

UKAID PROJECT REPORTING TEMPLATE

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Name of Organization	Shoklo Malaria Research Unit	Prepared by	SMRU and PU- AMI staff.

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2. LIST OF ACRONYMS

3TC	Lamivudine
ART	Antiretroviral therapy
AZT	Zidovudine
WHO	World Health Organization
CC	Contact Cases of TB patients
CHRO	Chronic patients
COERR	Catholic Office for Emergency Relief and Refugees
CXR	Chest X-Ray
D4T	Stavudine
DFID	Department for International Development, UK Government
DOT	Directly Observed Treatment
DOTs	Directly Observed Treatment Short-course
EFV	Efavirenz
HCW	Health care worker
HIV	Human Immuno-deficiency Virus
IOM	International Organization for Migration
IPD	Inpatient department
ML	Maela
MDG	Millennium Development Goal
MDR TB	Multidrug resistant TB
M&E	Monitoring and Evaluation
MST	Maesot
NA	New Arrivals
NAP	National AIDS Program for Myanmar
NGO	Nongovernmental Organization
NNRTI	Non-nucleoside reverse transcriptase inhibitor
NP	Nupo
NRTI	Nucleoside reverse transcriptase inhibitor
NTP	National Tuberculosis Program
OPD	Out-patient department
PCF	Passive Case Finding
PHC	Primary Health Care
PLWHA	People Living With HIV/AIDS
PU-AMI	Première Urgence-Aide Médicale Internationale
RIF	Rifampicin
SMRU	Shoklo Malaria Research Unit
t-ACF	targeted Active Case Finding
TAD	Treatment After Defaulted
Tak PHO	Provincial Health Office of Tak
TB	Tuberculosis
TTBI	Tak TB Border Initiative
TBV	TB Village
DFID	Department For International Development (United Kingdom government)
UM	Umpiem
UMP	Umphang
VCT	Voluntary Counseling and Testing
WTBD	World TB Day
WAD	World AIDS Day

3. EXECUTIVE SUMMARY

The TTBI project started in January 2013 with support from UK aid (DFID). This report covers the year three period of the project from January 2015 to December 2015. Although it is not a three year report, the evolution through activity, output and outcome will be examined for the three years, as the log frame is designed on cumulative targets.

The project is undertaken by Mahidol University's Shoklo Malaria Research Unit (SMRU) in close association with Première Urgence - Aide Médicale Internationale (PU-AMI) who is Sub recipient from SMRU of this DFID grant. The project receives support from the International Organization for Migration (IOM) in the form of laboratory services, and is facilitated with the support of Tak Public Health office and Thai district hospitals in the target area.

SMRU and PU-AMI undertake complementary activities through this project with SMRU targeting the migrant population and neighboring border communities in Myanmar, whilst PU-AMI's efforts focus on refugees living in Tak province's three temporary shelters (Maela, Umpien and Nupo).

At beginning of the project, and from approved proposal, the total population for these three camps was estimated around 75,000, and targets for refugee population were set according to this information and with perspective of continuous flow of new arrival. But as the Ministry of Interior of Thailand has restricted movements to the Temporary shelters from Myanmar and as there has been less conflict forcing people to flee, it is important to note that the population of the 3 camps under PU-AMI health services has drastically decreased in the past three years to less than 60,000 (59,892)¹, which means 20% decrease, with fewer new arrival.

This reduction has however been highlighted since the middle of the second year of the project, and will be important rationale for difference between target and achievement for refugee population under PU AMI; at the same time as the political situation is changing and the economic zone is developing with the opening of the ASEAN Economic Corridor in 2015, with impact on the increasing number of mobile population of migrants and cross border population in this area.

In year three of the project, all activities developed in the proposal and under outcome and output are well settled, and if some achievements had not reached targets, we can provide rationale and justification for those gaps.

It is important also to note for year three (2015) of the project, we will report for all TB activities as under DFID grant as it was only grant to support TTBI activity in first 6 months as SMRU's EU grant stopped in December 2014, and Global Fund supported technical staff only for the second semester.

¹ Statistics from CCSDPT Nov 2015

In year 2015, DFID contributed to the diagnosis to 544 TB cases (all forms) among refugees and displaced people and for treatment up to nearly 80% of them (431 TB patients registered for treatment), with a higher rate of enrollment in refugee population (94%) than in displaced (79%). The treatment success rate for both populations is above 80% but cannot reach target 85% when including transfer out / not evaluated TB cases.

PROGRESS AGAINST OUTCOMES / COMPONENTS

a. In the Migrant population

<i>Outcome/ component Statement</i>	<i>Outcome/ component Indicators</i>	<i>Baseline Reference 2011</i>	<i>Baseline reference 2013-2014</i>	<i>Progress against Indicators 2013 - 2015</i>	<i>2013-2015 Target</i>
1.The burden of TB and spread of MDR-TB is reduced among displaced populations in Easternmost Myanmar and refugees in Westernmost Thailand	1.1 Number of TB cases detected	73 (36% F)	380 (38.4% F)	779 (37% F)	Indicator Y3: 450-550 cases
	1.2 Number of MDR TB cases detected per annum	4 (75%F)	35 (26.4%F)	47 (36.2%F)	20 – 30 cases (30-60% F)
	1.3 Treatment success rate among displaced treated for TB (excluding MDR)	87%	84.3% (for patients enrolled in Y1)	82% (both M/F) (for 400 patients on 486 patients enrolled in year 1&2)	Indicator: ≥85% (both M & F)

Outcome 1.3 Treatment Success Rate (TSR), detailed for TB cases all forms and bacteriologically confirmed for 2013-2014 cohort evaluated in 2015 are presented below:

2013-2014 Cohort	All forms		Bacteriologically Confirmed	
Cure rate	30%	(142)	61%	(142)
Completed rate	53%	(256)	19%	(45)
Loss to Follow up rate	4%	(18)	4%	(9)
Death rate	8.5%	(40)	7%	(16)
Failure rate	0,4%	(2)	0.8%	(2)
Transfer Out	5%	(24)	7%	(17)
TSR	82%	(400/486)	81%	(187/231)

Outcome indicator 1.1:

Among displaced and migrant population, with additional 399 TB cases detected in 2015 (excluding transfer-In, and TB MDR), SMRU had detected 779 TB cases, **42% of TB cases over cumulative target of Y1-Y3**. We can notice that already in year 2, the number of TB cases was above target, and then, the increased number especially in year 2015 is explained by one main factor: For year 1 and 2, as TB program was supported with both EU and DFID, all TB cases were not contributed by DFID. In year 3, as EU was no more involved, and GF Myanmar proposal was not signed in 2015, all TB cases of SMRU TB program for migrants are contributed by DFID, which nearly

double the number of TB cases contributed by DFID.

