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ADB

HIV Vulnerability and Service Availability in Mobility Settings of Myawaddy and Kawkareik

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Abbreviations

ADB	Asian Development Bank
FSW	Female Sex Worker
IDU	Injecting drug user
MARP	Most at risk populations
MMM	Mobile men with money
MSM	Men who have sex with men
PWUD	People who use drugs

Operational definitions

- Study area: *one of two townships, namely Myawaddy or Kawkareik in Kayin State.*
- Hotspot: *an area of gathering among target populations*.
  For instance, transactional sex hotspots are areas where sex workers solicit or work. These include entertainment and leisure venues among migrants and mobile populations and most at risk populations such as bars, restaurants, massage parlour and karaoke venues.
- Men who have sex with men (MSM): *men who have engaged in anal sex with a man.*
- People who use drugs (PWUD): *individuals with a history of drug use, including injecting drugs.*
- Female sex workers (FSW): *women who have exchanged sexual intercourse (vaginal, anal or oral) for a gift, money, or drugs.*
- Mobile men with money (MMM): *men with recent economically-driven mobility.* For the purposes of this study the term refers to truck drivers and their assistants.
- Inbound migrant[1]: an individual who a) originates from outside of the study area and has lived in the area between 0 and 5 years and b) has stayed continuously in or made intermittent day time or overnight visits into the study area for a minimum of three months in the past two years (24 months).
- Local or outbound migrant: an individual who a) originates from the study area OR who originates from outside of the study area but has lived in the study area for more than 5 years and b) has stayed continuously in or made intermittent day time or overnight visits outside of the study area for a minimum of three months in the past two years (24 months).

[1] Note that a migrant in this study is not necessarily from a separate country, as per the UNHCR definition (1990). Originating from an area outside of the study township is sufficient to be considered a migrant.

1. Background

1.1 Overview

The relationship between HIV and mobility is widely recognized. While mobility and migration are not risk factors for HIV by themselves, the often harsh, unsafe and isolated conditions surrounding the mobility process can give rise to behaviours strongly associated with increased vulnerability to HIV, while also posing barriers to access to HIV prevention, treatment and care (Martin, 2011). The dynamics of population movement have evolved in South-East Asia over the last decade, and are in a phase of acceleration due to multiple factors including geopolitical and socio-economic changes, infrastructure development and closer cooperation among ASEAN Member Countries (UNRTF, 2008). Whether mobility is internal or cross-border, whether it is voluntary or forced, this increasing population movement generates particular conditions and circumstances that render migrants vulnerable and at risk of HIV infection (UNRTF, 2008). Article 86 of the 2011 UNGASS Political Declaration commits: "*to address, according to national legislation, the vulnerabilities of HIV experienced by migrant and mobile populations and support their access to HIV prevention, treatment,care and support*." Migration, interconnectivity and economic exchange across borders is integral to the lives of the people of the Greater Mekong Sub-region (GMS), and is expected to only increase, especially with the induction of the ASEAN economic community in 2015. It is essential to recognise the importance and links between HIV and Mobility and to mitigate potential risks associated with intiatives that will increase population mobility in the GMS region.

1.2 HIV in Myanmar

Current estimates of HIV prevalence in the general adult population in Myanmar is 0.47 per cent with an estimated 189,000 people (37% female) currently living with HIV (National AIDS Programme (NAP), 2014). Disproportionate prevalences have been observed in populations engaging in high risk behaviours, such as female sex workers (FSW), men who have sex with men (MSM) and people who use drugs (PWUD). Prevalence rates among these high risk groups from a NAP report from 2013 were 8.1 per cent for FSW, 10.4 per cent amongst MSM, and 18.7 per cent for PWUD. This is a positive improvement compared to the 2009 Myanmar National AIDS Programme Report of the HIV Sentinel Sero-Surveillance Survey, which found the prevalence of HIV in FSW to be 11.2 per cent (range 9.2-13.6%), 22.3 per cent for MSM (range 18.2-26.4%), and 34.6 per cent (range 31.6-37.7%) for PWUD. However, further interventions to prevent HIV transmission among these populations is paramount to eliminate the spread of HIV as interaction between high and low risk populations (partners/ clients of sex workers) present a gateway for HIV into populations typically unaffected, which is reflected in increasing prevalence among these intersecting populations.

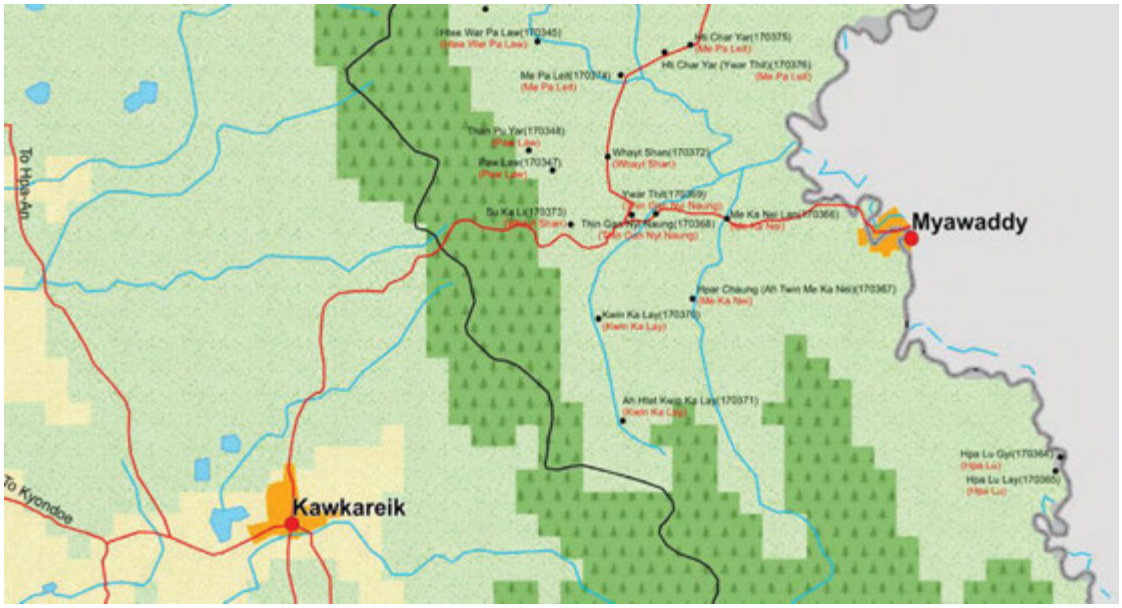
1.3 Mobility, migration and infrastructure development

Improved transportation infrastructure and the emergence of transport and economic corridors in the GMS have led to improved connectivity. This has simultaneously enhanced regional economic integration, the creation of new job opportunities, and resulted in an influx of migrant and local workers to development sites, creating new and complex patterns of internal and cross-border migration.

Although not inherent risk factors for HIV, mobility and migration often come with conditions that make migrants vulnerable to HIV transmission as a result of engagement in risky behaviours such as unprotected sex or drug use. In a report from the Asian Development Bank (ADB) and International Organization for Migration (IOM) in 2009 considering the effects of infrastructure development on HIV transmission in the GMS, it was stated that migrants and other local populations working and living along newly constructed road corridors are at a higher risk as they lack the knowledge and skills to prevent HIV infection.

Road expansion of the East-West Economic Corridor is scheduled to take place between the towns of Myawaddy and Kawkareik, Kayin State in Myanmar near the border to Mae Sot, Thailand (Figure 1). In a report from the ADB on HIV among migrant workers in the GMS (2013), it was stated that male and female migrant workers working in border areas, fishing and seaports, and transportation corridors are at the highest risk of HIV infection. Road construction is very mobile in nature, bringing migrant workers through communities along the planned development route. Workers subsequently engage in the surrounding communities where services and businesses catering to their needs produce a mobile microeconomy that accompanies alongside road development. This draws on the service of commercial sex workers and other forms of entertainment, and can also lead to increased drug use - both catalysts for the spread of HIV. It is therefore necessary that situational assessments of migration and HIV vulnerabilities in the East-West Economic Corridor between Myawaddy and Kawkareik are conducted to allow a tailored response to the development occurring in the area.

Map 1: Study area: Myawaddy Town-Thin Gan Nyi Naung-Old Route-Kawkareik Town



1.4 Rationale and objectives

The aim of this study was to assess HIV vulnerabilities and access to HIV health-care services among key affected populations that live or work along the East-West Economic Corridor between Myawaddy and Kawkareik in Kayin State, Myanmar, as well the impact of economic development and increased interconnectivity on these factors.

The findings will be used as an evidence base to develop HIV prevention and control policies, plans, and programmes within the target area. It will also serve as a baseline study for comparison with the next assessment, to be conducted after the development of new infrastructure and use of new roads.

The specific objectives are:

1. To identify current HIV risk behaviours of migrants and mobile populations, as well as the at-risk populations they are likely to have contact or overlap with, including sex workers, men who have sex with men, and people who use drugs.

2. To explore potential additional vulnerabilities to populations living near the proposed transportation corridors, including near construction sites.

3. To understand the accessibility to health services, which can reduce risks and mitigate the impact on these populations.

4. To constitute a baseline study for comparison with the next assessment to be conducted after the development of infrastructure and use of new roads in order to assess the impact of economic development and increased interconnectivity on these health factors.

2. Methodology

2.1 Method overview

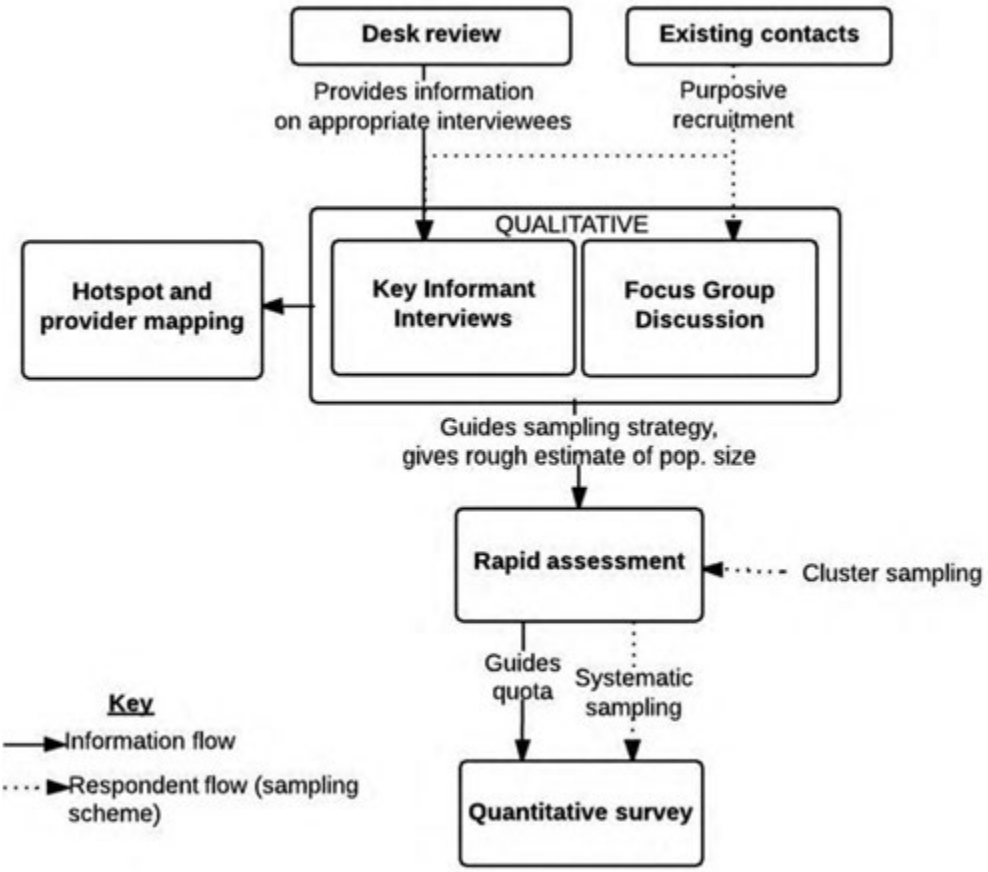
This research targeted key affected populations in Myawaddy and Kawkareik, Myanmar, namely migrants, female sex workers (FSW), men who have sex with men (MSM), and people who use drugs (PWUD).

The assessment applied a mixed methods approach collecting mapping, quantitative and qualitative data. The sampling strategy involved network recruitment and quota sampling from migrant-dense clusters to maximize the number of migrants recruited and thereby enable detailed characterization of the target group. Table 2 details the data collection methods and target groups, and Figure 1 illustrates how the study components inform successive sampling strategies.

Table 1: Data collection methods and their associated target groups and sampling strategies

Data collection method	Target groups	Recruitment/sampling method
Mapping		
Participatory hotspot mapping	Vulnerable groups and key informants	Derived from qualitative methods
Visit-based health facility and hotspot mapping	Health facilities, service providers, migrant social hotspots	Facility and venue visits
Qualitative		
Key Informant Interviews (KII)	Health staff, relevant officers, NGOs, community figures, MSM network organizer(s), manager(s), gate keeper(s) People Who Use Drug (PWUD)	Purposive recruitment *Note: Due to sensitive situation, PWUD were individually interviewed instead of conducting group discussion*
Focus Group Discussions (FGD)	Mobile Men with Money (MMM), Female Sex Worker (FSW), Men who have Sex with Men (MSM)	Network recruitment/Snowball sampling
Quantitative		
Rapid assessment Quantitative survey	Migrants (both inbound and outbound)	Cluster sampling Cluster quota sampling

Figure 1: Flow chart of project methodologies and their interconnectivity



2.2 Location

The research targeted the townships of Myawaddy and Kawkareik near the eastern border of Kayin State, Myanmar, as well as the smaller towns located along the East-West Economic Corridor, including Thin Gan Nyi Naung just outside of Myawaddy, and Lower Botel, Middle Botel, and Kyone Doe located just outside of Kawkareik. Methodology-specific areas are defined in the relevant sections below.

Due to political conflict within Myawaddy during the data collection period (September 2014), not all intended study areas were investigated. However, the required numbers of interviews was acquired.

2.3 Target groups and eligibility criteria

To be generally eligible for participation in the study, respondents had to meet the following criteria:

- Aged 15 to 50 years;
- Provide informed consent;
- Have not yet participated in any aspect of the study, aside from the rapid assessment.

To be eligible for the qualitative study, respondents had to qualify for one of the target risk groups, namely MSM, PWUD, FSW, or MMM (see operational definitions).

To be eligible as migrants for the quantitative survey, respondents had to display recent (within the past two years) and consistent (a minimum of three months in total) mobility into or out of the study area. Migrants were categorized as inbound if they originated from outside of Myawaddy and Kawkareik, and had not lived in the study area for more than five years. Migrants were categorized as local (outbound) if they originated from the study area or were from elsewhere and had lived in the study area for more than five years. The technical operational definitions are described on page 9 (operational definitions).

The minimum total time of three months of recent, consistent mobility was pragmatically selected to represent the time required for migrants to establish living patterns and familiarize themselves with the working/living conditions and health services available in the area. The five year cut-off between inbound and local (outbound) migrants that originate from outside the study area is based on empirical evidence that more than five years residency equates to a local experience of life in the study area. These assumptions are later discussed in Section 3.1.4 Rapid assessment.

2.4 Data collection methodology

2.4.1 Mapping

Participatory and visit-based mapping were the two methods employed to map migrant hotspots and health services in the study areas. Participatory mapping involved asking KII and FGD respondents about the location of migrant hotspots and health services with reference to a large map of the study area. Visits to the area and facilities/venues also provided information on the spatial and temporal distribution of provider types and services, including opening hours, staffing, service utilization, and referral activities. The mapping team used the health facilities mapping form to collect required data at each health facility in both study areas.

2.4.2 Qualitative methods

Six (6) FGDs with at-risk populations were conducted; four in Myawaddy among FSW, MSM and MMM, and two in Kawrakeik among MSM and MMM. Each session involved six to eight participants. There were 40 participants in total participating in FGDs.

Eighteen (18) key informant interviews (KII) were conducted with individuals considered to have considerable knowledge of policies, activities, and services related to migrant risk behaviour and health in either study area. Interviews were carried out both individually and in small groups of two to three people. There were 31 key informants involved in the KII. Key informants included Township Medical Officers, Maternal and Child Health (MCH) staff, STI Team Leader, Religious Leader, Community/Network Leaders, Project Manager of the Road Construction Project, Gate Keepers, non-government/CSO working on HIV/AIDS, and PWUD.

Each FGD and KII was led by a moderator/interviewer, and documented by a note taker and audio recorder. Sessions consisted of participatory mapping (as detailed in section 2.4) and semi-structured discussion aided by a guideline. Participants were enlisted through network recruitment, and informed consent was obtained prior to each session. For each FGD, participants were requested to fill in a participant profile form to record demographic information and employment status.

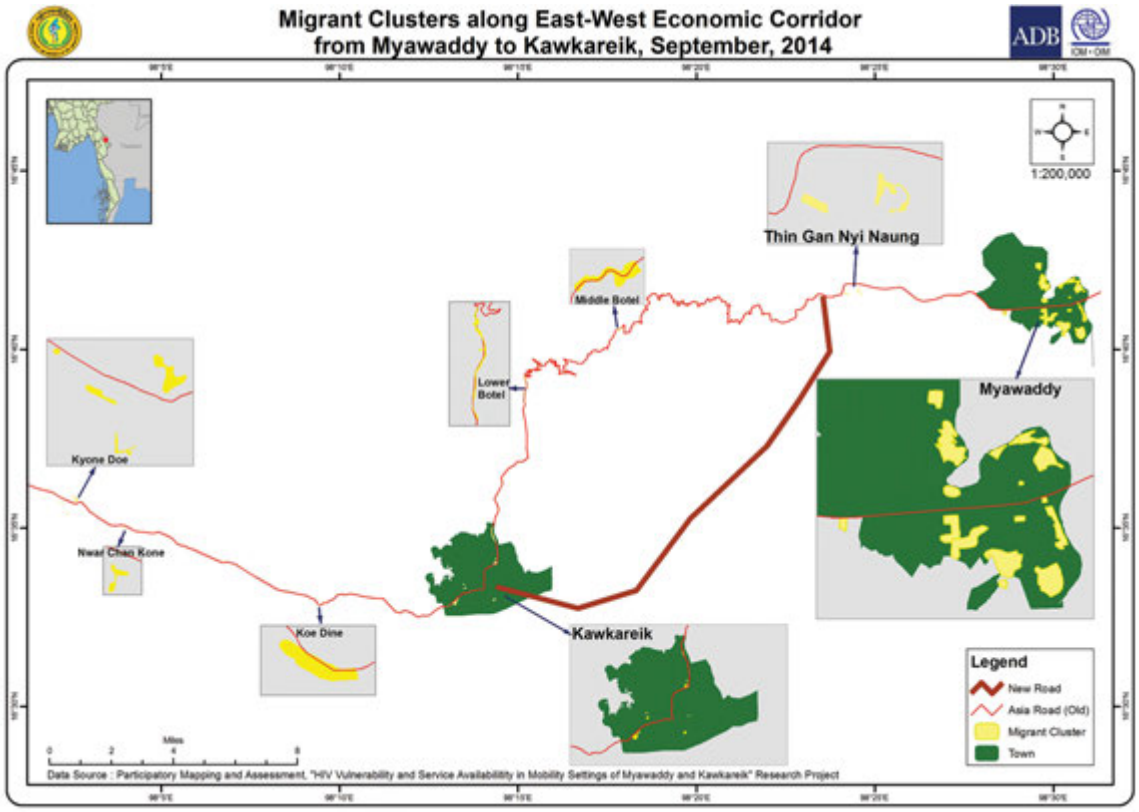
2.4.3 Rapid assessment

A rapid assessment was completed to estimate the target population size, demographic composition, mobility history and location. The study employed purposive cluster sampling of areas identified to be migrant-dense through the interviews with key informants and field visits. All households within these areas were visited, and a household representative was identified to answer questions on the number of inhabitants and their respective age, sex and basic mobility patterns. Findings were used to inform the sampling strategy for the quantitative survey.

2.4.4 Quantitative survey

The quantitative survey was distributed among migrants using quota sampling in migrant-dense clusters (specific study areas highlighted in yellow; Map 2). Two teams of data enumerators visited households identified by rapid assessment to contain eligible migrants. These visits were supported by community leaders (leaders of ten households or leaders of one hundred households) with good geographical knowledge of the areas. A male:female ratio of 2:3 and inbound:outbound ratio of 1:1 was applied to prevent over or under-sampling by gender or migration pattern. The pragmatic target sample size was 400 individuals. Each interview lasted for 30 to 40 minutes, and more than 95 per cent of households approached were interviewed.

Map 2: Migrant cluster in study areas



One participant was recruited from each house and screened using an initial screening questionnaire. If the individual matched the eligibility criteria as described in Section 2.3 and the intended quotas, and if informed consent was obtained, the full questionnaire was completed verbally. If these requirements were not met, the data collection team recruited a new household member or moved on to a new household. Two visits were made per household if there was no response or no household members met eligibility criteria at first visit.

Questions included standardized international and national indicators for comparability on the following topics:

- Socio-economic conditions and mobility patterns;
- Knowledge, attitudes and practices related to HIV, including sexual practices, condom use and drug-use behaviour;
- Health-seeking behaviours and health care and health communication accessibility;
- Barriers to HIV and health services and interventions, including testing, treatment, and health communications.

2.5 Analysis

GPS data relating location of migrant clusters and health facilities were entered into a MS Excel data spreadsheet and then transferred into Arc GIS mapper software and developed migrant cluster maps along the East-West Economic Corridor.

Quantitative data from the rapid assessment and survey underwent double-entry into EpiData 3.1. Stata 13 was used for data cleaning, management, and analysis. As part of data management, every tenth observation in the quantitative survey was double-checked with the original dataset. Queries flagged during the analysis process related to missing or anomalous data were also checked with the original datasets and corrected if possible.

Univariate tabulations were used for descriptive analysis to profile the migrant groups in the study sites. Migrants were categorized into age, income, employment and mobility groups to enable the analysis, and composite indicators were created based on combinations of variables. The composite indicators are described below.

Composite HIV knowledge indicator: This is a standard indicator that measures the per cent of respondents who correctly answered all of the following five binary questions (correct answer in brackets).

1. Can a person reduce the risk of HIV transmission by having sex with only one uninfected partner who has no other partners? (Yes)
2. Can a person reduce the risk of getting HIV by using a condom every time they have sex? (Yes)
3. Can a healthy-looking person have HIV? (Yes)
4. Can a person get HIV from mosquito bites? (No)
5. Can a person get HIV by sharing food with someone who is infected? (No)

Composite attitude score: this indicator summed the Likert scores reflecting agreement with the three statements below (ranging 1-5, where 1=strongly disagree, 5= strongly disagree, 3= don't know. Scores were adjusted to the same attitudinal direction, and combined to represent a total range of 1 (most negative attitude) to 15 (most positive attitude).

1. I think children living with HIV should not be able to attend school with children who are HIV negative.
2. I would buy fresh vegetables from a shopkeeper or vendor even if I knew that person to have HIV.
3. I would be willing to take care of an HIV infected relative in my home.

Multivariate logistic regression was used to investigate the determinants of health and mobility indicators and to adjust for confounding. Independent variables assessed included age, sex, inbound or outbound migrant status, length of mobility, exposure to health information, and HIV knowledge and attitudes. As required for multivariate logistic regression, outcome variables were converted to binary indicators. This involved the exclusion of 'don't know' and 'missing' answers, and applying cut-offs when converting ordinal variables to binary (please refer to multivariate tables in appendix III for details). Where multiple factors influenced an outcome, backwards stepwise logistic regression was used to select the significant determinants (where $p<0.05$). This report presents the major logistic regression findings; due to collinearity, predictability, or small numbers in some subcategories, this type of analysis was not applied to all variables.

Qualitative data were transcribed verbatim from voice recording files into written scripts by the field research team. Transcripts were then translated from Myanmar into English. The Research Coordinator checked the translation to ensure corrected interpretation of discussions. The scripts were coded and analyzed by theme using Atlas.ti version 4.2.

Study results are presented by topic, describing the relevant findings from each study methodology under the same thematic heading.

2.6 Tool development and data quality

A three day training workshop on research and data collection was held in Yangon, conducted by the Research Manager, Study Design and Data Analyst and Research Coordinator, to familiarize field workers with effective interviewing techniques and team roles in data collection. The workshop also involved an evaluation of the data collection tools to verify their validity, accuracy, and appropriateness when translated into the Myanmar language.

A pilot test of the quantitative questionnaire in Hlaing Thar Yar, a migrant dense area just outside of Yangon, helped further refine its content, structure, and phrasing. Data collection teams were managed in the field by experienced supervisors. Care was taken to provide a confidential and welcoming environment during the interviewing processes conducive to honest and complete responses despite the sensitive nature of some questions. This was achieved, for example, by interviewing in private locations and asking indirectly about 'friends'. To promote meaningful responses from respondents during data collection for the quantitative survey, 'I don't know' was never offered as a possible answer, although was recorded when given by a respondent.

Double entry and rechecking of data and use of a data entry form created to match the quantitative tools, as described in Section 2.5, minimized data entry errors.

2.7 Ethical considerations

Informed consent was integrated into all data collection procedures. For qualitative data collection, prospective participants were first invited to participate, then at the point of data collection were provided further project information and given the opportunity to opt out. Quantitative data collection involved one stage of consent: sampled participants were provided the research information by field workers and given the option to participate. Verbal consent was recorded on the consent form included with the questionnaire.

To ensure confidentiality, the names of participants were not recorded and attempts were made to interview respondents in private areas away from onlookers. Due to the likelihood of encountering illiterate respondents and the complexity of the survey, all questions were asked verbally. Compensation was provided to participants for their time contribution; 2,000 MMK for quantitative respondents, 5,000 MMK for FGD participants (including taxi fee), and small gifts costing about 10,000 MMK were offered to key informant interviewees as a thank you for their contribution to the research. Drinks and snacks were provided at FGD sessions.

3. Results

The results section includes findings from the qualitative, quantitative, mapping and rapid assessments. Results from these various methodologies have been grouped and are presented by thematic area.

3.1 Migration and mobility in Myawaddy and Kawkareik

Myawaddy is a migrant-dense township located at the mainland border to Mae Sot, a migrant dense, business district in Thailand. According to interviews with key informants and group discussion with people in the area, it has been estimated that about two-thirds of the population in Myawaddy consists of migrants. Among them, about 30 per cent have remained in Myawaddy for more than 5 years. Many have family lists or are registered in the township. Most migrants originated from Ayeyarwaddy, Bago and Yangon, and are between 20 to 45 years of age. Occupations ranged from labourer to business owner. Some migrants crossed the border to work in Thailand. According to a key informant, those who can speak Thai or have networks in Thailand could acquire better jobs faster than others.

"Migrants are coming largely from Ayeyarwaddy, Bago region, Hlaing Thar Yar and Shwe Pyay Thar of Yangon region."

Health-care provider, 28, Myawaddy

"There are people who come from lower Myanmar and they don't go back and stay here."

MCH, 44, Myawaddy

"About 70-80 per cent of the Myawaddy population come from other areas. One third of Myawaddy population are long-stayed migrants and they have been here for more than five years. Two thirds of Myawaddy's population might have a family list."

Health-care providers, 30, 50, Myawaddy

"People coming into this area are between the ages of 20 to 45 years."

Monk, Myawaddy

"Migrants from Mawlamyine and Hpa-an acquire better jobs more quickly as they have good networks with people working in Thailand and some are familiar with the Thai language."

Health-care provider, 28, Myawaddy

In Kawkareik, the number of migrants was less than in the border township. Key informants explained that migrants in Kawkareik originated from Bago, Ayeyarwaddy, Nay Pyi Taw and Pyin Ma Nar and other regions. Many of them had resided in Kawkareik for long durations. Some worked in brick kiln factories, worked on farms and in construction.

"Mostly they come from Nay Pyi Taw and Pyin Ma Nar region."

Seasonal migrant worker, 48, Kawkareik

"Population of Kyone Doe is about 10,000. There are about 180 migrant people in a brick kiln factory, 30-40 in farming and more than 300 migrant workers are stay long-term and become like local people."

MCH, 50, Kyone Doe

There were various groups of migrants along the East-West Economic Corridor from Myawaddy to Kawkareik. Some migrants remained in the areas for only a short period and then continued further, most likely across the border to Thailand. Destinations were varied and may not reflect the final destination. In addition to migrants from Myanmar, there were also some inbound migrants in the study area, namely Thai. Hundreds of single Thai worked on the road construction project along the East-West Economic Corridor.

"Some migrants move from one place to another and sometimes nobody knows where they are moving to."

MCH, 44, Myawaddy

"At this road construction site there are about 70 Thai workers and 200 Myanmar workers. There are 2 to 3 camps situated along the new road construction area."

Road construction engineer, Myawaddy

"Many construction workers are single."

Road construction engineer, Myawaddy

3.1.1 Reasons for migration

Economic reasons were the primary motive for migration for most migrants in the study areas. Daily wages earned in Myawaddy were higher than that in migrants' hometowns. One participant indicated a 5 fold increase in daily earnings (for example, MMK 1,000 per day in their home region, MMK 5,000 per day in Myawaddy). One key informant mentioned the trend that family members of migrants will migrate with the purpose to accompany them. Some locals in the areas migrated to other areas as well, many of them crossing the border to Thailand to seek work.

"Daily wages in their home region is about 1,000 MMK, and that of here is about 5,000 MMK for a manual labourer per day. When one gets a good job, the rest of all other family members and relatives, follow him and stay here."

MSM, 31, Myawaddy

"About 10 out of 100 people from Kawkareik go and work in Thailand.
Basically people from villages prefer working there.
Those who stay in the town have opportunities for their business in the town.
Jobless persons are likely to go there and get employed."

MSM, 42, Kawkareik

"There are many kinds of jobs on the other side [in Thailand].
There are regular or irregular migrations. Some people commute
daily and work as sex workers in hotels."

INGO, Myawaddy

However, some migrants were forced to migrate following natural disaster, as indicated by a key informant; after the Nargis Cyclone in 2008, many people from Ayeyarwaddy moved to Kawkareik and settled there.

"After Nargis cyclone, migrant workers from
Ayeyarwaddy Region came here in 2008 and 2009."

Health-care provider, Kyone Doe

Migration trends in the study area can be categorized into internal and cross-border migration.

3.1.2 Qualitative results: Migration patterns in Myawaddy and Kawkareik

Types of migrants can be divided into the following categories:

i. Internal migration

Seasonal migrants

A dominant group of internal migrants is seasonal migrants, who typically do manual, labour intensive jobs. This group of migrants were likely to migrate during the dry season and return home during the wet season for agriculture work. Some migrants in Kawkareik worked in brick kiln factories, some in construction, and some sold seasonal fruits along the main road between the main townships.

"The season for high mobility is in early summer.
In rainy season, the mobility is reduced."

MSM, 31, Myawaddy

"The jobs are seasonal and we are working in a brick kiln factory.
Brick season lasts for 5 months and some had gone back to their home."

Seasonal migrant worker, 48, Kawkareik

"There are two brick kilns in Kyone Doe where seasonal migrant workers live.
There are also carpenter groups from Ayeyarwaddy.
In rainy season, they move to another place."

MCH, 50, Kawkareik

Mobile truck drivers

As Myawaddy and Kawkareik are on the East-West Economic Corridor, the main route for land transportation between Thailand and Myanmar, it is one of the main logistic business areas. There is a great deal of mobility among drivers and assistants along the roads and at parking/ stop sites. Drivers, namely truck drivers, bus drivers and taxi drivers, were likely to stay together in a cluster for the purposes of sharing lodging and facilities, as well as for their own safety. Some drivers might sleep on their trucks near toll-gates waiting to travel on the next day.

"Truck drivers, highway drivers and taxi drivers usually rent a house (in groups usually three or five) or stay at a lodging house or warehouse, or sleep in the car. Trucks and buses have to park at an assigned station."

Health-care provider, 50, Myawaddy; MMM, 25, Kawkareik

"We usually take night stop near toll-gates or have to stop in group for safety to protect ourselves from being robbed."

MMM, 25, Kawkareik

"We prefer staying inside our place and watching movies. Sky Net channel via TV is available days and nights continuously."

MMM, 50, Myawaddy

ii. Cross-border migration

There is typically a high volume of border crossing between Myawaddy and Mae Sot. Statistics from Thai Immigration from October 2013 to September 2014 show that the average number of people crossing the border using a passport per day was 921 (873 for Myanmar) at Myawaddy-Mae Sot Immigration; a significantly high number was observed from February to April 2014 (40,000 to 67,000 per month). The average number of people crossing the border using a border pass per day was 2,045 (1,784 for Myanmar). The average number of daily border crossings was more than two times higher using a border pass than using a passport. The number of border crossings using a border pass increased greatly from June 2014 (79,649) and remained high (higher than 70,000 per month). As the borders between Mae Sot and Myawaddy are porous, people can cross the border at many crossing points. According to a key informant, there are 18 other border gates between 2 neighbouring towns. On average, there were about 4,000 migrants crossing the border daily in September 2014[2]. This number was much higher than that of border crossings at the Friendship Bridge, the official border.

"There is one official border pass across the Friendship Bridge and there are about 18 other border gates through which migrants are moving across."

35 year-old man, Myawaddy

[2] Data was collected by collecting the records and interviewing relevant key informants at the gates in September 2014 by the research team. Due to sensitivities, data about gates and specific numbers were not presented in the report.

Types of cross-border migrants in Myawaddy and Kawkareik are described below.

Documented/migrants under Memorandum of Understanding (MOU)

Many migrants moved to Thailand for work under the MOU between the Royal Thai Government and the Union of Myanmar. Formerly, migrants could proceed for a visa in Myawaddy, and during the time of study there were 150 recruitment agencies located in Myawaddy. Many migrants would stop and stay in Myawaddy for a period while waiting for a visa. More recently, however, the Myanmar Government changed the policy on visa processing and visas are processed only in Yangon. As a result, fewer migrants stay in Myawaddy for the purpose of visa processing. Only 39 recruiting agencies were still functioning in Myawaddy in late 2014. There were still some migrants waiting to cross the border to Thailand. Numbers of migrants varied per month, with estimates of at least 200 migrants moving out from the monastery only (a common location where hopeful migrants would reside while waiting for processing).

"Previously, migration was led by visa agents and migrants used to stay at monastery or apartments or quarters while they were waiting visa before going for Thailand. Now, it is not very crowded in ward 4 and 5 since visas are being processed in Yangon and they have less time to stay here."

INGO, Myawaddy

"There are 150 agencies registered but currently 39 agencies are well functioning. It was about 2,700 migrants registered to work at Thai in May, 3,400 in June, 4,000 in July and 3,100 in August (2014). It will be good if irregular migrant workers follow the official procedures and MOU processes."

Gate Worker, Myawaddy

"For a batch of migrant workers (to enter Thailand) leaving this monastery is about 200 persons in a month. The last batch of more than 200 workers left here in April. In coming October, more (migrant-workers) will come here to work in Thailand."

Monk, Myawaddy

Daily cross-border migrants

Among the huge number of cross-border migrants in Myawaddy, many of them may be daily cross-border migrants. These migrants resided in Myawaddy and crossed the border daily for work. According to the group discussion with migrants in Myawaddy, it was found that daily cross-border migrants lived near the Mei river bank and stayed in clusters. They crossed the border to sell goods, work in the factories, and sell sex in the hotels in Mae Sot. They travelled to Mae Sot in the early morning and returned to Myawaddy in the evening.

"Daily cross-border migrants working as vendors pass through at about 5 am and somebody since 2 or 3 am to sell goods in Thailand and come back around 6 pm."

MSM, 31, 50, Myawaddy; INGO, 28, Myawaddy

"About half of the residents near Thayetpin Gate are daily cross-border migrant workers. Cross-border migrants usually live near War Taw Gate. It is in ward 5."

Health-care provider, 50, Myawaddy (MCH)

"Mostly the factories on the river bank, which the daily cross-border migrants can reach easily."

Health-care provider, 59, Myawaddy

"Some people commute daily and work as sex workers in hotels. Some work in the factories across the border and they come back in the evening."

INGO, 30, Myawaddy

Short stay and long stay cross-border migrants

As many of the migrants in Myawaddy originated from other parts of Myanmar, they may have to wait in Myawaddy for some period (weeks to months) until they are informed about a job in Thailand or have the appropriate means to move beyond the border. They might work in Myawaddy as a manual labourer while waiting to cross the border. Some might engage in petty crime or sell sex in order to earn money.

"Manual labourers and odd-job workers are often pass through Myawaddy. Migrants want to work at factories on the Thai side and most of them have to wait at Myawaddy at least one or two months before getting a job. It is rare to get the job shortly after arrival to Myawaddy. During this waiting period, some run out of money and male migrants are prone to commit offence [crime], and some female migrants become sex workers."

Health-care provider, 44, Myawaddy

Most cross-border migrants from Myanmar worked in the agriculture and industrial sectors in Thailand. Those who worked in Mae Sot or in the area of Tak province were likely to work in the factories near the border, the construction sites, farms, and or sell goods (vending). Seasonal migrants who worked in the plantations tended to return to Myanmar after the season was over.

"Cross-border migration was more common in open season especially from September to February. Some stay here and sell goods in Mae Sot. Some stay here but work in factories or construction on the Thai side. Vending jobs are the most common."

FSW, 24, Myawaddy

"Migrants who cross into Thailand are working primarily in garment factories, on farms, on corn plantations, etc. If the season for growing corn is over, they mostly come back to this side [Myanmar]."

MMM, 21, Myawaddy

If migrants move beyond Mae Sot or Tak province, they may go to Samut Sakhon and Bangkok. This group of migrants is likely to be long-stay migrants. Many had networks (friends or relatives) working in Thailand. Long-stay migrants worked in the factories, fishing industries, rubber plantation, vending business, or as domestic workers.

> "Some migrants work along the riverside nearby, and some go further at Mahachai (Samut Sakhon). There are rubber plantations to work."
>
> Health-care provider, 59, Myawaddy

"There are many people from here [Myawaddy], they work there (Thailand) mostly in fish industries, oil station, groceries, garment industries, |and some works as baby sitters, housemaids, etc. If those migrants are educated and able, they open shops there."

MMM, 25, Kawkareik; Health-care provider, 44, Myawaddy

> "In Kawkareik, if there are five siblings in a family, two, especially males, might go and work in Thailand. They have a society there."
>
> Health-care provider, 59, Kawkareik

Returnee migrants

Returnee migrants, as discussed in interviews, referred to long-stay migrants, mainly as they did not return home to Myanmar often. There is huge mobility at the border during the New Year Water Festival (Songkran in Thailand; Thingyan in Myanmar) as many migrants return home at this time. The New Year Water Festival (mid-April) is the long holiday season in the Greater Mekong Sub-region. During this time most businesses are closed and migrants can return home.

"Migrant workers usually return back to Myanmar at the time of water festival in April and lighting festival in October."

Health-care provider, 43, Myawaddy

> "Migrant workers usually return home once a year during Water festival, Myanmar New Year for 10 to 15 days."
>
> Monk, Myawaddy

Trafficking in persons is a critical issue of concern in the South East Asian region. It can happen in many forms, such as through force or deception.

3.1.3 Migration and trafficking

Trafficking remains a critical risk in the migration process. Human trafficking found in this study was related to persuasion, physical attractiveness, peer influence, and drug abuse. Trafficking occurred to both males and females. Human trafficking in persons can take many forms; men may suffer labour-abuses, while women are more often subject to sexual abuse. Some cases discussed in the FGD were deceived that they would work in a factory or in a restaurant but ended up being forced to sell sex. Some worked without receiving wages, as was previously agreed.

"My friend told me that she worked for one month without any wages in Thailand. The broker who sent her to that brothel house took THB 3,000 as brokerage. Protection from human-trafficking should be given to those who want to work in another country."

FSW, 24, Myawaddy

"We were brought here by a broker (we called her "aunty") as soon as we arrived. At first, she lied work was for KTV (colloquial term for karaoke bar). When we got here we were told to work at massage parlours. They told us that we would be paid monthly or we could save our monthly income to be sent home in one lump sum. (However), when we wanted to draw our money back to us from them, it was not there."

FSW, 29 and 25, Myawaddy

"They come and get us. For example- There are male sex workers in charges. They search for young women at brothels/hostels and if they find them they call them (buyers from Thailand). If they don't want people to know, they go to the other side themselves instead. Some thought (wrongly) they are going to work in factories. These in-charges come and call young women, they pay money and then they let them work (in those sex service factories)."

FSW, 35, Myawaddy

Trafficking experiences were worse when the victims were rendered unconscious. A trafficker would feed them a kind of drug, i.e. methamphetamine, and then took the victim to an unknown place either in Myanmar or across the border to Thailand. These victims did not have a passport or any documents with them.

"They take you to the other side to do this job. Then they offer you food containing stimulant tablet. So you become senseless so you go with them. Some were trafficked even to Bangkok in the same way, etc.…For example – a kind of broker brought the daughter (of a certain family) and left her here. The daughter has to work as a housemaid. This is like human trafficking in persons (or forced-labour)."

FSW, 35, 29 and 25, Myawaddy

"There were some men usually search for young girls at entertainment venue/hostels. If you're not smart enough you will suffer. Sometimes they offer you food mixing with stimulant tablet and then you become senseless and have to follow them. Some were trafficked even to Bangkok in the same way. So the victim usually had no passport."

