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Abstract Book

**Myanmar National Operational Research course
2017-2018
Dissemination meeting**

Sunday, July 8th, 2018, Grand Amara Hotel, Nay Pyi Taw

Sunday July 8, 2018
National Structured Operational Research Training Initiative Course 2017-18
Dissemination

GRAND AMARA HOTEL, NAYPYITAW

Time	Presentations	Presenters	Chairs
8:30	Registration		
8:45	Opening Remark	Dr Hlaing Myat Thu, Deputy Director General, DMR	
9:00	Introduction to SORT IT	Dr Tin Oo, Director, DMR	
9:15	Photo Session		
9:20	How are the Village Health Volunteers delivering malaria prevention and control services and what are the challenges they are facing? – a mixed methods study in Myanmar	Dr Shwe Yi Linn Team Leader, VBDC	Dr.Tin Oo Director, DMR
9:45	Low uptake of malaria testing within 24 hours of fever despite appropriate health seeking among migrants in Myanmar: a mixed-methods study	Dr Kyaw Thu Hein Research Office, DMR	Dr Aung Thi Programme Manager, VBDC
10:10	Barriers in distribution, ownership and utilization of insecticide-treated mosquito nets among migrant population in Myanmar, 2016: A mixed methods study	Dr Shwe Yi Linn Team Leader, VBDC	
10:35	Tea Break		
10:50	High treatment success from patient-centred multidrug-resistant TB care through community-based volunteers in Yangon, Myanmar: a mixed-methods study	Dr Aung Pyae Phyo Research Officer, DMR	Dr Thandar Lwin
11:15	How many sputum samples should be assessed during follow-up of tuberculosis patients in Myanmar: two or one?	Dr Nang Thu Thu Kyaw, OR fellow, The Union	Deputy Director General, DoPH
11:35	Pre-treatment loss to follow-up and treatment delay among bacteriologically-confirmed tuberculosis patients diagnosed in Mandalay Region, Myanmar	Dr Nang Thu Thu Kyaw, OR fellow, The Union	Dr Si Thu Aung Director (Disease Control), DoPH
11:55	Magnitude and reasons for pre-diagnosis attrition among presumptive MDR-TB patients in Bago Region, Myanmar: A mixed method study	Dr Tun Oo Assistant Director, NTP	
12:15	Lunch		

Time	Presentations	Presenters	Chair
13:15	Sputum smear positive, Xpert MTB/RIF® negative TB patients: Magnitude and their treatment outcomes in Myanmar	Dr Moe Hnin Phyu Medical Officer, NTP	Dr Thandar Lwin Dr Si Thu Aung
13:35	Treatment outcome of tuberculosis patients detected by accelerated versus passive case finding in Myanmar	Dr Phone Suu Khaing, Project Manager, The Union	Dr Thandar Lwin Dr Si Thu Aung
13:55	Tuberculosis cases among household contacts of patients with multidrug-resistant tuberculosis in Myanmar, 2016-2017	Dr Nang Thu Thu Kyaw, OR fellow, The Union	Dr Thandar Lwin Dr Si Thu Aung
14:15	High prevalence and incidence of tuberculosis in people living with HIV in Mandalay, Myanmar: 2011 to 2017	Dr Khaing Hnin Phy, Project Manager, The Union	Dr Thandar Lwin Dr Si Thu Aung
14:35	Early success with retention in care among people living with HIV at decentralised ART satellite sites in Yangon, Myanmar, 2015-2016	Dr Kyaw Myo Htet Medical Officer, NAP	Dr Htun Nyunt Oo, Programme Manager, NAP
14:55		Tea Break	
15:15	Delay in enrolment and ART initiation and its association with attrition among PLHIV on anti-retroviral therapy in Myanmar	Dr Kyaw Zin Linn Team Leader, NAP	Dr Thandar Lwin Dr Si Thu Aung
15:35	Testing uptake, prevalence of HIV, hepatitis B and C and retention in care amongst people who inject drugs and are enrolled for methadone maintenance therapy in Yangon, Myanmar	Dr Nyein Su Aye, Research Officer, DMR	Dr Htun Nyunt Oo
15:55	Closing Remarks and Conclusion	Dr Thandar Lwin, Deputy Director General, DoPH	



Pre-course Mentoring

- Introduction of Mentors to Participants
- Discussion on research question
- Building rapport & familiarity with the project

Module 1 - Research Protocol



Module 2 – Data & Analysis

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Modus Operandi

Lectures
Plenaries
Hands-on training

Mentorship

SORT IT

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Timeline



How are the Village Health Volunteers delivering malaria prevention, treatment and control services and what are the challenges they are facing? – a mixed methods study in Myanmar

Authors and affiliations

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Background: Village Health Volunteers (VHVs) play a key role in delivering community based malaria care especially in hard-to-reach areas in Myanmar. It is necessary to assess their performance and understand the challenges encountered by them to effectively engage them in community management of malaria. This mixed methods study was conducted to: i) understand the cascade of malaria services (screening, testing, diagnosis, referral and treatment of malaria) provided by the VHVs under the National Malaria Control Programme (NMCP) in Myanmar in 2016, and ii) explore the challenges in delivery of malaria services by VHVs.

