mechanisms include TB civil society members and TB patient groups	Yes	Each CCM meeting includes representatives of the civil society organizations.	Civil society organizations are actively involved in development of the CN	
6.2.1	TB CARE-supported supervisory visits conducted	6	10	7	
6.2.2	People trained using TB CARE funds	400	400	674 (279 are women)	The overachievement of the target is due to the implementation of the on-job training where health care workers are trained in their own districts or health facilities.

Activity Code (***)	Lead Partner	TB CARE Year 4 Planned Activities	Cumulative Progress as of the Quarter's End	Planned Month		Status
				Start	End	
6.1.1	MSH/KNCV/WHO	Support the development of the new five-year strategic plan	TB CARE I provided TA to perform an epidemiological assessment of TB in Ghana. The results of the assessment are now being used to inform development of the NSP and CN.	Oct 13	Sep 14	Ongoing
6.2.1	MSH	Support the activities of the CCM	The TB CARE I country director and M&E officer participated in the CCM meetings in April, May, and June of 2014. During these meetings, participants agreed on the priority modular tools and a budget for each module.	Oct 13	Sep 14	Ongoing
6.2.2	MSH/WHO	Provide support for the Phase II grant negotiation of GF	TB CARE is supporting development of the NSP and CN	Oct 13	Sep 14	Ongoing
6.2.3	MSH/KNCV	Implement standard operating procedures for planning and evaluation of TB training events for basic TB directly observed treatment, short course (DOTS), PMDT, TB-HIV	Marleen Heus and Victor Ombeka conducted successful STTA missions in May and June of 2014. See most significant achievements above section for recommendations and findings.	Apr 14	Jun 14	Completed

		activities			
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3.7 M&E, OR, and Surveillance

Code	Outcome Indicators and Results	Actual Year 3 or Baseline Result	Expected End of Year 4 Result	Result to Date	Comments
7.2.1	Data quality measured by NTP	Rapid data quality audit assessment (RDQA) tool introduced	Y	Y	Support supervision to Greater Accra and Central regions supported. RDQA tool was used.
7.2.2	NTP provides regular feedback from central to intermediate level	Feedback mechanisms for every supportive visit provided Mid-year review of the NTP work plan conducted with the regions and districts	Y	Y	Two regional review meetings in Western and Eastern regions conducted
7.3.2	Operations research (OR) study results disseminated	TB referral OR study disseminated at National and in the regions	2		TB referral OR study disseminated during the Eastern, Northern and Western regions annual review meeting

Activity Code (***)	Lead Partner	TB CARE Year 4 Planned Activities	Cumulative Progress as of the Quarter's End	Planned Month		Status
				Start	End	
7.2.1	MSH	Analyze quarterly TB data submitted by regions	TA to analyze quarterly data is provided by TB CARE I M&E officer on an ongoing basis.	Oct 13	Sep 14	Ongoing
7.2.2	MSH	Conduct quarterly monitoring and supportive visits	1 support supervision visit conducted in the districts implementing hospital-based TB case detection	Oct 13	Sept 14	Ongoing
7.2.3	MSH	Conduct 7 monitoring supportive visits in 4 regions	2 support supervision visits conducted in the Greater Accra and Central regions	Oct 13	Sept 14	Ongoing
7.2.4	MSH/KNCV	Develop operational research road map	STTA mission provided by Dr. Eveline Klinkenberg in June where a draft list of research priority topics was developed. A follow-up visit is planned for July.	Oct 13	July 14	Ongoing
7.2.5	MSH	Disseminate national TB guidelines	The TB guidelines have been edited and submitted to the NTP for the next steps	Jan 14	Jan 14	Ongoing

7.2.6	MSH	Disseminate final TB CARE I results/report	Scheduled for September/October	Aug 14	Oct 14	Pending
7.3.1	MSH/KNCV	Conduct manuscript (paper) writing workshop	Scheduled for July/August	Oct 13	Sept 14	Pending

4. TB CARE I's Support to GF Implementation in Year 4

Current GF TB Grants

Name (i.e., Round 10 TB)	Average Rating*	Current Rating	Total Approved Amount	Total Dispersed to Date
Round 10		B1	\$31,738,598	25,084,406

* Since January 2010

IN-COUNTRY GF STATUS—KEY UPDATES, CHALLENGES, AND BOTTLENECKS

Parallel to the development of the NSP, the NTP in collaboration with stakeholders is also developing the CN. US\$27 million has been allocated to the NTP under the New funding Model. The NTP has already used US\$6 million. Consequently, the NTP will only have US\$21 million for the next three years. The modular tools selected are as follows:

1. TB CARE & PREVENTION
2. MDR-TB
3. TB/HIV

Following are the main challenges:

1. Both the NSP and the CN are being developed at the same time, meaning that the NSP may not be as robust as required.
2. The predictable funds available to the NTP for the next three years are limited (**US\$21 Million**)
3. According to the preliminary results of the TB Prevalence Survey, the burden of TB is much higher than currently estimated by WHO. The preliminary results show that Ghana has a TB prevalence rate of 286/100,000 population, which is much higher than the estimated 92/100,000. The TB case detection rate is 21%, which is much lower than the 81% provided by WHO. This level of the TB burden requires more resources than what is being allocated.

TB CARE I & GF—TB CARE I INVOLVEMENT IN GF SUPPORT/IMPLEMENTATION AND EFFECT OF GF ON THE TB CARE I WORK PLAN

The Country Director and the M&E Officer have been actively involved in the development of the NSP and drafting of the CN. The stakeholder meetings have focused on selecting the priority modular tools of the CN and allocating resources to each module.