FSW, 32, Myawaddy

"My friend was brought to another place after being fed horse-drugs (amphetamine type of stimulant) and then trafficked".

FSW, 29, Myawaddy

As explained from direct and indirect experiences among FSW in the FGDs, traffickers were people they had known. They might be the relative, friend, lover or even a husband. If traffickers were strangers they would approach victims in a pleasant way, luring them with hopeful stories of financial stability.

"Mostly male and adult women - They usually talk pleasantly/ sweet. The women would add like _ "I work there too, so, why not come with me.' They are brokers from our country working through their connections in the neighbouring country. They give incentives. "If you take up this job, your parents' lives will become easier."

FSW, 29 and 25, Myawaddy

"Even, one can be sold out by her lover or married couple. For one case, they met and got married while working here. The wife was 6 years older than her husband (but he sold her later). The young man persuaded his lover to move and stay (to elope) at his uncle's home located in Thailand. After getting trust from his lover, the young man sold her out there. Later, the seller was placed under arrest."

FSW, 18, Myawaddy

FGD participants also indicated circumstances whereby they resisted the lures of traffickers. These respondents voiced feeling more secure in Myanmar or indicated they did not want to stray far away from their families.

"Many guests persuade us to migrate (to move to Thailand). I told them that I did not want my life to get spoiled in the other country rather than in my own nation."

FSW, 24, Myawaddy

"We don't want to go over or visit to the other side [Thailand]. We don't care for any of their [men's] promises. We would rather work here for our parents. If we go there, we will be far away from our parents (and families who live in Myanmar)."

FSW, 18, Myawaddy

In addition to the qualitative results, a rapid assessment in migrant dense areas of Myawaddy and Kawkareik showed similar migration patterns of inbound and outbound migrants.

3.1.4 Rapid assessment: Migration and mobility patterns

The rapid assessment covered 3,174 people aged 15 to 50 in migrant dense areas of Myawaddy and Kawkareik. Among the 1,485 locals and 1,689 inbound migrants, approximately 22 per cent had a history of migration in Myanmar. Applying temporal criteria, just under 15 per cent had been mobile in Myanmar for a total minimum of three months in the past two years. Fewer people (15%) had experienced cross-border mobility. About 10 per cent had crossed the border for a total minimum of three months in the past two years (Table 3).

Table 2: Rapid assessment findings: mobility patterns among locals and inbound migrants in migrant-dense areas of Myawaddy and Kawkareik

Variable	Local		Inbound	
	n	%	N	%
In Myanmar	328	22.1%	371	22.0%
In Myanmar with 3-24 months recent mobility	221	14.9%	251	14.9%
Cross-border	295	19.9%	254	15.0%
Cross-border with 3-24 months recent mobility	209	14.1%	164	9.7%
Total aged 15-50	1,485	100.0%	1,689	100.0%

** These patterns clarified that a period of two years for eligibility was appropriate for the definition of 'recent' mobility. Accordingly, 17.5 per cent of rapid assessment respondents were considered eligible; 24.8 per cent in Myawaddy and only 4.3 per cent in Kawkareik.

In both townships inbound migrants and locals had roughly similar histories of mobility. Within the past two years around 50 per cent of those with a history of mobility in Myanmar had not travelled (45% of the local population versus 51% of the inbound population). 17 per cent had been mobile for a duration of between 3 and 12 months, and 36 per cent had been mobile for a duration of between 3 and 24 months.

Of those with a history of cross-border mobility, 54 per cent had not travelled in the past two years, 16 per cent had been mobile for a duration of between 3 and 12 months, and 35 per cent had been mobile for a total duration of between 3 and 24 months.

In conclusion, about one third of those with a history of mobility had a period of mobility between 3 and 24 months. Locals exhibited longer periods of mobility in the last two years compared to inbound migrants and although overall the township of Kawkareik experienced overall less mobility compared to Myawaddy, there currently is more mobility occurring in Kawkareik.

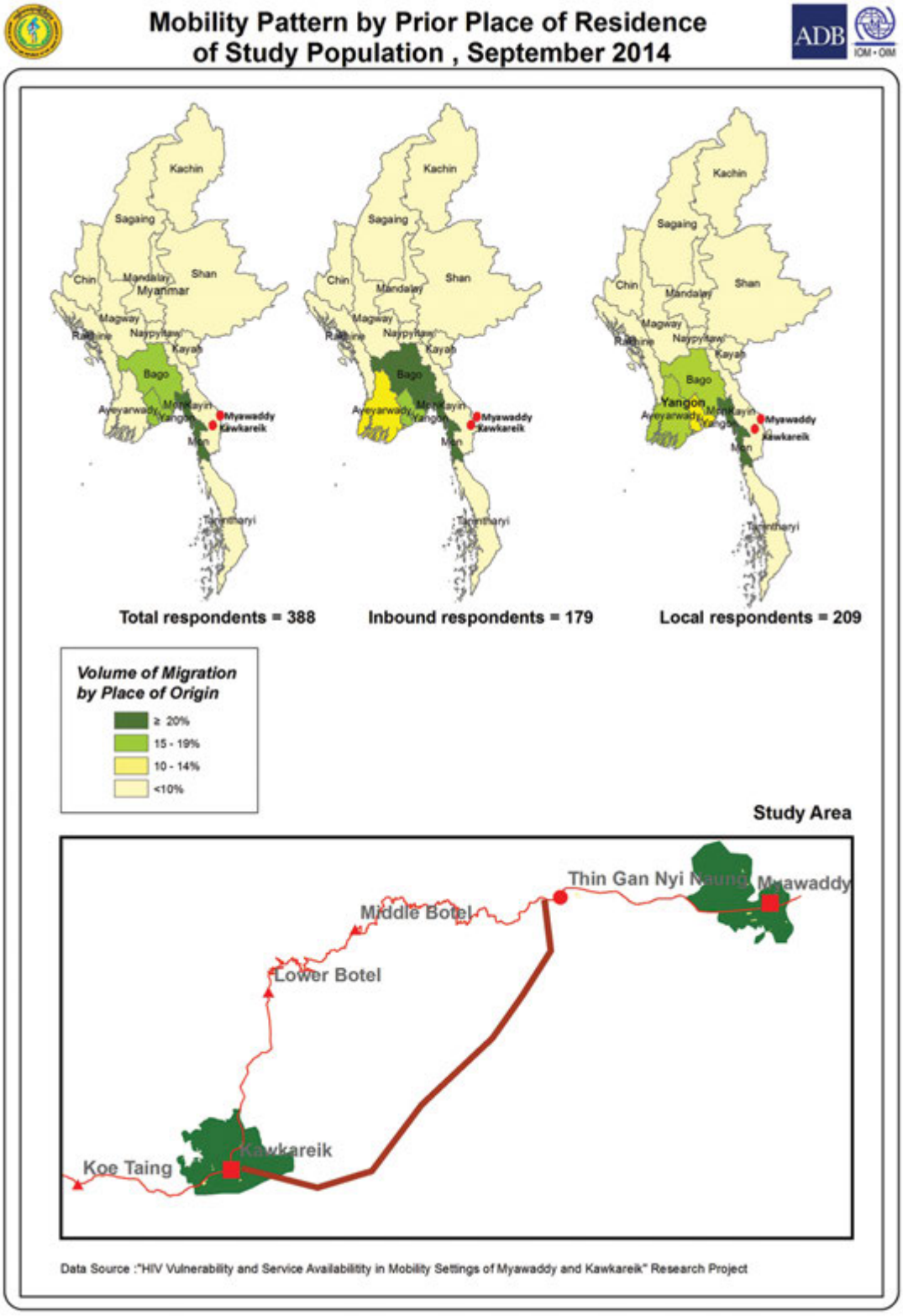
Combined with the findings from the rapid assessment, the data show that mobility, in particular cross-border mobility, is particularly prominent in Myawaddy.

Eligibility from the rapid assessment was sampled for the quantitative survey. Migration patterns among 388 respondents are presented in Section 1.3 below.

3.1.5 Quantitative survey: Migration patterns

Almost all migrants in the survey were originally from Myanmar, and only four from Thailand. All migrants interviewed stated that their more recent destination was in Myanmar, and mobility was relatively concentrated around the study sites. 27 per cent of all migrants (25% inbound and 31% local migrants) originally came from Mon State, directly west of Kayin State. 18 per cent of respondents originally came from Bago (21% inbound, 16% local), and 16 per cent from Yangon (18% inbound, 13% local). Seven (7) per cent of all respondents came from Kayin State, this included only 9 per cent of all locals. The similarities between where inbound migrants just came from and where local migrants last went to suggests an equal flow in and out of the state, but also reflect the fact that the majority of 'locals' are actually originally inbound migrants to the area.

Map 3: Mobility pattern of study population from Myawaddy and Kawkareik, September 2014



As shown in Table 3, the majority (96%) of inbound migrants had travelled to the study area directly from their hometowns. There was little difference between Myawaddy and Kawkareik (96% versus 90%). Most of these individuals (64% of all inbound migrants) intended to move elsewhere, although they had no particular plans at the time. Just over a quarter of inbound migrants intended to return home, and only a minority wanted to stay. These patterns indicate the uncertainty of migration, particularly in Myawaddy, with migrants habitually determining their next location according to circumstance.

Table 3: Previous and next location among inbound migrants, by Township (n=179)

Previous Location	Next Location	Total		Myawaddy		Kawkareik	
		n	%	n	%	n	%
Elsewhere	Home	4	2.2	3	1.9	1	5.0
	Unknown	4	2.2	3	1.9	1	5.0
	Total from elsewhere	**8**	**4.5**	**6**	**3.8**	**2**	**10.0**
Home	Home	49	27.4	40	25.2	9	45.0
	Stay	8	4.5	6	3.8	2	10.0
	Unknown	114	63.7	107	67.3	7	35.0
	Total from home	**171**	**95.5**	**153**	**96.2**	**18**	**90.0**
Total		**179**		**159**		**20**	

Temporal patterns of mobility varied among the study population, however, long-term moves (i.e. more than 3 months) were the most popular, experienced by 29 per cent of all respondents. 21 per cent of respondents crossed a border daily for work – all were located in the border town of Myawaddy. Among these individuals, there was a mix between local and inbound migrants (not shown in figure below), indicating that border crossings occurred in both directions. 23 per cent of all individuals displayed short-term or seasonal movement. However, just over a quarter indicated working in the area without mobility.

Multivariate analysis found that short-term stays (travels up to 1 month, including daily cross-border travel) are associated with being younger (p=0.003), having a lower income (p=0.002), and being in Myawaddy (p=0.001) (Appendix III). The mean age of those who travelled for shorter visits was 28.6, and 32.6 for those who travelled longer. This may reflect increasing stability with age. Disaggregating mobility patterns by profession, the daily cross- border migrants consisted particularly of those working in labour/construction and factories, who as previously mentioned earn slightly higher than the sellers/vendors that dominate the seasonal trips and long-term stays (Appendix II).

Figure 2: Temporal mobility patterns of migrants, by township

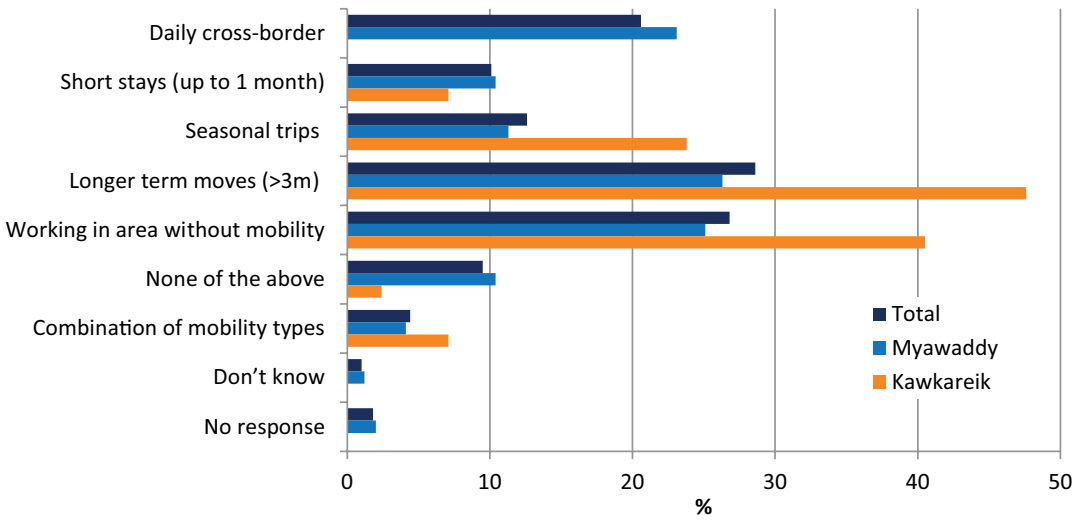
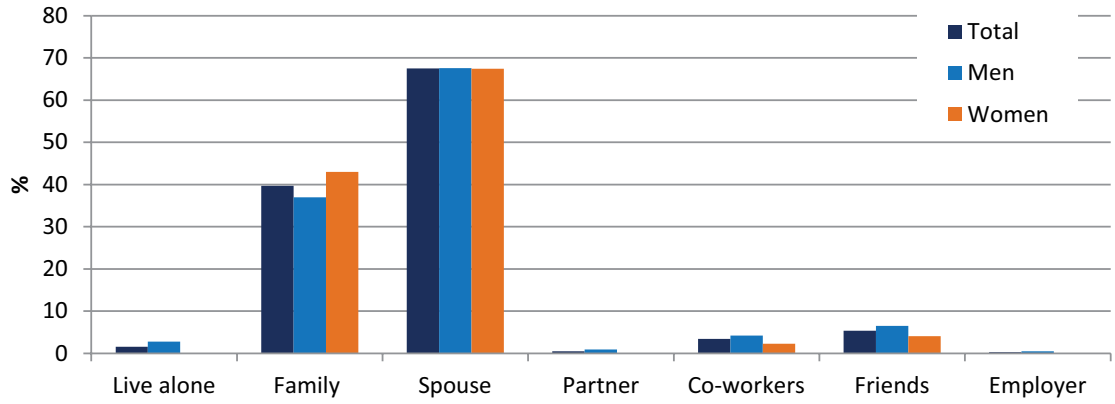


Figure 3: Relationship of respondents to household members/accommodation sharers, by sex



As illustrated in Figure 3, the large majority of respondents (90 %) lived with family and/or their spouse (40% with family, 68% with spouse). Few lived with other groups of people, and only a fraction lived alone (6 individuals; 1.6% of all respondents).

In conclusion, the migrant population residing in and passing through Myawaddy is proportionally larger than that in Kawkareik due to its proximity to Thailand and the subsequently high amount of traffic in that area. Both Myawaddy and Kawkareik had a substantial long-stay, migrant population. The border to Thailand presents an attractive alternative for those seeking work and improved economic opportunities. There are also accounts of trafficking occurring between the borders of Myawaddy and Mae Sot for purposes of labour and sex trade.

3.2 History of illness and health-care-seeking behaviour

History of illness was explored among respondents in both the qualitative and quantitative studies. It was found from interviews with health officers that health problems of migrants were no different from that of the local community. Water and sanitation-related issues and communicable diseases, such as malaria and elephantiasis were mentioned by health staff. These problems have, however, decreased as health services in the area have improved.

> "It can be malaria. They come from other areas. (They come from a malaria free area to an area where there is malaria.) Firstly, they don't know that they can catch malaria. Secondly, they are more often immune deficient as they have no immunity (from having a previous malaria infection). They also get cerebral malaria faster. Lately, as there are many NGOs working here since 2012 and the people can get treatment at their villages, the prevalence of malaria has decreased."

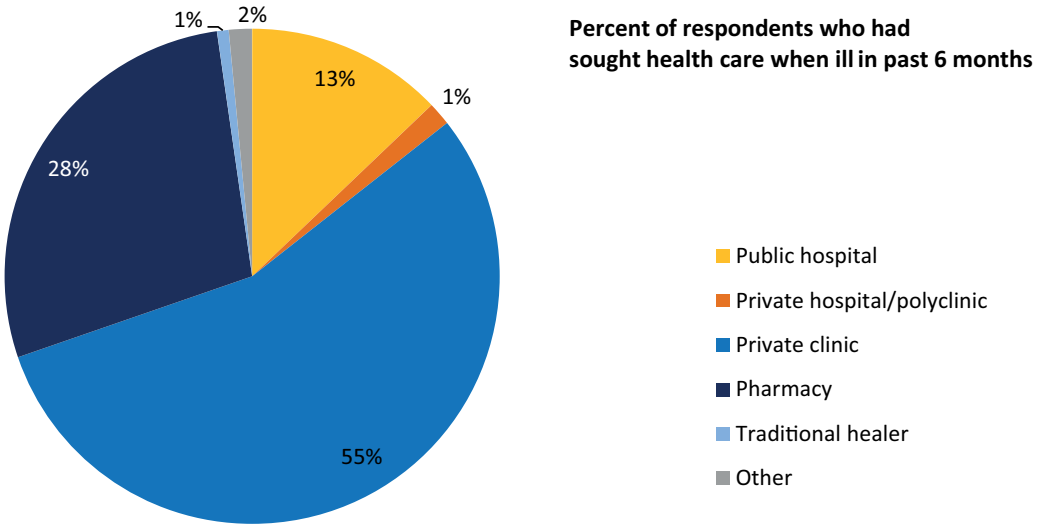
DMO, Kawkareik

Survey results indicate that 30 per cent of respondents had been ill in the six months prior to the interview. This was more likely among those with lower income ($p<0.01$) and those who had more access to health information ($p<0.01$) in the past six months (Appendix III). This finding could be due to reverse causality; those who are sick are likely to have searched for health information. Only two people, both local men, had experienced STI symptoms in the last 6 months (abnormal discharge and genital ulcer).

Out of the 30 per cent of respondents who had suffered from any sort of illness in the past 6 months, 91 per cent sought health care. Of all determinants investigated, including access to

health materials in the past six months, being of older age was the only significant determinant of health care seeking ($p<0.05$)(Appendix III). The most popular source of health care was a private clinic (70% of all respondents), followed by a pharmacy (35%), and public hospital (16%). Only two individuals (1.9%) mentioned private hospitals, and one mentioned a traditional healer. This is in spite of the fact that public hospitals and private hospitals were known to be available by almost all respondents (Figure 4). NGO services do not have a strong presence in these areas; most respondents were unaware of whether or not they exist.

Figure 4: Type of health-care facility attended among those who fell ill in the past 6 months (n=105)



Qualitative findings among vulnerable groups show that they were likely to acquire medication from pharmacies when they were ill. Others may use traditional medicine or exercise self-care at home. If illness was serious, many people in Myawaddy were likely to cross the border to receive treatment at Mae Tao clinic in Mae Sot which was able provide one-stop services at no-cost. Patients would pay only transportation costs and contribute a small donation to Mae Tao clinic for health-care services provided. This is a long-occurring trend.

"Even for the common cold, runny nose and cough, we rarely take medicine and wait to recover instead. I do not easily get ill. If seriously ill, we have to be brought to the clinics (and hospitals)."

FSW, Kawkareik

"Only what they need (for visiting particular clinic situated on the other site) is travel costs and an additional 20 Baht to be there. Only donation money is needed to get cured there."

FSW, 24 years old, Myawaddy

With regard to crossing the border to seek health treatment, participants mentioned two specific groups; rich or able persons and poor migrants. Rich individuals who can afford to may go further beyond the border to Bangkok or provincial health facilities. Many people would cross the border to Thailand for special health services, especially surgery. They did not trust surgery services in their areas.

"Only rich people in the region would choose big cities of Myanmar like Mawlaymine, Hpa An & Yangon where private & state owned specialized hospitals are situated. Mostly, they would first choose Thailand by crossing the border and secondly, Yangon in Myanmar for seeking proper treatment. Formerly, people here (even from Myawaddy, Hpa An, Mawlaymine) rely on health-care service providing centres situated on the other side of the border in Thailand because of almost free of charge (FOC) service availability in the health-care sector. Although for operative cases, those clinics situated on the other side are FOC."

IOM's HIV-TB doctor, Myawaddy

"There are some (patients that go to the other side of the river (Thailand) for health care services, especially for surgery cases which of those available on this side, (in Myanmar) are not good to take."

MSM, 48 years old, Myawaddy

Some, however, may only seek health services in Myawaddy or Kawkareik. FGD participants mentioned going to private clinics more than public hospitals if they were to seek health services in their communities. The main reason was due to convenience, for instance, 'Myit Tar Mon' clinic provides 24 hour service. Many participants mentioned that clinics were unaffordable to them and subsequently sought treatment in public hospitals or received medicine from a pharmacy. For accidents and emergencies, people were more likely to go to the hospital or clinic in their area.

"Some of us are calculating about income and expenditures of one's own. If it is 3 visits to the clinics that will cost about 30,000 MMK, which is equivalent to one night's earning when work is possible. But the nature of our work is not reliable to obtain such an amount per night. So the cheaper way is buying medicine from a pharmacy (or grocery store instead)."

FSW, 24 years old, Myawaddy

Traditional health treatment is also a popular option when people became ill. Use of health prevention or medical check-ups when healthy were uncommon practices.

"Even for going to the clinic, in our village people do not do so. To get cured from one disease or an illness is mostly done by well-known single herbal medicinal plants or medicines (which is easily available nearby). Particular health-care services like medical check-up to be taken by a patient are traditionally very strange among us."

MMM, 25, Kawkareik

As for HIV/STI-related, health-seeking behaviours, some participants explained that they would not go to public health services as they would not want to publicly expose their disease status. They would go to clinics they trust or where they would not be subject to discrimination as a result of their health status.

"Some STD-patients in this town won't go to the clinics and won't ask for help for treatment because they feel less confident (ashamed) to show up in public being labelled as "I am the one who enjoys prostitutes so that's how I got it". Only young guys who are shameless, go (to clinics) and get treated (from medical doctors). In some cases like gonorrhoea, symptoms like flowing puss form the organ can be treated and later they won't need special treatments."

MSM, 31 years old, Kawkareik

"They never come to visit the hospital wing under the category 'campaigning (controlling) against HIV/AIDS and STD'. Even now, only few come here (the unit in the hospital) under this title."

STI Team Leader, Myawaddy

To conclude, the history of illness among the migrant populations in Myawaddy and Kawkareik did not differ compared to the local population. Only two respondents indicated experiencing STI symptoms in the past six months. The vast majority of respondents who had fallen ill in the last six months sought health care; private clinics were the most preferred facility for health services although they incurred costs. Vulnerable groups were reluctant to seek health care when ill and were more likely to self-medicate. History of illness was found to be correlated with lower income and having increased access to health information.

3.3 STI and HIV/AIDS knowledge and awareness

People have different knowledge and awareness of STI and HIV/AIDS although they are in the same communities. Reports of HIV prevalence were inconsistent across informants. Informants indicated that more HIV testing was occurring, which may account for higher reported prevalences. Participants in health facilities indicated that a substantial proportion of new cases were migrant workers.

"I don't know about the country as a whole. I have more positive rates in my hand than others. According to my data, there are about 50 [cases]. Most of them are migrant workers."

IOM HIV/TB Medical Officer, Myawaddy

"HIV is not in town but in the village. Migrant workers bring HIV."

District Medical Officer, Kawkareik

There were also reports of high rates of new cases occurring in high risk populations, such as FSW and MSM. There was unanimous agreement that there was no injecting drug use occurring in the area.

"There are also sex workers. But IDU is few. Mostly DUs [drug users]. As they are DUs, infection is not much. There are also high positive rate in MSMs. It seems MSMs are not much accepted in Myawaddy.[…] About 30 to 40 per cent of sex workers are positive."

IOM HIV/TB MO, Myawaddy

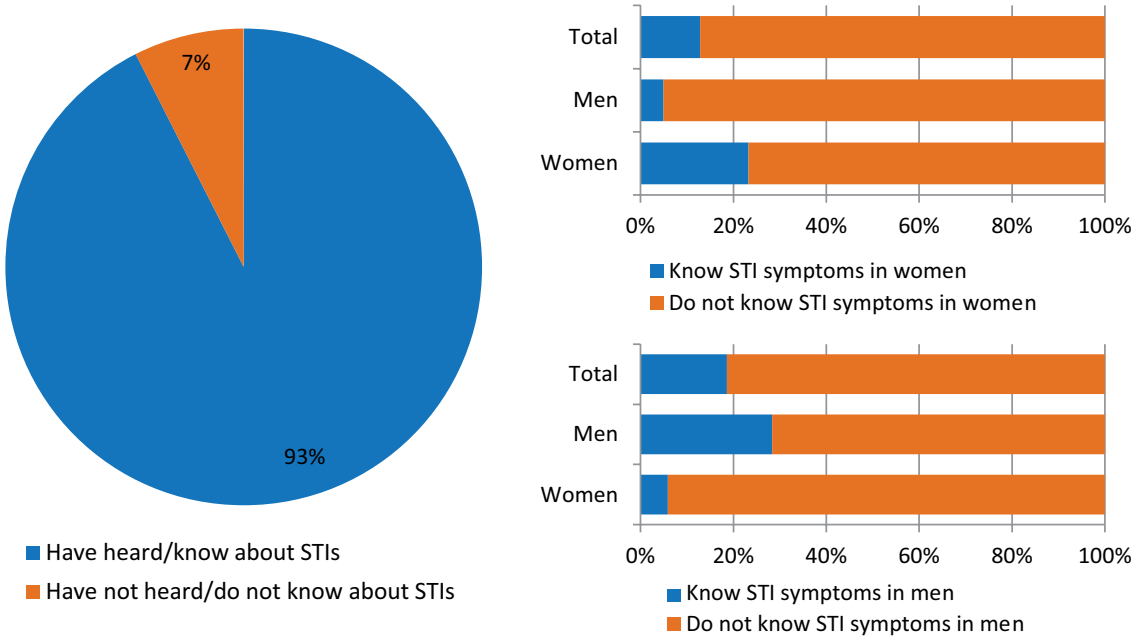
Actual rates of HIV in the community are difficult to ascertain as there is no routine testing at the public hospital and there is no mandatory registration requirement for HIV positive individuals. Prevention from Mother to Child Transmission (PMCT) in Kawkareik includes a blood test during antenatal care (ANC) visits, and in Kawkareik a health professional indicated that HIV tests must be conducted when applying for a visa.

"The people who go to Thailand had to take the test. Whenever they apply for the visa, they have to take the test. We do not have to test the rest of the people. We just have to test pregnant women."

MCH Staff, KyoneDoe, Kawkareik

As for individual knowledge and awareness of STI and HIV/AIDS, quantitative survey results indicate a high awareness and varying levels of knowledge among respondents in study areas.

Figure 5: Knowledge of STIs among all respondents, and knowledge of associated symptoms among those who have heard of STIs (n=359), by sex (204 men, 155 women)



A very high proportion of respondents (>90%) were familiar with sexually transmitted infections. However, specific information such as STI symptoms was less well-known (Figure 5). Men and women displayed a tendency to know about symptoms that affected their own genders, and the most frequently given examples were abnormal discharge for both sexes (18% and 48% of those who knew of STI symptoms in men and women respectively), painful urination in men (70%), and abdominal pain in women (20%) (Appendix II). There was confusion in interpreting this questionnaire item among some respondents; 5 respondents erroneously provided the following examples regarding symptoms in women: cervical cancer, breast cancer, and AIDS.

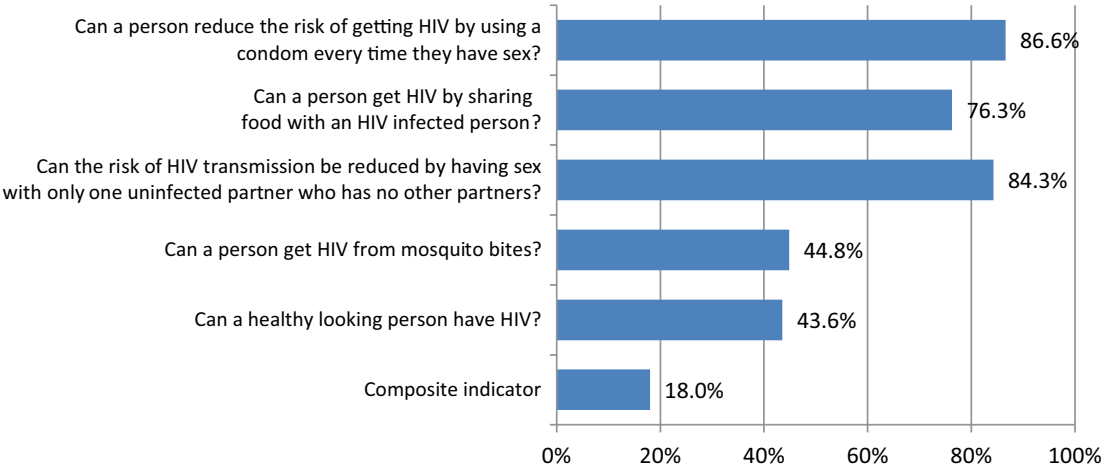
Although 93 per cent of respondents stated that they were familiar with HIV/AIDS prior to the interview, and all but one of respondents who knew of STI spontaneously gave HIV/AIDS as an example, more precise knowledge of HIV was lacking. Figure 6 visualizes the percentages of respondents who correctly answered the five questions that constitute the composite knowledge indicator.

The majority of individuals knew that a person can reduce the risk of transmitting HIV through using a condom and through maintaining monogamous relationships, however the misconception

that mosquitoes can spread HIV was common (45%), and there was a majority belief that HIV positivity equates to being and looking unwell (56%). As a result, only 18 per cent of respondents correctly answered all given questions.

Additional knowledge questions showed that other transmission routes are less well known, such as mother-to-child transmission. 28 per cent of respondents knew that HIV can be treated, and only 7 per cent had heard of antiretroviral therapy. A quarter believed that kissing can spread HIV.

Figure 6: Percentage of migrants who correctly answered HIV knowledge questions



Multivariate analysis found that a higher composite indicator result was associated with higher-levels of education ($p<0.001$; Appendix III). Education was also the underlying factor of the association between higher income and improved knowledge of STI and HIV/AIDS; after adjusting for education this relationship was not present. Interestingly, access to HIV information was not associated with an increased likelihood to have better composite HIV knowledge.

3.3.1 HIV awareness and risk assessment among risk groups

Awareness initiatives are not evenly implemented across the country. Qualitative discussion indicated that mobile populations from city centres are more likely to have received information about HIV/AIDS than rural populations.

> "Some migrants (including PLHIV) are already fully aware since they move here from Yangon and Bago, mostly people got it [HIV information] from Yangon region via workshops, pamphlets, displayed posters and demonstrations before they reach here. But some are moving from the southern part of Myanmar and other remote regions so that as usual they are not accessible to those particular knowledge and awareness concerned."
>
> IOM HIV/TB Doctor, Myawaddy

Participants also indicated that the number of awareness meetings in Myawaddy had decreased. This lack of knowledge creates a barrier to accessing HIV services. Furthermore, FSW were aware that HIV could be transmitted through unprotected sex, but they indicated they experienced resistance from clients when asked to use a condom, which may suggest one-sided knowledge or a lack of appreciation of the severity of HIV on behalf of clients.

Participant knowledge about HIV – FGD participants could correctly identify many aspects related to the disease and its progression. It was understood that HIV is a viral disease that is progressive in nature and that confirmation of HIV status must be done via a blood test. Participants could not, however, distinguish between HIV and AIDS and there was little knowledge about opportunistic infections, although participants were aware that HIV can result in multiple infections.

Identified manifestations of HIV included vaginal warts, enlarged lymph nodes, difficulty breathing, skin abnormalities (rash/boils), physical wasting, and herpes. Participants indicated that signs and symptoms of HIV could be visibly seen.

"Some AIDS patients are quickly darker with dried skin and thinner look."

MMM, 50, Myawaddy

Participants were aware that there is a treatment which can allow PLHIV to lead normal lives.

"HIV/ AIDS are not that much terrible disease according to how to get treated as modern treatment/ medicine comes up. If we have that infection it is not to be afraid since we have a link and connection with IOM to be secure in treatment and in easy access to the medicine."

MSM, 48, Myawaddy

Mobile men with money were the group with the least amount of correct knowledge and regard for HIV/AIDS.

"We got the message about it that "there is no curative medicine that kills the disease absolutely". But now I heard (not sure), a foreign country, USA, has invented and produce an AIDS-Killer medicine."

MMM, 37, Myawaddy

"Compared to the disease HIV/AIDS, now we are more afraid of the other newly noticed disease (but we know it long before). Such as Diabetes. Persons living with Diabetes are more vulnerable than the one with HIV/ AIDS.[…] People are now less attentive to HIV/AIDS."

MMM, 50, Myawaddy

"Though we don't know that much about it (HIV/ AIDS), since we are busy only with our routine, down-load, up-load, and go, some of us are feeling afraid of it but some are not keep pursuing sex is a result for drivers' life by relying on the medication which is now within our reach."

MMM, 50, Myawaddy

HIV transmission and prevention – The most common methods of HIV transmission reported included unprotected sexual contact, blood transfusion, injecting drug use, and vertical transmission from mother to child. Monogamy, condom use, and not sharing razors or needles were identified as ways to prevent HIV transmission. Some participants mentioned mosquito bites as another method of transmission and others were unsure as to whether sharing the same toilet or utensils were also methods of transmission.

"By blood flow, via needles for injection, via mosquito-bites, etc."

MMM, Myawaddy

"It is not infectious by mosquito-bites. You know the city Mandalay, which is notorious for its large mosquito population.[…] If mosquito-bites is a mean of infection, all staying in Mandalay would be now infected."

MMM, 50, Myawaddy

"At the beginning of the disease it is well known among public, we dare not use the same toilet which is known to be used by those patients. Later we dare use the same toilet."

MMM, 50, Myawaddy

There was also suspicion about condom effectiveness against HIV prevention.

"Having sex with an infected one is not sure and it is unsafe for both ways, with condom protection or without it."

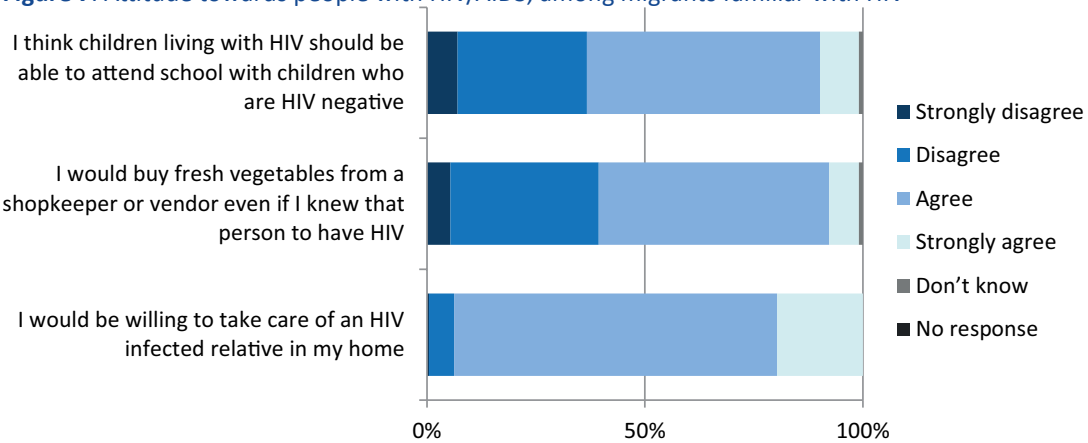
FSW, Kawkareik

It can be concluded that migrants and risk populations in Myawaddy and Kawkareik had inadequate knowledge and awareness of STI, HIV and AIDS. There were many misconceptions of the diseases, especially among migrants and MMM. Knowledge about HIV/AIDS may influence attitudes towards HIV/AIDS and People living with HIV (PLHIV).

3.4 Attitudes towards HIV/AIDS

There appears to be a largely negative attitude towards HIV positive individuals among quantitative survey respondents. Approximately 2 in 5 respondents who had heard of HIV/AIDS disagreed with the statement that children who are HIV positive should attend school with HIV negative children (Figure 7). 40 per cent would not buy from a shopkeeper known to be HIV positive. Despite this, an overwhelming 92 per cent of respondents stated they would be willing to take care of an HIV infected relative in their home. The composite attitude score that aggregated these three results was 10.5 in total (out of 15), with a slightly more positive score in Myawaddy (10.6) and a more negative score in Kawkareik (9.7). Scores were found to not be significant at $p<0.05$.

Figure 7: Attitude towards people with HIV/AIDS, among migrants familiar with HIV

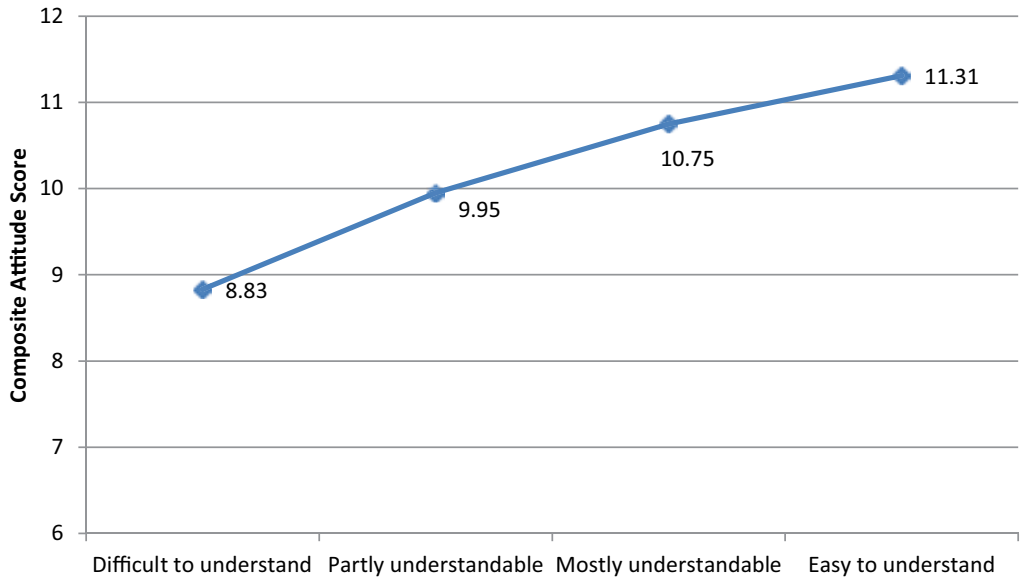


Attitudes were found to be determined by educational background and HIV knowledge. Each increase in level of education[3] was associated with a more positive composite attitude towards HIV/AIDS[4] (p=0.001). Correctly answering all five specified knowledge questions was also significantly correlated with more positive attitudes towards HIV/AIDS, even when controlling for socioeconomic background (p=0.017) (Appendix III).

However, in contrast to HIV knowledge, recent access to HIV information was a significant determinant of attitudes towards HIV. The mean composite attitude score of those who had received HIV information in the past 6 months was a more positive 11.3, compared to 10.4 among those who had not received information (p<0.001).

Respondents' attitudes towards HIV were also associated with the clarity of health information they had received[5]. Of those who had received health information in the past six months, those who found it difficult to understand had a score of 8.8 out of 15. This score progressively increased with increasing ease of understanding; those who stated they had found the health information easy to understand had a composite score of 11.3 (Figure 8) (adjusted p<0.001). This relationship was independent of educational background.

Figure 8: Composite attitude score (1=most negative, 15= most positive) with increasing ease of understanding health materials received in the past 6 months



Attitudes towards HIV among local migrant populations differs, however, from risk groups familiar with the disease through their own contacts and acquaintances and HIV information, as these groups have been the targets of HIV and AIDS communication campaigns for decades.

3.4.1 Affiliations and perceptions of people living with HIV/AIDS among risk groups

Most high risk groups knew of someone who was infected or had died of HIV. Most were friends or members of their communities. There were mixed feelings between risk groups as to their perceptions of people living with HIV (PLHIV). Mobile men with money (MMM) reported the greatest lack of knowledge and greatest amount of fear. This group indicated that they would not avoid HIV positive friends, but would keep their friendships "at an arm's length". MMM

[3] 1=no education to 7 = graduate education.

[4] A binary indicator based on a median composite Attitude score of 10.5, where a positive attitude was defined as at least 11 out of 15, and a negative score defined as a score of 10 or less out of 15.

[5] This concerns the 156 who had received health information in the past 6 months.

working as drivers indicated they would not stay in the same facilities or eat from the same establishments as HIV positive individuals.

"If someone suffers AIDS and stays at this restaurant, all drivers avoid staying and eating from this restaurant later on. It would be hard for us to take care of him, even staying in the same place, we won't. [All respondents] We won't even eat food from the same place."

MMM, 50, Myawaddy

MSM and FSW expressed different attitudes towards PLHIV. FSW expressed feeling pity for PLHIV. FSW who were HIV positive were restricted from working in massage parlours or brothels.

MSM expressed a very open dialogue within their community regarding HIV but said they would avoid having sexual contact with someone if they were sero-discordant. Both groups indicated that they were not afraid of PLHIV. These groups expressed the importance of the mental health of PLHIV and would encourage those who test positive to seek treatment.

"Our group goes hand in hand, eats together, has sex together. Openly speaking, the young guy to whom he (pointing his friend next to him) has sex with also does so. Both of us use condoms but we don't feel each other like vulnerable persons." "If we treat them in such a bad way (locking down on those HIV-positive partners), the patients will be depressed. Regardless of the disease, we all are friends."

