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HIV Implementation

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CAP-TB
CONTROL AND PREVENTION OF TUBERCULOSIS

fhi360
THE SCIENCE OF IMPROVING LIVES

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Narrative I: Executive Summary

The Burma Integrated Bio-Behavioral Surveillance (IBBS)/Population Size Estimation (PSE) assessment of female sex workers (FSW) and men who have sex with men (MSM) was completed during Fiscal Year (FY) 2015. During the first quarter of FY 2016, training for Respondent Driven Sampling Analysis (RDSA) was held, as well as a workshop to determine Population Size Estimation (PSE). This IBBS/PSE survey was led by the National AIDS Program (NAP) with technical assistance from FHI 360 in collaboration with UNAIDS, WHO, and other technical partners. A total of 3,975 participants (1,996 FSW and 1,979 MSM) were recruited from 10 respondent-driven sampling (RDS) sites across 5 selected cities in 5 regions of the country.

This final report will cover program performance and achievements specific to the IBBS/PSE implementation, which was funded through the USAID Control and Prevention of Tuberculosis (CAP-TB) Project.

Narrative II: Program performance/achievements and key challenges encountered during the reporting period by thematic area

IR1: Improved capacity to design, implement, and synthesize high-quality HIV-related IBBS

Output 1.1 Improved HIV IBBS scientific protocol that takes into consideration advances in IBBS design, including robust measurements of HIV, sexually transmitted infections (STI), risk behaviors, intervention exposure, and ethical standards for research among vulnerable populations

1.1.1 Assist in constructing the final scientific protocol(s)

Dr. Lisa G Johnston (MA, MPH, PHD), technical consultant hired through FHI 360, provided technical input during protocol development and finalization. FHI 360 then worked closely with the National AIDS Program (NAP), UNAIDS, WHO and other technical partners to develop and finalize the protocol.

1.1.2 Submit and obtain ethical approval for the IBBS protocol from the local Ethical Review Committee (ERC).

The protocol was submitted by the NAP to the Ethical Review Committee of the Department of Medical Research and Ministry of Health. It was modified based on comments made by the committee and then approved for implementation. Protocol review by the FHI 360 Protection of Human Subjects Committee was not obtained as FHI 360's role on the survey was merely to provide quality assurance rather than directly participate in human subjects research activities. There was no direct engagement with participants for research purposes from the FHI 360 team. Because of this limited role, it was decided that the protocol did not require review by FHI 360 PHSC and thus local ERC approval sufficed.

Output 1.2 Improved IBBS implementation training and monitoring to ensure adherence to protocol, optimal data quality, and ethical standards

1.2.1 Support training for NAP implementation staff on obtaining informed consent, collecting bio-samples, and administering questionnaires

The NAP IBBS training was held from 28th April to 3rd May, and the FHI 360 team led the Data Entry and Coupon Manager training sessions. Data entry training started with clarification of the roles for data entry personnel. On-site data entry and real time recruitment monitoring were integrated into the IBBS protocol, thus data entry personnel served as focal persons for reporting and communication. The data entry interface was developed by FHI 360 and training was conducted using pre-filled

questionnaires. Data entry personnel were also trained to use Microsoft One Drive for real time data synchronization. The data management protocol was developed by FHI 360 and reviewed by the NAP before training. The FHI 360 Information Technology specialist joined the training sessions to ensure technical competency for data entry.

The roles and responsibilities for coupon managers were also clarified during the NAP's IBBS training. Coupon Management was done using manual paper-based forms and then entered to an Excel spreadsheet, which was developed under guidance from the FHI 360 consultant. Practical sessions were carried out to strengthen the coupon managers' understanding and awareness for detecting potential errors.

1.2.2 Provide study monitors following IBBS implementation to ensure protocol adherence, data quality, and deviations/adverse event reporting

FHI 360 conducted daily monitoring through synchronized information from the field and bi-weekly monitoring visits by two site support officers. FHI 360's consultant worked remotely to monitor recruitment and provide ongoing input on coupon management datasets to monitor for problems with recruitment and suggested corrective actions to identify bottlenecks. Technical input was also provided in real time to address the need for data adjustments--- new data "seeds", isolated "nodes", or the need to terminate coupon distribution at specific study sites. This input was provided to the NAP throughout data collection to ensure data quality. During bi-weekly monitoring visits, the site support officers used site monitoring checklists developed by the NAP to emphasize compliance to study protocol and ethics.