Outcome Indicator 1.2:

However this justification of all program reporting is not standing alone for all outcome achievement, as for MDR, the number of **MDR TB cases is also well above target (+56% over higher range of target)**; it is still proportionate to increased number of cases but not only. It reflects also the high level of MDR TB in this border population. The rate of MDR was quite high in year 1 and 2 of the project (>9% in 2013-2014), although it is found lower in 2015 (3%), it is still in high range. We found 6% of MDR TB among all TB cases for the three year period. This rate is still on the same range as the one of both countries Myanmar and Thailand which are still countries with this high burden of MDR TB.

Outcome indicator 1.3

The third outcome under this statement is related to treatment success rate (TSR) for all forms of TB; TSR is related to cumulative proportion of people who:

- achieve treatment with completion of the full course of treatment for clinically diagnosed TB and for extra pulmonary TB and some pulmonary TB where people at end of treatment are not able any more to produce good quality sputum, or
- who get cured, that means negative smear at the end of treatment (WHO definition) for bacteriologically confirmed TB cases, and who complete full course.

TSR is evaluated for retrospective period of time that allows completion of treatment. TSR is referring on retrospective cohort of year 1 and 2 (2013-2014) as there is a delay from 6 to 12 months to complete treatment according to the localization and previous treatment.

In the project's logical framework for this 3 years, we are looking at TSR for all forms; target is set equal or above 85% of enrolled people for treatment.

SMRU achievement reached 82%, and is slightly under the milestone, by 3%; however, the definition of TSR and especially in denominator should be examined carefully with other outcomes at hand; we observe increasing number of patients transferred out and we cannot have feedback on their outcome. The proportion of people transferred out increased to 6% in 2014. After first start of treatment, people are transferred to other TB health facility in Myanmar on their demand to contribute to better adherence to treatment as they can be closer to their home. However communication with Myanmar hospitals was not formally settled and we have no feedback for those. This global proportion of outcome not evaluated because transfer out is 5.6%.

The TSR can be different if we exclude from the denominator patients not evaluated because of transfer out; in this option of definition, TSR is 85.2% in 2013 and 86.4% for both year 2013 and 2014, and over target.

Another impairment of TSR is due to the level of death rate, which is high for registered patients, this is a sad reflection on the fact that patients are often severely ill when they arrived to seek for treatment having faced difficulty in accessing care and delayed treatment seeking. These people have to face complex barriers to access to care due to the following problems:

- Cost of treatment in Myanmar where the drugs are now quite available and provided for free, but patients have to pay for food, and hospital stay, and they cannot afford it
- Loss of income: patients cannot support family if they stop working, as there is no social welfare so they continue working until they are too sick
- Low capacity of health care system in Kayin state, and these people are not allowed to access Thai hospitals lack of knowledge about health services and low coverage of primary health services in hard to reach areas

The lower than expected cumulative TSR is explained by high death rate average 8.5%; as explained in previous report, and stated above, TB patients arrived in health services with delayed access to care and in severe conditions. Severity of conditions of patients with advanced disease is also explained by the high proportion of HIV co infected patients in this death cohort where half of the dead patients are co infected although our average rate of co-infection for all patients is about 20%. People with TB/HIV are dying within the first month of their arrival which means they arrive in severe condition difficult to overcome in our setting.

25% of death happens within 3 weeks after enrolled for treatment, more than 10% within the first week with very severe medical advanced condition.

In our 2014 cohort of patients registered for treatment and evaluated for outcomes in 2015, 11 were lost to follow up, 29 died during the treatment, 17 were HIV positive and 13 died within the first 2 month after their arrival.

TSR of bacteriologically confirmed TB:

Considering the importance of this outcome of “treatment success rate” for control of the disease epidemic, we can look at this issue for TB patients with bacteriologically confirmed TB registered for treatments and consider this indicator also interesting under the Stop TB strategy as those patients are mainly pulmonary TB and the most contagious cases.

The observed TSR in our bacteriologically confirmed TB cases is not significantly different of global TSR, however of course our cure rate is much higher (61%). Those who get complete outcome under this indicator are mainly people who cannot produce sputum any more because they don't cough anymore and they get good health condition.

Conversion rate

Recently, DFID asked about our conversion rate:

Our statistics shows a level of conversion rate at 2 months of 64% in year 1 and 2 and 68% in Q1 to Q3 for 2015.

This indicator needs careful interpretation on a global level, and its value should be compared to cohort in same epidemiological and sociological environment, as its variation is linked to efficacy of treatment and also to higher grade of positivity of the first sputum, severity of the cases, and proportion of relapse and retreatment cases. It should also be stated that this indicator was not required from the project log frame.

At the clinical level, the physicians of the program are monitoring this conversion time very closely and have close individual follow up of this sputum conversion for each patient.