MSM, 48, Myawaddy

I would definitely encourage her/him not to be afraid/ depressed because what I know is after treatment and medication (with this medicine), the patient becomes looking more beautiful and nicer although the disease cannot be totally cured."

FSW, 24, Myawaddy

The research indicates that communities are becoming more accepting of PLHIV. PLHIV are increasingly more likely to share their status with friends and family, mostly due to the availability of ART, but stigma associated with HIV still exists.

"Now, some still exist. No discrimination training is available at the community level to lessen these impacts. […] Doing more knowledge and education trainings mainly can reduce them."

STI Team Leader, Myawaddy

Unanimous across all groups was the sense of responsibility to tend to HIV positive family members.

"This is our responsibility to take care of our family but we would use gloves and masks for protection from AIDS infection."

MMM, 25, Kawkareik

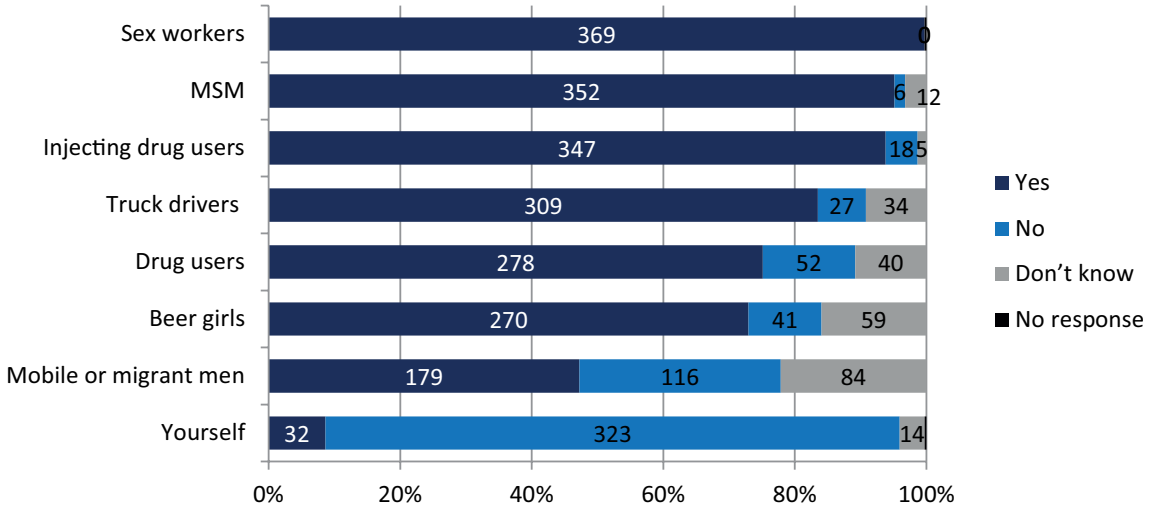
3.4.2 Perception of groups at risk of HIV transmission

Female sex workers, men who have sex with men, drug and alcohol users, regular patrons of massage parlours, those who engage in unprotected sex, and drivers were mostly commonly identified by participants in FGD and KII as those groups at highest risk of HIV transmission.

Military groups, migrants returning from more urban areas to local communities, and those working at border areas were also mentioned as at risk for HIV transmission. Freelancer FSW was noted as a special risk group as they are particularly hard to access for dissemination of knowledge and advocacy for HIV prevention.

Findings from the quantitative survey support these results. Female sex workers, men who have sex with men, and injecting drug users were identified as those with heightened risk of HIV infection by more than 90 per cent of those respondents who had heard of HIV (Figure 9). Interestingly, while 47 per cent of male migrants perceived migrants to be at particular risk of HIV infection, only 9 per cent believed themselves to have elevated risk.

Figure 9: Respondents who consider various groups to be at elevated risk of HIV/AIDS, among migrants familiar with HIV

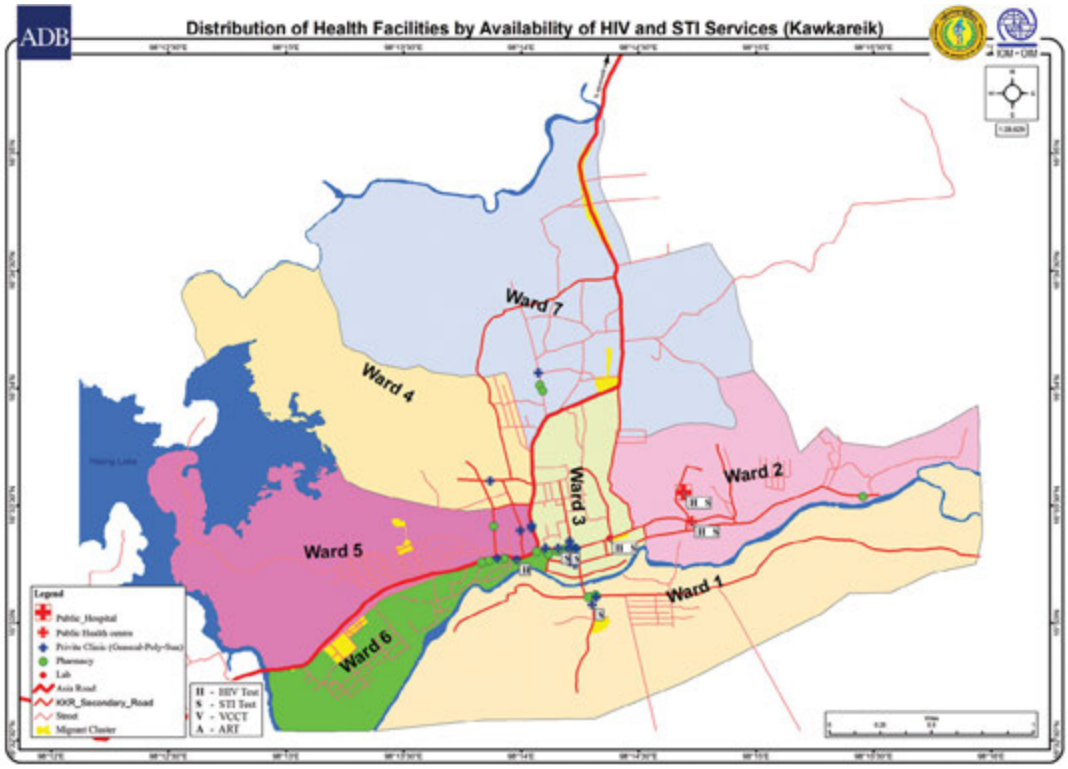


In conclusion, there appears to be varying attitudes towards PLHIV. Participants of the quantitative survey and MMM had a largely negative attitude, whereas attitudes of MSM and FSW showed compassion and community to friends and acquaintances that were living with HIV. All respondents indicated that they would take care of a relative with HIV/AIDS. Among quantitative participants attitudes towards HIV/AIDS were found to be positively associated with educational background and HIV knowledge. Migrants perceived others to be at a higher risk than themselves.

3.5 Health services and accessibility

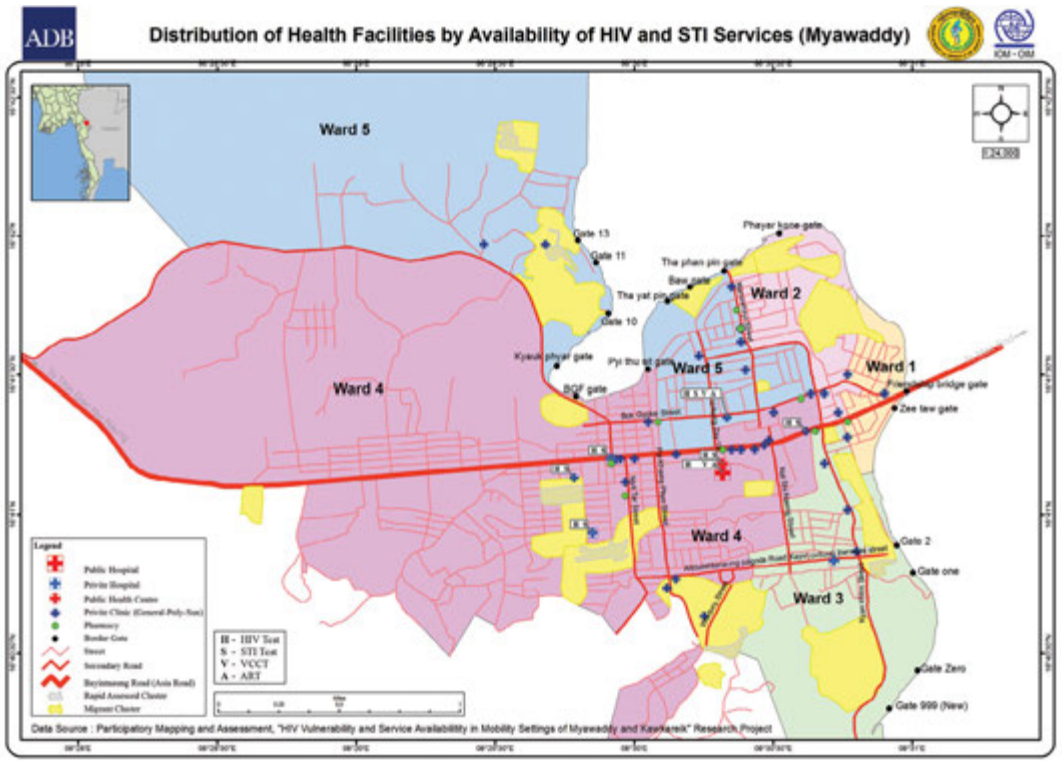
Within the two districts Myawaddy and Kawkareik there are the following health facilities: general hospital, private and NGO clinics, and pharmacies; there are no specialist facilities, but some hospitals offer specialist services. Mapping exercises conducted in September 2014 showed the distribution of all health facilities in the study areas as presented in Maps 3 and 4.

Map 4: Distribution of health facilities in Kawkareik, September 2014



The mapping exercise found a skew towards private service providers, such as private clinics and pharmacies, and an overall limited HIV testing availability in both study areas. In Kawkareik there are 18 private clinics, including two that cater specifically to FSW and MMM, and one caters to MSM. There are three public health centres, all of which are reproductive health clinics; one public hospital; one Maternal and Child Health Center; and one NGO that provides both fixed and mobile services.

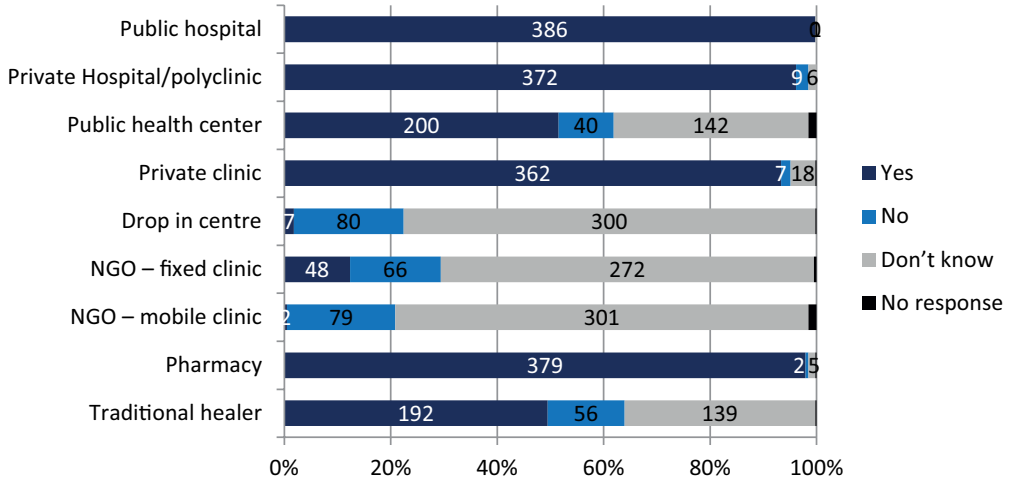
Map 5: Distribution of health facilities in Myawaddy, September 2014



In Myawaddy the predominance of private providers was more prominent: there were slightly more private clinics, 31 in total, as well as three private hospitals. The mapping exercise identified only one public health centre, one public hospital, and one NGO-provided health facility.

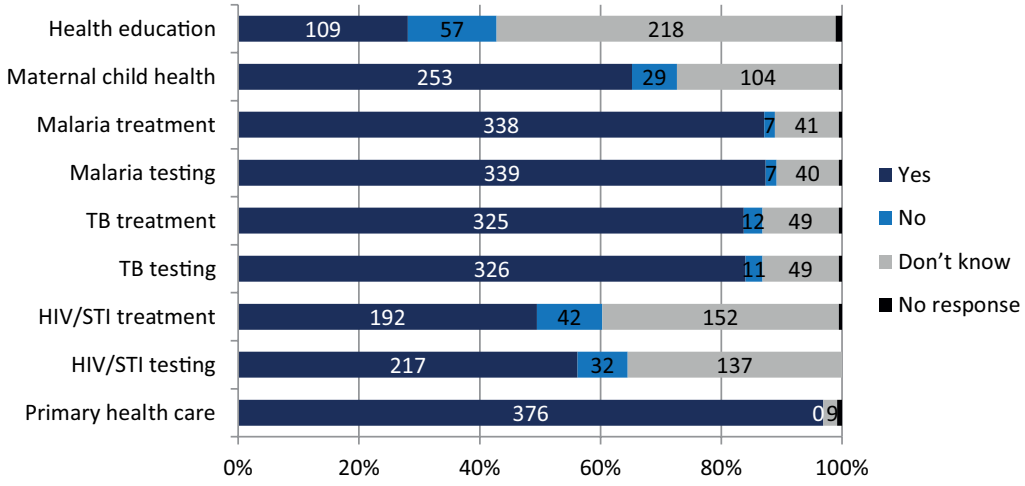
As for perceptions and knowledge of quantitative survey participants regarding the availability of health facilities in the areas, more than 93 per cent were aware of the public hospitals, private hospitals/polyclinics, private clinics and pharmacies. More than 77 per cent were not aware of the non-typical health facilities, such as the drop-in centre, or NGO-fixed and mobile clinics as presented in Figure 10.

Figure 10: Perceived availability of health providers in study area



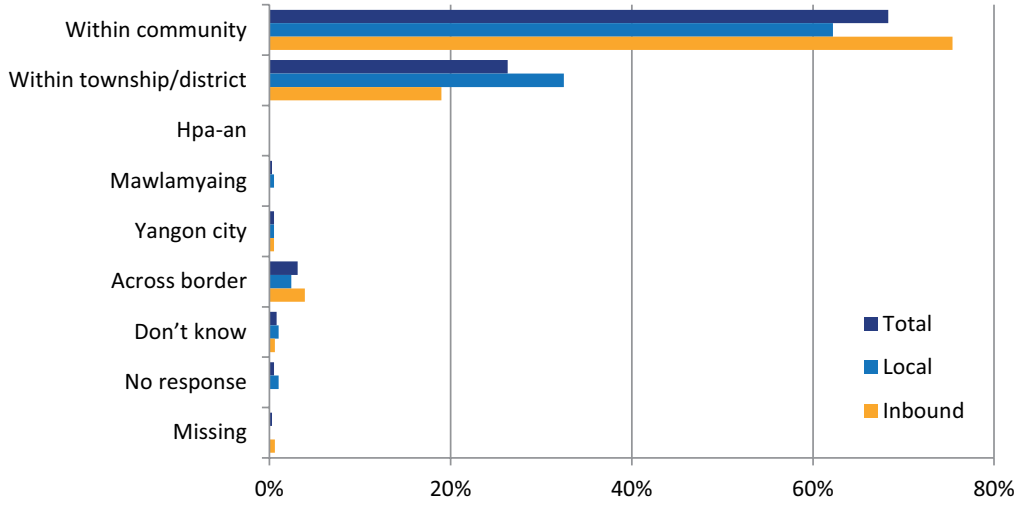
When asked about health services, primary health care was available and well-known by respondents. Malaria and tuberculosis (TB) services are also perceived to be available, however respondents were less knowledgeable about the existence of HIV/STI testing and treatment in the study areas. For Malaria, TB, and HIV, perceived service availability was lower in Kawkareik compared to Myawaddy (Figure 11).

Figure 11: Perceived availability of health services in study area



To obtain health care, 12 individuals had crossed a border in the past 6 months, this number increased to 35 people within the past year or 9 per cent of all respondents. Almost all of these individuals lived in the border Township Myawaddy and had sought health care along the Thai-Myanmar border, mostly in Mae Sot (31 respondents) (Figure 12). Two people targeted Mae Tao clinic in Mae Sot specifically.

Figure 12: Distance travelled in search of health care when last ill in the study areas, in total and by migrant category



Findings from qualitative discussion complemented the results from the quantitative survey. Key informants and FGD participants explained that there were primary health care, reproductive health, HIV, TB and malaria health care services operating at the public hospital in Kawkareik and Myawaddy. There are also many private clinics which provided similar services. In Kawkareik, three clinics were registered and operated by medical doctors in addition to unregistered clinics, which were opened by trainee nurses. The range of service costs were from MMK 1,500 to 5,000, depending on the reputation and seniority of the doctor.

Although some necessary health services were available, there was not a full continuum of care or preventive services available in both Myawaddy and Kawkareik. In Kawkareik, HIV testing was only available in the public hospital at the time of blood donation, prevention of mother to child transmission (PMTCT), Pyrexia of Unknown Origin (PUO) and/or surgical case. In addition, there were no specialists in either area. General practitioners are responsible for all forms of care.

"We haven't heard of any sort of special health services provided by those clinics in Kawkareik. Maybe it is because this town might not have that many events or cases of serious disease. But we have TB cases and we heard that TB patients get medications. For HIV cases, patients of the town have to go to Hpa-an directly and get medication from there."

MSM, Kawkareik

As Myawaddy borders with Mae Sot people can easily cross the border to access health services from NGO-run clinics although necessary health services provided by the government and NGOs are also available in Myawaddy. ART and TB medication were not provided free of charge in Mae Sot, but were provided at no cost in Myanmar. Referral and coordination mechanisms between the two sides have not been properly established. According to the STI Team Leader in Myawaddy, "out and in transfers" (O.I) can be provided for all patients and even provided to migrants who were on the other side of the river (Mae Sot).

"We can do O.I. Here is central to all. Previously, only a limited quota was available. Even it was unwilling to take transfer. Now O.I. is unlimited. Any team can have transfer "Out" as well as "In" since the medicine is continuously delivered. Those from other side are being taken as in-transfer cases."

STI Team Leader, Myawaddy

Health services have improved compared to the past but people may not be aware of the availability of all services as there has been no public communication to promote the health services provided by public hospitals.

"Today on our side, in border towns in Myanmar like Myawaddy , NAP, NTP like NGO run clinics are helpful for providing free of charge (FOC) health-care services. Information about services is not yet common knowledge here. So patients from this side are still relying largely on the NGO-run clinics on other side with FOC services available."

IOM HIV-TB doctor, Myawaddy

In addition to the public hospital and private clinics, non-government organizations have played important roles in providing health services to people in the communities for specific diseases. In Kawkareik there are, 1) Save the Children implementing initiatives for malaria; 2) Karen Development Health and Welfare (KDHW) implementing primary health care and MNCH in Thar Yar Gone and Ka Bu Hta areas; 3) Backpack Health Workers (BPHW); 4) MMA implementing primary health care; and 5) AMI distributing some hospital equipment to the hospital and conducting referral.

In Myawaddy, there are three organizations working on health activities. IOM is targeting HIV and malaria. Save the Children and MHA also implement initiatives targeting malaria. IOM is a referral centre for HIV positive cases in and around Myawaddy. IOM provides HIV testing, counselling, and medication for treatment, including ART. Not only direct patients receive IOM services, some HIV cases have been referred to IOM by public sector facilities and from NGOs implementing in Thailand (Mae Sot).

"Recently, to get ART properly, patients come and visit IOM's service centre or clinic (and state hospital in Myanmar on this side) even from the other side (people working in Thailand) referral cases are transferred by FOC clinics of public health care service centres in the region on both sides."

IOM's HIV and TB Doctor, Myawaddy

Although continuum of HIV care and prevention was not available for the general population in Kawkareik and Myawaddy, pregnant women received special attention from public providers through MCH staff.

"We make the blood test and if it is found, we refer to Sayar Zin (Dr.Zin Hla Maung, STI team leader). They call and see them. If we find the pregnant women, we send to Sayar Zin. They are given counselling. Send them to OG (Obstetrics and Gynaecologist doctor). OG asks them to take medicine from sister regularly. Some come here regularly until they give birth but some get lost (don't follow up). We have to go to their house."

MCH Staff, Myawaddy

"Prevention of Mother to Child Transmission (PMTCT) exists as a project here. In this project, diagnosis is made and treatment is given from Hpa-an. We are just responsible to identify the patient. So, they just focus on ante-natal care (ANC). ANC is performed and when the six or seven patients are found, the patient is given counselling. After that, the patient is referred to them. In 2014, because of decentralization, the medicine is given here. So, we have to explain to the patient thoroughly."

Deputy Medical Officer, Kawkareik

Most health facilities are situated in town areas while there are only mobile units or outreach teams reaching out to some communities occasionally, including some new and high density communities like Thin Gan Nyi Naung. People who live far from health facilities may only access health services once a disease has progressed or when perceived necessary.

"In Thin Gan Nyi Naung, it is not within easy reach. If there was also a shelter in Nyinaung, it would be convenient. If a new clinic like 'Nar Kho Yar' is possible to open in 'Ywa-Thit' (i.e. new residential place), it will be very convenient for us. To go very far to get access to a particular clinic is not convenient…. Only from IOM do we get help. The top centre from IOM has visited us, they gave a health-education talk. Condoms are distributed by IOM only, nowhere else."

FSW, 35 years old, Myawaddy

3.5.1 Health services for migrants and MARP

Migrants and mobile populations were able to access all health facilities in Kawkareik and Myawaddy, including public hospitals, private clinics and non-government clinics/ services. They have to pay for service charges the same as local communities. The primary issue for migrants accessing services is the cost of services as it may not be affordable for them. The government has, however, provided an equity fund to support poor patients and some medicines are provided free of charge. All clinics/ services run by international organizations or NGOs provide services free of charge to patients. Nevertheless, some migrants in Myawaddy still cross the border to access health services in Mae Sot although they have to contribute some costs.

"Mostly, migrant people cannot afford the expense. If so, we are informed. We have a patient who needs to undergo operation. That person cannot afford. What can we do? Formerly, there was a fund in the township. We can use from that trust fund for them. This August, we get an equity fund for this hospital. Last year, that equity fund was designated for mother and child, so we dare not use it. So, there were leftover funds. But this year, the new order for equity fund allows using it for poor patients. Moreover, this year, many of the medicines became free of charge (FOC), increasing the possibly they will come here. They also do come."

Deputy Medical Officer, Kawkareik

Many migrants were not aware of health services available in the areas. Information regarding services may be shared within a group but is not widely distributed. It was mentioned by MSM in the FGD that health information and education activities were arranged frequently in Mae Sot although it was still limited in Myawaddy. MSM reported sharing of information within their group.

"Relatively now people are becoming knowledgeable about those places (related to HIV/AIDS treatment and protection). In the past, migrants did not know anything about it. Compared to the previous situation, it would be said that now many people have access to information (about HIV/AIDS). Gays know more than usual guys."

MSM, 41 years old, Myawaddy

"Comparing Myawaddy and Mae Sot, many migrants working in Mae Sot claim that health education sessions are more frequent and even the village leader assists in it, unlike in Myawaddy (HE sessions are rare in Myawaddy)."

MSM, 31 years old, Myawaddy

As for HIV services, migrants could access HIV services at the public hospitals, some private clinics and non-government clinics/ services. There were no organizations working on HIV care and treatment in Kawkareik during the study period (September 2014). Only IOM implemented HIV activities in Myawaddy. IOM has been operating under the Myanmar National AIDS Programme's (NAP) direct coordination. NAP did not provide ART to patients who did not have the household registration card at the public hospital, but patients could access ART at the IOM clinic. Criteria for ART prescription at the IOM clinic was those patients who, a) lived/stayed in the defined project area, such as Myawaddy, for a minimum length of stay of six months in the same project area; b) had at least one close family member or friend who was knowledgeable of and could confirm his/ her history of ART use; and c) had evidence of counselling history that he/ she had already received in order to define whether he/ she could be classified as a standard (actual) ART user or not. As the majority of IOM patients were migrants, one of the challenges was checking their IDs and permanent address for registration.

"For the ART supervision, it is necessary that the patient has to stay in the area for at least 6 months. Then the ART user can receive close supervision by the health-care service provider , get good idea for whether patients take ART regularly or not, whether the amount/ dose is enough or not, what kinds of side-effects occurred to them, whether their health condition gets better or worse (via close supervision). Otherwise, if they travel outside of Myawaddy where their registration is kept, it is difficult for follow up."

IOM's HIV/TB Doctor, Myawaddy

Apart from providing health services to migrants in the townships, health officers in Myawaddy had provided health services to migrants who lived and worked in Mae Sot as well. Some migrants came to deliver a baby and receive vaccination. Procedures that require follow-up, however, are likely to have low attendance.

"People come here. We cannot go there, so they will have to come for follow-up visits. They have to come here regularly. We told them to come and get vaccines and blood test results. They may not come if they wish after two visits."

MCH staff, Myawaddy

If there were to be a large number of returnee migrants returning to Myanmar, the government would not be prepared to receive them and current existing structures and resources are not

enough to handle a large influx of returnees. There may be the possibility for a tailored response, as did occur in 2002 – 2004, for large numbers of returnees to Myanmar from Thailand. The quote below from a key informant details the response that occurred whereby all migrants were screened for HIV.

"I was there and at the time was the medical doctor in charge at the amp/ station for welcoming back those returning. It was the period from 2002 to 2005. All returnees were screened for HIV. Highlighted points on the migrants had to be checked. There was a reception centre for returnees in 2002 in this region. At the time of "Chief U Khin Maung Nyunt", I was in charge of health and team members, one laboratory technician, assistant director from Yangon as the team leader, staff and equipment/ apparatus form National Health Laboratory."

STI Team Leader, Myawaddy

These findings clearly show limited health capacities and obvious gaps in providing health services in Myawaddy and Kawkareik. In the circumstance of high mobility in the border areas, the referral of health services across the border can be a potential option for improving health situations in the border areas.

3.5.2 Health services - referral

It has been reported in the key informant interviews that there was no proper, systematic referral mechanism within Myanmar or across the border between Mae Sot and Myawaddy, although they share the border and mobility magnitude is high. Patients elected to cross the border to seek health care themselves.

There was in fact a referral committee. It included stakeholders responsible in both public and private sectors from Myawaddy and Mae Sot. Some relevant stakeholders may not be included and this committee therefore should be expanded. However, one can only be referred when the provided services match. According to IOM's HIV/TB Doctor, even though many meetings were held, the referral system does not function well. Patients could not yet be referred to the other side. Some HIV patients, however, have been referred to the IOM clinic by both public and private clinics in Myawaddy, as well as by cross-border referral from Mae Sot in Thailand. PMTCT was supported by Mae Tao and MCH clinics in Mae Sot.

"Recently, to get ART properly, patients come and visit IOM's service centre or clinic (and state hospital on this side). Even from other side (people working in Thailand) referral cases are transferred by free of charge clinics and public health-care service centres in the region from both sides. For PMTCT related services, it is available in Mae Tao and MCH clinics situated on the other side of the border region. All three parties: father, mother and the infant, are transferred back to this side after they fully receive PMTCT care (with 6 week-ART treatment). Decisions over whether those 3 parties still deserve/ need ART or not is the decision of health-care service providers on this side [Myanmar]."

IOM's HIV/TB Doctor, Myawaddy

In order to establish an efficient referral mechanism, there is a need for involvement at the national and local levels from both Thailand and Myanmar. There must be an agreement, referral protocol, and the network must be exercised either across sectors or within health sectors to strengthen the capacities and health service delivery.

"It is better to negotiate at the central level rather than at the local level. Our level cannot make decisions. Decision makers should meet in person. A local meeting was planned last time. The seniors/ heads will meet in September. After that, a meeting will be called. Like this, the decision makers should meet and lay down a format for more success."

STI Team Leader, Myawaddy

"What the cross-border region needs is to establish proper net-working mechanisms via a workable/ agreeable referral system in the region since the working areas of NGOs are limited and they cannot fulfil each and every single need of migrants (who are mobile). Networks like government to government, NGO to NGO should be systematically established (in the cross-border region) for better service delivery."

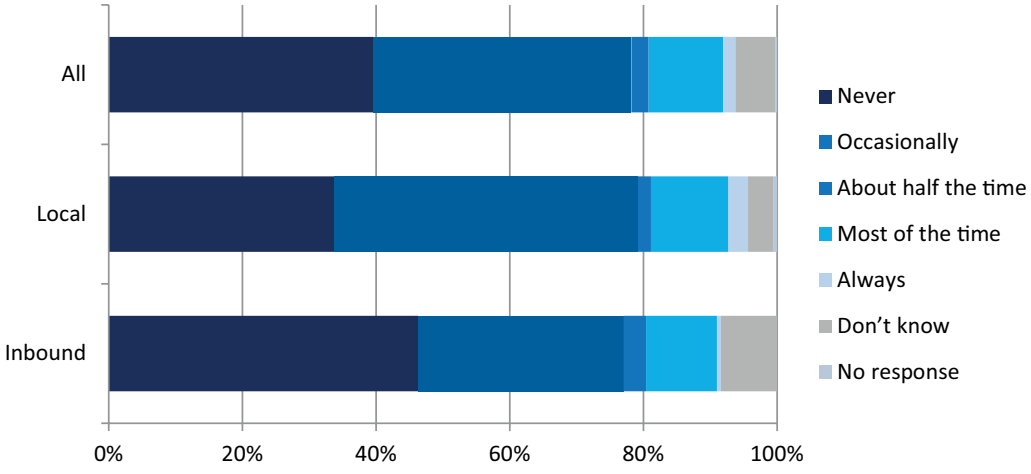
IOM Drop-in Centre Manager, Myawaddy

To conclude, numbers of health facilities were available in Myawaddy and Kawkareik. Migrants and risk groups were aware of the health facilities and services available to them. However, the quality of services and difficulties in accessing health services may hinder access among these populations.

3.6 Quality of health-care services and difficulties accessing health-care services

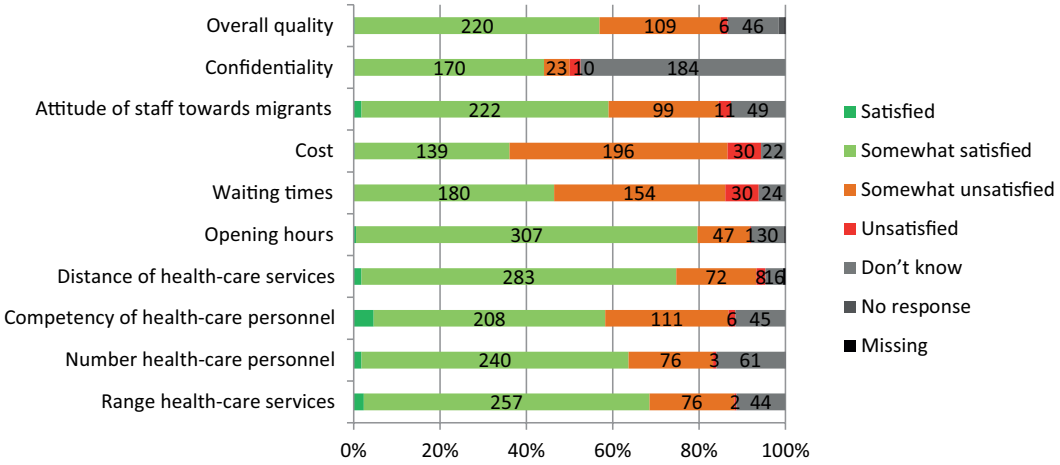
Quantitative survey results indicate that 40 per cent of all respondents had never faced difficulties accessing health care in the study area, and an additional 38 per cent had occasionally faced difficulties. 11 per cent of migrants stated that they had faced difficulties 'most of the time' (Figure 13). Among migrants who had been ill, a history of difficulty accessing health care was associated with being an outbound migrant ($p<0.05$), of an older age ($p<0.001$), and having access to health materials in the past six months ($p<0.001$) (Appendix III). Local migrants appeared to face more discrimination due to their socioeconomic status than inbound migrants (41% versus 30%), however there was no observed difference in terms of perceived unaffordability. It is likely that the increased access to heath materials may be due to the initiative of the individual when sick as a replacement for accessing professional care.

Figure 13: Frequency facing difficulties when accessing health services or facilities in study area, among all, local, and inbound migrants



The most commonly specified difficulties faced by migrants when accessing health care were unaffordability (66% of migrants who had faced difficulties), long waiting hours (37%), discrimination due to socioeconomic status (37%), and poor quality services (27%). Remote geographic location was also mentioned (Appendix II).

Figure 14: Satisfaction with various dimensions of health care in study areas



Qualitative study participants provided details of aspects influencing the quality of health and HIV services in Myawaddy and Kawkareik, and the decision to cross the border to seek health care as following:

3.6.1 Quality of HIV and health services in the areas

i. **Cost** – cost of health services can pose a great barrier to health services access although people can receive free of charge services for some ailments from the public hospital. In Myawaddy, the cost of a health-care session in a clinic is around 5,000 - 10,000 MMK (4.8 to 9.7 USD) which was high compared to a typical income. Instead, patients may decide to purchase traditional medicine available in grocery stores or pharmacies. Costs to acquire health services included transportation costs. In some situations, transportation could incur higher costs than that of treatment.

"Some of us are calculating about income and expenditures of one's own. If it is 3 visits to the clinics that will cost about 30,000 MMK, which is equivalent to one night's earnings when work is possible. But the nature of our work is not reliable to obtain such an amount per night. So the cheaper way is buying medicine from a pharmacy (or grocery store instead)."

FSW, 24 years old, Myawaddy

Some people may just cross the border to Mae Sot to receive free services at Mae Tao where they must contribute only a donation and the cost of transportation (approximately 20 THB for moto-bike taxi). Nevertheless costs may not be the main issue for some but rather the quality of, and trust in, the services provided.

"Mae Tao is farther but people have been going there for a long time. If something happens, everyone goes to Mae Tao, even people from the villages. They go passing the sandbanks. The cars come and fetch from this side."

IOM's HIV/TB Doctor, Myawaddy

ii. **Service-orientation of health-care provider** - The attitude towards care on behalf of caregivers can also impact patient motivation to seek health services. If a physician blames or uses unsupportive language with patients, concentrates on his/her economic gain (no money, no service) or rejects a patient on the basis of his/her qualification, patients are less likely to seek care from the particular provider.

"In the public hospital, health care personnel are very money-concerned. I'm afraid of it. Without any extra money (pocket money) paid to them, none of them want to take good care of patients. During my mother's hospitalization, she suffered the whole night. No one took care of her until payment came. The following day, when we borrowed money by using our home as collateral for the money lender's assurance, and paid the money to them, they started taking care of my mother and then she got an operation for her stomach."

FSW, 24 years old, Myawaddy

"In the past, I was TB positive so that I took the paper documents as evidence that I got from the Yangon Special Clinic (privately owned) showed my particulars to the doctor from this general hospital. What he said was "these remarks and prescriptions will be done by a doctor whose rank is lower than that of mine" and didn't accept me to give treatment or prescribe medication."

MSM, 48 years old, Myawaddy

iii. **Attitude and reaction of health providers toward PLHIV** – Stigma and discrimination is still high among some health providers. This is reflected in how they treat PLHIV. This was the main concern of participants from some groups about getting a HIV test and accessing services at the public hospital. Their HIV status could be exposed to the public as there was no privacy or confidentiality. Other people could have access to their health information.

"Whenever patients come in general blood tests are taken. Then if someone is positive, he gets treatment but with discrimination and there is the perception that service providers are timid/hesitant towards him."

MSM, 48 years old, Myawaddy

"Nurses speak openly about it and make remarks to us like "now you have this AIDS/ HIV?" instead of maintaining privacy."

MSM, 48 years old, Myawaddy

"If we do it in the general hospital we have to pay 3000 MMK, also our privacy is likely to be invaded by information leakages about us done by nurses."

All MSM respondents in Myawaddy

iv. **Management and health services** - The management and breadth of service provision also impacts patient readiness to seek care. Limited resources, lack of trust in services provided, and demanding payment for free of charge services, such as a chest X-rays or HIV tests reduces patients' willingness to seek health services. Respondents reported operating hours as convenient but patients still have to wait for a long time to receive care.

"Even to get X-ray checking for a suspected TB case, it is not a free of charge service (in general hospital).

MSM, 48 years old, Myawaddy

"Especially for surgery cases which are available on this side (in Myanmar) is not good to take."

MSM, 48 years old, Myawaddy

"Over there it is like a one stop service and one also doesn't have to pay fees. If it is pregnancy, they see the doctor. They provide necessary things. They give birth and they come back. They also give accessories for the child. It is also free."

IOM's HIV/TB Doctor, Myawaddy

v. **Lack of necessary infrastructure and medical equipment** – Electricity was not stable in Kawkareik which affected the provision of care and treatment to patients. For example, the hospital cannot stock some types of medication or set up a blood bank due to the lack of electricity. A generator for some work may be available but cannot be shared although other medications or procedures may be also important.

"They refer the patients who they trust. They are worried about transportation. And the problem here is that we don't have a cold chain yet to keep many medicines. We just get electricity from 6:30 to 8:30 pm."

Deputy Medical Officer, Kawkareik

"We have X-Ray. The first machine is a small tube. It was changed as it broke down. We have a 200 MP X-Ray machine provided by the government. We also had a generator to use with this machine. We have reported to CMSD to use these two machines jointly. We have also asked the X-Ray mechanics. We bought the generator from a company. The company gives a one year warranty. They don't allow handling by outside persons. So, they will come and join. If someone else handle the generator and something happens to it, the warranty will be invalid."

Station Medical Officer, Kyone Doe, Kawkareik

"There is no HIV case in Kawkareik. It is quite difficult to find blood as there is no blood bank. Testing is not at standard quality. There is also no parallel testing. There is no electricity."

Head of Base, Action Aid Medical, Kawkareik

vi. **No continuum of care and services and poor referral systems** – there were limited HIV services in both Myawaddy and Kawkareik due to various reasons, such as limited staff and resources, limited capacity, and lack of health facilities and equipment. Additionally, referral systems were either inactive or inefficient. This definitely affected the quality of services of health-care providers.

"Even for CD4 counts, we have to ask people to be in groups and then have to move to Mawlamyine. Patients and suspect care are waiting long for CD4 count, this results in waiting in a long queue to be counselled. Such services are only available in Mawlamyine. We need to be quick for it whether the patient deserves to take medicine or not. If yes, together with properly quick-medication is better."

MSM, 41 years old, Myawaddy

"We haven't heard any sort of special health services provided by those clinics in Kawkareik. Maybe it is because this town might not have that many events or cases for those serious diseases."

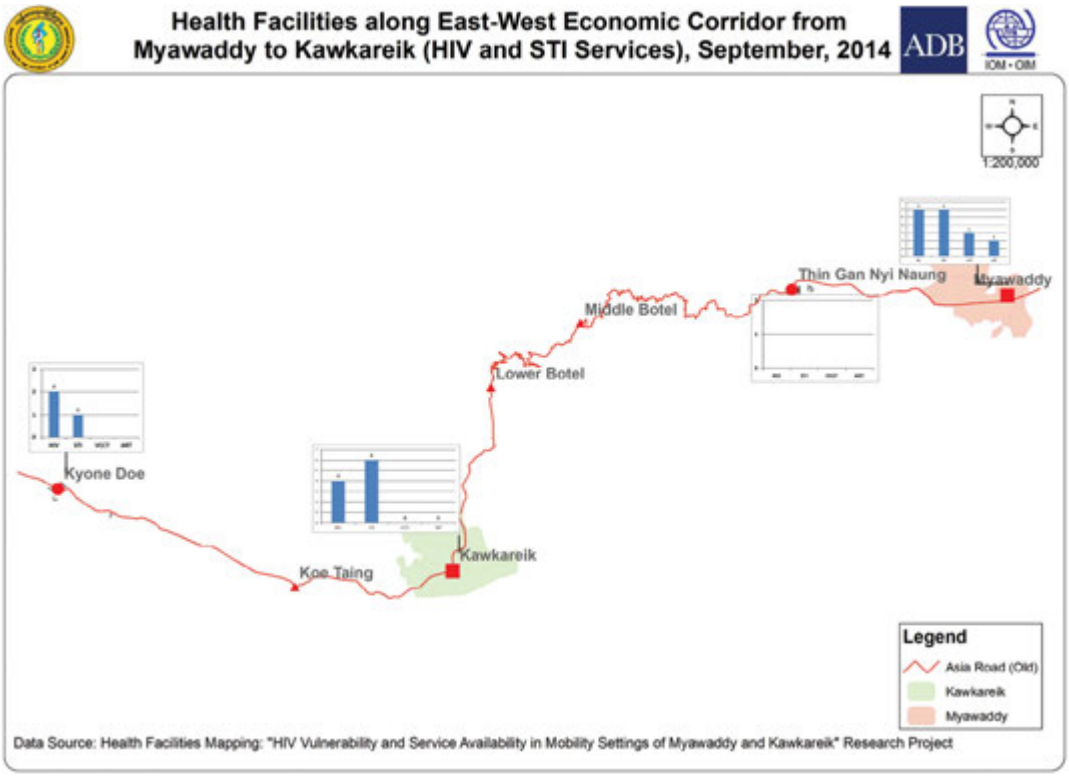
MSM, Kawkareik

These findings indicate that only a small percentage of respondents consistently faced difficulties accessing health services. Unaffordability was the greatest barrier to accessing health care. Qualitative respondents indicated that discrimination on the part of health providers, poor resources and infrastructure, as well as lack of a continuum of care influenced the likelihood to seek care.