Output 1.3 Improved analysis and data use for advocacy, policy, and intervention improvement

1.3.1 Provide training on advanced bio-behavioral data analysis and population size estimation, with a focus on people who inject drugs (PWID)/FSW/MSM datasets

On 19-21 October 2015, Dr. Lisa G Johnston led a training on Respondent Driven Sampling (RDS) Diagnostic and Data Analysis in Yangon, using RDS Analyst and Netdraw software. Dr. Johnston led the training with facilitation by FHI 360 in collaboration with UNOPS. This training involved staff from the NAP and other technical organizations in the field of HIV related research with interest in or a specific mandate to conduct IBBS data analysis. The participants included the Department of Medical Research (DMR), the University of Public Health (UPH), Population Services International (PSI), Burnet Institute, and UNAIDS. Training completion certificates were provided to all participants after the three day intensive training and exercises.

On 14-17 December, UNAIDS and UNOPS organized the 'Population Size Estimation and IBBS Preliminary Result Consultation Workshop for FSW and MSM' in Yangon with the objective of seeking consensus on PSE. Dr. Lisa G Johnston and the team from FHI 360 participated in the workshop as facilitators. Representatives from partners working in the field of HIV as well as PLHIV self-help groups also participated in this workshop and gave their input on estimations for the populations of interest (FSW and MSM). These estimations were used to inform PSE calculations, which were computed by Dr. Johnston prior to the workshop. During the first two days of the workshop, the calculated estimations were adjusted using input from in-country stakeholders, following standard methods and processes for PSE. The National AIDS Program then followed this exercise with size estimations for the country, using Asian Epidemic Spectrum software. These discussions calculations were done with technical assistance from Dr. Johnston and UNAIDS consultants.

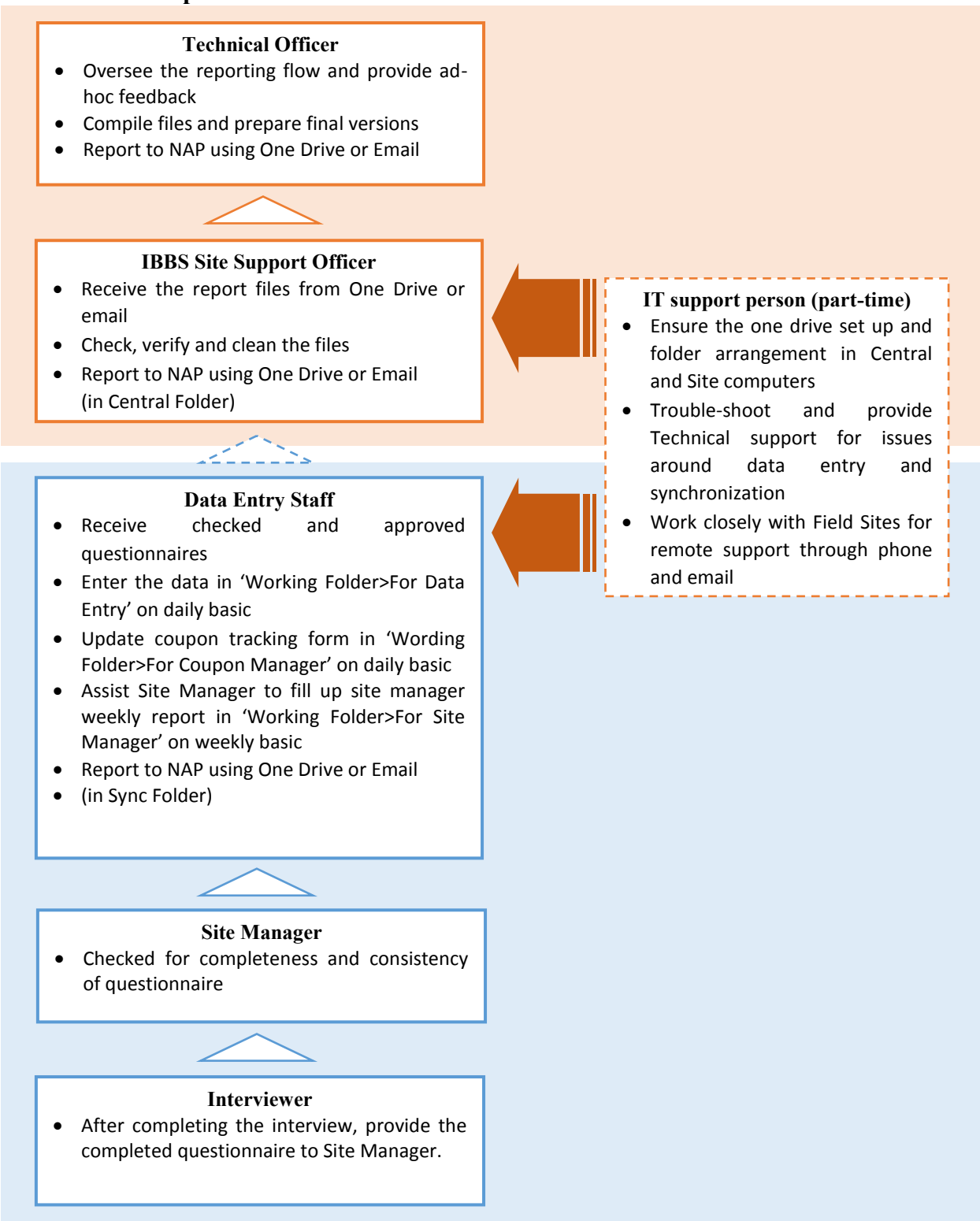
Table: Program level monitoring results (Not applicable)