Method: A sequential mixed methods study was designed with a quantitative followed by a descriptive qualitative component. The quantitative study was a cohort design involving analysis of secondary data available from NMCP database whereas the qualitative part involved 16 Focus Group Discussions (08 each with community and VHVs) and 14 Key-Informant Interviews with program stakeholders in four selected townships.

Results: Among 444,268 cases of undifferentiated fever identified by VHVs in 2016, 444,190 were tested using Rapid Diagnostic Test. Among those tested, 20,375 (4.6%) cases of malaria were diagnosed, of whom 16,910 (83%) received appropriate treatment, with 7,323 (36%) were treatment within 24 hours. Of all malaria cases, 296 (1.5%) were complicated, of whom, 79 (27%) were referred to the higher facility. More than two-thirds of all cases were falciparum malaria (13,970, 68.6%) followed by vivax (5619, 27.6%). Primaquine was given to 84% of all cases. VHVs managed 34% of all undifferentiated fever cases, 36% of all malaria cases and identified 38% of all *Plasmodium falciparum* cases. The key barriers identified are: work related (challenges in reporting, referral, management of malaria especially primaquine therapy, and lack of community support) and logistics related (challenges in transportation, financial constraints, time and shortage of drugs and test kits). On the other hand, they also enjoy good community support and acceptance in most areas.

Conclusion: VHVs play an important role in malaria diagnosis and management in Myanmar, especially in hard-to-reach areas. More programmatic support to VHVs is needed in terms of logistics, transportation allowance and supervision to improve their performance.

Low uptake of malaria testing within 24 hours of fever despite appropriate health seeking among migrants in Myanmar: a mixed-methods study

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Background: There is limited information on uptake of malaria testing among migrants who are a ‘high-risk’ population for malaria. This was an explanatory mixed-methods study. The quantitative component (a cross sectional analytical study involving analysis of data acquired through a nation-wide migrant survey in 2016) was followed by a systematic qualitative enquiry (descriptive design) into the perspective of migrants (focus group discussion, n=17) and health care providers (one-to-one interviews, n=17) including village health volunteers (VHV) into barriers and suggested solution to increase uptake of malaria testing within 24 hours. Quantitative data analysis was weighted for the three stage sampling design of the survey. Qualitative data analysis involved manual descriptive thematic analysis.

Results: A total of 3,230 households were included in the migrant survey. The mean knowledge score (maximum score 11) was 5.2 (95% CI: 5.1, 5.3). The source of information about malaria was 80% from public health facility staff and 21% from VHV. Among 11,193 household members, 964 (8.6%) had fever in last three months. Health seeking was appropriate for fever in 76% (95% CI: 73, 79); however, only 7% (95% CI: 5, 9) first visited a VHV while 19% (95% CI: 16, 22) had self-medication. Of 964, 220 (23%, 95% CI: 20, 26) underwent malaria blood testing within 24 hours. Stable migrants, high knowledge score and appropriate health seeking were associated with uptake within 24 hours. Qualitative findings showed that low uptake despite appropriate health seeking was due to lack of awareness among migrants regarding diagnosis services offered by VHV, delayed health seeking at public health facilities and not all cases of fever being tested by VHV and health staff. Providing appropriate behaviour change communication for migrants related to malaria, provider’s acceptance for malaria testing for all fever cases and mobile peer volunteer under supervision were suggested to overcome above barriers.

Conclusion: The presence of VHV is to ensure uptake within 24 hours. Low uptake among migrants was due to poor utilization of malaria testing offered by VHV. The programme should seriously consider addressing these barriers and implementing the recommendations if Myanmar is to eliminate Malaria by 2030.

Barriers in distribution, ownership and utilization of insecticide-treated mosquito nets among migrant population in Myanmar, 2016: A mixed methods study

Authors and affiliations

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Background: Sleeping under Insecticide-treated mosquito nets/ Long Lasting Insecticidal Nets (ITNs/LLINs) is one of the core interventions recommended by the World Health Organization to reduce transmission and prevent malaria in high-risk communities such as migrants by preventing mosquito bites. Malaria burden among the migrant population is still a big challenge for malaria elimination in Myanmar. In this context, this study aimed at assessing the ownership and utilization of ITNs/LLINs and to understand the barriers in distribution and utilization of ITN/LLINs among the high risk migrant communities in Regional Artemisinin Resistance Initiative (RAI) project areas of Myanmar.

Method: A sequential mixed methods study (a quantitative component: cross-sectional study involving analysis of secondary data available from a survey conducted among migrant households in RAI project areas of Myanmar in 2016 followed by a descriptive qualitative component in 2018. A total of 17 Focus Group Discussions (involving 121 participants) with different groups of migrants and 17 Key-Informant Interviews with key program stakeholders were conducted in 4 selected townships of RAI project areas.