3.7 HIV services and HIV testing history

Mapping exercises on HIV services along the East-West Economic Corridor from Myawaddy to Kawkareik show that non-private facilities in both townships were the main providers of HIV services. None of the private clinics in Myawaddy and only two in Kawkareik provided HIV testing or treatment, with HIV testing otherwise only available at NGO clinics, public health centres/ hospitals, and two private hospitals or 12 venues overall (8 in Myawaddy and 4 in Kawkareik). Only three venues did not incorporate HIV testing into a programme for HIV counselling, testing and treatment, and the public health centres offered HIV testing as a component for PMTCT. Furthermore, only two venues offered HIV treatment, namely an NGO and the public hospital in Myawaddy.

Map 6: HIV and STI services along East-West Economic Corridor from Myawaddy to Kawkareik, September 2014



Qualitative investigation complemented quantitative the findings that HIV services in Myawaddy and Kawkareik are associated with the public hospitals, or may be provided at private clinics. Only IOM was running a HIV services clinic in Myawaddy at the time of this study. Although there was no continuum of care and treatment for HIV in the areas, health providers reported referral of cases to other clinics/ hospitals in the area or to other towns. Main HIV services included HIV testing, VCCT, and ART provision. HIV communication and campaign will be presented in a separated section. HIV services are provided free of charge at the public hospitals and IOM clinic. Some people crossed the border to access services at Mae Tao Clinic (also called Student's Clinic) in Mae Sot.

In Myawaddy, HIV testing services are available in public hospitals, at the IOM clinic and Mae Tao clinic at no cost (save for transportation costs). IOM's HIV-TB doctor who was also one of the key informants explained that four clinics in Myawaddy provided HIV testing. 'Myitter Mon Clinic' which is a popular private clinic among FSW and MSM charged about MMK 20,000 per test (21 USD). However, it appears that the availability and scope of HIV services was better known among FSW and MSM compared to MMM and other populations. These groups preferred to receive services at the IOM clinic as it was completely free of charge and provided services in a standardized and friendly manner. According to the FGD participants, they had to pay a MMK 3,000 service fee (3 USD) at the hospital, and there was distrust in whether or not information would be kept confidential.

"IOM is the only one on which we can rely for FOC services for getting tested for HIV. "Myitter Mon" like private clinics are available, but it can be charged ("Myitter Mon" charges about 20 000 MMK). It is also available at the Public Hospital in Myawaddy."

FSW, 24 and 18, Myawaddy

"If we do it in the General Hospital, we have to pay 3000 MMK, also our privacy is likely to be invaded by information leakages (about us) done by nurses. In the IOM office/clinic, the way the clinic provides health-care services is mingled with other sorts of treatments so that patients are not singled out f or HIV/AIDS alone and it is easy access to get it."

A group of MSM, Myawaddy

In Kawkareik, FGD participants indicated that HIV testing was available in the public hospital and in some clinics. The District Medical Officer explained that there was no HIV testing for the general population. HIV testing services were provided through PMTCT for pregnant women mainly which also covered services for the husband if the wife is found to be positive.

"Blood tests can be conducted in our general hospital unlike that of Myawaddy centre where a separate room for blood-test is provided. Other private clinics in this town may provide HIV blood-testing facilities. But people here are not that eager to get that sort of blood tests since they don't really want to know about themselves [their HIV status]. Only if they have symptoms, they remember that they have to take tests for possible diagnosis."

MSM, 31 and 42, Kawkareik

"No idea, in Bago testing for AIDS is available in great clinic. There are so many things that we don't know."

MMM, 24, Kawkareik

"In PMTCT, when the woman is found as positive, the husband is entitled to get the test. They can get the test if they have desire. We cannot force them to get the test against their will."

MCH Staff, Kawkareik

Although HIV testing services are available, participants in the FGD also mentioned that people in the communities (including themselves) were not aware of the necessity of undergoing HIV testing if there was no suspicion or symptoms.

"Mostly risk groups and their risk partners had HIV testing. It's not active but passive findings that is what we call this type of blood testing and positive results. They come on their own only if they feel that they have risks (maybe after visiting massage parlours, etc.). Otherwise they won't that is why we call such a type of HIV/AIDS positive results as "passive findings". No active finding can exist here."

STI Team Leader, Myawaddy

"We have no idea to get tested for AIDS if we have not felt strange in our illness. Nor do the test-places (clinics)."

MMM, 31, Kawkareik

VCCT was available at a place that provided HIV testing but protocols and practices were different in each venue. VCCT at the public hospital and private clinics were not described in detail. At the IOM clinic, the protocol was described by the DIC Manager as quoted below.

"If the suspects stay at a place nearby, it is the better to wait till the result is out within a day. For most suspect cases, they have to be back to our place for collecting their results on the following day. To send blood-samplings and test kits of suspects to the general hospital, we do at that the same afternoon, and we collect blood-test results the following day in the morning from general hospital. When we give the test results to the suspects, someone who tests positive receives our Post-test Counselling. This is the procedure for those cases sent to the general hospital. In our lab, a technician from general hospital will visit on a weekly basis. They will sit and wait for suspects for their blood-testing on Wednesday and Thursday. On those two days, those who come to our lab have chance to get their results on the same day in late afternoon. Or if we think, the suspect cannot accept that sort of bad result straight away, we intentionally let him wait a few days (or provide result the next day)."

ART is provided free of charge at the public hospital which is the official health provider under the Myanmar National AIDS Programme (NAP), and at the IOM clinic. However, those who could access ART at the government hospital have to register in the township to receive a household number. They have to provide a national ID and certified letter of residency. The IOM clinic, however, is open to all, regardless of residency, especially high risk populations. IOM adheres to NAP's regime and recommendations for treatment protocol. Since 2014, the hospital could provide ART to all eligible patients with no limitations. There was regular follow up at the hospital as well.

"At the beginning, a maximum limit was set. Later, the limit increased. It was set at a 110 patient quota as the maximum per year. Lately, no maximum but minimum limit of medicine quota is only set. This year at least (medicine for 180 users) is required for minimum limit to be fulfilled by our hospital. No problem if there are more patients there is a free maximum limit, so to say. Every Monday, it is mandatory for all ART-users to visit such a clinic with a physician in charge to be followed up, in principle."

STI Team Leader, Myawaddy

Respondents, however, also indicated limitations on providing ART for all PLHIV in the areas.

"If asked whether it is increasing, we cannot give ART well. There are needs. There are a lot of people who have done blood test and they have no treatment. I don't know exactly how many of such people are still out there. The infection rate is high here. And I must say there are a lot of cases. I don't know about the country as a whole. I have more positive rates in my hand than others. According to my data, there are about 50. Most of them are migrant workers."

IOM HIV-TB doctor, Myawaddy

On the other hand, the protocol of HIV care and treatment was different in Kawkareik. The hospital did not have proper facilities and resources. They referred cases to Hpa-an for testing and ART treatment. The number of PMTCT patients receiving ART in Kawkareik was only 4 at the time of this study.

"What Hpa-an has done is that we don't have to give as soon as it is found. They give based on coming regularly to them. They refer the patients who they trust. They are worried about the transportation. And the problem here is that we don't have cold chain yet to keep many medicines."

DMO, Kawkareik

"We don't do CD4 count measurements for mothers. If the symptoms are seen, we refer to Hpa-an. When we send them to Hpa-an, they cannot go there as it is far. They are given medicine after going there about two times."

MCH staff, Kawkareik

CD4 count was not available in Myawaddy either. PLHIV had to go to Mawlamyine for services, which was time consuming and costly for some patients.

"Even for CD4 counts, we have to ask people to be in groups and then have to move to Mawlamyine. Patients and suspects are waiting long for CD4 count and results, they must be in a long queue for counselling. Such services are only available in Mawlamyine. We need to be quick for it whether the patient deserves to take medicine or not. If yes, together with properly quick-medication is better."

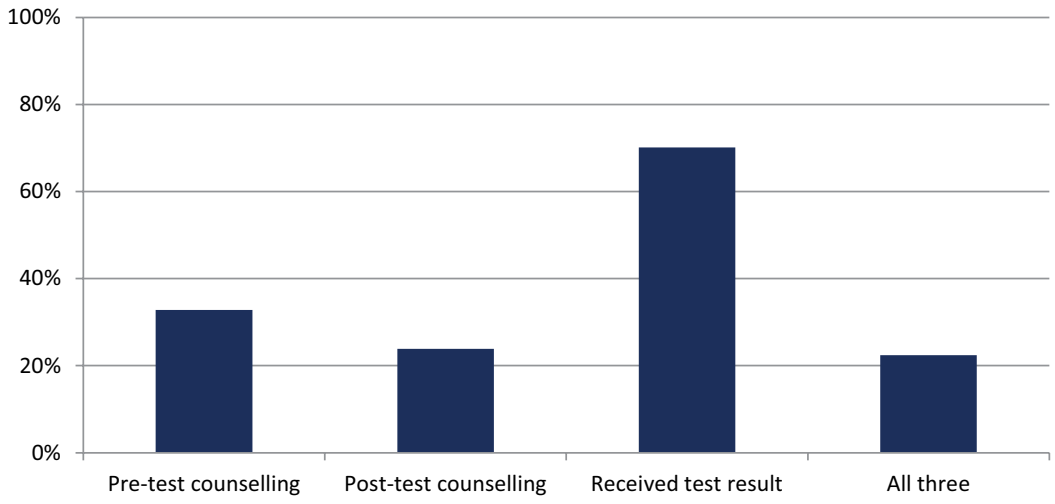
MSM, 48 and 41, Myawaddy

3.7.1 HIV testing history among migrants

Seventeen (17) per cent of migrants had ever had a HIV test. Of these, the majority (73%) had done so more than a year ago. More men than women had a history of HIV testing (85.2% vs 78.5%), however this did not prove to be statistically significant. For the multivariate logistic regression model (Appendix III), a respondent had a higher odds of having had a HIV test if they were married ($p<0.01$), had a higher income ($p<0.01$), had accessed HIV information in the past 6 months ($p<0.05$), had better HIV knowledge, and had a more positive composite attitude score[6]. There appears to be little personal initiative to test for HIV: 88 per cent of those who had never had a test stated that this was due to not being at risk, while 87 per cent of those that had tested did so because it was recommended or suggested by a health provider. No time to test, poor knowledge of HIV, and limited availability, including financial availability, were also mentioned as disincentives to testing. No individuals stated that they themselves felt at risk or had been exposure to HIV infection (Appendix II).

The testing experience at last HIV test was not optimal and adherence to testing standards was poor. As visualized in Figure 15, 33 per cent received pre-test counselling, 24 per cent received post-test counselling, 70 per cent received their test result, and 22 per cent experienced all three components during their testing session. Unlike health care seeking for general health problems, most respondents who had had a test did so at a public hospital (78%). 7 individuals, all of whom were located in Myawaddy, mentioned Mae Tao Clinic (response: 'other'), located on the border of Myawaddy and Mae Sot.

Figure 15: Migrants who received pre-test and post-test counselling, and who received their test result at their last HIV test, among migrants who had ever had an HIV test (n=67)



In conclusion, research shows that the study areas are severely lacking in HIV service provision and services currently offered are not comprehensive, convenient, or cost-effective; there was no existing continuum of care for cross-border or internal migrants. Less than a quarter of respondents had undergone a HIV test. There is no HIV treatment offered in Kawkareik and only two locations in Myawaddy. Cost of services again presented a barrier to seeking care. Poor confidentiality at public facilities was of concern for vulnerable groups.

3.8 Barriers to accessing HIV services

As presented in the mapping of health facilities in Myawaddy and Kawkareik, there are some HIV services provided in public hospitals and private clinics, and the IOM clinic provided HIV testing,

[6] Access to Health Materials was dropped due to its collinearity with access to Health Materials and a resulting better fit to the model.

VCCT and/or ART. Qualitative findings found some barriers among migrants and vulnerable populations in accessing HIV services which are described below.

i. **Restrictions in eligibility criteria for commencing ART** – NAP, through public hospitals, provides ART to all PLHIV who are registered in the township, can provide a household number, a national ID and a certified letter of residency. All migrants including most MSM, FSW and MMM are not eligible to receive ART at the public hospital. They can, however, access ART at the IOM clinic in Myawaddy. The criteria at IOM are set to serve migrants or those who are not registered in the township. However, patients must ensure that they stay in the communities and can take ART regularly under close supervision of the health personnel for at least six months. Criteria for ART prescription at the IOM clinic was those patients who, a) lived/stayed in the defined project area, such as Myawaddy, for a minimum length of stay of six months in the same project area; b) had at least one close family member or friend who was knowledgeable of and could confirm his/ her history of ART use; and c) had evidence of counselling history that he/ she had already received in order to define whether he/ she could be classified as a standard (actual) ART user or not.. Cases can be referred to the public hospital if the patient is registered in a household list.

ii. **ART provision is fixed to the town of registration only**– PLHIV must acquire ART at the original place of registration. The quota of ART for registered patient is fixed at one centre. Patients must travel to access ART there even if they have moved to another area. Other persons cannot collect medicines for the patient.

"No one can be transferred for medicine on another's behalf. For 3 months medicines are given to the person on a schedule. The recipients must have responsibility to be back before their medicine runs out."

MSM, 41, Myawaddy

"If a recipient is registered here, his quota of medicine or his registration cannot be transferred to the south (other regions like Kawkareik)."

MSM, 48, Myawaddy

"If a person is HIV positive and if she has to take CD4 count and regular medicine, let's say she is staying in Yangon, then it is not convenient for her to come here monthly to receive medicine. It would be convenient if the medicine is transferred to her place of residence."

FSW, 29, Myawaddy

iii. **Non-professional treatment standards by health personnel at public hospital** – some participants reported discrimination from health providers who knew of their positive HIV test results. There was no confidentiality and no privacy for patients and their personal data. As a result, some avoid going to the public hospital to get HIV services.

"The general hospital treats HIV-positive patients but with discrimination. Whenever patients come, blood-tests are taken. Then if someone is positive, he gets treatment but with discrimination and service providers are timid/ hesitant with him. Nurses speak openly about and make a remark to us like "now you have this AIDS/HIV?" instead of keeping privacy."

A group of MSM, Myawaddy

iv. **Social discrimination** – discrimination towards PLHIV in the communities is still high. FGD participants explained that they even hide themselves when they visit HIV clinic for HIV testing. They preferred HIV clinics located outside of the communities, attached to other clinics or that provided treatment for other diseases as well to avoid suspicion that they visited the clinic for HIV related treatment. Furthermore, discrimination does not only affect social status but also economic status as well. For example, clients may no longer visit people known to be HIV positive, or business owners may not allow them to work. They are afraid of knowing the results and being discriminated against and many people instead choose to not get HIV testing.

"The location of IOM organization now is inside the town, not outside of it. If it is located outside of the town just beyond it will be more convenient for us not to let other people easily see us while we visit the health-care service centre. We dare not go and visit inside the downtown. We are not that brave to be mingling with others so that for us the place/ clinic, outside of town is the better location because it is less crowded."

A group of MSM, Myawaddy

"In the case of sex workers, they are afraid to be known [HIV status] by their boss, managers, owners of brothel houses, also by their co-workers and other sex workers. When one sex worker has a positive result, to visit the special clinic for HIV/AIDs, if she sees her co-worker who also visits the same place, the feel afraid of each other."

IOM HIV-TB doctor, Myawaddy

"To give them like that, they don't want to accept us if we go to them [outreach programming]. They just want to come. We did it before, Sayar. They felt small. Only husband and wife know and the rest of the family does know. That's why; it is not ok for us to visit them."

MCH Staff, Myawaddy

v. **No awareness and knowledge of HIV testing and services** – Many people who exhibited high risk behaviour may not be aware of HIV testing as they were not knowledgeable about HIV or HIV testing. This seems to be more common among MMM, as they did not receive any communication materials or training about HIV/AIDS.

"There are so many things that we don't know. We have no idea that we should get tested for AIDS if we have not felt strange in our illness. Nor do we know of the test-places (clinics)."

MMM, 25 and 31, Kawkareik

"They themselves don't want to get the test. They don't want people to know… They are not interested. Some even don't understand if they are asked to get a three month pregnancy prevention injection [birth control]. They are illiterate and it is very difficult to talk to them."

MCH staff, Myawaddy

vi. **Competing economic and work priorities** – load of work and time arrangements were raised as reasons for not seeking HIV testing among truck drivers. They are travelling most of the time, and are usually busy with loading goods when stopped in townships like Myawaddy. Truck drivers and other mobile men would not manage to go for HIV test if they are not suspicious of their status.

"If it is difficult to get tested, we won't but if it is within an easy reach like technicians would visit to our village, we would do it. One thing is we are totally occupied by our tasks - up-loading, down-loading and go in a short interval."

A group of MMM, Myawaddy

vii. **Distance and transportation costs prohibit health service access**

"To get tested is a costly and time-consuming task that is why people don't go to get tested."

A group of MMM, Kawkareik

"When they go to the hospital, the transportation charge is big. It is about 35 miles from Kawkareik border. In the rainy season, they walk from there, take the boat, and take the carry (a litter carried by men)."

Head of Base in Kawkareik, PU-AMI (CSO)

Barriers in accessing HIV services were not only expressed from the side of the patient, health providers also faced challenges in providing HIV services to migrants and vulnerable people. The following presents challenges experienced by health personnel.

3.9 Challenges in providing HIV services

i. **Difficult to track migrants and mobile populations –** in high mobility areas such as Myawaddy, there is the potential for migrants and mobile persons to transmit or contract HIV. The mobile nature of vulnerable people is one of the challenges in providing HIV services as treatment requires adherence. Even HIV testing and VCCT requires a commitment of a few days.

"For migrants', the issue prohibiting people to know whether they are positive or not by VCCT testing among mobile ones, is that testing results were slow and people move quickly, mismatching in practise for mobile people. HE (health education) sessions with VCCT tests are done on one day, on the following day when results come, people disappear moving to the neighbouring country or back to their home town…, etc., is happens often."

IOM HIV-TB doctor, Myawaddy

ii. **Lack of medical supplies and equipment for HIV treatment** – it was reported in the key informant interviews that public hospitals in study areas were inadequate, especially in Kawkareik where HIV testing was not provided to the general population. There was not the necessary equipment in the hospital. Electricity was not stable. Some medicines cannot be kept in Kawkareik. Patients were referred to Hpa-an for HIV services, for instance, for CD4 count and ART provision.

"It depends on the number of patients. I have found what AFXB (INGO that supports transportation cost and admission to hospital) done in Kyike Latt. We referred our patients to them. We make the tests. All the support to the patient is done. Take them. Do counselling. Check CD4. Give the expenses (transportation and admission costs) and submit to Waibergi hospital if necessary. When they come back, they are linked with the family and supports. What Hpa-an has done is that we don't have to give as soon as it is found. They give based on coming regularly to them. They refer the patients that they trust. They are worried about transportation. And the problem here is that we don't have cold chain yet to keep many medicines."

DMO, Kawkareik

iii. **Reliance on PMTCT/midwives for HIV services** – there were limited HIV/STI officers, especially in Kawkareik. MCH staff is tasked as an HIV team in coordination with the STI team leader. High demand of multiple tasks by MCH staff limited their capacities to work on HIV services. They could mainly deliver health education with the communities when they did community outreach. There was priority given to pregnant women compared to other vulnerable groups.

"Midwives give health education when they reach the villages. They give that whenever possible while they give EPI (Expanded Programme of Immunization) injections as they look at the Ante-natal Care while they go. Formerly it is a bit difficult. PMTCT project gave us troubles. So we have to send the blood sample back to Kawkareik. It is not convenient. Midwives have to make appointments for patients again. Patients are gathered and take blood samples. So, they have to come again and again. Some come and take blood test when they coincide. And those are sent back as soon as the blood is taken out."

SMO, Kawkareik

iv. **Drug use by patients affects ART adherence** – some PLHIV used drugs, such as, methamphetamines (Yamaa) while on ART. This presented a challenge for the health providers for ART supervision and treatment as Yamaa may affect consciousness and memory. Patients may forget to take regular ART drugs and there may also be loss to follow-up for treatment adherence.

"Also some SWs and MSMs are drug users as per the nature of their job. For those cases, ART is a problem. The challenge coming out of HIV/AIDS related health-care service area faced by the service providers is mostly ART problems, especially difficult is ART adherence by SWs & MSMs."

IOM HIV-TB doctor, Myawaddy

v. **Behaviour change communication (BCC) is still not effective in changing sexual behaviours of vulnerable groups** – PLHIV can still live a normal life and engage in a predominantly normal sex life with their partners. The concerns of health providers are thus on safe sexual practices. PLHIV could spread HIV to others if they do not use a condom every time they have sex, and health providers cannot track or force vulnerable people to receive HIV testing.

"The most difficult part in the programmes involving ART in HIV/AIDS areas is behavioural change. To change behaviours by SWs & MSMs, simply they need to change the nature of their jobs. Even those who successfully change their job, it is their behaviour (sexual practices) that is most difficult to change. Service providers visit directly those areas and work places of SWs (brothel houses) for health education sessions or indirectly (via) peer education, but it is not that efficient work for actual behavioural change processes."

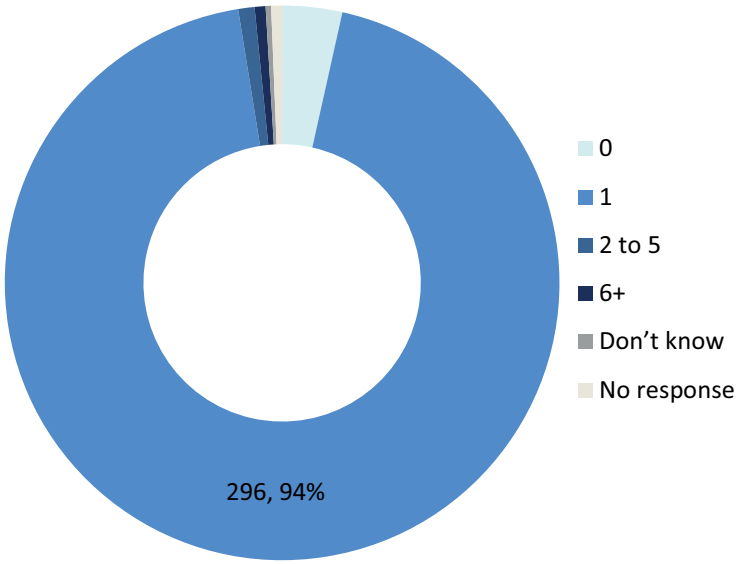
IOM HIV-TB doctor, Myawaddy

Unsafe sexual behaviour leads to HIV vulnerabilities. In order to change behaviours of migrants and risk groups to safer behaviour, it is important to know about their sexual behaviours both related to sexual partners and condom use.

3.10 Sexual behaviour

It was found that among 388 quantitative survey respondents, 81 per cent had ever had vaginal sexual intercourse, and the interquartile range of age at first sex among those respondents was 19 to 23. The overwhelming majority (96% of all respondents, 94% of respondents who had ever had sex) had only one partner in the past 12 months (Figure 16). Only two individuals had had sex with more than five people, and high number of partners (>10) and demographic details may suggest sex work, however this cannot be ascertained. No men in the survey reported having had sex with another man in their lifetime.

Figure 16: Distribution of number of partners in the past year among respondents who had ever had sex (n=315)



As listed in Table 4, 69 per cent of all respondents (and 86% of the 315 respondents who reported ever having sex) had had sex with a spouse in the past year. Other partner types were less frequent – only 6 per cent reported having had sex with a regular partner, three individuals stated that they had paid for sex, one person mentioned having had a casual, non-paid partner, and no individuals said they had been paid for sex.

Table 4: History of sex with specific partners among all migrants (n=388)

	Had sex in past year	
	n	%
Sex with spouse	268	69.1%*
Sex with regular partner	22	5.7%
Sex with paid partner	3	0.8%
Sex with partner who paid	0	0.0%
Casual non paid partner	1	0.3%

*This equates to 94 per cent of respondents who were married.

Of the three individuals who had paid for sex in the past 12 months, the number of paid sex partners was one or two. Respondents specified that venues for soliciting commercial sex were hotels, guesthouses, and entertainment venues. However, in addition to these individuals, four participants said they did not know and two had declined to respond.

Findings on sexual behaviour from migrants in the survey, however, were much different from those who have been identified as risk groups, namely MSM, FSW and MMM. Results from FGD with these vulnerable groups elude to interesting sexual behaviours which are described below.

3.10.1 Sexual behaviours and living conditions of risk groups

Migrants, mobile persons and local communities in the study areas engaged in sexual interaction across various networks. Sexual practices, including type and numbers of sex partners of vulnerable groups differed between groups. Vulnerabilities to HIV also differ.

i. Female sex workers (FSW)

Most sex workers were not from local areas. Some were from Yangon (Insein, Tarmway, San Chaung townships) and other areas. They tended to move from town to town, as well as cross the border to Thailand. In one FGD, FSW mentioned that they have been to Pathein, Chaungtha, Taungyi, Pyin-Oo-Lwin and Mawlamyine in 2014. Some had crossed the border for sex work. Most sex workers stayed in one place for no more than one year.

"FSWs working regularly for a shop will change periodically; monthly or quarterly or bi-yearly. Maximum stay of a FSW in the region is one year. If a FSW is less popular [among clients], she will be moved to Thin Gan Nyi Naung. Similarly one FSW from the southern region, would move here if her popularity there was less."

IOM DIC Manager, Myawaddy

Economic conditions were found to be the main factor pushing young women into the sex trade. Although income was instable, some sex workers in Myawaddy could earn up to MMK 120,000 in one week. Families may not be aware that a family member was working as a sex worker. Some women crossed the border to Mae Sot in Thailand daily or weekly to sell sex.

"Economic conditions are the main reasons. Most of us or any women do not want to work here. We do not like this. But everyone has problems so we have to. The major reason is income."

A group of FSW, Myawaddy

"Not freelancing, but I usually work under the management of the Boss [owner or manager of a brothel houses]. Some come back every Sunday. They give excuses to their family that they work at a garment factory [in Thailand]."

FSW, 32, Myawaddy

In Kawkareik, FSWs received much less compensation than those in Myawaddy. Sex workers were able to negotiate service fees, depending on what clients could afford; services may be free of charge if sex workers had preference for a client. The lowest reported service fee was only about MMK 500 per session. As sex work was hidden and the town is small, most FSW (posing as waitresses) provided sex services in the restaurant or in their lodgings.

"To give you an impression about the severity, commercial sex workers are paid only 500 MMK for one time. I said that it is like people are buying betel nuts. They take 500 MMK to have sex one time."

DMO, Kawkareik

"As much as we heard is [sex work] is not occurring elsewhere, inside the shops it happens. If a couple goes out, they better go very far otherwise if the place is in a hotel/inn room all people staying in this town will know who is doing what. If even a taxi driver sees it, the information may leak; the girl will be looked down upon. The shop-owner will not be perceived well. That is why a couple would best settle their affair inside the shop."

FSW, Kawkareik

Although crossing the border provided more opportunities for higher wages, some FSWs did not want to work there as they had concerns about family and security.

"We don't want to go over or visit to the other side [Thailand]. We don't care for any of their [men's] promises. We would rather work here for our parents. If we go there, we will be far away from our parents (and families who live in Myanmar)."

FSW, 18, Myawaddy

Typically, sex workers received one-third or a half of the service fee charged. One portion would be shared with the shop owner, and another was given to the hotel or to a middle man. Those who worked in a venue (karaoke bar, massage parlour, brothel, etc.) had limited freedom to go outside. They had to pay for accommodation and food from their earnings, as well as transportation, even if they were out for work purposes.

"We can't go out and work. Only 15 minutes interval or break is allowed for an outing. If an outing is more than 15 minutes, the owner will take away 10,000 MMK." "At night time, we have to work in the shop (brothel house). We have time to sleep during the day. Some private shops allow workers to go out. Here, we can't go out."

A group of FSW, Myawaddy

"One's service fee is 10,000 MMK (per section per client). They take 5,000 MMK, as half is management fees, so we get an equal amount; a half of the service charge as a common rule. We have to pay more for our food-costs, 20,000 MMK for water and some amount for electricity. Depending on the money we get from the clients, we share half and half. There are rules to follow at the particular shop. A fine of 10,000 MMK is incurred as usual if we don't follow certain rules which are laid out by them [the individual shop]."

FSW, 24 and 34, Myawaddy

Apart from daily living conditions, FSW had to struggle with their health conditions and accessing health services. They could access free of charge services at public hospitals but the cost of transportation presented a burden. One of the main health problems raised by FSWs in the FGD was abortion, which most FSW had done outside of a public hospital or unregistered clinic. Cases were referred to proper health facilities only when there were complications.

"Let's say there were 10 young women. One underwent abortion. The remaining 9 wanted to visit and see her for asking about her health. In that case, they have to hire the shop's taxi. 1,000 MMK is to go and 1,000 MMK is to return back per passenger so it is impossible to make a second visit because of a high cost. We (female sex workers) only have to hire the shop owned cycle-taxi instead which charges at double of the normal rate (outside taxi-fare)."

FSW, 24, Myawaddy

"It [abortion] is carried out intentionally everywhere. Only when the case becomes serious, they go to "Myttar Mon" clinic. It is also possible to recover outside of health-care facilities or at "Myttar Mon" like private and registered clinics. Some who felt alone and insecure as they stay far away from parents, so they go back home for their cases related to child-birth or abortion. Sometimes they got those fatal issues, usually they are sent to the public hospital in time. Some were infected due to getting treated by the unregistered mid-wives. Only then, did they regret and rushed to (registered) clinics.

FSW, 24 and 34, Myawaddy

Once having entered the sex trade, it may become difficult for sex workers to exit the business. Some FSW had to work until they no longer could after which they were released to die at home.

"Although it poses an occupational health hazard, owners [of brothel houses] force us to work. Two months ago, I felt pity for Ms.XYZ. It was her last day here [in the brothel house], it's heart breaking [respondents begins to cry]. Saying she was indebted to them, she was forced to work the whole day and even that night. The following day was her last day in the brothel house, to send her back for the reason of her serious illness - being unable to work any longer, they made her work that whole day and night. We haven't received any phone contact from her about her health condition for a very long time. Maybe she has died. She couldn't eat anything. She was getting very thin. At the beginning she was fair, good-looking and lovely as she descended from a formerly rich family

then ended up in poverty which is what made her work here in such a brothel house. Even if she had agreed to work because of her debts, they should not have allowed her to work in such a bad state. When she returned, they seized all of her belongings [clothes and suitcases]. She had to go back to her home with nothing rather than that which she was wearing. They watched her and let her work till she was about to die. Only just before a sex worker's death, owners of brothel houses will let her go back to her home since they're afraid and want to avoid a funeral. If they think she could continue working, they won't let her return [home]."

FSW, 24, Myawaddy

In Myawaddy, sex services were available at brothel houses, karaoke bars (called KTV in Myanmar), beer shops, massage parlours, hotels and guesthouses. In Kawkareik, sex services were mostly available at some restaurants, massage parlours and KTVs. Sex services could be offered at a venue or via an on-call service, especially in the more urban areas of Myawaddy. Taxi drivers, shop managers and lodging house staff were the links between sex workers and clients, especially for freelance sex workers. FSW in Kawkareik did not share information regarding their sexual practices, whereas FSW in Myawaddy provided more information. The number of clients of a FSW in Myawaddy typically ranged from 0 to 4 per night; one group reported 8-9 clients per night. In Myawaddy, clients of FSW were from armed organizations, car brokers, gate workers and traders, truck drivers, forestry workers, masons, labourers, travelers, cross-border businessmen, and hotel customers. Some FSW had sex with taxi drivers in exchange of taxi fare. Clients in Kawkareik included people who were on the way to/from Myawaddy, drivers, restaurant customers, and some men from India conducting business in the area. Fewer local men were the clients of FSW both in Myawaddy and Kawkareik. Most national clients were reported as coming from Yangon and Ayeyawady.

"For the passenger buses, on the days going up (in the direction of Myawaddy) and going down (direction of Kawkareik), potential customers for beer stations/ massage parlours and brothel houses in this town are different. Up-going buses would bring customers of passengers and drivers that will tend to be a busier day than usual. On the days for down-going cars potential customers to beer stations/ massage parlours and brothel houses are rare. Net customers for a shop per month are about 300."

IOM DIC Manager, Myawaddy

"People coming down to here from Myawaddy ask whether it [my offered sex-services] is available or not in our shop. So many varieties of people who come and visit here, many of them are car-drivers. Some are Indians."

A group of FSW, Kawkareik

Sex workers reported facing some violence or forced sex from clients. Some men used weapons to threaten FSW. FSW explained that they were afraid of this sort of customer and that they could not negotiate on any matters, including condom use. Some were threatened by the shop owner. In addition, many clients used drugs and got drunk before visiting them. Some of them forced FSW to do them favours. Condoms were not commonly used by these types of clients.

"They bring arms and even bombs. They threatened me once by showing a gun. He said he would pay Baht 1,500 more and asked me to do oral sex. I denied it. He was upset and left the shop [brothel house]. The shop-owner scolded me."

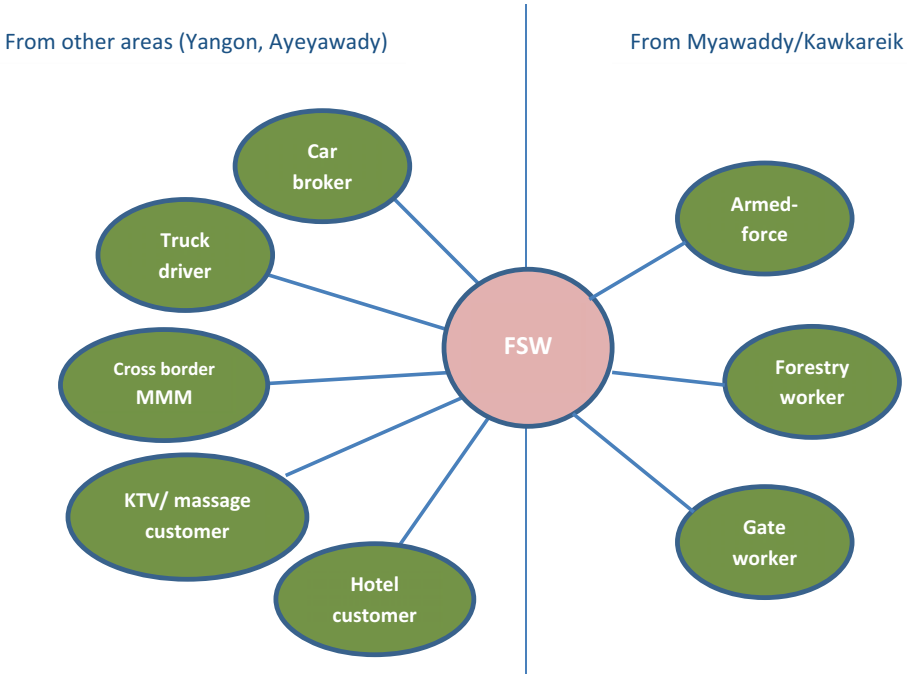
A group of FSW, Myawaddy

"Horse-drugs, energetic drugs and stimulant and sex durability drugs for active and longer sex are used while having sex."

A group of FSW, Myawaddy

The sexual network of FSW is illustrated in the diagram below.

Figure 17: Sexual network of FSW



ii. Men who have sex with men (MSM)

In Myawaddy and Kawkareik there were respondents included in the qualitative analysis who openly admitted to having sex with men; there were also men who admitted to having sex with men but who did not make their behaviour known to their families or communities. Those that participated in the FGD included those who openly admitted to having sex with men. MSM typically worked in beauty salons and some worked in the 'spirit media' circle[7], some sold flowers for special occasions and some sold narcotic drugs and amphetamine tablets. Partners of MSM included single, young men and married men. Some young male partners of MSM reported that their first sexual experience had been with a man. They did not have regular partners. Some MSM compensated their partners for having sex in the form of money or drugs. They gave money to young partners and provided drugs to drug-using partners. Some paid stranded migrants and jobless men in exchange for sex as well. On the other side, MSM received payment from older or married partners.

[7] In Myanmar, men who have sex with men are acknowledged as gateways for the Nat spirit. There are multiple spirits in Myanmar culture. These spirits are consulted for wish fulfilment.

"The one now involved in my love-affair [current sex-partner] is said to be at Grade 10 [level 9]."

MSM, Kawkareik

"In Kawkareik, the individual FSWs at the road sides are impossible [difficult] to find. Men in younger age who want to try sex, come and visit gays like us."

MSM, Kawkareik

"We have seen those who injected their organs [penile enlargement] are not single, they are married. At least, people come to us to have sex if they have that type of injected organs, they are married."

A group of MSM, Kawkareik

"For aged men, they pay us. And for young, we subsidize for having sex-fun (with them)."

A group of MSM, Myawaddy

"For those younger, we have to pay a thousand MMK back to them. Some are visiting us for having sex, they are just in need of it. Some young men want to try sex (with us), tell us I need pocket money of 1,000 MMK and I will do it for you. If they are to our liking, without asking for pocket money, we give money to them for their service. Some are visiting us to take our money."

A group of MSM, Kawkareik

"In this region, drug-inhalers outnumber drunkards. Gays offer to provide them one or two drugs to inhale for sex-fun in return."

A group of MSM, Myawaddy

Men typically approached MSM for sex at MSMs' place of residence. Some potential partners had consumed alcohol before visiting a MSM for sex. MSM in Kawkareik reported that their male partner(s) enjoyed sex with them prior to taking any drugs.

"So if they need sex they visit us gays in a decent manner. When we are alone at home, someone visits and we sit together. Talking things around and we gays, pushing, pulling and rolling them [for stimulation] then ask him "my son, please stand up and give me one shot, etc.". In this way we satisfy one show/ track (of a day)."

MSM, 48, Kawkareik

"When some are drunk, they become brave to tell us like 'please do a blow job to me'. We say please talk (and do things) till that drunkard falls asleep. When he wakes up, tell him to be back. We try and avoid conflicts when drunk."

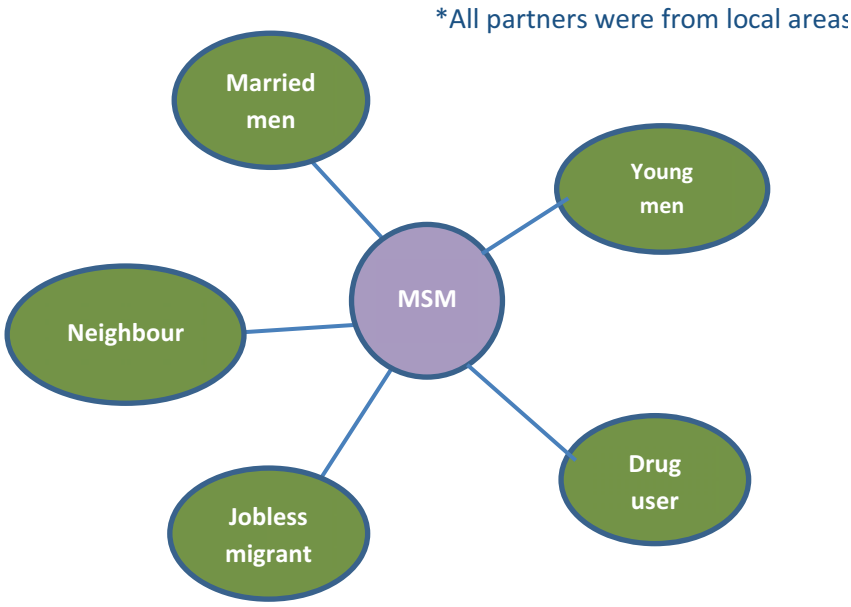
MSM, Kawkareik

"When they enjoy and feel drugs, they will not come to us. If they come and visit here, they would enjoy sex first, later they take drugs."

MSM, Kawkareik

The sexual network of MSM is illustrated in the diagram below.

Figure 18: Sexual network of MSM



iii. Mobile men with money (MMM)

In this study, the term mobile men specifically refer to truck drivers and their assistants. They travel most of the time from one town to another. It was reported that truck drivers had sex hotspots along the main roads, for instance the spot on the express way near Bago, and one near Mawlamyine. A group of truck drivers mentioned that Myawaddy was not the place to solicit commercial sex workers as there were fewer brothels in town; there were, however, plenty between Yangon and Mandalay.

"They bring FSWs of by chance finding on the way. When they see her, stop by, have sex then give the fees and leave her quickly. Never calling those FSWs till their destination, Kawkareik. The preferred spots for truck-drivers to enjoy sex on the road sides are at part of the express way near Bago and second one is near Mawlamyine."

MSM, Kawkareik

"For many drivers and conductors, Myawaddy is not the place to enjoy commercial sex. As you know that on the way, there are plenty, especially at night times. Here in Kayin State, relatively few brothel houses are available. Here there are less [FSWs available]; on the way between Yangon and Mandalay there are plenty (of FSWs)."