Annex I: Method used to estimate total number of individuals reached and Adjustment factor to calculate for potential overlap among all implementing partners and other USG (Narrative)
Not applicable

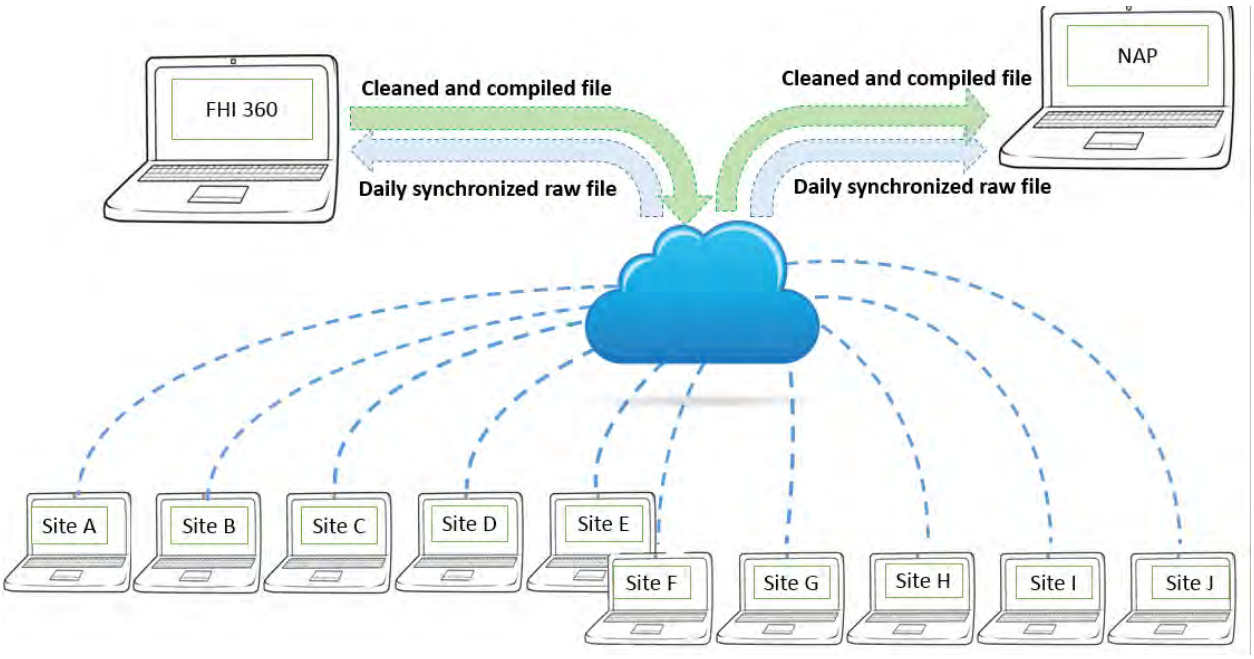
Annex II: Summary of accomplishments against targets
Not applicable

Annex III: Processes carried out to ensure data quality

1. Roles and responsibilities



2. Data security



Physical access limitation

Site Computers

10 RDS site computers: Password protected and have access by Data Entry person only.

Central Computers

6 Central computers (3 NAP computers and 3 FHI 360 computers): Password protected and have access by designated person only

Sharing limitation

Central Folder

Access by 6 Central computers (3 NAP computers and 3 FHI 360 computers) ***(Permission level: Edit)***

Sync Folder

Central computers (3 NAP computers and 3 FHI 360 computers) + respective RDS site computer ***(Permission level: Edit)***

Master Folder

6 Central computers (3 NAP computers and 3 FHI 360 computers) ***(Permission level: Edit)***

10 RDS site computers ***(Permission level: View)***

3. Data quality assurance measures

Central NAP level

Data cleaning and verification

RDS site level

Double Entry will be done for at least **20%** of the questionnaires

RDS site level

Standardized trainings for interviewers

Compulsory verification by Site Managers

Validated Data Entry interface

Standardized error handling process

Annex IV: Population size estimation results (draft)

METHODS

The population sizes of PWID were estimated using four methods: 1) the unique object multiplier; 2) the service multiplier method[1]; 3) the successive sampling size (SS-PSE) method[2]; 4) Wisdom of the Crowds; and, 5) key informant and NGO 'best guesses'. Each of these methods are described below.