In our settings, as people are living in hard to reach areas with difficult access to care for geographical or social reasons, they often come late to our TB clinics in severe conditions with high grade of sputum positivity.

b. Refugee Population

<i>Outcome/component Statements</i>	<i>Outcome/component Indicators</i>	<i>Baseline Reference - 2011</i>	<i>Base line Reference - 2014</i>	<i>Progress against Indicators (Jan 2013-Dec 2015)</i>	<i>2015 Target</i>
The burden of TB and spread of MDR-TB is reduced among displaced populations in Easternmost Myanmar and refugees in Westernmost Thailand	1.Number of TB cases detected	98 38% female	328 38% female	473 (39% female)	730 - 930 30-40% Female
	2. Number of MDR TB cases detected per annum	0	10 30% female	11 (27% female)	28 - 45
	3. Treatment success rate among displaced/refugee treated for TB (excluding MDR)	82%	80.4 %	82 %	> 85% (Male and Female)

- Outcome detailed for TB cases all forms and bacteriologically confirmed for 2013, 2014 cohort evaluated in 2015

<i>Rate of outcomes for all forms and bacteriologically confirmed TB of 2013-2014 cohort</i>	<i>TB cases all forms</i>	<i>TB Cases Bacteriologically confirmed</i>
Cure rate	48% (149 out of 309)	72% (149 out of 206)
Completed rate	33% (103 out of 309)	9% (18 out of 206)
Loss to Follow up rate	7% (22 out of 309)	5% (11 out of 206)
Death rate	4.5% (14 out of 309)	5% (10 out of 206)
Failure rate	4% (11 out of 309)	5% (10 out of 206)
Transfer Out	3% (10 out of 309)	4% (8 out of 206)
TSR	48% (149 out of 309)	72% (149 out of 206)

For the refugee population in the temporary shelters, in the changing context of the political situation that affects this population on the border, the outcome indicators cannot completely meet with the targets that had been fixed 3 years ago. However the results are showing good achievement on TB patient's management and are close to the target for the TSR.

Outcome Indicator 1.1

The total target of TB patients detected could not be met due to the changing context which could not be foreseen. As the Ministry of Interior of Thailand has restricted movements to the Temporary shelters from Myanmar and as there has been less violent conflict forcing people to flee, the total number of population living in the 3 camps started to decrease drastically also the number of new arrivals into the camps has been much lower than predicted and these are part of explanation for the case detection to-date.

The number of TB cases expected in the initial target was calculated from data at hand at the time the proposal was developed in 2012, including population living in the camps and trends in new arrivals.

The population of refugees living in the 3 camps at that time was 20% higher than current data recently updated from November 2015 by the Committee for Coordination of Services to Displaced Persons in Thailand (CCSDPT), and is continuously decreasing (-12% between 2014 and 2015).

On the other hand, it was expected to continue higher trends of new arrivals with important rate of TB. It was also planned in the 2012 proposal to try to reduce the number of undetected cases, according to level of TB cases observed from IOM data. According to recent data from IOM (2015), their screening strategy with CXR allows to say that there are still undetected cases in refugees and this is one objective of the new project of mass screening in Maela with CXR screening to get better detection of TB at earlier stage.

This reduction in population and especially new arrival has been highlighted since the middle of the second year of the project. Changes to more active strategy with the t-ACF algorithm were also introduced in order to try to find other strategy and new risk groups to reach the target but this has proved to be was insufficient.

New target groups were then included with screening for chronic patients followed by the PU-AMI clinics and include also students in boarding schools.

Outcome indicator 1.2

On the same pattern, the yields of MDR/TB patients detected are less than expected in previously planned target. Only one MDR patient has been found in year 2015.

Outcome indicator 1.3

For the TSR, it is nearly close to the target, however 8 patients lost to follow up in 2014 had serious impact on the TSR.

Conversion rate

For the Refugee population, PU-AMI check conversion rate at 2 months, for the retrospective period of DFID grant from January 2013 to Semester 1 of 2015. The conversion rate is 68% globally, not very different from SMRU's program, but it can be noticed, looking at the three locations, that the range varies from 65% in Maela to 81% in Umpiem. That

reflects the difficulty in interpretation of this indicator which was not set as a target indicator and its value depends on many factors as the grade of positivity of the sputum, the HIV co-infection rate, and other conditions of the patient impact the length of conversion.

Both SMRU and PU-AMI are checking conversion of sputum for each patient carefully; to follow this sputum conversion is an important monitoring tool of evolution of TB condition at the individual level for each patient and is done by medical staff; however on a activity report it will more difficult to use it and interpret conversion rate on a general basis as there are many factors that can influence its variation, and it was not recorded on that purpose.

We should also notice that for both Migrant and Refugee populations, the treatment success rate is above 80%, around 82%; this TSR is in the same range of both Thailand and Myanmar's National TB programmes according to WHO's 2015 report and both organizations are working with very mobile populations for whom this disease is especially difficult to handle.

5. PROGRESS AGAINST OUTPUT / COMPONENTS OF PROGRAM IMPLEMENTATION

a/ For Migrants

<i>Output/component Statement</i>	<i>Output/component Indicators</i>	<i>Baseline Reference 2011</i>	<i>Baseline reference 2013-2014</i>	<i>Progress against Indicators 2013 - 2015</i>	<i>2013-2015 Target</i>
1/ To provide diagnosis for presumptive TB cases and high risks groups among displaced/ migrant and Refugee population	1.1 Number of people screened for TB using t-ACD Methodology	0	1865 (60.9% F)	2944 (61% F)	2700-3300 (45 – 55% F)
	1.2 Number of people tested for TB using PCD methodology	250	1022	2325 (42%F)	1000-1100 (45 – 55% F)
	1.3 Number of enrolled TB patients in target population receiving voluntary counselling& testing and result of HIV test	96%	99.5%	98.9% (M) 98.7% (F)	>= 90%
	1.4 Proportion of eligible population being screened through active case finding	Not available	[Contact : 99% HCW : 92.8% HIV : 100%]	80,4% [Contact : 90% HCW : 85% HIV : 40%]	>80%

Output/component Statement	Output/component Indicators	Baseline Reference 2011	Baseline reference 2013-2014	Progress against Indicators 2013 - 2015	2013-2015 Target
2/ Treatment of patients found to be infected with TB - including management of HIV co-infection	2.1 Number of patients treated (registered) for TB	73	322 (38% F)	617 (36% F)	450-550 (30-40% F)
	2.2 Number of HIV co-infected TB patients treated	14 (20%F)	71 (45% F)	129 (41.5% F)	90-110 (20%-30% F)
	2.3 Proportion of patients diagnosed with TB who commence treatment	95%	85% M 87% F	79% M 79% F	> =80% for both M & F
	2.4 Percentage of HIV/TB cases receiving ART or Cotrimoxazole	78%	Cotri : 97% for M/F, ART : 92% (M), 88% (F)	Cotri 93% for M/F, ART 88% for M/F	>=90%