MMM, 37 and 50, Myawaddy

Some truck drivers stopped for sex along the way. According to the discussion in the FGD, truck drivers estimated that about 30 per cent of truck drivers had sex at least once in a trip. They usually had sex in a bush nearby, on the truck, or underneath the truck.

"Not all drivers have commercial sex while on tour. May be it is about 30 per cent of drivers that do so. Some enjoy commercial sex more than one time per trip, even the whole night they continually enjoy this fun."

A group of MMM, Kawkareik

"We stop by car/truck and enter the bushes nearby or inside our trucks."

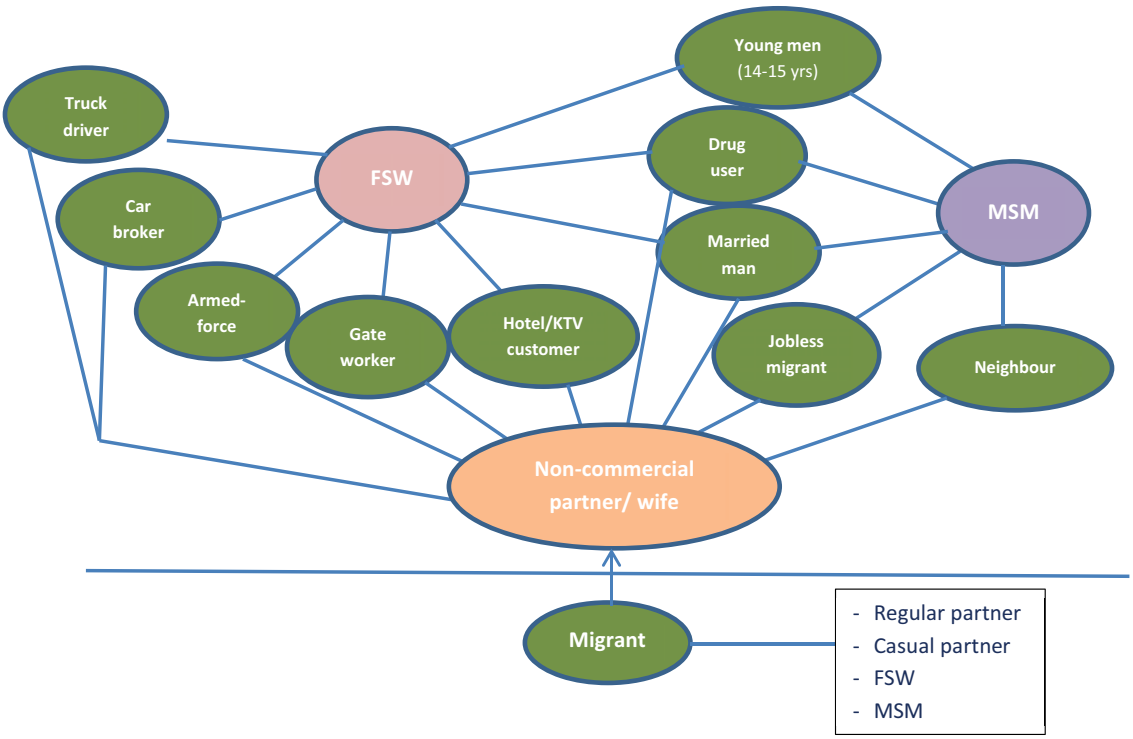
MMM, 24, Kawkareik

"Some consumers are a bit choosy and stingy for room inside their trucks, so they choose the underneath of their truck as sex-fun venue, or go into the bush."

MMM, 25, Kawkareik

In conclusion, migrants, vulnerable groups and communities had sexual interactions in either direct or indirect ways. FSW and MSM bridge populations in sexual networks. Sexual interaction travels across borders via migrants, FSW and MSM. General populations or wives of people involved in this sexual network as a result become at risk to HIV and STI if partners do not use a condom consistently when having sex with other partners. Sexual networks of people in Myawaddy and Kawkareik can be presented in a diagram below.

Figure 19: Sexual network of vulnerable populations in Myawaddy and Kawkareik



It can be seen from the findings described above that the general migrant population was sexually active and risk groups were highly sexually active. Everyone in the sexual network (Figure 19 above) are potentially at risk of HIV infection if they do not use condoms consistently when having sex with a partner, unless they exclusively have sex with one uninfected partner.

3.11 Condom use

Findings from the quantitative survey found that condom use was low at last sex with a spouse (as demonstrated Table 5). Condom use may be higher with more casual or paid partners. Two out of the three individuals who had paid for commercial sex reported always using a condom (one did not give condom use information). The one individual who had had a casual, non-paid partner in the last 12 months reported consistent condom use. However it is not possible to determine trends from this data due to the small sample size.

Table 5: History of sex and condom use with specific partners among all migrants (n=388)

	Had sex in past year		Used condom at last sex	
	n	%	n	%
Sex with spouse	268	69.1%*	11	4.1%
Sex with regular partner	22	5.7%	2	9.1%
Sex with paid partner	3	0.8%	2	66.7%
Sex with partner who paid	0	0.0%	0	-
Casual non paid partner	1	0.3%	1	100.0%

*This equates to 94 per cent of respondents who were married.

3.11.1 Condom use among risk groups

Reports from MSM respondents in FGDs indicated that MSM were likely to use a condom when having sex with any partner. This could be a result of higher exposure to HIV-related information and the open attitudes MSM had towards sexual practices and HIV within their group or with others. They were able to convince their partners to use condoms, and they educated their peers about the importance of condom use.

"The way for protection purpose used here is "using a condom". Now we are using APHAW (name of condom brand), next you have to use it, never have sex in bare practice [unprotected]. That is our advice to all of our sex-partners by retelling our knowledge."

MSM, 27, Myawaddy

"We use more condoms in this era due to suspicions felt among us. We don't trust our sex-partners and even ourselves."

MSM, 48, Kawkareik

FSW respondents reported that venue-based FSW were aware of condom use and could access condoms. However, there are some factors that prevented FSW from using condoms consistently. They can be categorized as condom-related reasons, client-related reasons, and FSW-related reasons. A summary of these reasons are presented in Table 6 below.

Table 6: Reasons for condom use

Reasons for using a condom	Reasons for not using a condom
• Contraception/ family planning • Protection from HIV and STI • Aware of importance of condom use • Condom is available when required • HIV positive	• Condom-related reasons – Size of condom too small – Poor quality of condom – No condom available when needed • Client-related reasons – Ignorance (one time should be fine) – Forced sex – Drunk/intoxicated – Client removes condom before completion – Condom as barrier to intimacy – Do not like condoms – Sex is cheap (500 MMK), do not want to invest more on a condom – No knowledge of condoms • FSW-related reasons – Extra pay for bare sex – Use contraceptive pill instead of condom for pregnancy prevention – Show 'love'/satisfy client – Give 'Yaama' (amphetamines) in exchange for bare sex

Apart from availability and affordability of condoms, and awareness about using condoms, there were some enabling factors that supported condom use among FSW, including pre-arranged sexual encounters (client made appointment with a FSW in advance), and working in a venue where health officers and HIV agencies provided free condoms and peer education sessions. Other important factors are the self-esteem and negotiation skills of the FSW. If they are empowered to insist on condom use and have developed negotiation skills, they will use a condom at every sex.

"I am taking care of myself. I never have sex without condom use.
Without any cover [condom], disease will transmit from one to another."

FSW, 32, Myawaddy

"I have to persuade them [clients] to use it.
If he refuses I leave the room. I never tolerate."

FSW, 32, Myawaddy

A group of FSW agreed that young clients listened to them and they could be persuaded to use a condom, while the older clients were more difficult to convince.

"When persuaded, most youth listened. They even consider us and said 'thanks'.
Older people are difficult to be persuaded [to use condoms during sex]."

FSW, 24, Myawaddy

"There are some who take condoms off without our noticing.
These are older persons and adults who do so."

FSW, 34, Myawaddy

However, if there are circumstances where FSW are threatened, they often must accept having sex without a condom in order to avoid violence.

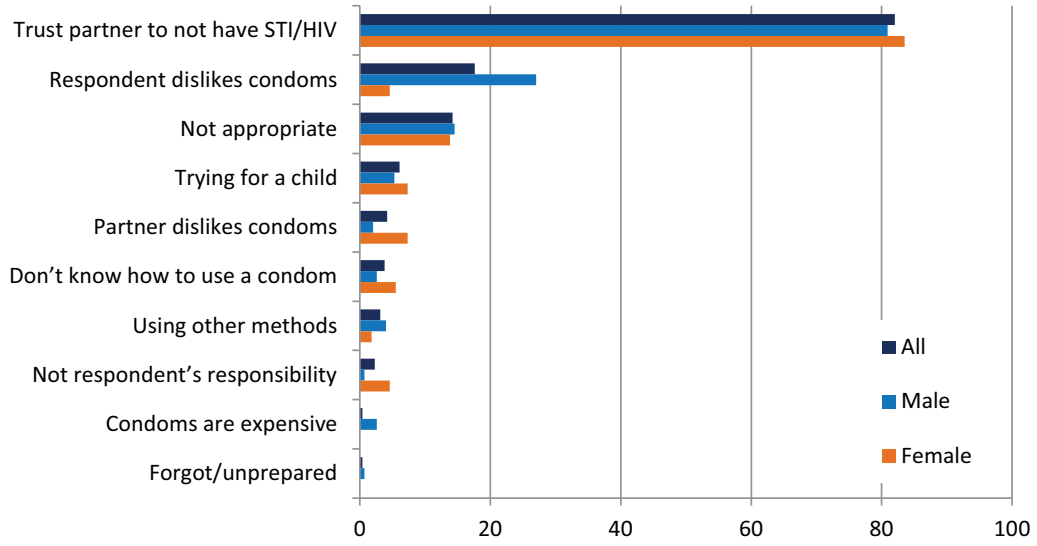
"Some threatened me with a gun when I refused his bare-practice in sex. Some covered my mouth. I couldn't shout for such a case."

FSW, 34, Myawaddy

Consistent findings on reasons for using and not using a condom were also found in the quantitative survey results. Figure 20 shows reported reasons for not using a condom among those who had sex with a spouse or regular partner in the past year. Trust in their spouse and/or the perception that condoms were inappropriate in their sexual partnership were among the leading reasons, with trust in a partner cited by more than 80 per cent of respondents. Dislike of condoms was the second most popular reason, although notably a more common response among males. Correspondingly, more women than men stated that their partner's dislike of condoms was the reason for not using a condom during sex. Other reasons included trying to get pregnant, using other methods, and the price of condoms. General comments on condom availability in the area were not mentioned.

Reasons for condom use and their ranking were similar with regular partners, including the gender imbalance regarding respondents' and respondents partners' dislike of condoms (presented in Appendix II due to low sample size). As consistent condom use was reported by those with casual or commercial partners, reasons for not using condoms could not be investigated for these sex partners.

Figure 20: Reasons for not using a condom among those with history of not using a condom during sex in last 12 months with their regular partner



Pregnancy prevention was overall the most important reason for using condoms, and was mentioned by 8 of 13 of those who had a history of condom use during sex with a spouse (Table 7). Cleanliness, partner's insistence, prevention of HIV/STIs, and STIs symptoms were other reasons mentioned. Interestingly, those who had had sex with a commercial partner reasoned that they wanted to prevent pregnancy, and did not discuss prevention of sexually transmitted infections.

Table 7: Reasons for condom use among those with a history of condom use during sex in last 12 months, presented by partner

	Spouse		Regular partner		Paid partner		Casual partner	
	n	%	n	%	n	%	n	%
Prevent pregnancy	8	61.5	3	100.0	2	66.7	1	100.0
Prevent HIV/STIs	1	7.7	0	0.0	0	0.0	1	100.0
Cleanliness	3	23.1	0	0.0	0	0.0	0	0.0
Partner insists	2	15.4	0	0.0	0	0.0	0	0.0
Sore	1	7.7	0	0.0	0	0.0	0	0.0
Missing	0	0.0	0	0.0	1	33.3	0	0.0
Total	13		3		2		1	

Due to the limited variation in the data, multivariate analysis is not possible to assess the determinants of partner type on condom use. However, it was noted that only men reported casual or commercial sexual relationships. The three men who had a history of soliciting commercial sex were between 17 and 36 years, single, and had recently migrated to the area. The individual with a casual partner was also male, aged 25 and married.

In addition to male condom, female condom has been promoted in Myanmar. Although not popular, some groups were familiar with it and it discussed in the FGDs.

3.11.2 Female condom

Female condoms were found to be unpopular among FSW and MSM; these groups were more familiar with the female condom compared to the general population. Main reasons given were complications during use, inconvenient and time consuming, and skill required for wearing a female condom. FSW mentioned that the female condom may be more useful for older sex workers and those women who have given birth. Mobile men with money familiar with the female condom remarked on the shape and size.

"It is inconvenient, feeling like other strange stuff between. I think female condom is fit only with ladies who have experienced child-birth."

FSW, 18, Myawaddy

"In using female condoms, we have to take it out of the package, then fold it before wear. Then we have to put it inside the hole [vagina], so it is too much trouble to be ready for having sex and very time-consuming too. We are not that patient... [respondents engage in laughter]."

MSM, Kawkareik

"It is big, looks like a funnel shape filter usually used in cafés and tea-shops."

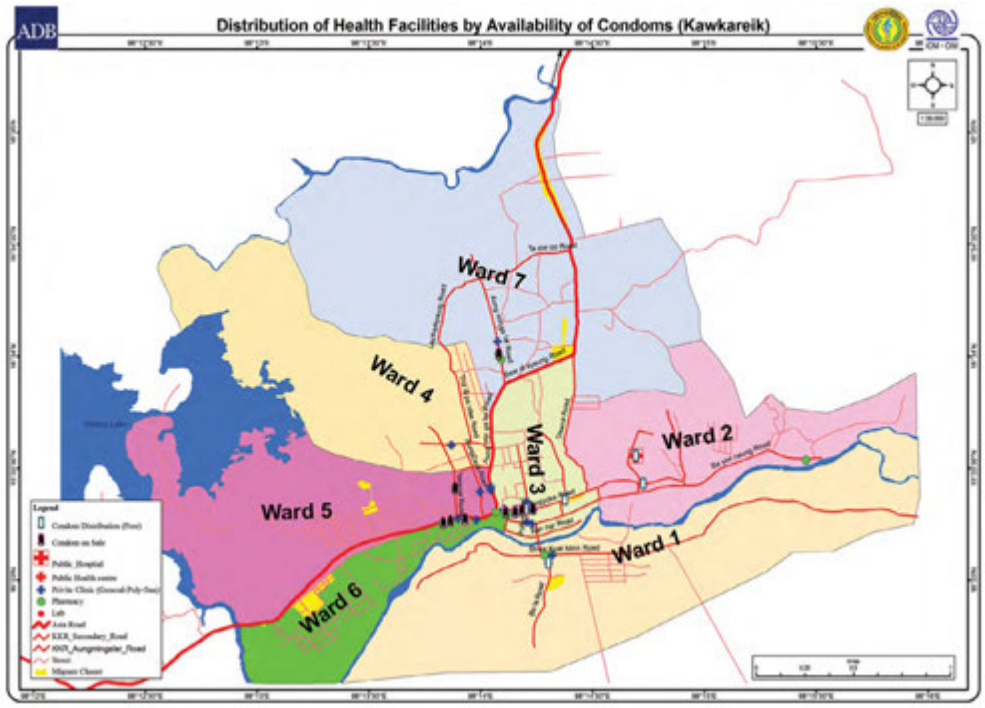
MMM, 50, Myawaddy

Among the number of reasons for not using a condom, the availability and accessibility of condoms can also be a key enabler or barrier to consistent condom use among migrants and risk groups. The availability and accessibility of condoms in Myawaddy and Kawkareik is presented in next section.

3.12 Condom availability and accessibility

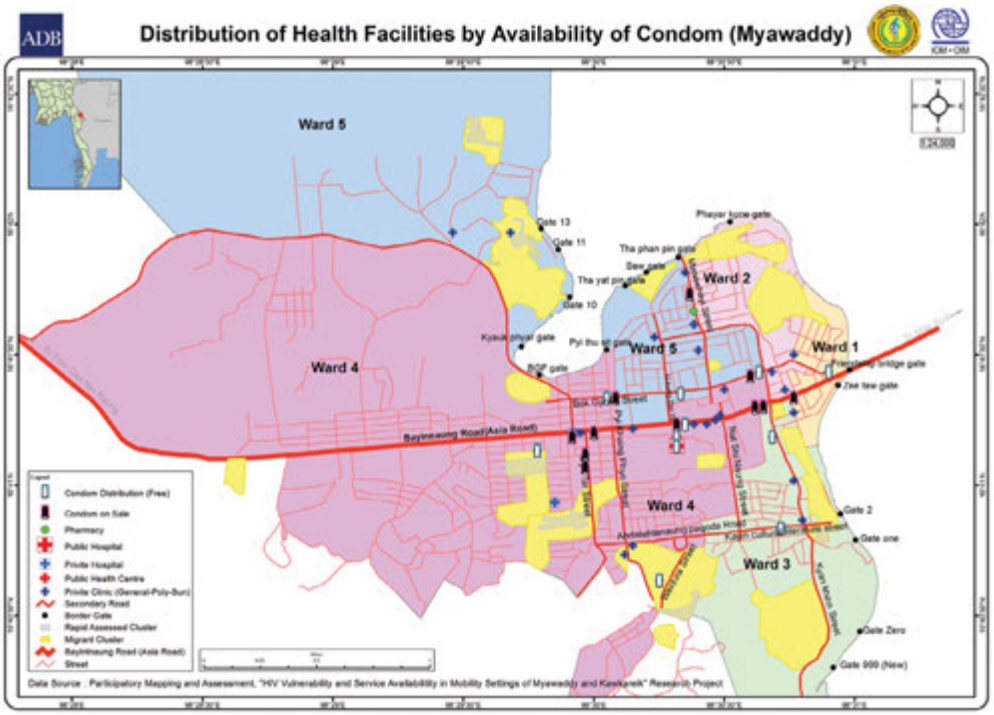
Condom outlets in Myawaddy and Kawkareik were plotted during mapping exercises in September 2014. Maps including information of distribution of condom outlets, free and sale condoms, in Kawkareik and Myawaddy are shown in Map 7 and Map 8 below.

Map 7: Distribution of condom outlets in Kawkareik, September 2014



The pro-private provider pattern also applies to condom availability. The most common condom dispenser was pharmacies, however this only amounted to 9 of 17 pharmacies in Kawkareik, which sold condoms for between 100 and 300 MMK per condom.

Map 8: Distribution of condom outlets in Myawaddy, September 2014



Nine out of 11 pharmacies in Myawaddy sold condom, with prices reaching up to 2,000 MMK. Condoms were also available for free at some private clinics, public health centres, public hospitals, and the three NGO clinics. The large majority of these facilities are open daily.

The data from the quantitative survey suggests Myawaddy has better and/or more transparent condom availability compared to Kawkareik, with 75 per cent and 4 per cent of respondents in each respective area stating that they know where to obtain condoms (Figure 21); 52 per cent versus 17 per cent of respondents found it easy to obtain condoms in their respective areas (Figure 22). This was affirmed when migrants were questioned on the barriers to obtaining condoms: out of those who had not found it easy to obtain condoms, 35 per cent of respondents in Myawaddy and 57 per cent in Kawkareik indicated a lack of knowledge on where to access them.

Men are more aware of where to obtain condoms compared to women ($p<0.001$). 81 per cent of male respondents and 59 per cent of female respondents were aware of where condoms could be obtained. Similarly, 63 per cent versus 30 per cent of males and females found it easy to obtain condoms. Better knowledge of where to access condoms was also associated with a higher attained level of education ($p<0.001$) and exposure to health materials ($p<0.001$). Income was univariately associated, however this was a function of education level (Appendix III).

As listed in Table , the most popular sources of condoms were pharmacies, mentioned by 97 per cent of those who knew were to buy condoms. This was followed by shops, entertainment areas and hotels or guesthouses. Myawaddy also has a wider range of condom dispensers, with condoms made available through various health providers, according to respondents.

There is some evidence of stigma associated with condoms, as almost a third of respondents who had not found it easy to obtain a condom stated that they felt embarrassed or did not want others to know of their purchase (Appendix II).

Three per cent of all respondents were carrying a condom at the time of interview – this was the same for both male and females. 12 per cent had heard of the female condom, and it does not appear that women were more likely to know of it (Appendix II). However, only two had used the female condom – one male and one female inbound migrant in Myawaddy (not in table).

Figure 21: Respondents who know where they can obtain condoms, among all migrants and by township and sex

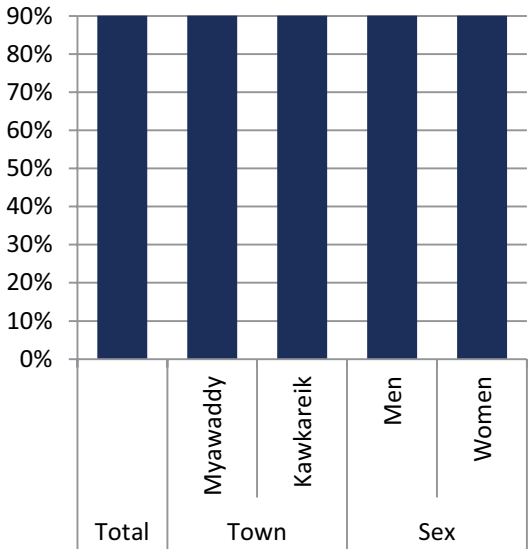


Figure 22: Ease of obtaining condoms, among all migrants and by township and sex

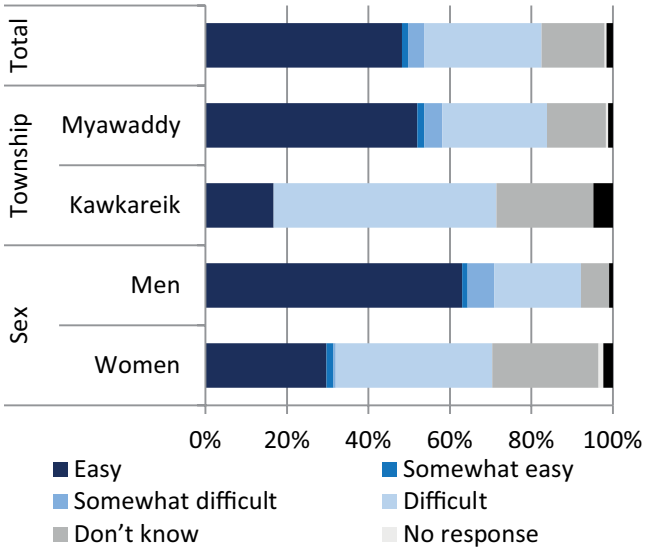


Table 8: Source of condoms in each Township and by sex

	Total		Myawaddy		Kawkareik		Men		Women	
	n	%	n	%	n	%	n	%	n	%
Pharmacy	270	97.8	254	98.1	16	94.1	173	98.9	97	96.0
Store/shop	81	29.4	77	29.7	4	23.5	63	36.0	18	17.8
Entertainment area	37	13.4	36	13.9	1	5.9	30	17.1	7	6.9
Hotel/guesthouse	30	10.9	30	11.6	0	0.0	23	13.1	7	6.9
Public hospital	23	8.3	23	8.9	0	0.0	17	9.7	6	5.9
Private clinic	20	7.3	18	7.0	2	11.8	15	8.6	5	5.0
NGO	17	6.2	17	6.6	0	0.0	11	6.3	6	5.9
Private hospital/polyclinic	6	2.2	6	2.3	0	0.0	5	2.9	1	1.0
Friends	4	1.5	4	1.5	0	0.0	4	2.3	0	0.0
Public health centre	3	1.1	3	1.2	0	0.0	1	0.5	2	2.0
Total	**276**		**259**		**17**		**175**		**101**	

Results from the qualitative study complemented the survey results as described below.

3.12.1 Condom availability among risk groups

Condoms (49 mm diameter) are provided free of charge at the public hospital, some private clinics and at some hotspots in Myawaddy and Kawkareik. The National AIDS Programme Health Officers and IOM provided free condoms to hotspot venues periodically. Generally, people could access free condoms at all public health facilities. Commercially sold condoms were not expensive. They were available at drug stores, betel shops, clinics, hotels and some hotspot venues. Costs of condoms varied depending on the venue and location. Condoms were widely available, especially in the urban areas.

"For the customers who need condoms, they could get them easily in the region; free of charge condoms are now obtained from IOM and NAP. Service providers go and visit their workplaces (such as brothels), deliver condoms with health education in closed discussions. Monthly condom delivery is done for hotels, motels and inns. Frequently to private clinics deliver condom boxes to put on the table corner, etc. Refilling of condom boxes in those areas happens on a monthly basis."

IOM's HIV-TB doctor, Myawaddy

"Houses (sex venues) have them. If there is a hole, they come and pick them up. The hospital also has them. They can take. Sayar Zin (STI team leader in Myawaddy) gives a packet if the massage (parlour) name is given. The guesthouses have them in the rooms. There is no difficulty getting condoms."

MCH staff, Myawaddy

"Drug stores and grocery stores are available. They also distribute among themselves. We put them in the restaurants. Condoms are 500 MMK for six. There is no difficulty."

MCH staff, Kawkareik

Issues found from the study regarding condom availability were mostly concerning the provision of larger-sized condoms (52 mm and 54 mm diameter). Respondents of this study reported sex partners manipulating the shape and size of their penises. These alterations led to standard sized condoms no longer fitting.

"This size is no longer possible. The tightness makes them uneasy. During intercourse, it gets too heated and the condom tears. To get larger sizes, we have to buy larger condoms other places. They [clients] are injected with 5cc, 1cc or 2cc [for enlagement]. Some have put marbles [penile implants] (in their sex-organs). Two to three out of ten usually have marbles. Some have 7 to 8 marbles put in. A half or one-third of those persons who had sex with us is mostly injected [enlarged]."

FSW, 34, Myawaddy

3.12.2 Condom accessibility among risk groups

According to the FGD and KII, condoms were accessible in the communities at most health facilities in both Myawaddy and Kawkareik. People knew where they could obtain condoms, but social and cultural resented a large barrier for people to access condoms; this was not the case for MSM and FSW. People reported feeling shy and embarrassed to ask for or accept a condom from someone else or in public places. It was reported that a person who carries a condom is perceived as a 'womanizer' and is "ready for sex". Additionally, a woman who carried a condom may be presumed to be a sex worker, which is illegal in Myanmar. As a result, women (FSW) may be less likely to carry condoms if they venture out to provide services as they may be victimized.

"If customers keep and bring condoms, then come and visit brothel houses, they are afraid for their condoms to be seen (by other people) and to be labelled as "womanizers". So they [clients] are afraid and avoid bringing/keeping condoms."

MMM, Kawkareik

"(R1)Some don't buy condoms because they feel shy." (R2)"For me personally I am shy even to accept free condom delivery by young girls at toll-gates." (R1) "My shyness is more when those free of charge (FOC) condoms are given out by young girls." (R2) "If FOC condoms are delivered by men to us, it is not that problematic, but if it is done by young girls to elder men like us, that timid feeling starts."

MSM, 31 and 24, Kawkareik

"According to the recent law, if a woman is seen with a condom that can be defined as "with purposes of prostitution" and action could be taken upon it. I think it is not well matched with today's situation, especially in our health-care system and in proper use of health education knowledge."

MMM, Kawkareik

Table 9: Summary of condom availability vs. accessibility

Availability	Accessibility
• Free condom – Provided at the hospital, MCH staff, IOM DIC and PE, clinic, hotel, restaurant, massage parlour – One size (49 mm diameter) • Sale – At drug store, betel shop, clinic, hotel, massage parlour – 500 MMK for 1-6 condoms – Larger sizes available (52 mm and 54 mm diameter)	• Physical access – Know where to obtain free and sale condom – Affordable price (some are not willing to pay extra cost for sex) • Social access – Shy to ask for/buy a condom, especially from female distributor/ vendor – Carrying a condom is akin to being a 'womanizer'/'ready for sex'

Sexual behaviours and condom use are identified as key risk factors for HIV infection, while drug and alcohol consumption may constitute factors influencing individuals to engage in sexual risk behaviours. Drug and alcohol use will be presented in following section.

3.13 Drug and alcohol consumption

Participants in the qualitative study indicated that it was easy to access alcohol in the communities and that drug use was common. There was a general agreement among all groups that there was no injecting drug use occurring in either township. There was, however, strong consensus that amphetamines, also known as "Horse Drug" or "Yaama" was frequently used by FSW, MSM, MMM, youth and students, and long distance drivers.

"Alcohol and beer are cheap so it is easy to be addicted."

IOM HIV/TB Doctor, Myawaddy

"Everyone who goes to massage parlours drinks.
They drink and inhale but they don't jab [inject drugs]."

MCH Staff, Myawaddy

"Some owners of places put the drugs (amphetamines)
into the drinking water and let us drink."

FSW, 18, Myawaddy

"Yes, there are many drug-users in the town, at least 90 out of 100
are those ones within the age range of from 15 to 30 years old."

MSM, Kawkareik

"About 80 per cent of drivers belong to drug-inhalers."

MMM, 29, Kawkareik

Yaama was used among FSW and MSM to increase sexual performance. It was reported that FSW take Yaama (voluntarily or involuntarily) so they would be able to receive more clients.

"Some sex workers are also drug users. Some use amphetamine so that
they can endure (many clients)."

IOM HIV/TB MO, Myawaddy

Other drugs used included cocaine, cough syrup, glue and hashish.

Quantitative survey revealed that alcohol consumption was moderately common in the group interviewed with just over 40 per cent of respondents reporting consuming alcohol in the past month. This mean hides a strong gender difference: only 5 women (3.4% of women) had consumed alcohol in the past month, whereas more than 70 per cent of men had. Additionally 20 per cent of men drank alcohol at least once a week, compared to 2.3 per cent of women (Appendix II).

Recreational drug consumption was very low in the study group. Five respondents (1%) reported using a non-injecting recreational drug and one reported injecting drugs in the past 12 months. All respondents who reported drug use were men located in Myawaddy; three local and two inbound. All of these men had used amphetamines, and one had used codeine.

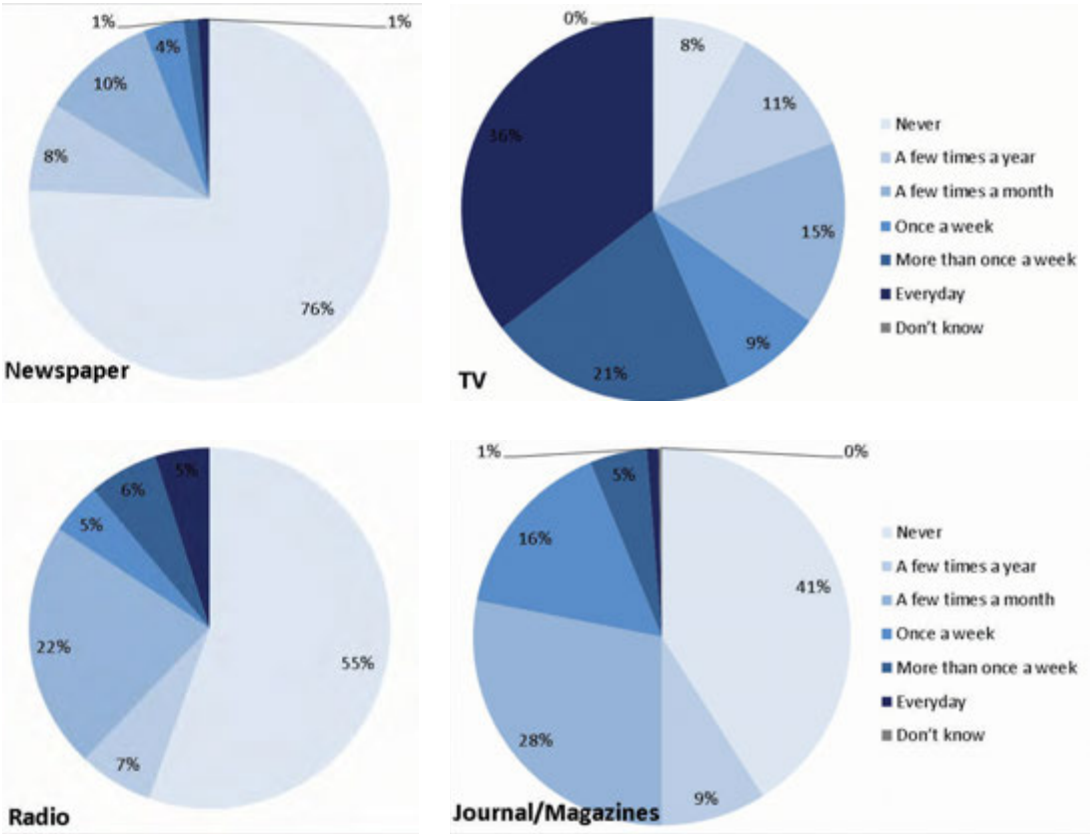
No individuals reported injecting drugs in their lifetime, thus particular injecting drug behaviours such as needle sharing could not be investigated.

In promoting HIV communication campaigns, interpersonal and mass media have been used by both government and non-government agencies. Number and content of HIV information have been adjusted over time. HIV and health communications in Myawaddy and Kawkareik are described below.

3.14 Media and health communications

It was found from the survey among migrant respondents that television was the most commonly accessed form of media, with 36 per cent of all respondents watching television every day, and more than half watching TV more than once a week. Other forms of media, including radio, were significantly less popular – only 5 per cent of respondents listened to the radio every day.

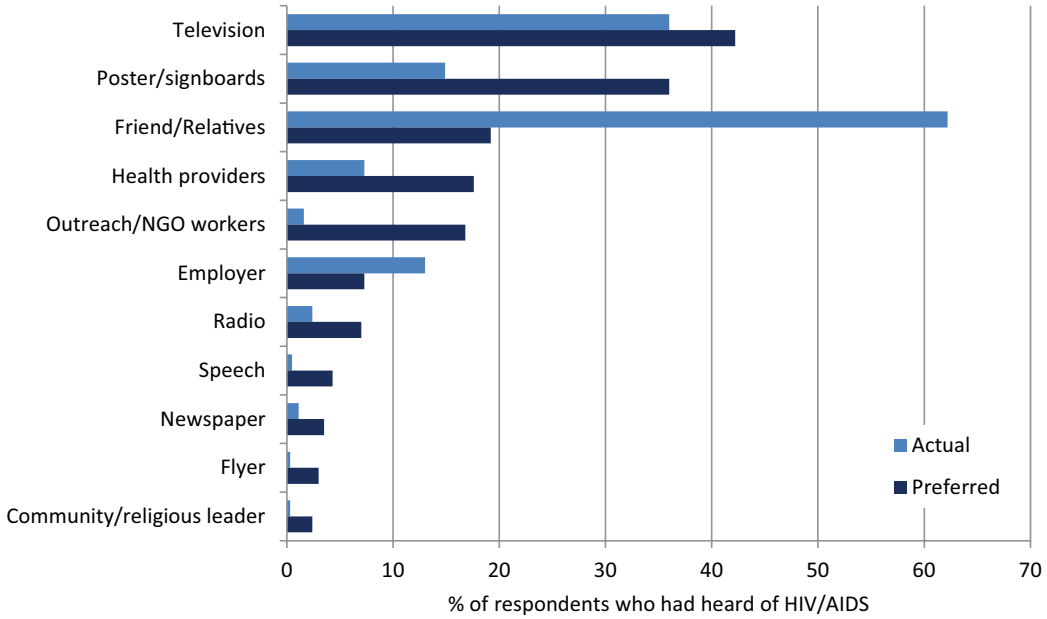
Figure 23: Frequency of respondents in accessing to media in the communities



The media also played a prominent role as a source of health information, with television again as the most cited source (54% of all respondents), followed by friends and relatives (40%), and employers (11%). Similar patterns were seen for sources of HIV-specific information, however, friends and relatives played a much more important role (63% of all those who had heard of HIV/AIDS), followed by television, posters or signboards, and employers (Figure). There is some suggestion that there is more health information available in Myawaddy than Kawkareik, with more respondents receiving HIV/AIDS information from television (40% of all those who had heard of HIV/AIDS) and posters or signboards (16%), than in Kawkareik (10% and 5.1% respectively) (Appendix II).

As demonstrated in Figure 24, the ranking of actual sources of HIV information does not exactly correspond with the preferred source; there was a higher proportion of respondents preferring rather than already benefitting from posters and signboards, television, health providers, and outreach or NGO workers. Conversely, while 62 per cent of respondents received information from family and relatives, only 15 per cent believed them to be a valuable source of HIV and AIDS information in the community. However, the variation in preference for each source roughly reflected pre-existing information sources. For instance, television was particularly preferred in Myawaddy, where there already was good exposure to television for HIV/AIDS information. This may simply indicate a particular reliance on television for information in that area.

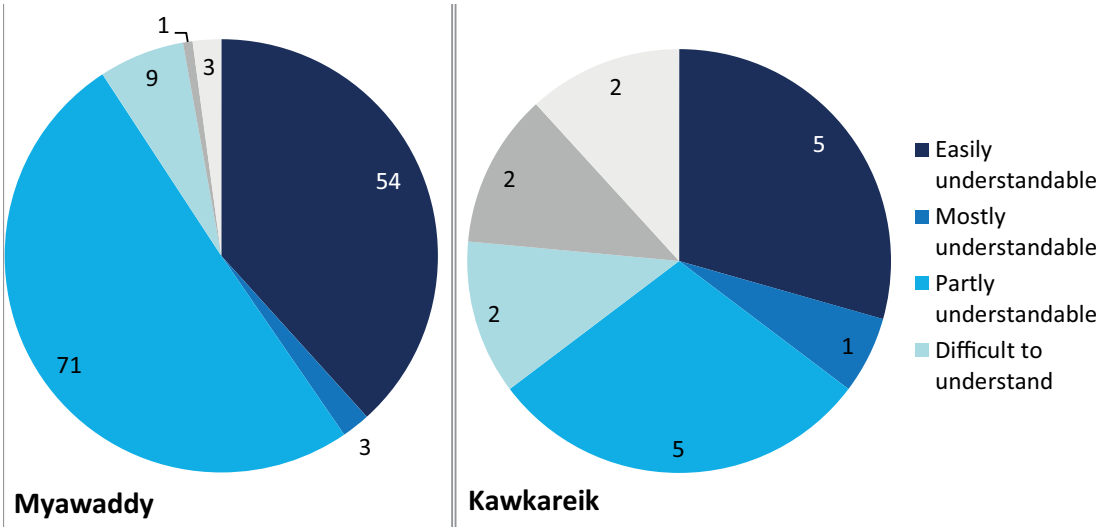
Figure 24: Actual and preferred sources of information on HIV/AIDS among respondents who had heard of HIV/AIDS



Seventy-eight (78) per cent of respondents who had ever heard of HIV/AIDS had received information about HIV/AIDS more than one year ago, and only 14.7 per cent had received HIV-specific information within the past six months (Appendix II). A higher percentage of individuals in Kawkareik (87%) compared to Myawaddy (77%) had not received information within the past year, and this percentage was roughly similar by gender and migrant type (inbound or outbound) (Appendix II).

A larger proportion of migrants (40%) had received general, as opposed to HIV-specific, health information within the past six months. 40 per cent of them considered the health information mostly or easily understandable. This figure was closer to 60 per cent in Myawaddy, and just under a quarter in Kawkareik (Figure 25).

Figure 25: Understandability of health information received in past six months among those who had received health information in that time (n=158), by township



Fifty-one (51) per cent of all migrants expressed wanting to learn more about HIV. Other popular subjects included tuberculosis and malaria (23 per cent each), ebola virus (8%), maternal and child health (7%), influenza (7%), and cancer, including cervical and breast cancer (Appendix II).

3.14.1 Sources for HIV prevention advocacy

Focus group discussions with risk groups targeted for HIV campaigns revealed the impacts of HIV communications. Participants described that information about HIV prevention was delivered through the use of video, radio, and print (brochures, pamphlets, billboards, etc.). Some participants felt that use of print information would disadvantage illiterate populations, and that the limited electricity in Kawkareik may reduce the effectiveness of video as a method of information dissemination. There were general recommendations to reduce the overall amount of print content, to include a gift or condom, and to supplement print material with imagery to maintain reader interest.

Places of information dissemination included social spaces, such as massage parlours and salons, during events, demonstrations and during festivals, such as World AIDS Day (initiated by IOM and hospitals), radio broadcasts (in Thailand), or Public Health Officer-led workshops in the community. Participants in also indicated that learned information was also passed on by word of mouth within the communities.

Participants indicated a number of additional dissemination methods that should be included in advocacy interventions for HIV prevention. These included the use of billboards (which participants claimed were either non-existent or ineffective); educational films during bus journeys to and from Thailand; in work camps where migrant workers live; during public events or shows; practical, peer-led workshops; and during important festivals such as the New Year Water Festival. Age appropriate information targeting various age groups was also recommended by participants.

> "I think that they will be more interested in video. That will be better. Some people are illiterate. Most of the hard labourers cannot encourage their children's education. So pamphlets need to be read but videos with Myanmar language and cartoons can be better."

SMO, Kawkareik

> "Township-wide live shows, campaigns like well-known and attractive activities should be provided. Poster displays, exhibitions in festivals, health education together with entertainment are better ways than pamphlets for delivery of HIV prevention and treatment information."

IOM Staff Saya Chan, Myawaddy

Need for time-appropriate interventions was also raised.