Multiplier methods

The unique object and service multiplier methods involve overlapping independent population counts to extrapolate the overall population size.

Unique object multiplier

The unique object multiplier involves distributing unique objects to population members in each survey township one week prior to initiating the RDS study. The number of objects distributed are counted (first multiplier) and used in a calculation with the proportion of those who reported receiving the object (second multiplier) to derive a population estimation. Unique objects should consist of an item that is of no monetary value, so people neither give them away nor sell them, and is easy to remember. This study used small jade pendants with "IBBS" inscribed on them and attached to a black cord. The unique objects were distributed in each of the survey townships by NGO staff to persons matching the eligibility criteria. NGO staff ensured that no person received more than one object and that objects were distributed in a manner consistent with ordinary service delivery activities. NGOs recorded data about how many objects were distributed, how many were refused and the reasons for any refusals.

To measure how many participants received a unique object multiplier, they were asked during the survey: "Did you receive a pendant in the week of [dates of distribution of unique object] that was given to you by outreach workers of [add name of NGO]?"[3]

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[1] UNAIDS. Guidelines on Estimating the Size of Populations Most at Risk to HIV. Accessed on August 15, 2012 at: whqlibdoc.who.int/publications/2010/9789241599580_eng.pdf.

[2] Handcock M, Gile K, Mar C. 2012. Estimating Hidden Population Size using Respondent-Driven Sampling Data Electron. J. Statist. Volume 8, Number 1 (2014), 1491-1521. Accessed on November 19, 2014 at: http://projecteuclid.org/download/pdfview_1/euclid.ejs/1409619420

[3] See questionnaire page… insert in Annex xx

Service multiplier

The service multiplier used service data consisting of the unique counts of population members who received a service in each survey township during January to March 2015. The second multiplier was enumerated during the RDS survey by asking each respondent whether they had exposure to the service at least one time during January to March 2015. Service data included receiving an HIV test from a specified NGO/heath center and visiting a specified NGO/heath center. To measure how many participants received services, they were asked during the survey:

> "Did you receive an HIV test from [specific name of NGO/health center here] during January to March 2015 (3 months)?"[4]
> "Did you visit [specific name of NGO/health center here] during January to March 2015 (3 months)?"

Multiplier assumptions

The assumptions for the multiplier are:

- Two overlapping data sources (specific to the group being counted)
- Population being counted must have non-zero probability of inclusion in both sources
- One data source (i.e. the survey) must be random and encompass the group in the multiplier, but can include others as well
- Second data source (multiplier) need not be random but should be specific to the group being estimated
- No individual accounted for more than once in the multiplier
- Two data sources must be independent of each other (inclusion in one not related to inclusion in the other)
- Limited in- and out-migration

Multiplier Calculation

The number of population members who received a unique object one week prior to the start of the survey or visited a service during January to March 2015 was used as a numerator (M) and the proportion who reported receiving an object prior to the start of the survey or visited a service during January to March 2015 was used as the denominator (P). The mathematical formula to calculate the population size was: $N = M/P$

Where:

N=Estimated Size

[4] See questionnaire page… insert in Annex xx

P=Proportion[5] of population members in survey who reported receiving the object/service.
M=Number of population members to whom the object was distributed or service provided.

SS PSE

The SS-PSE method, uses each participants' social network size data gathered during the RDS studies to quantify population sizes by assuming that the network size distribution of successive waves reflects a depletion of the population. The estimates use a Bayesian framework (i.e., quantifies uncertainty about unknown quantities by relating them to known quantities) incorporating information about a "guess" or prior knowledge of the size of the sampled population. The Bayesian framework also allows the computation of probability intervals.

Wisdom of the crowds

These estimates were elicited by asking participants in each of the studies, their best guess about the most likely highest, lowest and accurate number of their respective population members in each the survey townships.

NGO 'best guesses'

This method uses enumeration based on the estimates of key informants and NGOs working with FSW and MSM in each of the study townships. Key informants and NGOs in each survey site was asked to respond to questions about the most likely highest, lowest and accurate number of population members in each the survey township.