Output/component Statement	Output/component Indicators	Baseline Reference 2011	Baseline reference 2013-2014	Progress against Indicators 2013 - 2015	2013-2015 Target
3/ Improved treatment outcomes for TB patients through TB centres and community bases and home management of TB	3.1 Proportion of TB patients managed in community and TB Village	60%/40%	70% in TB village/ 30% in community	67% in TB village/ 33% in community	50%/50%
	3.2 Defaulting treatment rate among migrant treated for TB	4.2%	3.8% cohort of 2013	4% for cohort 2013-2014	<=10%
	3.3 Proportion of patients transferred out according to the transfer in /out protocol	100%	100%	100%	>=80%

Output/component Statement	Output/component Indicators	Baseline Reference 2011	Baseline reference 2013-2014	Progress against Indicators 2013 - 2015	2013-2015 Target
4/ Drug resistance assessed and managed for all patients found to be infected by TB	4.1 Proportion of TB smear positive cases tested for drug resistance	100%	92%	100%	100%
	4.2 Proportion of drug-resistant TB cases diagnosed and managed (SMRU)	4-12%	35 MDR TB diagnosed, 32 registered = 10% of registered cases	47 MDR TB diagnosed, 44 registered = 7% of registered cases (34% F)	30-35 patients (10% of TB cases)
	4.3 proportion of DR TB Cases treated successfully	100% of cohort 2011 (3p), 2012 (2p)		90% of 2013 TB_MDR cohort (100% F, 87%M)	60% (M/F)

Indicators related to output 1

Output Indicator 1.1 and indicator 1.2

As it can be seen in the above table the achievements for these both targets are within the range of targets set in the initial framework.

With nearly 2,944 people on targeted risk group screened during this three year period, and 2,325 people for PCF, we had been evaluating 5,269 people for TB diagnosis.

Output indicator 1.4

This indicator is also on track with target; it is related to the performance of the number of t-ACD done and the proportion of eligible population being screened through ACD reaching the target set globally to 80%; it can be noted that for contacts screening it is more about 90%, and about 85% for HW. For people being HIV positive, the level of screened people is low because the follow up of these people for TB is done with yearly CXR and if they miss their appointment for CXR screening, it is difficult to organize new appointment for them again, as they are often living far from the clinic.

We need to develop new strategies for this group to get a better rate of screening for these at risk patients.

If we look at the yield of detection for each group, which is not a log frame indicator but an interesting one to look at efficiency of the strategy, it shows expected results according the level of risk for each group.

Target group for ACF evaluated after screening	No people screened	No and % of TB detected
Contact	1,315	92 (7%)
Health workers	1,505	13 (0.9%)
HIV	124	8 (6.5%)
Total	2,945	113 (3.8%)

Altogether the t-ACD strategy accounts for 14.5% of all TB cases detected during 3 years.

Indicator 1.3 is related to activity of counselling and will be commented with output2.

Indicators related to Output 2

Output Indicator 2.1:

For the management of the TB cases, SMRU achieve a high number of patients registered for treatment in link with high number of patients detected (outcome 1.1).

Output indicator 2.3:

The proportion of patient registered after detection (79%) is slightly below the target set at 80% and above. There are several explanations for this, but the main one is the high level of

initial referral that increases along the years. In the last two years, on average, 14% of TB case detected by SMRU among displaced population was initially referred to other TB service in Myanmar hospitals to start treatment.

In 2015, 73 patients (17%) were referred out after diagnosis, before starting treatment; 65 (85%) were referred to hospital in Myanmar, of whom 38 (50%) referred to Myawaddy hospital.

The referral process is done after discussion with the patient according to their need and the best chance for them to complete the treatment close to their place. Some are living far from SMRU clinic, and it can be difficult for them to stay in our setting for a long time, even with support. This referral is done by the physician. We provide them a referral letter and referral form from Myanmar National TB program, with all required information to be handled for the health services in Myanmar.

As SMRU has signed an MOU with Myanmar NTP, the referral process should be structured with more feedback of our referred cases, whether they are initial or after registration.

Output Indicator 2.2: Number of HIV Co infected TB patients:

For all 3 years of program, 129 coinfecting TB/HIV patients are under treatment with DFID contribution. **This indicator is 17% above the higher end of the range of the target, for the 3 years program.** This indicator is related to activity of counselling for all new TB patients (Indicator 1.3). In DFID log frame, the proportion of TB patients with known HIV status is set as output indicator 1.3 for output 1. But it is interesting to look at it in this output, as we are testing more than 95% of TB patients and actual level of counselling for TB patients and TB patients with known HIV status is 99%. These numbers allow us to talk about prevalence of coinfection among TB patients.

As for indicator 2.2, the level of co infected patients remains quite high with 18% of TB patients coinfecting with HIV diagnosed in 2015; these 58 patients added to the ones of previous 2 years give a total of 129 coinfecting TB-HIV patients registered for treatment these last three years, which a global level of HIV infected in our cohort of 16% patients with TB-HIV coinfection.

Output Indicator 2.4:

More than 90% of the co-infected TB HIV patients are starting treatment either first on Cotrimoxazole (93%), or with ART (88%). These patients have a high level of mortality (15%), especially because they arrive late for diagnosis, already with many complications and poor general state of health.

Indicators related to output 3

Output indicator 3.1 is related to the proportion of TB patients managed in the community or in TB centers.

This proportion of patients staying in the TB village is still higher than the original target

(67% against 50% target). This proportion remain stable during the project's lifespan and is related to the conditions of living of our patients as most often they will not find any access to treatment from their villages or close to it; that is why this proportion in the TB village is still quite over target.

Output indicator 3.2: Defaulting treatment rate among migrants treated for TB

This indicator is about 4% over the last three years of DFID grant and well in the target which is equal or less than 10%.

Output indicator 3.3: proportion of patients transferred out according to transfer In, Transfer out protocol.

The project remains on the target as this transfer/referral protocol is essential for the patient to have the best chance of getting the right treatment in the right place.