> "Migrants work during the day-time, enjoy fun and relax in the evening. Shows at night are more effective for information-delivery as people participate and watch."

MSM, 27, Myawaddy

The two townships differed with regard to how often information was disseminated in their communities. It was mentioned that programmes in Kawkareik were inconsistent, implementing one year but then not the next.

"Till 2011 and 2012 still those [HIV programming] are available periodically. But in 2013 onwards, those public movements disappear. Only flyers and posters telling about how to properly use condoms are stuck on the walls of public access areas."

MSM, Kawkareik

"It is now common information which is opened to the public, so people would know unsurprisingly about HIV."

MSM, FGD, Myawaddy

"People who work this job [sex workers in brothels] know that HIV/AIDS is (sexually) infectious."

MSM, 48, Myawaddy

Participants indicated wishing to know more about preventive methods, treatment opportunities and how to live with the disease, as well as the "window of opportunity" to take post-exposure prophylaxis.

"How they can prevent, how they should live if they have HIV, how to get treatment. I want people to know this."

MCH Staff, Myawaddy

"They do not know about the "Window Period" [to take post-exposure prophylaxis] although we share properly full knowledge about HIV/AIDS."

IOM DIC Manager, Myawaddy

4. Discussion

4.1 Study findings

4.1.1 Migration and mobility in Myawaddy and Kawkareik

This study has exposed the complexity of mobility patterns within this border area. Mobility is largely localized to the surrounding states, with a large variety of temporal patterns. Those along the border were more likely to make brief cross-border visits and these individuals were most frequently men. For both cross-border inbound and local migrants in Myawaddy, all of whom originated from Myanmar, Myawaddy is clearly an ideal transit point for those wanting to work in Thailand.

Truck drivers, businessmen and mobile men are found to be sensible and challenging group for any intervention as they move from place to place quite frequently. These people constitute a large group in Myawaddy and along the East-West Economic Corridor as they are involved in the industries of logistics and trade between Thailand and Myanmar and within Myanmar. In addition to the goods and products truck drivers and their assistants transport, they can also carry disease with them or spread information along the roads and within the communities they pass through. Proper planning and regular interventions for truck drivers and mobile men are crucial in reducing incidence and prevalence of HIV.

Daily cross-border migration is common migration pattern between bordering business towns where crossing border is convenient. Thousands of migrants living in Myawaddy cross the border daily to work in the factories and do business in Mae Sot where they can earn higher incomes than in Myawaddy. These groups of migrants may simply use border passes and some may not use any documents to cross the border. They tend to stay in community clusters along the Mei river bank. Most of these migrant groups are not originally from Myawaddy but from other regions in lower Myanmar, such as Bago, Ayeyarwady, Mon, Yangon. Most of them move and stay with family. HIV risks may be not high among this group except for those who work in sex trade. Any health interventions among this group of migrants should be done in both sides; in Mae Sot during the day and in Myawaddy during the evening.

Seasonal migration is one popular migration pattern both in Myanmar and across the border. There are two types of seasonal migration; agricultural and construction work related migrations. Some migrants from other regions move to work in brick kiln factories in Kawkareik, some move to sell seasonal fruits, and some works on the construction sites in Myawaddy and Kawkareik during the dry season (October to April). They may return home or move onward to other areas during the rainy season (May to September). Some groups of migrants cross the border to work in the plantations such as rose plantation in Tak province or rubber and fruit plantation in other areas, and return home after the harvesting season. Mapping of seasonal migrants will be useful for monitoring and planning the interventions among them.

Myawaddy seems to be the main transit point for long-term and documented migrants from Myanmar to Thailand. Migrants move beyond the border to many parts of Thailand, especially to Bangkok and Samut Sakhon where there are many jobs for migrants. Many of them have connections and networks in Thailand, either friend or relatives. Documented migrants do not

have significant difficulties in accessing health care when they are in Thailand as they are covered by health insurance. Undocumented migrants can buy a health insurance package. They will only encounter problems when they have health complications and require referral, as the referral system has not yet been properly established between the two countries. However, it would be beneficial for both Thailand and Myanmar to create a health monitoring system for these long-term migrants. Health interventions and education could be conducted properly before departure, after arrival and upon return.

4.1.2 HIV knowledge and attitudes

Limited HIV-related knowledge and a high prevalence of stigma towards people living with HIV were major findings in this research. While knowledge of the existence of HIV/AIDS was nearly universal, it was very poor for other sexually transmitted infections, and widespread knowledge of some common forms of HIV transmission is offset by the prevalence of outdated or incorrect perceptions of HIV transmission, infection and about PLHIV. Misconceptions, such as mosquitoes as a vector for HIV transmission or that a healthy looking person cannot have HIV, are barriers to prevention. They act against effective preventive measures, for example implying that condoms are not required if one's partner looks healthy, and contributes to elevated stigma that in turn affects risk and health-care-seeking behaviour. This was supported by the qualitative findings, including the fact that respondents felt embarrassed when buying or getting condoms due to the associated negative perceptions of others that acquiring or carrying a condom implies that one is a 'womanizer' or 'brothel-goer'. These findings also correlate with previous research on migrants' knowledge of HIV/AIDS.

It is obvious from the research results that those who had access to HIV interventions, like MSM and FSW, have better knowledge of HIV compare to MMM and migrants. This affected their attitudes towards PLHIV directly. More HIV comprehensive communications must be promoted among other vulnerable populations like MMM, migrants and mobile persons.

One significant finding that should be highlighted is the importance of familial relationships. The family unit is very strong in Myanmar culture. People show an exceptional amount of care and concern for members of their family, and findings indicate that this would not exclude a family member with HIV. This could be observed in the overwhelming majority (90%) of respondents that were willing to take care of an HIV infected relative amidst generally negative attitudes towards HIV positive individuals. The extent of these negative attitudes towards people living with HIV were illustrated by a series of questions and statements. Approximately 2 in 5 respondents who had heard of HIV/AIDS disagreed with the statement that children who are HIV positive should attend school with HIV negative children, and 40 per cent would not buy from a shopkeeper known to be HIV positive. Learning from this result, promoting HIV safer practices through the messages 'love and care' of their family or the ones they love may be effective in the prevention of HIV interventions.

Health education must therefore address the new realities of HIV comprehensively: while effective treatment is possible, the importance of preventing transmission should not be deprioritized.

4.1.3 HIV risk behaviours

The research brought about mixed findings with regard to HIV risk. Sexual behaviours correlating with higher risk of contracting HIV, such as, multiple sex partners or infidelity; sex work, whether venue-based or freelance; and male-male sex, were not found in the quantitative study population. This corresponded with a very rare history of STIs symptoms among respondents. These findings markedly contrast the behaviours found among the risk groups that participated in FGDs and the testimonies given by those who participated in KII; these groups suggested that sex between men and sex with female sex workers were relatively common among migrant populations.

Condom use in the quantitative study population was low, this may be perhaps due to less sexual risk behaviours reported, which were notably lower in this study compared to other research of risk groups. Indeed, there is no direct evidence from the quantitative study that the low condom use is risky: lack of necessity was the overarching theme, and the majority of sexually active respondents pointed out trust in their partner or the use of other contraceptive measures, and reported only monogamous, marital sex.

The gender differences in condom use observed, however, are cause for concern. There is some evidence that women are not adequately empowered where condom usage is concerned, as women were less likely to know where to buy condoms and were more likely to appease the wishes of their partners who claimed to dislike using condoms. This could be countered by more woman friendly-, such as outreach family planning services to give women more ownership over reproduction.

It is important to note as well that women or FSW may not have the power to control or negotiate condom uses to protect themselves from STI/HIV. Some FSWs were threatened by their clients and/or the shop owners for to have unprotected sex, which they reportedly did to avoid more violence. Clients who exercised threats were identified as those in the armed-forces or men with money. More education on HIV should be promoted to clients of FSW; this could be implemented at their workplaces. Negotiation and communication skills of FSW are perhaps also necessary skills to promote to increase condom use. It was evidenced from the qualitative study that a FSW with good negotiating skills and high self-esteem could convince clients to use a condom, otherwise they would not provide any services.

Unlike FSW, MSM seem to have more control over their sexual experiences and their partners. This may be because MSM do not only have transactional sex, but rather sex is predominantly for enjoyment. MSM in this study reported paying some of their partners for sex. They are exposed to more HIV information and interventions than other groups so they are more familiar with the importance of practicing safe sex and take responsibility to educate their partners. Consistent and correct condom use messages, however, must continue to be promoted among MSM communities as the prevalence in this group is still high. No detailed research of sexual practices has been conducted to investigate the factors leading to HIV transmission among MSM.

Injecting drug use was low among all sources of data collection, which is consistent with previous research in Myanmar. However, use of amphetamines or 'Yaa-ma' was reported as common in both communities. This could be a result of a low risk study population, but may also indicate poor availability of injecting drugs in the Myawaddy and Kawkareik areas. It may also have been due to the precarious security situation at the time of data collection (September 2014) or the illegality of injecting drug use in Myanmar which prevented access to injecting drug users for the purposes of the study.

4.1.4 Condom availability and accessibility

In the discussion of condom availability, three distinct points must be made: true availability, perceived availability, and the practical implications of availability. Condoms are clearly available in the study areas, both as purchasable items and free to obtain from certain health facilities. Public awareness is good although not optimal, with 75 per cent of those who had ever been sexually active knowing where to obtain a condom. The practical implications of this are minimal, as it is clear that the intention to obtain condoms is not prominent to begin with. Knowing where to buy condoms may be a problem among those who do intend to buy condoms, however condom accessibility is not considered to be an impediment to use. Therefore, the data makes clear that availability does not directly coincide with use.

Social and cultural barriers are the main concerns in accessing condoms among migrants and some risk groups as possessing a condom is associated with being a womanizer, brothel-goer, as well as promiscuity. Even FSW do not want to carry a condom when they go outside of their

workplaces as sex work is illegal in Myanmar. A woman who carries a condom can be perceived as a sex worker and can be victimized by the police. There is need to promote positive attitudes towards condoms and those who carry condoms. This is very important to promote condom use and decrease HIV incidence. There is evidence from different groups that they did not use a condom when having sex because there was no condom at hand when they needed it. As a result, it may be efficient to distribute or put condoms in those venues where sex encounters are likely to occur. This would alleviate the worry and associated stigma.

To conclude, there is a clear need to improve the ease of obtaining condoms, particularly among women, such that they can be bought and used when needed. This can be achieved by improving knowledge of where to obtain condoms, but more importantly by combatting the stigma associated with obtaining, carrying, and using them.

4.1.5 Health-care availability and health referral

The patterns of health care and perception of health-care availability reflect the actual availability of health services within the study area. With 18 and 31 private clinics in the Kawkareik and Myawaddy areas respectively, and 28 pharmacies in total, it is unsurprising that these venues are the primary sources of medical care compared to the handful of NGO clinics, public health centres, and public hospitals. NGO clinics have particularly poor visibility, with 3 in 4 respondents not knowing if they exist in the study area. However, as demonstrated by the qualitative data, the reason for the preference of private clinics is also rooted in an inherent mistrust in public services.

The mapping exercise also demonstrated limited HIV testing. Opportunity for HIV testing is restricted locally, which is furthermore reflected in poor awareness of testing availability among the public. Despite the popularity of private facilities, public facilities offer more in the way of HIV services, as reflected in the higher percentage of people who had obtained their last test from a public health centre or hospital. However, testing does not appear to be available to everyone, but rather provided as part of specific health programmes such as PMTCT or surgical cases. This environment greatly limits the possibility for opportunistic testing among those entering a health facility for other reasons. Such a testing strategy could be particularly relevant given the low level of HIV knowledge and initiative to test. Offering tests in private clinics would be particularly effective given the heightened trust in private providers.

Health-care services in the areas are still limited in terms of expertise, equipment and capacity. There is a need to establish proper, systematic referral mechanisms within Myanmar or across the border between Mae Sot and Myawaddy. In fact, a referral system between Thailand and Myanmar has been discussed for years but there is a need for involvement at both the national level and local level from the two countries. To strengthen the capacities and health service delivery in Mywaddy and Kawkareik, there should be a referral protocol and active cooperative networks either across sectors or within health sectors.

4.1.6 Quality of health-care services and barriers in accessing health services

Among respondents, health-care quality appears to be a high priority. The qualitative and quantitative data suggest a need for improved health-care quality, in terms of both general health care and HIV testing specifically, as well as financial accessibility. Both of these areas were met with relatively poor satisfaction and were specified as dominant barriers to accessing health care among migrants. Financing mechanisms to decrease costs and infrastructure developments, and capacity building to reduce waiting times and improve health-care provider competency are particularly important. A continuum of care should be ensured with referral mechanisms across the border, particularly near Myawaddy where there was a higher proportion of people crossing into Thailand to seek health care.

Improvement of migrant friendly-services, attitudes of health providers towards migrants and PLHIV, and professional treatment may dramatically improve the perceptions of migrants and risk groups regarding the quality of health-care services. The collaboration and sharing of responsibilities between public, private and non-government implementers in Myawaddy and Kawkareik should definitely enhance health service delivery.

4.1.7 HIV and health communications

The need or preference for more information on HIV/AIDS was expressed by half of the migrants surveyed. While this may be prompted partly by the subject matter of the survey itself, the need for more information related to HIV/AIDS is clear from the low level of knowledge and negative attitudes. The subject of HIV/AIDS appears to foster considerable hearsay, as indicated by the higher proportion of HIV knowledge obtained from friends and relatives compared to general health knowledge. This suggests that care must be taken to ensure that correct information is disseminated. Health promotion strategies must be evidence-based, accurate, responsive to the needs of risk groups such as migrants, and should tackle the specific gaps or errors in knowledge among the target groups. Health promotion streams should be multi-modal, with particular potential for television channels, health providers, and material such as posters to play an important health promoting role.

Importantly, health information should also be integrated into formal education, as background education appeared to have a strong impact on HIV knowledge, attitudes, and uptake of HIV testing. This was the case even when controlling for the ease of understanding health information. In contrast, health materials such as public health promotion appear to encourage positive attitudes, but not better knowledge. This may be because, while health information does not adequately improve scientific knowledge of the infection, it provides the public a form of exposure to HIV that familiarizes them and normalises HIV testing.

Together, these findings stress the importance of formal education as a public health intervention and the value of including HIV prevention messages in the formal curriculum. The findings also point to the need to maintain high exposure to HIV messages to normalise HIV as a chronic disease. The quality of public health messages could also be improved through more informative content displayed in an optimally comprehensive way.

4.1.8 Representativeness and validity

The choice of purposive quota-based sampling over random sampling was both pragmatic and a result of the intention to characterise migrants and their health-care experiences. However, representativeness was limited by the political restrictions within Myawaddy that prevented sampling from certain study areas, and the difficulties encountered identifying locations with migrants that originate from the study area. Considering the under-sampling of local migrants that originate from the study area, the quantitative survey can be considered to be broadly representative of migrants within the inbound-migrant-dense parts of Myawaddy and Kawkareik. Under-reporting and response bias may have contributed to the results, resulting in some of the differences with previous behavioural surveys conducted for the National AIDS Programme, in which risk groups such as FSW and MSM displayed notably greater history of STIs, condom use, knowledge of HIV, and HIV testing history.

This may be rooted in a range of socio-political and interviewing conditions. Male-male sex is illegal and punishable by law in Myanmar, and traditional culture dictates that sex and discussing sexual acts, especially among women, is taboo. Furthermore a third of respondents were interviewed by the opposite sex (32.5% of male respondents interviewed by female, 33.2% female interviewed by male), respondents were interviewed near their homes, and interviews were verbal. Collectively, this could have increased the tendency to provide socially-desirable answers. Many of these conditions were due to logistical restrictions, as literacy was not high enough to administer a written questionnaire, and same-sex interviewing was not always possible considering the research team distribution.

However, the data also suggests that this group of migrants were not particularly high risk. The sampling scheme was developed to choose migrants with established living or working patterns, as well as knowledge of the locally available health facilities, by including a time restriction of at least three months of exposure to the study area. As a result, the study group does not include risk groups such as truck drivers passing through the area only once, although it could include migrants who stay overnight in the area several times throughout the year. While these criteria allow derivation of more detailed information on the facilities available to migrant groups, the result is a tendency to include migrants who are more settled in the area, and who may as a result be more likely to live with their families and exhibit lower risk behaviours. As the study did not look at the actual sero-prevalence within the study population, it is difficult to correlate perceived and actual risk.

With the development of the road construction and East-West Economic Corridor, there may be a corresponding increased influx of single working men and an increase of risk behaviour. It will be interesting to apply the same sampling scheme later to determine if levels of sexual risk do increase.

5. Key findings and gap analysis

Significant findings and gaps from the qualitative and quantitative research are presented below in Table 10. Gaps considered beyond the responsibility of MOH and health partners or which need to be coordinated with other sectors are asterisked (**).

Table 10: Summary of significant findings and gap analysis

Topics	Key findings and gap summary
HIV-related Knowledge and Attitudes	HIV knowledge • There were low levels of knowledge about HIV and STI among migrants, and continuing misperceptions about HIV transmission and prevention, with MMM exhibiting particularly low knowledge. Attitude towards HIV and PLHIV • There is a largely negative attitude towards PLHIV, as evident in not wanting to share utensils/plates/cups or frequent establishments (such as restaurants) where PLHIV go. These sentiments were particularly prevalent among MMM. • More positive attitudes towards HIV were associated with higher levels of educational attainment, higher levels of HIV knowledge, receiving HIV information within the last six months and clarity of HIV information received • Self-awareness of HIV risk amongst migrants is lower compared to MSM and FSW. While 47% of male migrants perceive migrants to be at particular risk of HIV, only 9% think they themselves have elevated risk.
Sexual Behaviours and Drug Uses	Sexual behaviours • Economic conditions were found to be the main factor pushing young women into the sex trade. ** • Many sex workers moved regularly from town to town or across borders, with some women going to Mae Sot, Thailand daily or weekly to sell sex. • Sex services were available at brothel houses, karaoke bar (called KTV in Myanmar), beer shops, massage parlours, hotels and guesthouses. Many FSW especially in Kawkareik, posing as waitresses, provided sex services in restaurants or in their lodgings. Sex services could be offered at a venue or via an on-call service, especially in urban areas of Myawaddy. • Freelance FSW are a special risk group as they are particularly hard to access for dissemination of knowledge and advocacy around HIV prevention. • Clients of FSW were from armed organizations, car brokers, gate workers and traders, truck drivers, forest workers, masons, labourers, travelers, cross border businessmen, and hotel and restaurant customers. Truck drivers for example had sex hotspots along the main roads. • Some MSM gave money to young partners and provided drugs to drug-using partners or paid stranded migrants and jobless men in exchange for sex. • Many clients used drugs and got drunk before visiting FSW, with condoms not commonly used by these types of clients. • Sex workers also reported facing violence or forced sex from some clients. • Sexual interaction occurs across borders via migrants, FSW and MSM. Members of the general population or wives of people in this sexual network may be at risk of HIV and STI if partners do not use a condom consistently when having sex with other partners.

Topics	Key findings and gap summary
Sexual Behaviours and Drug Uses	• Abortion was a significant health problem among FSW. Abortion could only be accessed at a public hospital or unregistered clinic, with cases referred to proper health facilities only when there were complications. • Drug use behaviours • No injecting drug use was reported in the study areas, though methamphetamines, also known as "Horse Drug" or "Yaama" was frequently used by FSW, MSM, MMM, youth and students, and long distance drivers.
Condom Availabilities, Accessibility and Usage	Condom availability • Free condoms are only available in one size (49 mm.) • Myawaddy has better and/or more transparent condom availability compared to Kawkareik, with 75% and 40% of respondents respectively stating they know where to obtain condoms, and 52 per cent versus 17 per cent respectively finding it easy to obtain condoms. Condom accessibility • Except for MSM and FSW, social and cultural factors such as embarrassment were the primary barrier to condom access. • Lack of knowledge of where to access to condoms was a barrier for 35% of Myawaddy respondents and 57% in Kawkareik respondents who reported not finding it easy to obtain condoms. • Better knowledge of where to access condoms was associated with a higher level of education attainment and exposure to health materials. Condom usage • There was poor knowledge of condom as a protective measure against STIs, HIV or pregnancy amongst migrant respondents and poor condom use with regular or casual partners. Trust in their spouse and/or the perceptions that condoms were inappropriate in their sexual partnership were among leading reasons for not using a condom. • Clients of FSW not interested in negotiating condom use and FSW were sometimes persuaded by clients with to have unprotected sex for more money or drugs, indicating one sided knowledge about HIV and HIV prevention. • MSM could force their partners to use a condom and train peers about condom use. • FSW with self-esteem and negotiation skills could also insist partners use condoms. Other factors enabling condom use among FSW the client making an appointment with a FSW in advance and working in a venue where health officers and HIV agencies provided free condoms and peer education. • Study respondents reported sex partners for example manipulate the shape and size of their penises; these alterations led to standard sized condoms no longer fitting.
Access to Health and HIV Services	Access to health services • People, including migrants, may not be aware of the availability of all services as there has been no public communication about health services provided by public hospitals. • Among migrants who had been ill, a history of difficulty accessing health care was associated with being an outbound migrant, older age, and having access health materials in the past six months. • There was not a full continuum of care or preventive services in either Myawaddy or Kawkareik. • Most health facilities are situated in town areas with only mobile units or outreach teams servicing some communities occasionally, including new and high density communities like Thin Gan Nyi Naung. • Direct (fees) and indirect (distance and transportation) costs prohibit health service access. Nine percent of all respondents travelled to Thailand to access health services.

Topics	Key findings and gap summary
Access to Health and HIV Services	Access to HIV services • Availability and scope of HIV services was better known among FSW and MSM compared to MMM, migrant survey respondents and other populations. • No standardized testing for HIV available in either study area. • In Kawkareik, HIV testing was only available in the public hospital at the time of blood donation, Prevention from Mother to Child Transmission (PMCT), Pyrexia of Unknown Origin (PUO) and/or surgical case. • There were no organizations working on HIV care and treatment in Kawkareik. The hospital did not have proper facilities and resources so referred cases to Hpa-an for testing and ART treatment. • None of the private clinics in Myawaddy and only two in Kawkareik provided HIV testing or treatment, with HIV testing otherwise only available at NGO clinics, public health centres/hospitals, and two private hospitals: 12 venues overall (8 in Myawaddy and 4 in Kawkareik). • CD4 count was not available in Myawaddy. Blood samples were sent to Mawlamyine for services. • Survey respondents were more likely to have an HIV test if they were married, had a higher income, had accessed HIV information in the past 6 months, had better HIV knowledge, and a more positive composite attitude score. • All migrants including most MSM, FSW and MMM are ineligible to receive ART at the public hospital as they must be registered in the township, and able to provide a household number, a national ID and certified letter of residency. • Mobility also provides challenges to treatment adherence. Referral system • Referral to health services across the border can improve access to health services for residents of Myawaddy and Kawkareik, though referral and coordination mechanisms between the two sides have not been properly established.
Quality of HIV and Health Services	Access to health services • The most common difficulties faced by migrants in accessing health care were unaffordability, long waiting hours, discrimination due to socioeconomic status, poor quality services and remote geographic location. • Local migrants appeared to face more discrimination due to their socioeconomic status than inbound migrants (41% vs 30%), but displayed no difference in terms of perceived unaffordability. • Health-care providers can reject patients if the patient has been treated by those “below their qualification” or if the patient is unable to pay. Quality of HIV services • Stigma and discrimination is still high among some health providers and can impact motivation seek health services. • There was no privacy or confidentiality and other people could have access to the health information or HIV status of PLHIV. • There was a reliance on PMTCT/midwives for HIV services given limited HIV/STI officers especially in Kawkareik. High demands placed on MCH staff limited their capacities to work on HIV services. • Unstable electricity supple in Kawkareik affected the provision of care and treatment to patients. **

Topics	Key findings and gap summary
HIV and Health Communications	HIV and health communication • A higher percentage of individuals in Kawkareik (87%) compared to Myawaddy (77%) had not received information within the past year. • Fifty-one (51) per cent of all migrants expressed wanting to learn more about HIV though Information was often provided in inapplicable fora – i.e. TV programming where there is unreliable electricity or in print form where many are illiterate. • Freelance FSW and migrants can be the hardest to provide health information to because they constantly mobile or hard to find.
HIV and Health Communications	HIV communication strategies • Information must be timed and provided in convenient spaces to allow participation of high-risk groups in. • There was a preference to receive HIV information from posters and signboards, television, health providers, and outreach or NGO workers. • Places of information dissemination included social spaces, such as massage parlours and salons, during events, demonstrations and during festivals, such as World AIDS Day (initiated by IOM and hospitals), radio broadcasts (in Thailand), or Public Health Officer-led workshops in the community. • Additional dissemination methods could include use of billboards (which participants claimed were either non-existent or ineffective); educational films during bus journeys to and from Thailand; in work camps where migrant workers live; practical, peer led workshops; and during important religious festivals such as the Water Festival. • Use of print information would disadvantage illiterate populations, and that the limited electricity in Kawkareik may reduce the effectiveness of video as a method of information dissemination. Information dissemination also needs to be age appropriate (incl. of educational cartoons for younger populations).

6. Recommendations

1. Improving of HIV knowledge and attitudes towards HIV and PLHIV

a. Target MMM, migrants and freelance (non-establishment based) FSW who have the least amount of knowledge about HIV transmission and prevention, and are the most likely to be missed in dissemination efforts.

b. Develop, test and implement comprehensive and simple BCC and IEC materials and interventions which :

- Address lack of knowledge and misconceptions about HIV and STIs;
- Explains risk clearly so that people can accurately appraise their own level of risk;
- Emphasise the importance of HIV prevention while encouraging regular HIV and STI testing for those at risk;
- Promotes a positive attitude towards condom use;
- Increase awareness of what commodities and services are available and encourage health seeking behaviour;
- Address disparities between groups, including men and women, in HIV related knowledge, ability to negotiate use of condoms where appropriate and understanding of how to access services and commodities;
- Reduce stigma and discrimination towards PLHIV and at risk groups;
- Integrate HIV messages into broader health education and utilizes various modalities for delivery of messages including social spaces, community events and billboards; and
- Are provided repeatedly to reinforce messages and increase likelihood that knowledge will translate into attitudes and behaviours, such as reduced stigma and increased utilization of HIV testing.

c. Include HIV and STIs in the secondary school curriculum, to reach young people before they leave the education system and potentially become mobile, making them more difficult to track.

2. Maximizing accessibility to condom and promoting condom usage

a. Distribute free condoms in bigger sizes.

b. Promote use of the female condom as an option for men with bigger size organs, including those enlarge their penis.

c. Expand condom distribution points to all hotspots or sex venues, and make condoms free where possible.

d. Place condoms in the most reachable but not too visible areas in hotspots to minimize embarrassment and support people to access condoms.

e. Promote other benefits of condom use in addition to preventing HIV and STIs, such as pregnancy prevention.

f. Inform and train people, including migrants, on correct condom usage.

3. Enhancing health and HIV services

a. Establish additional mobile units or outreach teams, including HIV services, to reach high density or remote communities at least periodically.

b. Promote the availability of health services in townships.

c. Ensure public services are free at the point of care and explore other options for increasing the overall affordability of health care.

d. Increase and promote availability of HIV testing in Kawkareik.

e. Develop and implement standard operating procedures (SOPs) for HIV services.

f. Consider modifying ART eligibility criteria in migrant-dense or border townships to allow access to HIV care and treatment among migrants.

g. Enhance and systemize in-country referral mechanisms, for example around CD4 monitoring and provision of ART, and seek to address the challenges in providing services to migrants when they move.

h. Enhance and activate cross-border referral mechanisms especially between Mae Sot and Myawaddy, including by sharing information, capacity and resources and in the longer term developing a migrant health surveillance system to monitor health situations of migrants in the areas.

4. Improving of quality of HIV and health services

a. Train local health staff to:

- Provide health care services without discrimination and in a manner which encourages trust between the doctors and patient;
- Identify and offer HIV testing to patients who may be at high risk and increase opportunistic HIV testing where appropriate; and
- Provide HIV testing and pre and post-test counselling in line with SOPs and best practice.

b. Recruit, train and support additional health workers (e.g. community health workers) where feasible and appropriate.

c. Improve access to community outreach among migrants and other target populations including recruiting and training peer educators and community health workers to deliver HIV community outreach services.

5. Strategizing HIV and health communications and behaviour change communication

a. Prioritize HIV interventions among FSW and MSM.

b. Target clients of FSW with information about HIV prevention.

c. Conduct HIV interventions at the hotspots where sexual risk behaviours may occur.

d. Reach out and advocate with taxi drivers, shop managers and lodging house staff to become peer educators for HIV interventions as they are the links between sex workers and clients, especially freelance sex workers.

e. Strengthen the knowledge and capacity of MSM in delivering HIV interventions such as information dissemination and condom distribution, particularly to hidden populations.

f. Develop and train FSW to negotiate condom use and provide support in dealing with and preventing forced sex and violence.

6. Strengthening networking and collaboration within health sectors and across other sectors

a. Coordinate with immigration and other relevant partners to reach migrants and provide them with HIV information.

b. Strengthen coordination between government and non-government providers, including private providers and between health and non-health sectors such as the Ministry of Labour and Ministry of Construction.

c. Collaborate with other government offices and Ministries in providing HIV training and promoting safe sex, especially the Military and Immigration as these officials are key clients of FSW at the border townships.

d. Involve other ministries in further research and interventions on HIV and migration.

7. Maintaining evidence-based planning and interventions and monitoring the impacts of HIV and mobility in the infrastructure development settings

a. Map migration and mobility patterns periodically.

b. Use this research as a baseline, to monitor and address migration and HIV vulnerabilities on East-West Economic Corridor at all phases of infrastructure development.

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Appendices

- Eligibility and demographic profile of respondents in the survey
- Descriptive results from the survey
- Logistic regression analysis
- Kawkareik and Myawaddy Township Profile
- Ethical Certificate from the Ethical Review Committee, Department of Medical Research (Lower Myanmar)

Appendix I: Eligibility and demographic profile of respondents in the survey

Eligibility

All migrants approached for this study on the basis of the rapid assessment fulfilled the criteria of being aged 15 to 50 years with recent mobility of at least 3 months of long-term or daily cross-border mobility in or out of the township within the last two years.

179 individuals were categorized as inbound migrants, who had recent mobility into the study area and had lived in the study area for no more than five years in total. 209 individuals were considered local migrants, with recent mobility outside of the study area. The majority (195) of those considered locals were inbound migrants who had settled and lived in the study area for more than five years. Only 14 eligible local migrants were originally from the study area. This balance of migrant categories was roughly similar in both townships, although Myawaddy had significantly more.

Table 11: Number of participants by migrant category and township

Eligibility migrant category	Total		Myawaddy		Kawkareik	
	N	%	N	%	N	%
Inbound (<5 years)	179	46.1	159	45.9	20	47.6
Local	209	53.9	187	54.1	22	52.4
Local (>5 years)	195	50.3	176	50.9	19	45.2
Local (originally)	14	3.6	11	3.2	3	7.1
Total	**388**	**100**	**346**	**100**	**42**	**100**

A total of 388 migrants were interviewed in the survey, of whom 346 were from Myawaddy and 42 were from Kawkareik. The breakdown of those interviewed and their locations are provided below. Thin Gan Nyi Naung, Kyone Doe, Nwar Chan Gone, and some urban areas in Myawaddy were skipped during quantitative data collection due to unsafe security conditions.

Table 12: Number of participants in the survey by township and ward

Township and ward	Numbers screened	% of study population
Myawaddy	346	89.2
2	1	0.3
3	24	6.2
4	207	53.4
5	114	29.4
Kawkareik	42	10.8
5	9	2.3
7	16	4.1
Lower Botel	17	4.4
Total	**388**	**100**

Demographic and educational profile

Forty-four (44) per cent of participants were female. The total gender ratio was 56% to 44% males and females, which approached the intended 60:40 quota. Almost three quarters of migrants were married, and the remaining quarter was single. Outbound migrants (local) were slightly older (p=0.003) than inbound migrants, which led to a higher proportion of married outbound than inbound migrants. Multivariate analysis (Appendix III) found that the two Townships differed significantly in terms of sex (p=0.007), with a higher ratio of women to men in Kawkareik, and education level (p=0.015), with a tendency towards more highly educated individuals in Myawaddy.

Table 13: Demographic features of migrants in Myawaddy and Kawkareik

Demography	Total		Myawaddy		Kawkareik	
	N	%	N	%	N	%
Sex						
Male	217	55.7	202	58.4	14	33.3
Female	172	44.3	144	41.6	28	66.7
Age						
16-24	108	27.8	99	28.6	9	21.4
25-34	125	32.3	113	32.7	12	28.6
35-44	114	29.4	95	27.5	19	45.2
45-54	31	10.6	39	11.3	2	4.8
Median	30		30		34.5	
Marital status						
Single	96	24.7	89	25.7	7	16.7
Co-habiting	0	0	0	0	0	0
Married	283	72.9	250	72.3	33	78.6
Divorced/separated	4	1	3	0.9	1	2.4
Widowed	5	1.3	4	1.2	1	2.4
Total	**388**	**100**	**346**	**100**	**42**	**100**

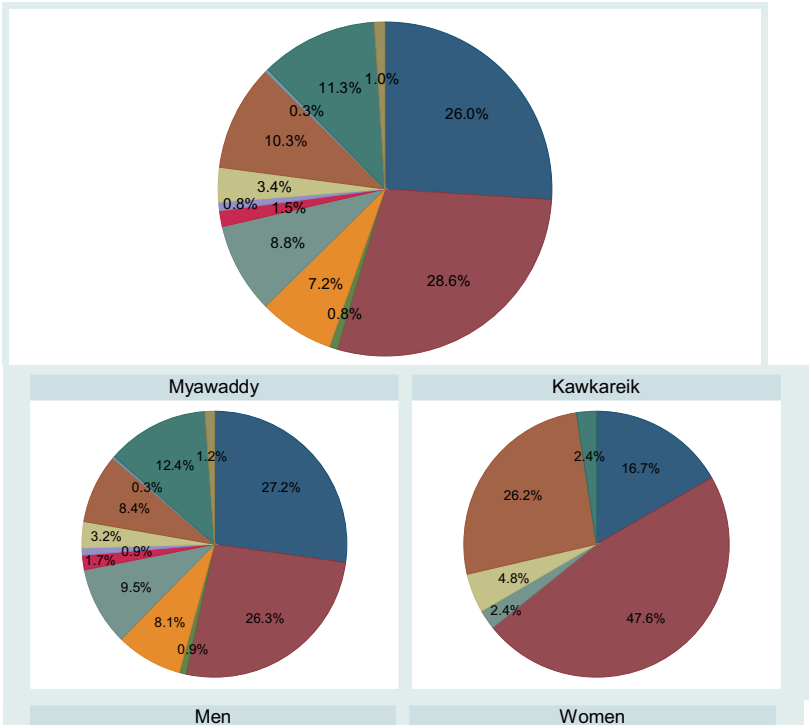
Table 14: Educational background of migrants in Myawaddy and Kawkareik

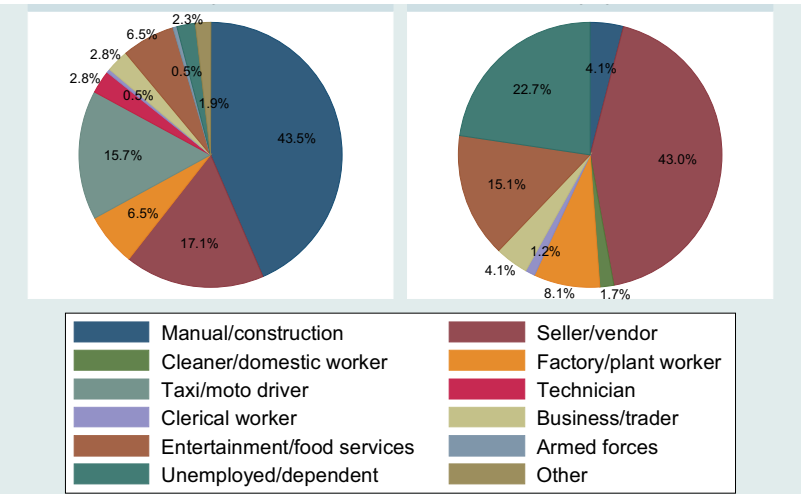
Education Level	Total		Myawaddy		Kawkareik	
	N	%	N	%	N	%
Education level						
None	4	1	1	0.3	3	7.1
Below primary	21	5.4	17	4.9	4	9.5
Primary (G1-5)	103	26.6	88	25.4	15	35.7
Middle school (G6-9)	154	39.7	140	40.5	14	33.3
High school (G10-11)	80	20.6	77	22.3	3	7.1
College/University	12	3.1	12	3.5	0	0
Graduate	14	3.6	11	3.2	3	7.1
Total	388	100	346	100	42	100
Ability to write a simple letter among those without complete primary education						
Easily	5	20	5	27.8	0	0
With difficult	17	68	11	61.1	6	85.7
Not at all	3	12	2	11.1	1	14.3
Total	25	100	18	100	7	100

Employment

The majority of migrants worked as seller/vendors (29%) and in manual labour or construction (26%), however there was an obvious gender difference: more women than men (43% vs 17%) worked as seller/vendor and more men than women (44% vs 4.1%) worked in labour/construction. More women (15%) worked in the entertainment industry or were unemployed/dependent (23%). These trends are further reflected in township differences, as Kawkareik, where more women were sampled, had a particularly high percentage of individuals who had worked in sales or entertainment in the past year. Kawkareik did not have any factory/plant workers, and no sampled individuals described themselves as truck drivers.

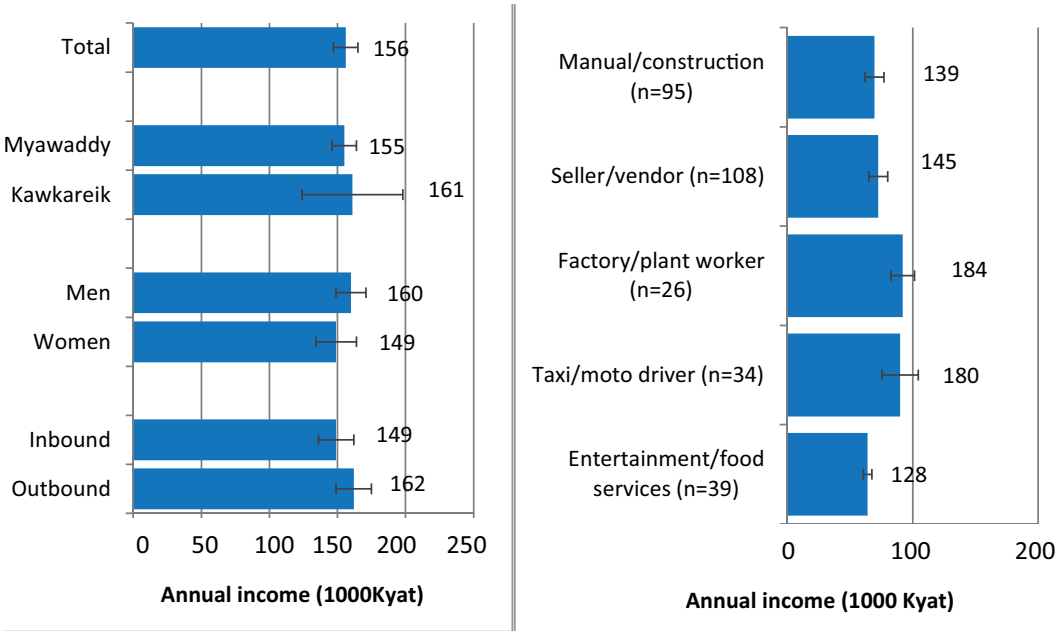
Figure 26: Main employment in the past 12 months among all migrants (top chart) and by Township and sex





Among those who were employed, the mean income was 156,000 MMK per month (approximately 150 USD). While men earned more than women and outbound earned slightly more than inbound, these differences are not significant, as indicated by overlapping confidence intervals in Figure 27: Monthly income, by Township, Sex, Migrant category, and main form of employment (where n>21)Figure 27. There is some evidence of income differences between some professions; factory and plant workers for instance earn more than manual/construction workers and those working in the entertainment/food services ($p<0.05$)(Figure 27).