SUPPORT OF THE DEVELOPMENT OF THE NSP IN MEETING CONDITIONS FOR ACCESSING FUNDS FROM GF

TB CARE I provided TA to perform epidemiological assessment for TB. The results of the assessment have informed the development of the NSP. The five selected objectives of the new NSP are as follows:

- To increase the number of all forms of notified (new cases) from 14,970 in 2013 to 18,500 in 2020, while increasing the proportion of bacteriologically confirmed pulmonary TB from 49% in 2013 to 75% in 2020
- To detect and enrol into treatment at least 80% of estimated MDR-TB cases among new and previously treated cases by 2020
- To attain higher treatment success from 86% in 2012 to at least 91% by 2020 onward through improved quality clinical care and community TB care
- To reduce death rates of TB/HIV co-infected cases from 17% in 2011 to 10% and coverage of HIV status of TB cases from 77.4% to 80% by 2020
- To improve program management; coordination M&E and OR to support increase TB case findings and treatment success

5. MDR-TB Cases Diagnosed and Started on Treatment in Country

Quarter	Number of MDR Cases Diagnosed	Number of MDR Cases Put on Treatment	Comments:
Total 2010	4	0	The M&E, surveillance and recording and reporting for MDR-TB is still weak and cannot easily provide accurate information. However, what is known is that the cumulative number of MDR-TB patients on second-line anti-TB treatment by June 2014 was 28. About 50 MDR-TB patients who are known to still be alive have been diagnosed and a number of them are on a waiting list for treatment due to limited second-line drugs (SLDs) and in-patient admission facilities for the very sick. Following the STTA that was conducted between May and June, we expect surveillance for drug-resistance TB to improve.
Total 2011	7	2	
Total 2012	38	2	
Jan-Mar, 2013	7	4	
Apr-Jun, 2013	8	4	
Jul-Sep, 2013	14	15	
Oct-Dec, 2013	9	0	
Total 2013	87	27	
Jan-March, 2014	??	??	
April-June, 2014	??	??	
Total 2014	TBD	TBD	

6. TB CARE I-Supported International Visits (Technical and Management-Related Trips)

#	Partner	Activity Code	Name	Purpose	Planned Month, Year	Status	Dates Completed	Additional Remarks (Optional)
1	MSH	1.2.4	Pedro Suarez (MSH)	Develop and disseminate scale-up plan for the implementation of intensified health facility TB case detection including clinical care of TB patients	Jan–Mar 2014	Completed	Feb 15–22	
2	MSH	1.2.5	Abel Nkolo (MSH)	Conduct district review meetings in 3 districts implementing hospital-based TB case detection activities	Jan–Mar 2014	Pending		This will be conducted by Dr. B. Assefa during the last week of July
3	MSH	2.3.1	Alaine Nyaruhirira (MSH)	Develop GeneXpert National Rollout Plan	Jan–Mar 2014	Completed	Jun 15–27	Mission related being finalized
4	MSH	1.2.4	Abel Nkolo (MSH)	Develop and disseminate scale-up plan for the implementation of intensified health facility TB case detection including clinical care of TB patients	Jan–Mar 2014	Pending		
5	MSH	6.1.1	Dr. Navinidra Persaud replacing Abel Nkolo (MSH)	Support the development of the new five-year Strategic plan	Oct–Dec 2013	Completed	May 7–19	Upon request from the NTP, the external consultants, Dr. Navinidra and Dr. Belaineh Girma, provided TA to the NTP in performing epidemiological assessment to inform the new national strategic plan
6	MSH	6.1.1	Dr. Belaineh Girma)	Support the development of the new five-year Strategic plan	Oct–Dec 2013	Completed	May 7–19	Upon request from the NTP, the external consultants, Dr. Navinidra and Dr. Belaineh Girma, provided TA to the NTP in

								performing epidemiological assessment to inform the new national strategic plan
7	MSH	7.2.6	Pedro Suarez (MSH)	Disseminate final TB CARE I results/report	Sep 2014	Pending		
8	WHO	6.2.3	WHO (TBD)	Implement standard operating procedures for planning and evaluation of TB training (basic DOTS, PMDT, laboratory basic training)	Apr–May 2014	Completed	May 19–Jun 6	WHO consultant was not involved. This was only conducted by KNCV consultants-Marleen Heus and Victor Ombeka
9	KNCV	7.3.1	Eveline Klinkenberg (KNCV)	Conduct Manuscript development workshop	Feb–Mar, 2014	Pending		
10	KNCV	6.2.3	Marleen Heus (KNCV)	Implement standard operating procedures for planning and evaluation of TB training (basic DOTS, PMDT, laboratory basic training)	Apr–May 2014	Completed	May 19–Jun 6	
11	KNCV	6.2.3	Dr. Victor Ombeka (KNCV)	Implement standard operating procedures for planning and evaluation of TB training (basic DOTS, PMDT, laboratory basic training)	Apr–May 2014	Completed	May 19–Jun 6	
12	KNCV	7.2.4	Eveline Klinkenberg (KNCV)	Develop operational research roadmap	Oct–Dec 2013	Completed	Jun 8–14	There will be a follow up for this STTA mission where stakeholder will discuss and endorse priority TB topics for the inclusion in the NSP
Total number of visits conducted (cumulative for fiscal year)						8		
Total number of visits planned in work plan						12		
Percent of planned international consultant visits conducted						67%		