Indicators related to Output 4: drug resistance assessed and managed for all patients found to be infected with TB

Indicator 4.1: Proportion of TB smear positive tested for drug resistance,

Target is set to 100%, as, according to the level of resistance on this population, all new patients with TB diagnosis should be checked for resistance. As SMRU started using GeneXpert from April 2013, all positive sputum samples for diagnosis have been tested through it and for 2015, 100% of patients with positive smear have been tested for resistance.

All patient's sputum positive on GeneXpert are then sent to IOM for confirmation on culture and Drug Susceptibility Testing.

Indicator 4.2: proportion of Drug resistant TB diagnosed and managed in SMRU

Target is set at 30-35 MDR TB patients diagnosed and managed by SMRU; **Achievement is 25% over target.** As outcome indicator 1.2 shows a high number of MDR TB cases detected, this indicator is following same level of results, with 44 MDR TB patients registered for treatment in TB centers.

We could not register all MDR patients as one TB-HIV coinfecting patient died before starting, and two were lost to follow up.

In addition SMRU is managing MDR treatment for other organizations: since 2013, 10 MDR patients from PU-AMI have been referred for treatment to SMRU TB centers, and 2 from Maesod, and Pophra hospitals. These patients are migrant patients diagnosed by the Thai hospitals, but as they cannot afford to pay fees in Thai hospitals, they were referred to SMRU as collaboration service in TTBI.

The total number of MDR TB patients managed by SMRU for the 3 years is 56 MDR patients.

Indicator 4.3 : proportion of drug-resistant TB Cases treated successfully:

This indicator was not included in the initial log frame but as it is in the Year 4 log frame, we can provide it for the cohort of MDR patient from year 1.

Treatment of MDR TB patients was first set to 24 months in all recommendations but last year WHO recommendations were revised to shorten it to 20 months course. However we give the results for the 2013 patients evaluated in 2015. The TSR for this cohort is 90% (100% F, 87%M) well above target set at 60% (M/F).

6. a/ PROGRAMME IMPLEMENTATION UNDER OUTPUTS IN THE MIGRANTS POPULATION

Implementation continues as described in the previous reports with the main notable points being:

- More than half of PCD cases came through Mae Tao Clinic during 2015. SMRU provides regular training on TB infection control and management of presumptive cases to staff of Maetao Clinic.
- SMRU has now done 6,698 GeneXpert diagnoses for suspected TB patients identified by SMRU and PU-AMI. Results are confirmed and completed with Culture and DST by IOM's Laboratory in Maesod.
- Capacity of SMRU's residential treatment facilities now stands at 198 isolation rooms including 50 rooms for MDR patients. As we have more patients coming from deeper inside Myanmar, they need to stay close to TB services for treatment and so we developed capacity to accommodate them.
- For nearly one third of the patients, it is possible to work with them through home or clinic base DOTS, as they are not living too far from the clinic and either they can come every day or our health workers can do home visits. Health workers have been recruited and trained in this purpose. We also develop many activities to promote treatment adherence and psychosocial support, to develop the care (not only cure) for patients. Activities were developed with the patients such as group discussions, social activity for specific events like Christmas or Loy Krathong, TB Day and World AIDS Day.
- As the cohort of TB MDR patients increases, SMRU TB doctors have followed specific training to update their skills, and to reinforce the specific required skills to manage TB MDR patients and the complexity of this follow up with management of drugs side effects.

5) b/ PROGRESS AGAINST OUTPUT FOR REFUGEE POPULATION

<i>Output Statements</i>	<i>Output Indicators</i>	<i>Baseline Reference - 2011</i>	<i>Baseline Reference - 2014</i>	<i>Progress Against indicators (Jan 2013-Dec 2015)</i>	<i>2015 target</i>
1. Diagnosis for suspected TB cases in displaced and high-risk refugee populations	1.1 Number of people screened for TB using t-ACF Methodology	0	6,759 53% female	16,512 52% female	12,500-16,000 45-55% Female
	1.2 Number of people tested for TB using PCF methodology	1,006	2,117 Female 48%	3,272 49% Female	3,000-3,300 45-55% Female
	1.3 Number of enrolled TB patients in target population receiving voluntary counselling & testing and result of HIV test	100%	99% for male 100% for female	100 % for both male and female	≥90% (both male and female)
	1.4 Proportion of eligible population being screened through active case finding	N/A	92% for male 94% for female	99 % for both male and female	≥80% (both male and female)

Output Statements	Output Indicators	Baseline Reference - 2011	Baseline Reference - 2014	Progress Against indicators (Jan 2013-Dec 2015)	2015 target
2. Treatment of patients found to be infected with TB - including management of HIV co-infection	2.1 Number of patients treated (registered) for TB	98 38% female	309 38% female	444 39.2 % female	730-930 30-40% Female
	2.2 Number of HIV co-infected TB patients treated	13 57% female	32 31% female	40 35% female	56-74 50-60% Female
	2.3 Proportion of patients diagnosed with TB who commence treatment	Not measured before 2013	96% for male 90% for female	89.5 % for male 98.3 % for female	≥80% (both male and female)
	2.4 Percentage of HIV/TB cases receiving ART or Cotrimoxazole	100%	100% Cotrimoxazole 77% male and 80% female on ART	100% Cotrim 84% for Male and 87% for Female on ART	≥90% (both male and female)
3. Improved treatment outcomes for TB patients through TB centres and community bases and home management of TB	3.1 Proportion of TB patients managed in community and TB Village	100% in TB Village/wards	75%/25% male 63%/37% female	58 % /42% male 55 %/ 45% female	60%/40% for both male and female
	3.2 Defaulting treatment rate among refugee treated for TB	7%	9.2%	3.0 % Male 8.9 % Female	≤10% for both male and female
	3.3 Percentage of patients transfer out according to the transfer in/out protocol	N/A	100%	100%	≥80% (both male and female)
4. Drug resistance assessed and managed for all patients found to be infected with TB	4.1 Proportion of TB smear positive cases tested for drug resistance	100%	100%	100%	100% for both male and female

Indicators related to Output 1

All Indicators under Output 1 (1.1, 1.2, 1.3, 1.4) are on track with their estimated milestone

Indicators related to Output 2

Indicators 2.1 and 2.2 under this Output could not meet with targets as the total target of TB patients in Outcome 1 could not be reached as planned and as they are closely related.