Figure 27: Monthly income, by Township, Sex, Migrant category, and main form of employment (where n>21)



Appendix II: Descriptive Results from the Survey

Table 15: Monthly income distribution among migrants with employment history in past 12 months, by Township, sex, and migrant category

Monthly Income	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0-49,999 Kyat	9	2.6	5	1.7	4	9.8	4	1.9	5	3.8	4	1.9	7	3.9
50,000-99,999 Kyat	69	20.1	61	20.1	8	19.5	39	18.5	30	22.6	39	18.7	43	24
100,000 – 199,999 Kyat	157	45.6	142	46.9	15	13.6	101	47.9	56	42.1	94	45	82	45.8
200,000 -299,999 Kat	65	18.9	58	19.1	7	17.1	38	18	27	20.3	42	20.1	31	17.3
300,000 + Kyat	31	9	25	8.3	6	14.6	21	10	10	7.5	22	10.5	10	5.6
Missing	13	3.8	12	4	1	2.4	8	3.8	5	3.8	8	3.8	6	3.4
Total	**344**		**303**		**41**		**211**		**133**		**209**			
Income summary data														
Median	150,000		150,000		120,000		150,000		125,000		150,000		150,000	
Min	15,000		15,000		30,000		15,000		20,000		20,000		15,000	
Max	600,000		500,000		600,000		500,000		600,000		600,000		350,000	

Table 16: Mobility patterns among migrants, by Township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Relation to others in household														
Live alone	6	1.6	6	1.7	0	0	6	2.8	0	0	2	1	4	2.2
Family other than spouse	154	39.7	132	38.2	22	52.4	80	37	74	43	89	42.6	65	36.3
Spouse	262	67.5	231	66.8	31	73.8	146	67.6	116	67.4	161	77	101	56.4
Partner	2	0.5	2	0.6	0	0	2	0.9	0	0	1	0.5	1	0.6
Co-workers	13	3.4	11	3.2	2	4.8	9	4.2	4	2.3	5	2.4	8	4.5
Friends	21	5.4	21	6.1	0	0	14	6.5	7	4.1	7	3.4	14	7.8
Employer	1	0.3	0	0	1	2.4	1	0.5	0	0	0	0	1	0.6
Migration pattern														
Daily cross-border	80	20.6	80	23.1	0	0	54	25	26	15.1	42	20.1	38	21.2
Short stays (up to 1 month) in working area	39	10.1	36	10.4	3	7.1	23	10.7	16	9.3	28	13.4	11	6.2
Seasonal trips to working area	49	12.6	39	11.3	10	23.8	23	10.7	26	15.1	35	16.8	14	7.8
Longer term (three months or longer) moved to working area	111	28.6	91	26.3	20	47.6	78	36.1	33	19.2	67	32.1	44	24.6
Working in area without mobility	104	26.8	87	25.1	17	40.5	57	26.4	47	27.3	42	20.1	62	34.6
None of the above	37	9.5	36	10.4	1	2.4	4	1.9	33	19.2	17	8.1	20	11.2
Combination of two types of mobility	17	4.4	14	4.1	3	7.1	12	5.6	5	2.9	11	5.3	6	3.4
Don't know	4	1	4	1.2	0	0	2	0.9	2	1.2	2	1	2	1.1
No response	7	1.8	7	2	0	0	4	1.9	3	1.7	6	2.9	1	0.6
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	

Table 17: Knowledge of sexually transmitted infections among migrants, by township, sex, and migrant category

Knowledge	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Knowledge of sexually transmitted infections														
Yes	359	92.5	320	92.5	39	92.9	204	94.4	155	90.1	198	94.7	161	90
No	29	7.5	26	7.5	3	2.14	12	5.6	17	9.9	11	5.3	18	10.1
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Known examples of STIs among those who knew of STIs (multiple answer - spontaneously provided)														
HIV/AIDS	351	99.7	319	99.7	39	100	203	99.5	155	100	190	100	160	99.4
"STI"	23	6.4	22	6.9	1	2.6	16	7.8	7	4.5	13	6.6	10	6.2
Syphilis	6	1.7	5	1.6	1	2.6	4	2	2	1.3	3	1.5	3	1.9
Gonorrhea	14	3.9	13	4.1	1	2.6	13	6.4	1	0.7	7	3.5	7	4.4
Genital herpes	3	0.8	3	0.9	0	0	3	1.5	0	0	0	0	3	1.9
Hepatitis B/C	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Cancer of the uterus	1	0.3	1	0.3	0	0	0	0	1	0.7	1	0.5	0	0
Chlamydia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**359**		**320**		**39**		**204**		**155**		**198**		**161**	
Knowledge of STI symptoms in women among those who knew of STIs														
Yes	46	12.8	41	12.8	5	12.8	10	4.9	36	23.23	20	83.2	26	16.2
No	312	86.9	279	87.2	33	84.6	193	94.6	119	76.8	178	89.9	134	83.2
Missing	1	0.3	0	0	1	2.6	1	0.5	0	0	0	0	1	0.6
Total	**359**		**320**		**39**		**204**		**155**		**198**		**161**	

Knowledge	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Known examples of STI symptoms in women (multiple answer - spontaneously provided)														
Abnormal discharge	22	47.8	20	48.8	2	40	6	60	16	44.4	6	30	16	61.5
Painful urination	4	8.7	4	9.8	0	0	1	10	3	8.3	4	20	0	0
Genital Ulcer	3	6.5	3	7.3	0	0	0	0	3	8.3	2	10	1	3.9
Abdominal pain	9	19.6	8	19.5	1	20	2	20	7	19.4	2	10	7	26.9
Itchiness	8	17.4	7	17.1	1	20	1	10	7	19.4	3	15	5	19.2
Other	5	10.9	3	7.3	2	40	1	10	4	11.1	4	20	1	3.9
Total	**46**		**41**		**5**		**10**		**36**		**20**		**26**	
Knowledge of STI symptoms in men among those who knew of STIs														
Yes	66	18.4	61	19.1	5	12.8	57	27.9	9	5.8	35	17.7	31	19.3
No	289	80.5	256	80	33	84.6	144	70.6	145	93.6	161	81.3	128	79.5
No response	3	0.8	3	0.9	0	0	2	1	1	0.7	2	1	1	0.6
Missing	1	0.3	0	0	1	2.6	1	0.5	0	0	0	0	1	0.6
Total	**359**		**320**		**39**		**204**		**155**		**198**		**161**	
Known examples of STI symptoms in men (multiple answer - spontaneously provided)														
Pain during sex	7	10.6	6	9.8	1	20	6	10.5	1	11.1	1	2.9	6	19.4
Swelling in groin	5	7.6	5	8.2	0	0	4	7	1	11.1	4	11.4	1	3.2
Abnormal discharge	12	18.2	12	19.7	0	0	11	19.3	1	11.1	8	22.9	4	12.9
Painful urination	46	69.7	44	72.1	2	40	42	73.7	4	44.4	24	68.6	22	71
Genital ulcer	14	21.2	13	21.3	1	20	13	22.8	1	11.1	9	25.7	5	16.1
Impotence	1	1.5	1	1.6	0	0	1	1.8	0	0	1	2.9	0	0
Other	4	6.1	2	3.3	2	40	2	3.5	2	22.2	0	0	4	12.9
Total	**66**		**61**		**5**		**57**		**9**		**35**		**31**	

Table 18: Knowledge of HIV/AIDS among migrants, by township, sex, and migrant category

Knowledge	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Awareness of HIV/AIDS														
Yes	370	95.4	331	95.7	39	92.9	212	98.2	158	91.9	202	96.7	168	93.9
No	18	4.6	15	4.3	3	7.1	4	1.9	14	8.1	7	3.4	11	6.2
Total	388		346		42		216		172		209		179	
Is there a cure for HIV infection or AIDS?														
Yes	35	9.5	29	8.8	6	15.4	16	7.6	19	12.0	24	11.9	11	6.6
No	380	75.7	251	75.8	29	74.4	169	79.7	111	70.3	155	76.7	125	74.4
Don't know	55	14.9	51	15.4	4	10.3	27	12.7	28	17.7	23	11.4	32	19.1
Can symptoms of HIV infection be treated?														
Yes	104	28.1	87	26.3	17	43.6	53	25.0	51	32.3	56	27.7	48	28.6
No	201	54.3	185	55.9	16	41.0	123	58.0	78	49.4	119	58.9	82	48.8
Don't know	65	17.6	59	17.8	6	15.4	36	17.0	29	18.4	27	13.4	38	22.6
Have you heard of ART or anti-retroviral therapy?														
Yes	27	7.3	24	7.3	3	7.7	16	7.6	11	7.0	12	5.9	15	8.9
No	323	87.3	388	87.0	35	89.7	189	89.2	134	84.8	183	90.6	140	83.3
Don't know	19	5.1	18	5.4	1	2.6	7	3.3	12	7.6	7	3.5	12	7.1
No response	1	0.3	1	0.3	0	0.0	0	0.0	1	0.6	0	0.0	1	0.6
Can a healthy looking person have HIV?														
Yes	169	45.7	151	45.6	18	46.2	101	47.6	68	43.0	96	47.5	73	43.5
No	111	30.0	98	29.6	13	33.3	55	26.0	56	35.4	61	30.2	50	29.8
Don't know	62	16.8	55	16.6	7	18.0	35	16.5	27	17.1	30	14.9	32	19.1
No response	21	5.7	20	6.0	1	2.6	16	7.6	5	3.2	10	5.0	11	6.6
Missing	7	1.9	7	2.1	0	0.0	5	2.4	2	1.3	5	2.5	2	1.2
Total	**370**		**331**		**39**		**212**		**158**		**202**		**168**	

Table 19: Knowledge of HIV transmission among migrants, by township, sex, and migrant category

Knowledge	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Can a person reduce the risk of getting HIV by using a condom every time they have sex?														
Yes	336	90.8	307	92.8	29	74.4	193	91	143	90.5	183	90.6	153	91.1
No	7	1.9	7	5.1	0	0	6	2.8	1	0.6	6	3	1	0.6
Don't know	26	2	17	2.1	9	23.1	13	6.1	13	8.2	12	5.9	14	8.3
No response	1	0.3	0	0	1	2.6	0	0	1	0.6	1	0.5	0	0
Can HIV by transmitted by sharing infected needles?														
Yes	345	93.2	309	93.4	36	92.3	201	94.8	144	91.1	186	92.1	159	94.6
No	3	0.8	3	0.9	0	0	3	1.4	0	0	2	1	1	0.6
Don't know	22	6	19	5.7	3	7.7	8	3.8	14	8.9	14	6.9	8	4.8
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can HIV by transmitted through unsafe blood transfusions?														
Yes	329	88.9	292	88.2	37	94.9	186	87.7	143	90.5	175	86.6	154	91.7
No	15	4.1	15	4.5	0	0	11	5.2	4	2.3	11	5.5	4	2.4
Don't know	26	7	24	7.3	2	5.1	15	7.1	11	7	16	7.9	10	6
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can a person get HIV by sharing a toilet with an HIV infected person?														
Yes	36	9.7	27	8.2	9	23.1	23	10.9	13	8.2	17	8.4	19	11.3
No	295	79.7	270	81.6	25	64.1	170	80.2	125	79.1	165	81.7	130	77.4
Don't know	39	10.5	34	10.3	5	12.8	19	9	20	12.7	20	9.9	19	11.3
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can a person get HIV by sharing food with an HIV infected person?														
Yes	38	10.3	31	9.4	7	18	29	13.7	9	5.7	17	8.4	21	12.5
No	296	80	267	80.7	29	74.4	160	75.5	136	86.1	168	83.2	128	76.2
Don't know	36	9.7	33	10	3	7.7	23	10.9	13	8.2	17	8.4	19	11.3
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Knowledge	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Can HIV be transmitted from a HIV positive mother to baby during delivery?														
Yes	268	72.4	237	71.6	31	79.5	149	70.3	119	75.3	165	81.7	103	61.3
No	46	12.4	44	13.3	2	5.1	26	12.3	20	12.7	19	9.4	27	16.1
Don't know	56	15.1	50	15.1	6	15.4	37	17.5	19	12	18	8.9	38	22.6
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can HIV be transmitted from a HIV positive mother to baby through breastfeeding?														
Yes	252	68.1	223	67.4	29	74.4	139	65.6	113	71.5	143	70.8	109	64.9
No	53	14.3	50	15.1	3	7.7	34	16	19	12	36	17.8	17	10.1
Don't know	65	17.6	58	17.5	7	18	39	18.4	26	16.5	23	11.4	42	25
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can a person get HIV by shaking hands with or touching an HIV infected person?														
Yes	36	9.7	29	8.8	7	18	28	13.2	8	5.1	18	8.9	18	10.7
No	313	84.6	284	85.8	29	74.4	172	81.6	140	88.7	175	86.6	138	82.1
Don't know	21	5.7	18	5.4	3	7.7	11	5.2	10	6.3	9	4.5	12	7.1
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can a person get HIV by kissing an HIV infected person?														
Yes	87	23.5	79	23.9	8	20.5	62	29.3	25	15.9	52	25.7	35	20.8
No	265	71.6	236	71.3	29	74.4	142	67	123	77.9	142	70.3	123	73.2
Don't know	18	4.9	16	4.8	2	5.1	8	3.8	10	6.3	8	4	10	6
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can a person get HIV from mosquito bites?														
Yes	140	37.8	114	34.4	26	66.7	68	32.1	72	45.6	88	43.6	52	31
No	174	47	163	49.2	11	28.2	115	54.3	59	37.3	90	44.6	84	50
Don't know	56	15.1	54	16.3	2	5.1	29	13.7	27	17.1	24	11.9	32	19.1
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?														
Yes	327	88.4	293	88.5	34	87.2	184	86.8	143	90.5	176	87.1	151	89.9
No	27	7.3	27	8.2	0	0	19	9	8	5.1	19	9.4	8	4.8
Don't know	16	4.3	11	3.3	5	12.8	9	4.3	7	4.4	7	3.5	9	5.4
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**370**		**331**		**39**		**212**		**158**		**202**		**168**	

Table 20: Sources of information on HIV/AIDS among migrants, by township, sex, and migrant category

Source	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sources of information on HIV/AIDS (multiple responses – spontaneously provided)														
Television	133	36	129	39	4	10.3	76	35.9	57	36.1	74	36.6	59	35.1
Radio	9	2.4	6	1.8	3	7.7	8	3.8	1	0.6	5	2.5	4	2.4
Newspaper	4	1.1	4	1.2	0	0	2	0.9	2	1.3	0	0	4	2.4
Poster/signboards	55	14.9	53	16	2	5.1	33	15.6	22	13.9	26	12.8	29	17.3
Health providers	27	7.3	21	6.3	6	15.4	12	5.7	15	9.5	14	6.9	13	7.7
Friend/Relatives	230	62.2	204	61.6	26	66.7	134	63.2	96	60.8	121	59.9	109	64.9
Outreach/NGO workers	6	1.6	6	1.8	0	0	3	1.4	3	1.9	3	1.5	3	1.8
Employer	48	13	44	13.4	4	10.3	33	15.6	15	9.5	27	13.4	21	12.5
Community/religious leader	1	0.3	1	0.3	0	0	1	0.5	0	0	0	0	1	0.6
Flyer	1	0.3									1	0.5	0	0
Speech	2	0.5	2	0.6	0	0	1	0.5	1	0.6	2	1	0	0
Book	5	1.4	4	1.2	1	2.6	4	1.9	1	0.6	3	1.5	2	1.2
When did you last get information about HIV/AIDS?														
In the past month	18	4.9	15	4.5	3	7.7	6	2.8	12	7.6	8	4	10	6
1 to 3 months ago	11	3	11	3.3	0	0	5	2.4	6	3.8	4	2	7	4.2
3 to 6 months ago	25	6.8	24	7.3	1	2.6	11	5.2	14	8.9	11	5.5	14	8.3
6 to 12 months ago	27	7.3	26	7.9	1	2.6	18	8.5	9	5.7	15	7.4	12	7.1
Longer than 1 year ago	288	77.8	254	76.7	34	87.2	171	80.7	117	74.1	163	80.7	125	74.4
Don’t know	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Where do you think HIV/AIDS information should be distributed in this community?														
Television	156	42.2	153	46.2	3	7.7	92	43.4	64	40.5	81	40.1	75	44.6
Radio	26	7	20	6	6	15.5	18	8.5	8	5.1	10	5	16	9.5
Newspaper	13	3.5	11	3.3	2	5.1	8	3.8	5	3.2	6	3	7	4.2
Poster/signboards	133	36	122	36.9	11	28.2	82	38.7	51	32.3	67	33.2	66	39.3
Health providers	65	17.6	58	17.5	7	18	40	18.9	25	15.8	38	18.8	27	16.1
Friend/Relatives	71	19.2	68	20.5	3	7.7	43	20.3	28	17.7	35	17.3	36	21.4
Outreach/NGO workers	62	16.8	55	16.6	7	18	37	17.5	25	15.8	24	14.3	38	18.8
Employer	27	7.3	26	7.9	1	2.6	14	6.6	13	8.2	13	6.4	14	8.3
Community/ religious leader	9	2.4	7	2.1	2	5.1	7	3.3	2	1.3	6	3	3	1.8
Flyer	11	3	4	1.2	7	18.9	2	0.9	9	5.7	6	3	5	3
Speech	16	4.3	11	3.3	5	12.8	8	3.8	8	5.1	9	4.5	7	4.2
Other	2	0.5	2	0.6	0	0	2	0.9	0	0	2	1	0	0
Total	**370**		**331**		**39**		**212**		**158**		**202**		**168**	

Table 21: Risks groups associated with HIV among migrants who have heard of HIV/AIDS , by township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Mobile or migrant men														
Yes	32	8.7	25	7.6	7	18	18	8.5	14	8.9	17	8.4	15	8.9
No	323	87.3	292	88.2	31	79.5	188	88.7	135	85.4	176	87.1	147	87.5
Don't know	14	3.8	11	3.9	1	2.6	5	2.4	9	5.7	8	4	6	3.6
No response	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Total	**370**		**331**		**39**		**212**		**158**		**202**		**168**	

Table 22: Attitudes towards HIV/AIDS among migrants who have heard of HIV/AIDS , by township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
I think children living with HIV should not be able to attend school with children who are HIV negative														
Strongly disagree	26	7	23	7	3	7.7	15	7.1	11	7	16	7.9	10	6
Disagree	110	29.7	92	27.8	18	46.2	62	29.3	48	30.4	63	31.2	47	28
Agree	198	53.5	185	55.9	13	33.3	109	51.4	89	56.3	106	52.5	92	54.8
Strongly agree	33	8.9	29	8.8	4	10.3	23	10.9	10	6.3	17	8.4	16	9.5
Don't know	3	0.9	2	0.6	1	2.6	3	1.4	0	0	0	0	3	1.8
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I would buy fresh vegetables from a shopkeeper or vendor even if I knew that person to have HIV														
Strongly disagree	20	5.4	16	4.8	4	10.3	9	4.3	11	7	14	6.9	6	3.6
Disagree	126	34.1	107	32.3	19	48.7	71	33.5	55	34.8	72	35.6	54	32.1
Agree	196	53	186	56.2	10	25.6	114	53.8	82	51.9	101	50	95	56.6
Strongly agree	25	6.8	19	5.7	6	15.4	15	7.1	10	6.3	14	6.9	11	6.6
Don't know	3	0.9	3	0.9	0	0	3	1.4	0	0	1	0.5	2	1.2
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I would be willing to take care of an HIV infected relative in my home														
Strongly disagree	2	0.5	1	0.3	1	2.6	1	0.5	1	0.6	1	0.5	1	0.6
Disagree	21	5.7	17	5.1	4	10.3	6	2.8	15	9.5	12	5.9	9	5.4
Agree	274	74.1	249	75.2	25	64.1	166	78.3	108	68.4	152	75.3	122	72.6
Strongly agree	73	19.7	64	19.3	9	23.1	39	18.4	34	21.5	37	18.3	36	21.4
Don't know	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**370**		**331**		**39**		**212**		**158**		**202**		**168**	

Table 23: History of illness and health-care seeking, by township, sex, and migrant category

History of illness	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
History of illness in the past 6 months (since February 2014)														
Yes	116	29.9	102	29.5	14	33.3	65	30.1	51	29.7	64	30.6	52	29.1
No	271	69.9	243	70.2	28	66.7	150	69.4	121	70.4	114	68.9	127	71
Don't know	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
History of seeking treatment for illness within past 6 months, among those who had been ill in past 6 months														
Yes	105	90.5	94	92.2	11	78.6	58	89.2	47	92.2	58	90.6	47	90.4
No	11	9.5	8	7.8	3	21.4	7	10.8	4	7.8	6	9.4	5	9.6
Don't know	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**116**		**102**		**14**		**65**		**51**		**64**		**52**	
Venue visited for health care among those who sought treatment for illness in the past 6 months (multiple choice)														
Public hospital	17	16.2	16	17	1	9.1	11	19	6	12.8	9	15.5	8	17
Private hospital/ polyclinic	2	1.9	2	2.1	0	0	2	3.5	0	0	2	3.5	0	0
Private clinic	73	69.5	64	68.1	9	81.8	41	70.7	32	68.1	40	69	33	70.2
Pharmacy	37	35.2	36	38.3	1	9.1	21	36.2	16	34	26	44.8	11	23.4
Traditional healer	1	1	1	1.1	0	0	1	1.7	0	0	1	1.7	0	0
Other	2	1.9	1	1.1	1	9.1	1	1.7	1	2.1	0	0	2	4.3
Total	**105**		**94**		**11**		**58**		**47**		**58**		**47**	

History of illness	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Distance travelled in search of health care when last ill in this area														
Within community	265	68.3	238	68.8	27	64.3	143	66.2	122	70.9	130	62.2	135	75.4
Within township/ district	102	26.3	90	26	12	28.6	63	29.2	39	22.7	68	32.5	34	19
Hpa-an	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mawlamyaing	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Yangon city	2	0.5	2	0.6	0	0	2	0.9	0	0	1	0.5	2	0.5
Across border	12	3.1	12	3.5	0	0	3	1.4	9	5.2	5	2.4	7	3.9
Don't know	3	0.8	1	0.3	2	0.8	1	0.5	2	1.2	2	1	1	0.6
No response	3	0.5	1	0.3	1	0.3	2	0.9	0	0	2	1	0	0
Missing	1	0.3	0	0	0	0	0	0	0	0	0	0	1	0.6
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Crossed a border to seek health care in the last year														
Yes	35	9	34	9.8	1	2.4	16	7.4	19	11.1	19	9.1	16	8.9
No	351	90.5	310	89.6	41	97.6	199	92.1	152	88.4	189	90.4	162	90.5
Don't know	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No response	1	0.3	1	0.3	0	0	0	0	1	0.6	1	0.5	0	0
Missing	1	0.3	1	0.3	0	0	1	0.5	0	0	0	0	1	0.6
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Destination city/town among those who crossed a border to seek health care in the last year														
Mae Sot	31	88.6	30	88.2	1	100	15	93.8	16	84.2	16	84.2	15	93.8
Tak (Muang district)	3	8.6	3	8.8	0	0	1	6.3	2	10.5	3	15.8	0	0
Other	1	2.9	1	2.9	0	0	0	0	1	5.3	0	0	1	6.3
Total	**35**		**34**		**1**		**16**		**19**		**19**		**16**	

Table 24: History of STIs and health care seeking, by township, sex, and migrant category

History of STI	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
History of discharge in past 12 months	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
History of genital ulcer in past 12 months	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Total	**388**		**346**		**42**		**217**		**172**		**209**		**179**	
History of health care seeking for genital discharge or ulcer in past 12 months														
No	2	100	2	100	-	-	2	100	-	-	2	100	-	-
Total	**2**		**2**		**0**		**2**		**0**		**2**		**0**	

Table 25: Difficulties faced accessing health care, by township, sex, and migrant category

Health Care Access	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Frequency facing difficulties when accessing health services or facilities in study area														
Never	153	39.4	137	39.6	16	38.1	87	40.3	66	38.4	70	33.5	83	46.4
Occasionally	149	38.4	133	38.4	16	38.1	79	36.6	70	40.7	94	45	55	30.7
About half the time	10	2.6	9	2.6	1	2.4	5	2.3	5	2.9	4	1.9	6	3.4
Most of the time	43	11.1	39	11.3	4	9.5	23	10.7	20	11.6	24	11.5	19	10.6
Always	7	1.8	7	2	0	0	4	1.9	3	1.7	6	2.9	1	0.6
Don't know	23	5.9	19	5.5	4	9.5	16	7.4	7	4.1	8	3.8	15	8.4
No response	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Missing	2	0.5	1	0.3	1	2.4	1	0.5	1	0.6	2	1	0	0
Total	388		346		42		216		172		209		179	
Difficulties faced among those who had faced difficulties when accessing health services or facilities in study area														
Unavailable health staff	14	6.7	12	6.4	2	9.5	9	8.1	5	5.1	7	5.5	7	8.6
Lack of services	6	2.9	6	3.2	0	0	3	2.7	3	3.1	3	2.3	3	3.7
Not affordable	138	66	128	68.1	10	47.6	71	64	67	68.4	83	64.8	55	67.9
Remote location	30	14.4	15	8	15	71.4	13	11.7	17	17.4	21	16.4	9	11.1
Inconvenient times	9	4.2	5	2.7	4	19.1	4	3.6	5	5.1	6	4.7	3	3.7
Discrimination – migration	7	3.4	6	3.2	1	4.8	4	3.6	3	3.1	3	2.4	4	4.9
Discrimination – socioeconomic	77	36.8	73	38.8	4	19.1	43	38.7	34	34.7	53	41.4	24	29.6
Discrimination – health status	1	0.5	1	0.5	0	0	0	0	1	1	1	0.8	0	0
Lack of information	1	0.5	1	0.5	0	0	0	0	1	1	1	0.8	0	0
Poor quality	57	27.3	55	29.3	2	9.5	85	76.6	67	68.4	36	28.1	21	25.9
Long waiting hours	78	37.3	73	38.8	5	23.8	55	50	23	23.5	47	36.7	31	38.3

Table 26: Health-care availability in study area, by township (prompted question)

Health Care Availability	Total		Myawaddy		Kawkareik	
	N	%	N	%	N	%
Public hospital						
Yes	386	99.5	345	99.7	41	97.6
No	0	0	0	0	0	0
Don't know	1	0.3	1	0.3	0	0
Private Hospital/polyclinic						
Yes	372	95.9	342	98.8	30	71.4
No	9	2.3	0	0	9	21.4
Don't know	6	1.6	4	1.2	2	4.8
Public health center						
Yes	200	51.6	171	49.4	29	69.1
No	40	10.3	34	9.8	6	14.3
Don't know	142	36.6	137	39.6	5	11.9
No response	6	1.3	4	1.2	2	4.8
Private clinic						
Yes	362	93.3	321	92.8	41	97.6
No	7	1.8	7	2	0	0
Don't know	18	4.6	18	5.2	0	0
No response	1	0.3	0	0	1	2.4
Drop in centre						
Yes	7	1.8	5	1.5	2	4.8
No	80	20.6	69	19.9	11	26.2
Don't know	300	77.3	272	78.6	28	66.7
No response	1	0.3	0	0	1	2.4
NGO – fixed clinic						
Yes	48	12.4	45	13	3	7.1
No	66	17	54	15.6	12	28.6
Don't know	272	70.1	246	71.1	26	61.9
No response	2	0.5	1	0.3	1	2.4
NGO – mobile clinic						
Yes	2	0.5	2	0.6	0	0
No	79	20.4	67	19.4	12	29.6
Don't know	301	77.6	273	78.9	28	66.6
No response	6	1.6	4	1.2	2	4.8
Pharmacy						
Yes	379	97.7	340	98.3	39	92.9
No	2	0.5	0	0	2	4.8
Don't know	5	1.6	6	1.7	0	0
No response	1	0.3	0	0	1	2.4
Traditional healer						
Yes	192	49.5	172	49.7	20	47.6
No	56	14.4	43	12.4	13	31
Don't know	139	35.8	131	37.9	8	19.1
No response	1	0.3	0	0	1	2.4
Total	**388**		**346**		**42**	

Table 27: Health-care facilities available to public in study area, by township (prompted question)

Health Care Facilities	Total		Myawaddy		Kawkareik	
	N	%	N	%	N	%
Primary health care						
Yes	376	96.9	337	97.4	39	92.9
No	0	0	0	0	0	0
Don't know	9	2.3	8	2.3	1	2.4
No response	3	0.8	1	0.3	2	4.8
HIV/STI testing						
Yes	217	55.9	207	59.8	10	23.8
No	32	8.3	24	6.9	8	19.1
Don't know	137	35.3	115	33.2	22	52.4
HIV/STI treatment						
Yes	192	49.5	183	52.9	9	21.4
No	42	10.8	33	9.5	9	21.4
Don't know	152	39.2	130	37.6	22	52.4
No response	2	0.5	0	0	2	4.8
TB testing						
Yes	326	84	299	86.4	27	64.3
No	11	2.8	7	2	4	9.5
Don't know	49	12.6	40	11.6	9	21.4
No response	2	0.5	0	0	2	4.8
TB treatment						
Yes	325	83.8	299	86.4	26	61.9
No	12	3.1	7	2	5	11.9
Don't know	49	12.6	40	11.6	9	21.4
No response	2	0.5	0	0	2	4.8
Malaria testing						
Yes	339	87.4	303	87.6	36	85.7
No	7	1.8	7	2	0	0
Don't know	40	10.3	36	10.4	4	9.5
No response	2	0.5	0	0	2	4.8
Malaria treatment						
Yes	338	87.1	302	87.3	36	85.7
No	7	1.8	7	2	0	0
Don't know	41	10.6	37	10.7	4	9.5
No response	2	0.5	0	0	2	4.8
Maternal child health						
Yes	253	65.2	223	64.5	30	71.4
No	29	7.5	25	7.2	5	9.5
Don't know	104	26.8	98	28.3	6	14.3
No response	2	0.5	0	0	2	4.8
Health education						
Yes	109	28.1	94	27.2	15	35.7
No	57	14.7	48	13.9	9	21.4
Don't know	218	56.2	203	58.7	15	35.7
No response	4	1	1	0.3	3	7.1
Total	**388**		**346**		**42**	

Table 28: History of HIV testing , by township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
History of HIV testing														
Yes	67	17.3	60	17.3	7	16.7	30	13.9	37	21.5	43	20.6	24	13.4
No	319	82.2	284	82.1	35	83.3	184	85.2	135	78.5	164	78.5	155	86.6
Don't know	2	0.5	2	0.6	0	0.0	2	0.9	0	0.0	2	1.0	0	0.0
No response	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Reason for not seeking an HIV test among those who have never tested for HIV (spontaneously provided)														
Not at risk	281	88.1	252	88.7	29	82.9	162	88.0	119	88.2	148	90.2	133	85.8
No time to test	4	1.3	4	1.4	0	0.0	3	1.6	1	0.7	1	0.6	3	1.9
Services not available	5	1.6	3	1.1	2	5.7	3	1.6	2	1.5	2	1.2	3	1.9
Services not affordable	12	3.8	12	4.2	0	0.0	8	4.4	4	3.0	5	3.1	7	4.5
Poor quality services	1	0.3	1	0.4	0	0.0	0	0.0	1	0.7	1	0.6	0	0.0
Scared of positive result	1	0.3	1	0.4	0	0.0	0	0.0	1	0.7	1	0.6	0	0.0
Scared of facility discrimination	1	0.3	1	0.4	0	0.0	1	0.5	0	0.0	0	0.0	1	0.7
Poor knowledge /awareness of HIV	3	0.9	2	0.8	1	2.9	0	0.0	3	2.2	1	0.6	2	1.3
Total	**319**		**284**		**35**		**184**		**135**		**164**		**155**	
Time of most recent test among those who have ever tested for HIV (spontaneously provided)														
Within past 3 months	4	6.0	4	6.7	0	0.0	4	13.3	0	0.0	1	2.3	3	12.5
3 to 6 months ago	6	9.0	5	8.3	1	14.3	1	3.3	5	13.5	2	4.7	4	16.7
6 to 12 months ago	8	11.9	8	13.3	0	0.0	3	10.0	5	13.5	2	4.7	6	25.0
Over 1 year ago	49	73.1	43	71.7	6	85.7	22	73.3	27	73.9	38	88.4	11	45.8
Total	**67**		**60**		**7**		**30**		**37**		**43**		**24**	

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Type of facility for most recent test (spontaneously provided)														
Public hospital	51	76.1	47	78.3	4	57.1	25	83.3	26	70.3	33	76.7	18	75.0
Private hospital/polyclinic	5	7.5	3	5.0	2	28.6	4	13.3	1	2.7	3	7.0	2	8.3
Health center (Public)	1	1.5	0	0.0	1	14.3	0	0.0	1	2.7	0	0.0	1	4.2
NGO (fixed clinic)	2	3.0	2	3.3	0	0.0	1	3.3	1	2.7	2	4.7	0	0.0
Company/employer doctor	1	1.5	1	1.7	0	0.0	0	0.0	1	2.7	1	2.3	0	0.0
Other	7	10.5	7	11.7	0	0.0	0	0.0	7	18.9	4	9.3	3	12.5
Reason for seeking HIV test (spontaneous, multiple choice)														
Regular blood test	4	6.0	4	6.7	0	0.0	4	13.3	0	0.0	1	2.3	3	12.5
Urged by partner	1	1.5	1	1.7	0	0.0	1	3.3	0	0.0	0	0.0	1	4.2
Urged by friend	4	6.0	4	6.7	0	0.0	4	13.3	0	0.0	2	8.3	1	4.7
Recommended by provider	58	86.6	51	85.0	7	100.0	22	73.3	36	97.3	40	93.0	18	75.0
For work permit	3	4.5	3	5.0	0	0.0	2	6.7	1	2.7	2	4.7	1	4.2
Influenced by media campaign	2	3.0	2	3.3	0	0.0	1	2.7	1	3.3	0	0.0	2	8.3
Experience of last HIV testing session														
Pre-test counselling	22	32.8	21	35.0	1	14.3	10	33.3	12	32.4	11	25.6	11	45.8
Post-test counselling	16	23.9	16	26.7	0	0.0	8	26.7	8	21.6	8	18.6	8	33.3
Received test result	47	70.1	41	68.3	6	85.7	20	66.7	27	73.0	25	58.1	22	91.7
Total	**67**		**60**		**7**		**30**		**37**		**43**		**24**	

Table 29: General sexual behaviour among migrants, by township, sex, and migrant category

Sexual behaviour	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Have ever had vaginal sexual intercourse														
Yes	315	81.2	280	80.9	35	83.3	182	84.3	133	77.3	181	86.6	134	74.9
No	73	18.8	66	19.1	7	16.7	34	15.7	39	22.7	28	13.4	45	25.1
Total	**388**		**246**		**42**		**216**		**172**		**209**		**179**	
Age at first sex among those who had ever had vaginal sex														
Median	20		20		20		20		20		20		20	
IQ range	19-23		19-24		18-23		19-24		18-23		19-23		18-23	
Range	14-39		16-30		14-39		14-39		14-39		14-35		16-35	
Number of partners in past 12 months among those who had ever had vaginal sex														
0	11	3.5	9	3.2	2	5.7	3	1.7	8	6	6	3.3	5	3.7
1	296	94	263	93.9	33	94.3	174	95.6	122	91.7	174	96.1	122	91
2 to 5	3	1	3	1.1	0	0	3	1.7	0	0	0	0	3	2.2
6+	2	0.6	2	0.7	0	0	0	0	2	1.5	1	0.6	1	0.8
Don't know	1	0.3	1	0.4	0	0	0	0	1	0.8	0	0	1	0.8
No response	2	0.6	2	0.7	0	0	2	1.1	0	0	0	0	2	0.5
Total	**315**		**280**		**35**		**182**		**133**		**181**		**134**	

Table 30: Sexual behaviour with spouse among married migrants, by township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sex with spouse in last 12 months among married migrants														
Yes	267	94.4	239	95.6	28	84.9	153	97.5	114	90.5	160	95.2	107	93
No	11	3.9	6	2.4	5	15.2	2	1.3	9	7.1	5	3	6	5.2
Missing	5	1.8	5	2	0	0	2	1.3	3	2.4	3	1.8	2	1.7
Total	**283**		**250**		**33**		**157**		**126**		**168**		**115**	
Condom use at last sex with spouse, among those who had sex with their spouse in the last 12 months														
Yes	11	4.1	9	3.8	2	7.1	7	4.5	4	3.5	6	3.8	5	4.7
No	256	95.9	230	96.2	26	92.9	146	95.4	110	96.5	154	96.3	102	95.3
Total	**267**		**239**		**28**		**153**		**114**		**160**		**107**	
Frequency of condom use with spouse in the last 12 months, among those who had sex with their spouse in the last 12 months														
Always	2	0.7	1	0.4	1	3.6	0	0	2	1.8	1	0.6	1	0.9
Most times	1	0.4	1	0.4	0	0	1	0.7	0	0	0	0	1	0.9
About half the time	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Occasionally	10	3.8	9	3.8	1	3.6	7	4.6	3	2.6	6	3.8	4	3.7
Never	251	93.6	226	94.6	24	85.7	144	94.1	106	93	150	93.8	100	93.5
Missing	4	1.5	2	0.8	2	7.1	1	0.7	3	2.6	3	1.9	1	0.9
Total	**267**		**239**		**28**		**153**		**114**		**160**		**107**	
Non-condom use during sex with spouse in last 12 months, among those who had always used a condom during sex with their spouse in the last 12 months														
Yes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No	2	100	1	100	1	100	0	0	2	100	1	100	1	100
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**2**		**1**		**1**		**0**		**2**		**1**		**1**	

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Reason for non-condom use among those with history of not using a condom during sex with their spouse in the last 12 months (spontaneously provided answer, multiple choices allowed)														
Trust partner to not have STI/HIV	214	82	200	84.8	14	56	123	80.9	91	83.5	25	16	16	15.2
Not respondent's responsibility	6	2.3	6	2.5	0	0	1	0.7	5	4.6	3	1.9	3	2.9
Condoms are expensive	1	0.4	4	1.7	0	0	4	2.6	0	0	4	1.5	0	0
Partner dislikes condoms	11	4.2	11	4.7	0	0	3	2	8	7.3	5	3.2	6	5.7
Respondent dislikes condoms	46	17.6	45	19.1	1	4	41	27	5	4.6	32	20.5	14	13.3
Don't know how to use a condom	10	3.8	6	2.5	4	16	4	2.6	6	5.5	7	4.5	3	2.9
Forgot/unprepared	1	0.4	1	0.4	0	0	1	0.7	0	0	0	0	1	1
Using other methods	8	3.1	8	3.4	0	0	6	4	2	1.8	2	1.3	6	5.7
Trying for a child	16	6.1	11	4.7	5	20	8	5.3	8	7.3	7	4.5	9	8.6
Not appropriate	37	14.2	32	13.6	5	20	22	14.5	15	13.8	24	15.4	13	12.4
Total	**261**		**236**		**25**		**152**		**109**		**156**		**105**	
Reason for condom use with spouse in last 12 months among those with history of using a condom during sex with their spouse in the last 12 months														
Prevent HIV/STIs	1	7.7	1	9.1	0	0	1	12.5	0	0	1	14.3	0	0
Prevent pregnancy	8	61.5	6	54.6	2	100	5	62.5	3	60	5	71.4	3	50
Cleanliness	3	23.1	3	27.3	0	0	3	37.5	0	0	1	14.3	2	33.3
Partner insists	2	15.4	2	18.2	0	0	2	15.4	2	40	1	14.3	1	16.7
Other: Sore	1	7.7	1	9.1	0	0	0	0	1	20	1	14.3	0	0
Total	**13**		**11**		**2**		**8**		**5**		**7**		**6**	

Table 31: Sexual behaviour with regular partner, by township, sex, and migrant category

Sexual behaviour	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sex with regular partner in last 12 months														
Yes	22	5.7	22	6.4	0	0	20	9.3	2	1.2	10	4.8	12	6.7
No*	366	94.3	324	93.6	42	100	196	90.7	170	98.8	199	95.2	167	93.3
Missing														
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Condom use at last sex with regular partner, among those who had sex with regular partner in the last 12 months														
Yes	2	9.1	2	9.1	-	-	1	5	1	50	1	10	1	8.3
No	20	90.9	20	90.9	-	-	19	95	1	50	9	90	11	91.7
Total	**22**		**22**		**0**		**20**		**2**		**10**		**12**	
Frequency of condom use with regular partner in the 12 months, among those who had sex with a regular partner in the last 12 months														
Always*	1	4.6	1	4.6	-	-	1	5	0	0	1	10	0	0
Most times	1	4.6	1	4.6	-	-	0	0	1	50	0	0	1	8.3
About half the time	0	0	0	0	-	-	0	0	0	0	0	0	0	0
Occasionally	1	4.6	1	4.6	-	-	1	5	0	0	0	0	1	8.3
Never	19	86.4	19	86.4	-	-	18	90	1	50	9	90	10	83.3
Total	**22**		**22**		**0**		**20**		**2**		**10**		**12**	
Reason for non-condom use among those with history of not using a condom during sex with their spouse in the last 12 months (spontaneously provided answer, multiple choices allowed)														
Trust partner to not have STI/HIV	16	76.2	16	76.2	-	-	15	79	1	50	8	88.9	6	66.7
Partner dislikes condoms	3	14.3	3	14.3	-	-	2	10.5	1	50	2	22.2	1	8.3
Respondent dislikes condoms	8	38.1	8	38.1	-	-	8	42.1	0	0	2	22.2	6	50
Don't know how to use a condom	1	4.8	1	4.8	-	-	1	5.3	0	0	1	11.1	0	0
Forgot/unprepared	2	9.5	2	9.5	-	-	1	5.3	1	50	0	0	2	16.7
Already pregnant	1	4.8	1	4.8	-	-	0	0	1	50	0	0	1	8.3
Using other methods	3	14.3	3	14.3	-	-	3	15.8	0	0	1	11.1	2	16.7
Total	**21**		**21**		**0**		**19**		**2**		**9**		**12**	
Reason for condom use with spouse in last 12 months among those with history of using a condom during sex with their spouse in the last 12 months														
Prevent pregnancy	3	100	3	100	-	-	2	100	1	100	1	100	2	100
Total	**3**		**3**		**-**	**-**	**2**		**1**		**1**		**2**	

*Includes the 73 people who had never had vaginal sex

**This person confirmed via the follow-up question 'Have you ever not used a condom with your regular partner?' that condom usage was consistent.