RESULTS

Township level calculated estimates

The results obtained from the different PSE methods for FSW and MSM for each township can be found in Table X. These data were used during a validation workshop comprised of NGO and government representatives, members of key populations, and other stakeholder in the first step of a process to estimate the population sizes of MSM and FSW for the entire country of Myanmar.

[5] Calculated using the successive sampling estimator and adjusted standard errors in RDS Analyst.

Table X. Results of calculated FSW and MSM PSEs and the percentage of the adult female and male population represented by each calculated PSE for each survey township, Myanmar, 2015.

Survey Site	PSE FSW	Percent of adult female population (15 to 49 years)	PSE MSM	Percent of adult male population (15+)
Mandalay		(492,148)		(608,114)
Objects	1154	0.23%	1433	0.24%
Top Centre Visit	1750	0.40%	1635	0.27%
Top Centre HIV test	1915	0.39%	1892	0.31%
SS-PSE (median)	10178	2.07%	--	
WOC (Best mean)	5869	1.19%	12622	2.08%
NGO most likely	6000	1.22%	10150	1.67%
Mean	4476	0.92%	5646	0.91%
Monywar		(106,507)		(119,368)
Objects	1250	1.17%	1231	1.03%
Top Centre Visit	4532	4.25%	1421	1.19%
Top Centre HIV test	1511	1.42%	1307	1.10%
SS-PSE (median)	--	--	--	
WOC (Best mean)	467	0.44%	2244	1.88%
NGO most likely	1500	1.41%	1400	1.17%
Mean	1852	2.53%	1521	1.27%
Pathein		(101,235)		(128,309)
Objects	790	1.02%	853	0.66%
Top Centre Visit	1111	1.10%	2032	1.58%
Top Centre HIV test	1212	1.20%	1773	1.38%
SS-PSE (median)	1158	1.50%	1818	1.42%
WOC (Best mean)	279	0.36%	406	0.32%
NGO most likely	2000	2.59%	2300	1.79%
Mean	1192	1.55%	1530	1.19%
Pyay		(69,031)		(83,530)
Objects	625	0.91%	574	0.69%
Top Centre Visit	755	1.09%	871	1.04%
Top Centre HIV test	330	0.48%	1158	1.39%
SS-PSE (median)	3840	5.56%	6252	7.48%
WOC (Best mean)	651	0.94%	103	0.12%
NGO most likely	1200	1.74%	1200	1.44%
Mean	1234	1.79%	1693	2.03%
Yangon		(1,604,687)		(1,849,442)

Survey Site	PSE FSW	Percent of adult female population (15 to 49 years)	PSE MSM	Percent of adult male population (15+)
Objects	7500	0.47%	15200	0.82%
Top Centre Visit	3278	0.20%	4787	0.26%
Top Centre HIV test	2455	0.15%	4953	0.27%
SS-PSE (median)	4773	0.30%	15569	0.84%
WOC (Best mean)	4327	0.27%	--	--
NGO most likely	16000	1.00%	18300	0.99%
Mean	6389	0.40%	37288	2.02%

Using the findings in Table X. stakeholders broke into five groups, each representing one of the townships. Groups were asked to assess each of the PSE multiplier methodologies and results according to specific biases inherent in those methods. The assessment of bias data was inputted into a spreadsheet to adjust multipliers based on over or underestimations. Groups also gained consensus of the most reasonable PSE based on their own knowledge and experience.

Creating FSW and MSM density group rankings

The next step in estimating a national population size of FSW and MSM was to use the sampled township PSE findings to derive FSW and MSM density group rankings for all townships in Myanmar. Two groups were formed, one of MSM and the other of FSW, to create criteria for density rankings of high (the townships with the highest percentage of FSW or MSM), medium and Low. Criteria used to rank FSW and MSM density included whether the townships had trades and/or industry, or high mobility, recreation and/or tourism, universities or military bases or were on a border. Estimates from the five surveyed townships were ranked as being high.

Obtaining national estimates of FSW and MSM

FSW national estimates

Using the findings from the calculated and adjusted PSEs from the five survey townships and the density rankings for all townships, the final national estimate for the population size of FSW ages 15 to 49 years (who exchanged sex for money or goods in the past year) in Myanmar is 66,054. This represents 0.48% of females aged 15 to 49 years.

MSM national estimates

Using the findings from the calculated and adjusted PSEs from the five survey townships and the density rankings for all townships, the final national estimate for the population size of MSM ages 15 years and older (who had anal sex in the past six months) in Myanmar is 251,517. This represents 1.5% of males aged 15 years and above.