The decreasing number of refugee population and ongoing low recruitment of new arrivals into the camps is the major reason for the low case detection to-date. Changes to the t-ACF algorithm were introduced and new targeted groups screened in order to try and find other ways to reach the target but reveals to be insufficient. Moreover, the yields of MDR/TB patients are less than expected, which is good news regarding the case management.

However for indicator 2.2, it stays on ratio between number of TB patient and co infected patients. The assumption was 8% of TB patients are co-infected. Here 9% are co-infected, with less female as planned.

Indicators under output 3:**Indicator 3.1 is on track.**

It is to be noted that some patients diagnosed with TB do not live in the camps. To access the treatment the patient needs to be closely monitored for the first months in the TB ward or the TB village. Depending on their personal situation some cannot comply with this commitment.

Indicator 3.2, stay on track with loss to follow up less than 10% for both male and female; absolute numbers of LFU are 22 patients who were registered in the period Jan-Dec 2013; 8 patients who were registered in the period Jan-Dec 2014;

Indicator 3.3 is on track.**Indicator four output 4****Indicator 4.1 is on track**

6. b/ PROGRAMME IMPLEMENTATION UNDER OUTPUTS FOR REFUGEES

Implementation continues as described in the previous reports with the main notable points being:

- To work towards achieving the output targets for t-ACF and within the range of the PCF target, the revised (mid-2014) algorithm continued to be implemented. The most at risk groups are set as target groups and have received regular screenings for the duration of the reporting period: New arrivals (98 %), Contact (98%), Health Workers (89 %), PLWHA (100%).
- The introduction of Tuberculin skin tests (TST) started near the end of 2014 to use as a supportive diagnostic tool for TB in contact children and some cases that are difficult to decide. Training was conducted by SMRU who have experience with TST. To date, 50 suspect patients were tested skin test and 8 patients were found to have positive. Overall TB cases detected comprised of 86% from PCF and 14% from ACF
- For t-ACF the detection of positive TB cases was:
 - 0.1% in new arrivals (1 out of 902)
 - 0.7 % among contact cases (4 out of 560)
 - 1% of Health Workers (5 out of 479)
 - 5% in PLHA (5 out of 100)
 - 0 % in chronically ill patients (0 out of 260) and
 - 0.09% in others (5 out of 5,647).
- In Umpiem and Nupo camps the TB treatment is managed by Umphang Hospital, which provides the medical supplies during the monthly follow up consultations. In Maela the TB treatment is directly managed by PU-AMI in its TB village or directly in the patient's home. TB patients are referred to Thai hospitals when required laboratory investigation and medical care are not available in PU-AMI health facilities. From January to December 2015, a total of 15 TB patients from Maela were referred to Mae Sot hospital and 12 TB patients from Nupo and Umpiem to Umphang hospital for admission and in-patient management.
- During 2015, PU-AMI organized income generating activities by providing candle-making and soap-making trainings in collaboration with COERR (Catholic Office for Emergency Relief and Refugees) and Traditional Karen dress weaving training for Maela and Nupo TB patients and care-takers. A total of 51 patients and their family members received IGA trainings.
- To improve general public awareness on TB, the TB Health Workers conduct small group discussions in the community by doing door to door visits. Health Education and Behaviour Change Communications activities are also organized. In 2015, 10,923 community members (Male: 4,610 and Female: 6,313) were reached during these awareness raising activities.
- Amongst PU-AMI's TB patients there was only 1 MDR case detected in 2015.

7. MONITORING and Evaluation Arrangement

For both organizations, TB activities are monitored on a monthly basis, with supervision from management level. The quality of data is reviewed through consistency of results and discrepancies and lack of information is clarified with the physician on site level.

SMRU and PU-AMI have monitored the progress of activities with the involvement of staff from field level to coordination team level in order to maximize the implementation of planned activities.

Quarterly meetings involving SMRU, PU-AMI and other partners are conducted to coordinate the activities implementation and review the progress on achieving the targets of TTBI activities and the available funding against the increasing needs.

SMRU and PU-AMI medical staffs meet also on a regular basis to discuss specific cases and medical processes. The recording and monitoring follow the process of monitoring, and monitoring tools that have been provided for Y4 proposal (Annex B and B1).

At the request of DFID, plans have been developed during late 2015 to undertake a greater degree of oversight of PU-AMI's work under the TTBI project as 'Fund Manager' during 2016. This will include SMRU undertaking more detailed monitoring of performance as well as linking performance to payment. A Due Diligence review will be undertaken by SMRU during early 2016.

No external programme evaluations have been undertaken during the reporting period, but one is planned during the March or April 2016 to evaluate the whole TTBI programme.

At SMRU:

Registration and recording of information are done at site level with monitoring and supervision by the TB doctors and supervised by the new Director of the TB program (arrived in October 2015).

Data management workshops have been organized with physicians and medics beginning early in 2016 in order to review definitions and reinforce accuracy and consistency of data and quality of daily and weekly recording and monitoring at site level.

For PU-AMI

TB activities are monitored on a monthly basis and supportive supervision to all three camps is conducted by the TB supervisor, TB Doctor and TB Manager. To verify the quality of data, all TB data are reviewed and analyzed monthly within PU-AMI notably with the support of the Medical Coordinator and the Deputy Program Coordinator.

These indicators are communicated on a quarterly basis to SMRU during the quarterly meeting. And SMRU and PU-AMI medical staff meet on a regular basis to discuss specific cases and medical processes.

The TB Manager met with staff from IOM to evaluate the IOM TB patients DOTs, which have been under direct supervision by PU-AMI TBHWs in both Umpiem and Nupo camps.

8. RISK MANAGEMENT AND MITIGATION

SMRU has stopped recruitment of MDR TB case for treatment by the end of September 2014 and has referred the new MDR TB cases detected in the Q4 of 2014 to Maesod Hospital (MSH) for enrollment under their treatment program. As a result, four MDR TB patients have received medical supply from Maesod Hospital which has avoided turning away these cases without any option to access to treatment.