Table 32: Sexual behaviour with paid partner, by township, sex, and migrant category

Sexual behaviour	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Number of partners paid with money or gifts to have vaginal sex, in the last 12 months														
0*	367	94.6	327	94.5	40	95.2	204	94.4	163	94.8	198	94.7	169	94.4
1	1	0.3	1	0.3	0	0	1	0.5	0	0	0	0	1	0.6
2	2	0.5	2	0.6	0	0	2	0.9	0	0	0	0	2	1.1
Don't know	4	1	4	1.2	0	0	2	0.9	2	1.2	4	1.9	0	0
No response	2	0.5	2	0.6	0	0	2	0.9	0	0	2	1	0	0
Missing	12	3.1	10	2.9	2	4.8	5	2.3	7	4.1	5	2.4	7	3.9
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Condom use at last sex with paid partner, among those who had sex with paid partner in the last 12 months														
Yes	2	66.7	2	66.7	-	-	2	66.7	-	-	-	-	2	66.7
No	0	0	0	0	-	-	0	0	-	-	-	-	0	0
Missing	1	66.7	1	66.7	-	-	1	66.7	-	-	-	-	1	66.7
Frequency of condom use with regular partner in the 12 months, among those who had sex with a paid partner in the last 12 months														
Always**	2	66.7	2	66.7	-	-	2	66.7	-	-	-	-	2	66.7
Most times	0	0	0	0	-	-	0	0	-	-	-	-	0	0
About half the time	0	0	0	0	-	-	0	0	-	-	-	-	0	0
Occasionally	0	0	0	0	-	-	0	0	-	-	-	-	0	0
Never	0	0	0	0	-	-	0	0	-	-	-	-	0	0
Missing	1	66.7	1	66.7	-	-	1	66.7	-	-	-	-	1	66.7
Total														
Reason for condom use with regular partner in last 12 months, among those with history of using a condom during sex with a paid partner in the last 12 months														
Prevent HIV/STIs	2	100	2	100	-	-	2	100	-	-	-	-	2	100
Total	**2**		**2**		**0**		**2**		**0**		**0**		**2**	

*Includes the 73 people who had never had vaginal sex
**These two individuals confirmed via the follow-up question 'Have you ever not used a condom with your regular partner?' that condom usage was consistent

Table 33: Access to condoms, by township, sex, and migrant category

Access to condoms	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Knowledge of where to obtain condoms in the area														
Yes	276	71.1	259	74.9	17	40.4	175	81.0	101	58.7	155	74.2	121	67.6
No	111	28.6	86	24.9	25	59.5	40	18.5	71	41.3	53	25.4	58	32.4
Missing	1	0.3	1		0		1	0.5	0	0.0	1	0.5	0	0.0
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Specified locations where condoms can be obtained in the area, among those who know where to obtain condoms														
Pharmacy	270	97.8	254	98.1	16	94.1	173	98.9	97	96.0	151	97.4	119	98.4
Store/shop	81	29.4	77	29.7	4	23.5	63	36.0	18	17.8	49	31.6	32	26.5
Entertainment area	37	13.4	36	13.9	1	5.9	30	17.1	7	6.9	18	11.6	19	15.7
Hotel/guesthouse	30	10.9	30	11.6	0	0.0	23	13.1	7	6.9	15	12.4	15	9.7
Public hospital	23	8.3	23	8.9	0	0.0	17	9.7	6	5.9	18	11.6	5	4.1
Private clinic	20	7.3	18	7.0	2	11.8	15	8.6	5	5.0	14	9.0	6	5.0
NGO	17	6.2	17	6.6	0	0.0	11	6.3	6	5.9	9	5.8	8	6.6
Private hospital/polyclinic	6	2.2	6	2.3	0	0.0	5	2.9	1	1.0	4	2.6	2	1.7
Friends	4	1.5	4	1.5	0	0.0	4	2.3	0	0.0	4	2.6	0	0.0
Public health centre	3	1.1	3	1.2	0	0.0	1	0.5	2	2.0	3	1.9	0	0.0
Total	**276**		**259**		**17**		**175**		**101**		**155**		**121**	**67.6**
Ease of obtaining a condom														
Easy	187	48.2	180	52.0	7	16.7	136	63.0	51	29.7	113	54.1	74	41.3
Somewhat easy	6	1.6	6	1.7	0	0.0	3	1.4	3	1.7	2	1.0	4	2.2
Somewhat difficult	15	3.9	15	4.3	0	0.0	14	6.5	1	0.6	8	3.8	7	3.9
Difficult	112	28.9	89	25.7	23	54.8	46	21.3	66	38.4	57	27.3	55	30.7
Don't know	60	15.5	50	14.5	10	23.8	15	6.9	45	26.2	25	12.0	35	19.6
No response	2	0.5	2	0.6	0	0.0	0	0.0	2	1.2	1	0.5	1	0.6
Missing	6	0.6	4	1.2	2	4.8	2	0.9	4	2.3	3	1.4	3	1.7
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	

Access to condoms	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Difficulties faced when obtaining condoms (excluding those who found it easy to obtain a condom)														
Don't know where to obtain	78	38.8	58	35.0	20	57.1	32	40.0	46	38.0	36	37.5	42	40.0
Feel embarrassed asking for a condom	61	30.4	53	31.9	8	22.9	34	42.5	27	22.3	33	34.3	28	26.7
Don't want others to know of condom purchase	7	3.5	7	4.2	0	0.0	7	8.8	0	0.0	4	4.2	3	2.9
Condoms are expensive	1	0.5	1	0.6	0	0.0	1	1.3	0	0.0	1	1.0	0	0.0
Current carriage of a condom														
Yes	12	3.1	10	2.9	2	4.8	7	3.2	5	2.9	7	3.4	5	2.8
No	366	94.3	328	94.8	38	90.5	206	95.4	160	93.0	198	94.7	168	93.9
No response	2	0.5	2	0.6	0	0.0	0	0.0	2	1.2	1	0.5	1	0.6
Missing	8	2.1	6	1.7	2	4.8	3	1.4	5	2.9	3	1.4	5	2.8
Have heard of female condom														
Yes	47	12.1	39	11.3	8	19.1	22	10.2	25	14.5	19	9.1	28	15.6
No	335	86.3	303	87.6	32	76.2	191	88.4	144	83.7	188	90.0	147	82.1
Missing	6	1.6	4	1.2	2	4.8	3	1.4	3	1.7	2	1.0	4	2.2
	201		**166**		**35**		**80**		**121**		**96**		**105**	

Table 34: History of drugs and alcohol, by township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Frequency of alcohol consumption in the past month														
Did not drink alcohol	216	55.7	186	53.8	30	71.4	51	23.6	165	95.9	108	51.7	108	60.3
Less than once a week	80	20.7	74	21.4	6	14.3	77	35.7	3	1.7	44	21.1	36	20.1
Once a week	38	9.8	35	10.1	3	7.1	37	17.1	1	0.6	24	11.5	14	7.8
More than once a week	30	7.7	28	8.1	2	4.8	29	13.4	1	0.6	18	8.6	12	6.7
Daily	22	5.7	21	6.1	1	2.4	21	9.7	1	0.6	13	6.2	9	5
No response	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Missing	1	0.3	1	0.3	0	0	0	0	1	0.6	1	0.5	0	0
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Use of non-injecting recreational drugs in the past 12 months														
Yes	5	1.3	5	1.5	0	0	5	2.3	0	0	2	1	3	1.7
No	381	98.2	340	98.3	41	97.6	210	97.2	171	99.4	205	98.1	176	98.3
No response	1	0.3	0	0	1	2.4	1	0.5	0	0	1	0.5	0	0
Missing	1	0.3	1	0.3	0	0	0	0	1	0.6	1	0.5	0	0
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Drugs used in the past 12 months among those who have used non-injecting drugs														
Amphetamine	5	100	5	100	-	-	5	100	-	-	3	100	2	100
Codeine/cough syrup	1	20	1	20	-	-	1	20	-	-	0	0	1	33.3
Total	**5**		**5**		**0**		**5**		**0**		**3**		**2**	

Table 35: Frequency of access to media, by township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Frequency of watching television														
Never	31	8	16	4.5	15	35.7	16	7.4	15	8.7	13	6.2	18	10.1
A few times a year	44	11.3	42	12.1	2	4.8	32	14.8	12	7	21	10.1	23	12.9
A few times a month	60	15.5	54	15.6	6	14.3	40	18.5	20	11.6	33	15.8	27	15.1
Once a week	34	8.8	31	9	3	7.1	14	6.5	20	11.6	20	9.6	14	7.8
More than once a week	81	20.9	73	21.1	8	19.1	49	22.7	32	18.6	38	18.2	43	24
Everyday	138	35.6	130	37.6	8	19.1	65	30.1	73	42.4	84	40.2	54	30.2
Don't know	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Frequency of listening to the radio														
Never	215	55.4	196	56.7	19	45.2	109	50.5	106	61.6	111	53.1	104	58.1
A few times a year	26	6.7	25	7.2	1	2.4	15	6.9	11	6.4	12	5.7	14	7.8
A few times a month	86	22.2	78	22.5	8	19.1	56	25.9	40	17.4	57	27.3	29	16.2
Once a week	18	4.6	17	4.9	1	2.4	7	3.2	11	6.4	7	3.4	11	6.2
More than once a week	24	6.2	21	6.1	3	7.1	18	8.3	6	3.5	11	5.3	13	7.3
Everyday	19	4.9	9	2.6	10	23.8	11	5.1	8	4.7	11	5.3	8	4.5
Frequency of reading the newspaper														
Never	294	75.8	262	75.7	32	76.2	163	75.5	131	76.2	159	76.1	135	75.4
A few times a year	31	8	26	7.5	5	11.9	19	8.8	12	7	26	12.4	5	2.8
A few times a month	40	10.3	38	11	2	4.8	21	9.7	19	11.1	17	8.1	23	12.9
Once a week	14	3.6	14	4.1	0	0	9	4.1	5	2.9	5	2.4	9	5
More than once a week	5	1.3	4	1.2	1	2.4	3	1.4	2	1.2	1	0.5	4	2.2
Everyday	4	1	2	0.6	2	4.8	2	0.5	3	1.7	1	0.5	3	1.7
Frequency of reading journals/magazines														
Never	159	41	137	39.6	22	52.4	81	37.5	78	45.4	85	40.7	74	41.3
A few times a year	35	9	27	7.8	8	19.1	21	9.7	14	8.1	24	11.5	11	6.2
A few times a month	109	28.1	102	29.5	7	16.7	59	27.3	50	29.1	54	25.8	55	30.7
Once a week	61	15.7	58	16.8	3	7.1	40	18.5	21	12.2	36	17.2	25	14
More than once a week	19	4.9	18	5.2	1	2.4	11	5.1	8	4.7	8	3.8	11	6.2
Everyday	4	1	3	0.9	1	2.4	3	1.4	1	0.6	1	0.5	3	1.7
Don't know	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	

Table 36: Frequency of access to media, by township, sex, and migrant category

Access to media	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Received health information in the past 6 months														
Yes	158	40.7	141	40.8	17	40.5	78	36.1	80	46.5	85	40.7	73	40.8
No	229	59	204	59	25	59.5	137	63.4	92	53.5	123	58.9	106	59.2
Don't know	1	0.3	1	0.3	0	0	1	0.5	0	0	1	0.5	0	0
Total	**388**		**346**		**42**		**216**		**172**		**209**		**179**	
Topic of health information														
HIV/AIDS	65	41.4	63	45	2	11.1	32	41.6	33	40.7	31	36.5	35	46.6
Maternal child health	4	2.5	4	2.9	0	0	0	0	4	4.9	3	3.5	1	1.4
Malaria	33	20.9	29	20.7	4	22.2	18	23.4	15	18.5	15	17.7	18	24.7
Influenza	20	12.7	19	13.6	1	5.6	11	14.3	9	11.1	9	10.6	11	15.1
TB	33	20.9	32	22.9	1	5.6	16	20.8	17	21	18	21.2	15	20.6
Diarrhoea/Cholera	20	12.7	19	13.6	1	5.6	8	10.4	12	14.8	8	9.4	12	16.4
Nutrition	4	2.5	4	2.9	0	0	1	1.3	3	3.7	0	0	4	5.5
Source of health information														
Television	86	54.4	82	58.2	4	23.5	40	51.3	46	57.5	42	49.4	44	60.3
Radio	11	7	7	5	4	23.5	8	10.3	3	3.8	3	3.5	8	11
Newspaper	7	4.4	7	5	0	0	5	6.4	2	2.5	1	1.2	6	8.2
Public hospital	3	1.9	2	1.4	1	5.9	0	0	3	3.8	2	2.4	1	1.4
Public health center	3	1.9	3	2.1	0	0	0	0	3	3.8	1	1.2	2	2.7
Private clinic	10	6.3	9	6.4	1	5.9	5	6.4	5	6.3	6	7.1	4	5.5
NGO – fixed clinic	1	0.6	1	0.7	0	0	1	1.3	0	0	1	1.2	0	0
NGO – mobile clinic	1	0.6	1	0.7	0	0	1	1.3	0	0	1	1.2	0	0
Pharmacy	1	0.6	1	0.7	0	0	1	1.3	0	0	1	1.2	0	0
Company/ employer clinic	17	10.8	13	9.2	4	23.5	11	14.1	6	7.5	10	11.8	7	9.6
Community/ Spiritual healer	1	0.6	1	0.7	0	0	0	0	1	1.3	1	1.2	0	0
Friends/relatives	63	39.9	58	41.1	5	29.4	33	42.3	30	37.5	36	42.4	27	37

Access to media	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
How understandable did you find the information?														
Easily understandable	59	37.3	54	58.2	5	23.5	29	37.2	30	37.5	27	31.8	32	43.8
Mostly understandable	4	2.5	3	2.1	1	5.9	3	3.8	1	1.3	1	1.2	3	4.1
Partly understandable	76	48.1	71	50.4	5	29.4	35	44.9	41	51.3	46	54.1	30	41.1
Difficult to understand	11	7	9	6.4	2	11.8	5	6.4	6	7.5	6	7.1	5	6.8
Don't know	3	1.9	1	0.7	2	11.8	2	2.6	1	1.3	1	1.2	2	2.7
No response	5	3.2	3	2.1	2	11.8	4	5.1	1	1.3	4	4.7	1	1.4
Total	**158**		**141**		**17**		**78**		**80**		**85**		**73**	
What health information would you like to learn more about														
HIV	197	50.8	178	51.4	19	45.2	110	50.9	87	50.6	107	51.2	90	50.3
Maternal / child health	27	7	24	6.9	3	7.1	11	5.1	16	9.3	13	6.2	14	7.8
Malaria	89	22.9	82	23.7	7	16.7	66	30.6	23	13.4	49	23.4	40	22.3
influenza	27	7	24	6.9	3	7.1	17	7.9	10	5.8	14	6.7	13	7.3
TB	89	22.9	85	24.6	4	9.5	58	26.9	31	18	49	23.4	40	22.3
Diarrhoea	12	3.1	9	2.6	3	7.1	5	2.3	7	4.1	8	3.8	4	2.2
Hygiene and sanitation	4	1	4	1.2	0	0	1	0.5	3	1.7	1	0.5	3	1.7
STIs	7	1.8	7	2	0	0	5	2.3	2	1.2	2	1	5	2.8
Breast Cancer	3	0.8	3	0.9	0	0	0	0	3	1.7	1	0.5	2	1.1
Cervical Cancer	10	2.6	7	2	3	7.1	0	0	10	5.8	7	3.3	3	1.7
Other cancers	9	2.3	6	1.7	3	7.1	4	1.9	5	2.9	6	2.9	3	1.7
Diabetes	6	1.5	6	1.7	0	0	3	1.4	3	1.7	5	2.4	1	0.6
Ebola	32	8.2	23	6.6	9	21.4	18	8.3	14	8.1	13	6.2	19	10.6
Hypertension	7	1.8	7	2	0	0	3	1.4	4	2.3	7	3.3	0	0
Other	31	8	27	7.8	4	9.5	10	4.6	21	12.2	13	6.2	18	10.1
388		346		42		216		172		209		179		

Appendix III: Logistic regression analysis tables

Table 37: Univariate and adjusted multivariate logistic regression analysis of demographic and education differences between Townships (where Kawkareik=1 and Myawaddy=0)

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Migrant category (Inbound=0, outbound=1)	0.94 (0.49-1.78)	0.838		
Sex (Men=0, women =1)	2.81(1.43-5.52)	0.003**	2.56 (1.29-5.08)	0.007**
Age	1.01 (0.98-1.05)	0.464		
Marital status (Not married =0, married = 1)	1.41 (0.65-3.05)	0.386		
Education level (1=none – 7=graduate)	0.64 (0.47-0.88)	0.006*	0.68 (0.49-0.93)	0.016*
Income (in 100,000Kyat among employed)	1.08 (0.73-1.61)	0.676		

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 38: Univariate and adjusted multivariate logistic regression analysis of demographic and education differences between migration category (where outbound=1 and inbound=0)

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	0.94 (0.49-1.78)	0.838		
Sex (Men=0, women =1)	0.69 (0.46-1.04)	0.077		
Age	1.03 (1.01-1.06)	0.003**	1.03 (1.01-1.06)	0.003*
Marital status (Not married =0, married = 1)	2.28 (1.44-3.61)	0.000**		
Education level (1=none – 7=graduate)	0.90 (0.75-1.07)	0.231		
Income (in 100,000Kyat among employed)	1.22 (0.93-1.59)	0.157		

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 39: Univariate and adjusted multivariate logistic regression analysis of demographic and socioeconomic differences between short term (cross border mobility or short visits < 1 month) and longer visits (season or >3 months)

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	6.71 (1.96-22.95)	0.002**	8.73 (2.33-32.71)	0.001**
Migrant category (Inbound=0, outbound=1)	1.40 (0.93-2.35)	0.21		
Sex (Men=0, women =1)	0.93 (0.55-1.58)	0.797		
Age	1.05 (1.02-1.08)	0.001**	1.05 (1.02-1.09)	0.003**
Marital status (Not married =0, married = 1)	1.87 (0.03-1.06)	0.031		
Education level (1=none – 7=graduate)	0.79 (0.62-1.00)	0.053		
Income (in 100,000Kyat among employed)	0.59 (0.43-0.83)	0.002**	0.50 (0.35-0.72)	0.000**

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)
NB: Analysis of only those individuals who chose one pattern of mobility, excluding those who stated they did not have mobility and those who displayed a combination (N=244).

Table 40: Distribution of employment types per mobility pattern (Out of those who chose a specific mobility pattern, n=244)

Variable	Median income	manual/ construction	Seller/ vendor	Taxi/moto driver	Entertainment/ Food industry	Factory/ plant worker
Daily cross border	190,000	27 (37.0%)	13 (17.8%)	8 (11.0%)	0 (0.0%)	23 (32.9%)
Short term stays	150,000	8 (24.2)	12 (36.4%)	7 (21.2%)	2 (6.1%)	1 (3.0%)
Seasonal trips	100,000	10 (22.7%)	20 (45.5%)	1 (2.3%)	9 (20.5%)	0 (0.0%)
Long term stays	120,000	34 (30.6%)	28 (34.2%)	8 (7.2%)	16 (14.4%)	2 (1.8%)
Total	**156,000**	**79 (32.4%)**	**83 (31.8%)**	**24 (9.2%)**	**27 (10.3%)**	**27 (10.3%)**

Table 41: Univariate and adjusted multivariate logistic regression analysis of determinants of correctly answering all five questions in the HIV composite indicator

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	0.73 (0.29-1.82)	0.504		
Migrant category (Inbound=0, outbound=1)	0.89 (0.53 – 1.49)	0.651		
Sex (Men=0, women =1)	0.65 (0.38 – 1.10)	0.111		
Age	0.99 (0.96 – 1.01)	0.332		
Marital status (Not married =0, married = 1)	0.66 (0.38-1.14)	0.135		
Education level (1=none – 7=graduate)	1.95 (1.52-2.50)	0.000**	1.95 (1.52-2.50)	0.000**
Income (in 100,000Kyat among employed)	1.45 (1.06-2.00)	0.020*	(associated with education)	
Accessed HIV info. in past 6m (Yes=1, 0=No)	0.42 (0.15-1.09)	0.077		
Accessed health materials in past 6m (Yes=1, 0=No)	1.03 (0.61-1.74)	0.91		
Ease of understanding health information (1=Easy – 4=difficult)	1.06 (0.72-1.56)	0.778		

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 42: Univariate and adjusted multivariate logistic regression analysis of determinants of more negative attitudes towards HIV

This is based on a median composite attitude score of 10.5, where a positive attitude was defined as at least 11 out of 15, and a negative score defined as a score of 10 or less out of 15)

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	1.87 (0.97-3.60)	0.063		
Migrant category (Inbound=0, outbound=1)	1.10 (0.74-1.64)	0.644		
Sex (Men=0, women =1)	1.19 (0.79-1.77)	0.402		
Age	1.02 (0.99-1.04)	0.148		
Marital status (Not married =0, married = 1)	1.42 (0.90-2.23)	0.132		
Education level (1=none – 7=graduate)	0.51 (0.41-0.64)	0.000**	0.66 (0.48-0.89)	0.001**
Income (in 100,000Kyat among employed)	0.93 (0.71-1.21)	0.588		
Accessed HIV info. in past 6m (Yes=1, 0=No)	0.36 (0.19-0.69)	0.002**	0.19 (0.08-0.48)	0.000**
Accessed health materials in past 6m (Yes=1, 0=No)	1.05 (0.70-1.57)	0.826		
Ease of understanding health information (1=Easy – 4=difficult)	1.81 (1.31-2.50)	0.000**	1.67 (1.17-2.40)	0.005**
HIV knowledge composite indicator 1=All five answers correct, 0= at least one wrong)	0.50 (0.29-0.85)	0.011**	0.29 (0.01-0.90)	0.017*

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 43: Univariate and adjusted multivariate logistic regression analysis of determinants of history of illness in the past 6 months

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	1.19 (0.60-2.36)	0.615		
Migrant category (Inbound=0, outbound=1)	1.10 (0.74-1.64)	0.644		
Temporal mobility pattern (1=Daily cross border, 2=<1month, 3=seasonal, 4=>3months)	1.19 (0.95-1.49)	0.127		
Sex (Men=0, women =1)	1.19 (0.79-1.77)	0.402		
Age	1.02 (0.00-1.04)	0.148		
Marital status (Not married =0, married = 1)	1.15 (0.70-1.89)	0.587		
Education level (1=none – 7=graduate)	0.90 (0.74-1.10)	0.318		
Income (in 100,000Kyat among employed)	0.64 (0.46-0.89)	0.007**	0.63 (0.46-0.88)	0.007**
Accessed health materials in past 6m (Yes=1, 0=No)	1.83 (1.17-2.85)	0.007**	1.79 (1.10-2.92)	0.020**
Ease of understanding health information (1=Easy – 4=difficult)	1.15 (0.84-1.56)	0.382		

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 44: Univariate logistic regression analysis of determinants of health care seeking, among those with history of illness in the past 6 months

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	0.31 (0.07-1.25)	0.12		
Migrant category (Inbound=0, outbound=1)	1.03 (0.30-3.58)	0.965		
Temporal mobility pattern (1=Daily cross border, 2=<1month, 3=seasonal, 4=>3months)	0.85 (0.07-9.88)	0.895		
Sex (Men=0, women =1)	1.42 (0.39-5.14)	0.595		
Age	0.93 (0.87-0.99)	0.048*		
Marital status (Not married =0, married = 1)	0.28 (0.03-2.25)	0.228		
Education level (1=none – 7=graduate)	1.08 (0.58-1.99)	0.814		
Income (in 100,000Kyat among employed)	0.74 (0.35-1.56)	0.429		

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 45: Univariate and adjusted multivariate logistic regression analysis of having experienced difficulties accessing health-care services in the local area

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	0.96 (0.48-1.90)	0.899		
Migrant category (Inbound=0, outbound=1)	1.87 (1.2-2.86)	0.004**	1.73 (1.09-2.73)	0.019*
Temporal mobility pattern (1=Daily cross border, 2=<1month, 3=seasonal, 4=>3months)	1.86 (1.09-2.18)	0.023*		
Sex (Men=0, women =1)	1.16 (0.76-1.77)	0.479		
Age	1.06 (1.04-1.09)	0.000**	1.06 (1.03-1.08)	0.000**
Marital status (Not married =0, married = 1)	2.05 (1.28-3.27)	0.003**		
Education level (1=none – 7=graduate)	0.94 (0.78-1.13)	0.496		
Income (in 100,000Kyat among employed)	0.98 (0.61-1.07)	0.133		
Accessed health materials in past 6m (Yes=1, 0=No)	3.5 (2.22-5.57)	0.000**	0.12 (0.05-2.74)	0.000**

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 46: Univariate and adjusted multivariate logistic regression analysis of determinants of knowing where to obtain condoms in the local area

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	0.23 (0.12-0.44)	0.000**	0.29 (0.14-0.62)	0.001**
Migrant category (Inbound=0, outbound=1)	1.40 (0.90-2.18)	0.134		
Temporal mobility pattern (1=Daily cross border, 2=<1month, 3=seasonal, 4=>3months)	0.74 (0.42-1.31)	0.302		
Sex (Men=0, women =1)	0.33 (0.21-0.51)	0.000*	0.31 (0.19-0.52)	0.000**
Age	1.01 (0.99-1.04)	0.252		
Marital status (Not married =0, married = 1)	1.36 (0.84-2.20)	0.218		
Education level (1=none – 7=graduate)	1.73 (1.37-2.18)	0.000**	1.60 (1.26-2.05)	0.000**
Income (in 100,000Kyat among employed)	1.39 (1.01-1.91)	0.045*		
Accessed health materials in past 6m (Yes=1, 0=No)	2.27 (1.40-3.68)	0.001**	2.93 (1.71-5.02)	0
Ease of understanding health information (1=Easy – 4=difficult)	0.72 (0.48-1.09)	0.125		

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 47: Univariate and adjusted multivariate logistic regression analysis of determinants of having ever had an HIV test

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	0.95 (0.40-2.23)	0.9		
Migrant category (Inbound=0, outbound=1)	1.69 (0.98-2.92)	0.058		
Temporal mobility pattern (1=Daily cross border, 2=<1month, 3=seasonal, 4=>3months)	1.07 (0.53-2.19)	0.848		
Sex (Men=0, women =1)	1.68 (0.99-2.86)	0.055		
Age	1.01 (0.98-1.04)	0.545		
Marital status (Not married =0, married = 1)	3.17 (1.46-6.90)	0.004**	3.73 (158-8.82)	0.003**
Education level (1=none – 7=graduate)	1.22 (0.96-1.53)	0.102		
Income (in 100,000Kyat among employed)	1.70 (1.23-2.35)	0.001**	1.63 (1.16-2.23)	0.005**
Accessed HIV info. in past 6m (Yes=1, 0=No)	2.06 (1.06-4.01)	0.033*	2.40 (1.08-5.33)	0.031*
Accessed health materials in past 6m (Yes=1, 0=No)	2.16 (1.27-3.68)	0.005**		
Ease of understanding health information (1=Easy – 4=difficult) HIV attitudes (scored 1-15)	1.89 (1.02-3.49) 1.19 (1.05-1.39)	0.044 * 0.005**	2.19 (1.08-4.44) 1/15 (1.00-1.32)	0.029* 0.047*

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 48: Univariate and adjusted multivariate logistic regression analysis of determinants of having ever had an HIV test

Variable	Univariate Logistic Regression		Multivariate Logistic Regression	
	Odds Ratio	P value	Odds Ratio	P value
Township (Myawaddy=0, Kawkareik=1)	0.95 (0.40-2.23)	0.9		
Migrant category (Inbound=0, outbound=1)	1.69 (0.98-2.92)	0.058		
Temporal mobility pattern (1=Daily cross border, 2=<1month, 3=seasonal, 4=>3months)	1.07 (0.53-2.19)	0.848		
Sex (Men=0, women =1)	1.68 (0.99-2.86)	0.055		
Age	1.01 (0.98-1.04)	0.545		
Marital status (Not married =0, married = 1)	3.17 (1.46-6.90)	0.004**	3.73 (158-8.82)	0.003**
Education level (1=none – 7=graduate)	1.22 (0.96-1.53)	0.102		
Income (in 100,000Kyat among employed)	1.70 (1.23-2.35)	0.001**	1.63 (1.16-2.23)	0.005**
Accessed HIV info. in past 6m (Yes=1, 0=No)	2.06 (1.06-4.01)	0.033*	2.40 (1.08-5.33)	0.031*
Accessed health materials in past 6m (Yes=1, 0=No)	2.16 (1.27-3.68)	0.005**		
Ease of understanding health information (1=Easy – 4=difficult)	1.89 (1.02-3.49)	0.044*	2.19 (1.08-4.44)	0.029*
HIV knowledge composite indicator 1=All five answers correct, 0= at least one wrong)	1.89 (1.02-3.49)	0.044*	2.19 (1.08-4.44)	0.029*
HIV attitudes (1=most negative – 15=most positive)	1.19 (1.05-1.39)	0.005**	1/15 (1.00-1.32)	0.047*

*Some evidence of relationship (0.01<p<0.5)
**Strong evidence of relationship (p<0.01)

Table 49: Attitudes towards HIV/AIDS among migrants who have heard of HIV/AIDS, by township, sex, and migrant category

Migration Pattern	Total		Myawaddy		Kawkareik		Men		Women		Local		Inbound	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
I think children living with HIV should not be able to attend school with children who are HIV negative														
Strongly disagree	26	7	23	7	3	7.7	15	7.1	11	7	16	7.9	10	6
Disagree	110	29.7	92	27.8	18	46.2	62	29.3	48	30.4	63	31.2	47	28
Agree	198	53.5	185	55.9	13	33.3	109	51.4	89	56.3	106	52.5	92	54.8
Strongly agree	33	8.9	29	8.8	4	10.3	23	10.9	10	6.3	17	8.4	16	9.5
Don't know	3	0.9	2	0.6	1	2.6	3	1.4	0	0	0	0	3	1.8
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I would buy fresh vegetables from a shopkeeper or vendor even if I knew that person to have HIV														
Strongly disagree	20	5.4	16	4.8	4	10.3	9	4.3	11	7	14	6.9	6	3.6
Disagree	126	34.1	107	32.3	19	48.7	71	33.5	55	34.8	72	35.6	54	32.1
Agree	196	53	186	56.2	10	25.6	114	53.8	82	51.9	101	50	95	56.6
Strongly agree	25	6.8	19	5.7	6	15.4	15	7.1	10	6.3	14	6.9	11	6.6
Don't know	3	0.9	3	0.9	0	0	3	1.4	0	0	1	0.5	2	1.2
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I would be willing to take care of an HIV infected relative in my home														
Strongly disagree	2	0.5	1	0.3	1	2.6	1	0.5	1	0.6	1	0.5	1	0.6
Disagree	21	5.7	17	5.1	4	10.3	6	2.8	15	9.5	12	5.9	9	5.4
Agree	274	74.1	249	75.2	25	64.1	166	78.3	108	68.4	152	75.3	122	72.6
Strongly agree	73	19.7	64	19.3	9	23.1	39	18.4	34	21.5	37	18.3	36	21.4
Don't know	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No response	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**370**		**331**		**39**		**212**		**158**		**202**		**168**	
Composite attitude indicator score														
	10.5		10.6		9.7		10.7		10.3		10.6		10.4	

Annex IV: Profile of Kawkareik and Myawaddy

Country Health Profile: Myanmar

The Republic of the Union of Myanmar is a sovereign state in South East Asia. It borders Bangladesh, India, China, Lao PDR and Thailand. Myanmar currently consist of Nay Pyi Taw Council Territory, 7 States and 7 Regions, 74 districts, 330 townships, , 398 towns, 3,065 wards, 13,619 Village Tracts and 64,134 Villages. . Myanmar has a population of 53.26 million (World Bank, 2013). Approximately 33 per cent of the population lives in urban centres. The population of Myanmar is predominantly Buddhist (90%) followed by Christians (5%), and Muslims (4%) (WHO, 2015a). In 2012, total % GDP for health expenditure was 1.8 (WHO, 2015b).

Life expectancy in Myanmar is 64 years for men and 68 years for women. According to statistics from 2013, 25 per cent of the population of is under the age of 15 years. Total fertility in Myanmar is 1.9 children per woman and the national contraceptive prevalence is 46 per cent. National rate of skilled birth attendance was 71 per cent in 2007. Under-5 mortality is 51 deaths per 1000 live births and the rate for maternal mortality is 200 per 100,000 live births. Myanmar suffers from a double burden of communicable and non-communicable disease. The overall prevalence for HIV is below 1 per cent. Death due to HIV/AIDS, malaria and tuberculosis was 21.6, 5.4 and 49 per 100,000 population, respectively. Other major diseases under national surveillance include malaria, acute respiratory infection (ARI), diarrhoea, dysentery and tuberculosis. Major causes of death from non-communicable illness include, stroke (12.7%), lower respiratory infection (9.2%), and cardiovascular diseases, such as ischemic heart disease (6.8%) (WHO, 2015a).

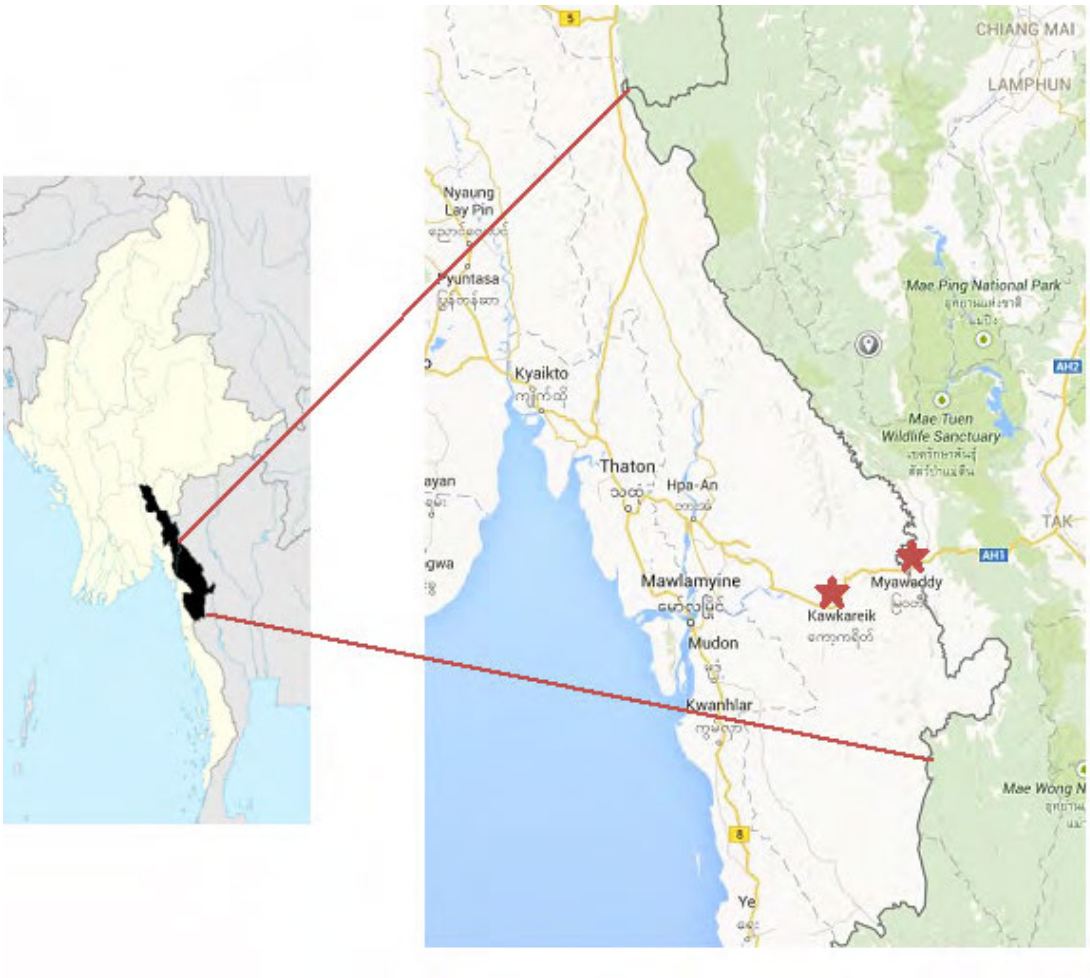
Aside from migration for economic purposes, Myanmar has a long history of political unrest, which has contributed to waves of internal and international displacement of different political or ethnic groups. Furthermore, natural disasters, such as reoccurring floods or the devastating Nargis Cyclone in 2008 have also led to population movements within and out of Myanmar (UNHCR, 2015).

Study Township Profiles

The two townships, Kawkareik and Myawaddy, are located in Kayin State in Myanmar and are separated by a distance of 62km. Kayin State is a mountainous area with a tropical climate. It shares its eastern border with Thailand. The population is estimated at 1.4 million. Within Kayin State there are 4 districts, 7 townships, 84 wards and 374 village tracts. The predominant religion in Kayin State is Buddhism (85%), followed by Christianity (9%) and Islam (5%) (UNHCR, 2014).
There is one hospital that offers specialist services, 7 general hospitals and 12 station hospitals. There are a total of 788 hospital beds and 4 dispensaries to server the whole population (UNHCR, 2014).

There were an approximate 89,150 internally displaced persons living in Kayin State as of 2012 (UNHCR, 2014).

Map 9: Geographical locations of Myawaddy and Kawkareik



Kawkareik[1]

The district of Kawkareik is located approximately 62 km from the border to Thailand. The district lies on the western side of the Dawna mountain range. It has a population of 227,855. The majority of the population lives in rural areas (84%). There are 7 wards and 256 villages (42 village tracts).

Table 50: Health Facilities in Kawkareik

HEALTH FACILITIES	No.
100 Bedded Hospital	1
50 Bedded Hospital	-
Station Hospital (25) Bedded	1
Station Hospitals (16) Bedded	3
Maternal and Child Health	1
Rural Health Centres	7
Sub Health Centres	32
Private Clinic and Maternity Homes	16

Health Profile

Kawkareik District has an infant mortality rate of 14.8/1000, an under-5 mortality rate of 17/1000 and a maternal mortality rate of 110/100,000. In 2013, the average number of antenatal care visits was 3.5 and the majority of births were attended by either a basic health staff or auxiliary midwife (56%). There was a referral rate of 12.5 per cent. 6.4 per cent of children under-5 are moderately underweight and 0.2 per cent are severely underweight.

Mortality as a result of malaria infection is 1.3 per 100,000 population and mortality for ARI is 11.4 per 100,000. Expanded Programme on Immunization levels are moderately high with 90 per cent BCG coverage, 81 per cent measles, 70 per cent tetanus toxoid, 69 per cent oral polio and 64 per cent pentavalent vaccine.

Road traffic accidents are responsible for 7 deaths per 100,000 population, 6.1 for suicide and 14.5 for assault.

Myawaddy[2]

The district of Myawaddy borders Thailand and is a location of great population movement. The district lies on the eastern side of the Dawna mountain range. It has a population of 121,708. The majority of the population lives in rural areas (58%). There are 5 wards and 78 villages (15 village tracts).

Table 51: Health Facilities in Myawaddy

HEALTH FACILITIES	No.
100 Bedded Hospital	1
Sub Township Hospital (16) Bedded	2
Station Hospital	1
Maternal and Child Health	1
Rural Health Centres	4
Sub Health Centres	17
Private Clinic and Maternity Homes	26
Private Hospital	1

Health Profile

Myawaddy district has an infant mortality of 8.6/1000, an under-5 mortality rate of 17.6/1000 and a maternal mortality of 112/100.000 live births. In 2013, the average number of antenatal care visits was 2.9 and the large majority of births were attended by either a basic health staff or auxiliary midwife (70%). There was a referral rate of 27.6 per cent. 5.9 per cent of children under-5 are moderately underweight and 0.4 per cent are severely underweight.

Mortality as a result of malaria infection is 2.5 per 100,000 population; mortality from ARI is 21 per 100,000 population. Expanded Programme on Immunization levels are high with 94 per cent BCG coverage, 89 per cent measles, 87 per cent tetanus toxoid, and 83 per cent for both oral polio and pentavalent vaccine.

Road traffic accidents are responsible for 11.5 deaths per 100,000 population, 10.7 for suicide and 3.3 for assault.

Annex V: Ethical Certificate

The Government of The Republic of The Union of Myanmar

Ministry of Health

Department of Medical Research (Lower Myanmar)

No. 5, Ziwaka Road, Dagon Township, Yangon 11191
Tel : 95-1-375447, 95-1-375457, 95-1-375459 Fax : 95-1-251514

Letter No. 45/ Ethics 2014
Dated: 21.8.2014

The Ethics Review Committee on Medical Research Involving Human Subjects, Department of Medical Research (Lower Myanmar), approves to conduct the following proposed research project.

HIV vulnerability and service availability in mobility settings of Myawaddy and Kawkareik Townships

Principal Investigator: Ms. Montira Inkochasan

Dr. Myint Htwe
Chairperson
Ethical Review Committee
Department of Medical Research
(Lower Myanmar)

(*** Approval of the research is for the period of one year from the date mentioned)

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International Organization for Migration (IOM)

ရွှေ့ပြောင်းသွားလာနေထိုင်ခြင်းဆိုင်ရာ နိုင်ငံတကာအဖွဲ့အစည်း

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