SMRU is seeking additional funding from potential donors like Global Fund and to meet the increasing needs. Likewise the rising number of TB/HIV co-infected cases enrolled in the SMRU project also carries the potential risk of continuum of care for patients who need life-long ART. To minimize this risk, we have been encouraging the newly diagnosed TB/HIV cases who live in Myawaddy or close by a place where ART is available are encouraged to go and take both TB and HIV treatment inside Myanmar through thorough counseling.

9. CHALLENGES AND KEY LESSONS LEARNT

Challenges and lessons learned in treating migrant TB cases

For this year 2015, what appear concerning challenges are several issues:

Medical issues:

High mortality rate

The severity of the condition of the patients living in hard to reach areas with difficult access to care leads to a high mortality rate with initial death before treatment, or shortly after registration for treatment. Some patients with coinfecting TB-HIV are in so severe conditions that neither TB nor ART can be started right after diagnosis and some specific medical care should be provided before starting treatment. Half of the deaths occurred in coinfecting TB/HIV patients. ICU wards and training for staff on these problems have been addressed and established in 2015. Weekly and monthly case-review are organized by physician with the staff to determine good practice on clinical work.

Monitoring and treating side effect of second line drugs:

As SMRU is managing many MDR TB patients, we have to manage severe side effects of the second line TB drugs, especially for their impacts on mental health. SMRU is working with other organizations in order to organize training for the staff on mental health assessment and first line treatment of mental disorders.

Programmatic issues:

Increasing number of transfer out cases

Since 2 years, the increasing number of patients challenges the workload for the staff and the close monitoring of each patient. Also the situations become more diverse with some people who do not want to stay far from their family. Review of situation with medical staff and counsellor together with the patient help to choose which can be the best solution for the patients and their compliance to treatments.

As SMRU provide stable care for precarious patients from hard to reach area, from deep inside Myanmar, patients can stay longer in TB clinics for all TB treatments, but sometimes, they just want to go home and get treatment in place close to their home.

In these cases, we send the patients with referral letter and forms, but the referral process with Myanmar hospital still need to be structured to get good feedback from our referral. Also SMRU plan to work with IOM Myanmar which is covering some area in Myawaddy with community health workers providing home DOTS, and patients education.

Challenges and lessons learned in treating Refugees:

Camp-based staff turnover

Frequent recruitment process and refresher trainings are needed to combat the loss of staff.

Limited TB screening for t-ACF in Umphang hospital

Limited human resources in Umphang hospital and tight schedules of the doctors make it more complicated than in previous years to send patients with suspected TB to the hospital. The alternative option is to send less patients to Umphang Hospital, instead directing them to Mae Sot Hospital.

Treatment for MDR/TB patient

Among 11 MDRTB patients, 10 were referred to SMRU and one patient was followed by Mae Sot Hospital. The latter stopped his treatment and became a MDR Defaulter after 1 year of MDR treatment. Collaboration with stakeholders including government hospitals is to be strengthened.

10. CROSS CUTTING THEMES

Equity in gender

In the migrant population, SMRU always sees a higher proportion of male than female patients among detected TB cases (64% male), MDR TB cases (66% male) and TB/HIV co-infected cases (59% male). This might be due to the fact that men are more exposed to TB since they spend more time in communal settings than women do in this population and may be more mobile though the vulnerability to TB disease is the same. We cannot explain the difference by differentiate access to care as on the contrary, women are more likely to

voluntarily access health services.

The proportion in Refugee population is slightly different (61% male on TB detected) but on the same range with the same type of explanation.

Loss to follow up

The loss to follow up is a common challenge for both SMRU and PU-AMI. And is higher among male (72% of Loss to Follow are male). Although we can provide accommodation, and food, they need and want to work to make some income for their family and they sometimes have to go far for this purpose. Both SMRU and PU-AMI support the patient with regular counselling and health education and social activity, these need to be developed and the need for income generation activities is crucial in this environment. Finding solutions to reduce default are still challenging.

Uncertainty of funding

The Year 2015 has been difficult for the TB program with the uncertainty of funding for half of the year 2015 and uncertainty in coming 2016. This uncertainty had had already impact on procurement of drugs in Q4 of 2014 to the beginning of the year 2015. And SMRU had fortunately got the support of Thai hospital to treat migrant MDR TB patients.

There was also a rather long delay in receiving approval from DFID for a substantial reallocation of funding. The request was made on 3rd April 2015 but was only approved on 19th June 2015 (11 week turn around).

11. FINANCIAL INFORMATION

SMRU

By the end of December 2015, SMRU had spent 98.17% of the budget forecasted for the 3 years project. The categories with notable variances against the forecasted budget were training, Services and supplies, overspending 100%, 31.44%, 8.11% which was accepted by DFID (approval by e-mail, dated 11 September 2015).

PU-AMI

As of the end of this 3-years grant (January 1st, 2013 to December 31st, 2015), 98% of the total budget was spent and the under-spending can be explained as follows:

- The number of TB patients detected, and thus treated, was lower than initially planned, therefore the budget directly related to TB activities (referrals, X-rays, lab tests, drugs, patient support) could not be fully spent.
- There were some temporary staffing gaps over the 3-years period as well as some unexpected funding from other donors for some specific positions.
- The implementation of a cloud server was replaced by a simpler solution
- As a consequence, all related indirect costs (7% of the direct costs) could not be spent

12. VALUE FOR MONEY

All of the TTBI project interventions are designed in a manner that ensures the maximum achievement of program goals, ensuring all beneficiaries receive the highest level of benefits from our programs.

Economy:

Senior SMRU staff time (Programme Director, Head of Lab, Resource Mobilisation Officer) are all fully funded by SMRU's research grants from other sources, this means that SMRU does not have to charge the TTBI project for their work to support its planning, implementation, monitoring and reporting.

Efficiency:

An external assessment of the TTBI programme was conducted in April 2014 (already submitted to DFID) the report stated that the project's services are "overall highly cost-effective". Another external evaluation of the 3 years program will be prepared to review efficiency of the program in early 2016.

Effectiveness:

We believe that the intervention has been effective so far.

The project has met or exceeded all of its targets for numbers of people screened. The number of cases that the project can treat is entirely dependent upon the number of cases found, so whilst PU-AMI may have treated fewer refugee TB patients than expected this is not an indication of them being ineffective at screening adequate numbers of patients.

The yield of TB cases from t-ACF and the stability of our results with average rate of treatment success over 80%, and up to 90% for MDR TB patients suggest that our actions are overall effective.

Equality:

All suspected TB cases get free-of-charge services for the diagnosis of TB, and treatment is also free-of-charge for those diagnosed and registered for treatment. Meals and accommodation are provided for those who stay in TB residence throughout their stay. Travel costs are provided for those poor who cannot afford to come for clinical follow-up or free transport is provided by SMRU or PU-AMI vehicles where no public transport is available. Therefore our services ensure the most vulnerable are supported to finish TB treatment. In fact we can say that almost 100% of our patients are socio-economically vulnerable because they are either rural poor residing in remote areas, mobile migrants or refugees. Furthermore the fact that SMRU receives patients from deep inside Myanmar, who come to us because they cannot afford to pay for food and accommodation there even if they can access free treatment, is an indication of their socio-economic status.

Sustainability:

For SMRU, the first step of partnership development the with Global Fund and Myanmar

National TB Program started in early 2015. This has been followed by effective work and further contacts. Although a Global Fund contract was not signed in 2015, they provided bridging support for HR costs in the latter half of 2015.

A visit of a delegation of Myanmar national program on 13-15 of October 2015 was followed by a presentation of the SMRU program to the Myanmar authorities and a 3 year MoU was signed on 18th of November 2015. SMRU's TB program will be co-funded by GF/UNOPS to contribute to National Tuberculosis Program of Myanmar for during 2016 and we will propose to receive ongoing support for the next round of the GF TB/HIV grant during 2017-2020.

As MDR TB is considered as a serious public health threat on both sides of the border, we expect that health authorities will support the contribution of SMRU to this problem.

Recent contact with Thai NTP and local authorities at meeting on MDR TB in the north of Thailand strengthens the need to continue to work in close partnership on this important problem.

13. DIRECT FEEDBACK FROM BENEFICIARIES/SUCCESS STORIES

The story of an migrant TB patient

This is the story of a 44 year old lady, who was diagnosed with MDR TB by Gene X pert in January 2014. Previously she worked in a rose farm with her family. They live nearby their workplace and there are five family members including her, her husband and three children. The eldest daughter was teenager and worked with her mum, middle daughter was school aged and the youngest boy was in kindergarten.

Decision to take the MDR-TB treatment was a big challenge for her and her family. Because her two children were still going to school and there should be someone at home to take care of them and for the house work. Her family was quite supportive and finally they got the final point to get the treatment at SMRU. All the family members were screened for TB and happily they did show any TB sign at that time.

SMRU, started treatment in March 2014 with standard treatment regime and her baseline body weight was really underweight (46kg). She got sputum conversion after one month of MDR-TB treatment and showed satisfactory response until the end of treatment. At the end of treatment, she weighed 57 kg with TB cured by 20 months of treatment.

Throughout of her treatment, she didn't face major side effects of medicines apart from mild hypokalemia with insomnia occasionally. Her motivation was very strong and she could manage very well especially for her family affairs. During the time she stayed at the clinic, she acted not only as a good senior but also a mature sister for others who were being treated with her at the same time. She finished the treatment in Nov 2015 and is now back to work in her previous job. Now they are planning to move back to their home town in Myanmar.

The story of a refugee TB patient:

A 29 year-old woman visited the Nupo In patient Department for the symptom of prolonged fever with loss of weight, loss of appetite, night sweat and neck swelling for more than two months duration. She is originally from a Kayin village in Myanmar but temporarily stayed with her husband at a Thai village near the Nupoe camp and worked as a daily worker in the fields. As her health condition was getting worse, she visited Nupo IPD and after necessary investigations it was found that she had extra pulmonary TB and was HIV positive. Anti -TB treatment was provided with close supervision of TB Health workers to ensure compliance. Before anti-TB treatment was started, her body mass index (BMI) was below average as combined effect of HIV and TB. Her clinical symptoms and BMI had dramatically improved while under the TB treatment over a month within PU-AMI facility. During the TB treatment, she received monthly food rations and materials to meet her basic needs. When tested, her husband was found to have HIV infection but not TB and it is planned to provide ARV soon. As a daily worker, staying along the Thai-Myanmar border, PU-AMI's services offer a great chance for her to get anti-TB treatment and HIV treatment simultaneously. In her village of origin health care services are not available.

14. NEXT 6MONTHS/1 YEAR WORK PLAN AND PROPOSED CHANGES IN THE LOG FRAME/APPROVED ACTIVITIES

For year 2016, DFID had provided a one year extension for the TTBI program for the following activity:

- Ongoing clinical and programmatic activity for PCD and T-ACD
- For SMRU and PU-AMI under TTBI : a new major activity of mass screening the population of Maela Refugee Camp.
 - During the first quarter of 2016 activities include:
 - ✓ Advocacy for all camp authority and community organizations (NGOs & CBOs) to explain the need for the mass screening project.
 - ✓ Preparing the full protocol, sample size, operational procedures, screening process, timeline of screening, recruitment and training of staff, logistic activity in order to realize the project on the planned timeframe of starting screening on February 29th.
 - The second quarter will be full screening activity and monitoring
 - The third quarter will be dedicated to analysis and evaluation of action
 - The last quarter will be for activities decided upon results of the screening project to finish screening of 21,000 people from Maela.

During the preparation of this action both organizations had to overcome the difficulty of procurement and delay in final approval of budget, which impact on HR and recruitment, and on procurement; but it seems currently the proposed action plan is still on the planned timeline.

Other planned activity during 2016:

For SMRU:

- to expand t-ACF in the cohort of diabetic patients followed by the Mae Tao Clinic
- Training of health workers
- World TB day (24th March)
- World AIDS day (1st December) in both clinics

For PU-AMI:

- World TB Day campaign in all three camps in March 2016
- Adjustment of Screening of patients form Umpiem camps: to be sent to Mae Sot Hospital for CXR services as shorter route and quicker results
- Refresher training to all TB Health Workers in May 2016