Results: Out of 3,230 migrant households, 63.3% of households had at least one ITN/LLIN while only 36% had sufficient ITNs/LLINs (i.e. 1 ITN/LLIN per 2 persons). Regarding ITN/LLIN utilization, about 52% of household members slept under an ITN/LLIN last night, similar among the under-fives and pregnant women. Over half of all bed nets were ITNs/LLINs with nearly one-third having holes or already undergone repairs. The qualitative findings revealed that the key challenges for LLIN utilization were insufficient LLINs in households and dislike for LLINs. The barriers in LLIN distribution were incomplete migrant mapping due to resource constraints (time, money and manpower), difficulties in transportation and carrying LLINs.

Conclusion: This study highlights poor ownership and utilization of ITNs/LLINs among the migrants in RAI project areas of Myanmar and barriers in their ownership and utilization. To achieve universal coverage and utilization, more programmatic support by the program is needed to carry out complete migrant mapping and continuous LLIN distribution at remote locations.

High treatment success from patient-centred multidrug-resistant TB care through community-based volunteers in Yangon, Myanmar: a mixed-methods study

Authors and affiliations

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Background: Treatment and care of MDR-TB is global challenge with poor treatment success rates and high rates of lost to follow-up. Myanmar is a high burden MDR-TB country with known hotspots in Yangon. The national TB program decentralized treatment to an ambulatory model of patient-centered MDR-TB care through community-based volunteers which was implemented in 38 townships in Yangon from 2014.

Objective: To describe the treatment outcomes of patient-centered community-based MDR-TB care from 2015-16 and explore the perspectives of patients receiving care

Method: Mixed-methods study involving a retrospective cohort study using routine programmatic data and focus group discussions (FGDs) with patients receiving care.

Results: There were 2636 MDR-TB patients enrolled in Yangon during 2015-2016 of which (81%) were provided patient-centered CB-MDR-TB care. The treatment success rate for 2015 cohort was 80% and 16% died. Eighty-four percent of 2016 cohort was in care and 13% died. Lost to follow-up was minimal in both years at 3% and 2%, respectively. Patients of older age and patients in the working age groups were 4 times and 9 times more likely to have unfavorable outcomes. HIV-positive patients had a significantly higher risk of unfavorable outcomes than HIV negative. Through FGDs, 4 main themes emerged; services received and services needed by MDRTB patients; and their perceptions and preferences towards the care model. The majority of patients had positive perspectives towards the model and valued monetary support, evening treatment provision, health education, adherence counselling and emotional support.

Conclusion: Our study shows low rates of LTFU and supports ongoing scale-up of the care model in Myanmar. This should be coupled with future research on effectiveness, feasibility and cost. Community-based approaches are central to the massive expansion of TB case-finding, treatment and prevention services needed to curb the epidemic in high burden settings and ultimately set the course for elimination.

How many sputum samples should be examined during follow-up of tuberculosis patients in Myanmar: 2 or 1?

Authors and affiliations

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Setting: Ten selected microscopy centers of Sagaing Region, Myanmar, functioning under an external quality assurance system with no reported major errors.

Objectives: Among the follow-up sputum microscopy examinations of TB patients conducted from 1st November 2017 to 15th April 2018, to assess i) patterns of serial sputum results (NN-both smear-negative, NP-first smear-negative and second smear-positive, PN-first smear-positive and second smear-negative and PP-both smear-positive) ii) the incremental yield of the second sample (proportion with NP).

Design: Cross-sectional study using secondary data (laboratory registers).

Results: Of 2,001 examinations, 94(4.7%) were smear-positive [PP:66(3.3%); PN:12(0.6%); NP:16(0.8%); 75% of ‘NP’ were ‘scanty’]. The incremental yield was 0.8%(95% CI: 0.5%-1.3%), implying it required 125 (95% CI: 77-200) smears to detect one additional smear-positive in second sample. Of the 16 ‘NP’ instances (15 patients), 14 were also tested using Xpert MTB/RIF and none had rifampicin resistance. On continuation of treatment, 13 became smear-negative, one remained smear-positive and one had “unknown” follow-up smear status.

Conclusion: The incremental yield of the second sample was low and with negligible benefit for monitoring anti-TB treatment. Given the favourable resource implications (reduced laboratory workload and costs), we recommend changing the policy from two sputum smears to one during follow-up sputum examinations of TB patients.

Pre-treatment loss to follow-up and treatment delay among bacteriologically-confirmed tuberculosis patients diagnosed in Mandalay Region, Myanmar

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Background: Pre-treatment loss to follow-up (PTLFU) among tuberculosis (TB) patients is a global public health problem, because such patients are highly infectious and experience high mortality. There is no published evidence on this issue from Myanmar.

Objective: To determine PTLFU and treatment delays and their associated demographic, clinical and health-system related factors among bacteriologically-confirmed (sputum smear-positive and/or Xpert-positive) TB patients diagnosed in Mandalay region between January and June 2017.

Method: This was a cohort study involving secondary analysis of routine programme data. Every TB patient in the laboratory register was tracked for at-least 3 months in the treatment register. Patients neither found in the treatment register nor referred out for treatment were considered PTLFU.

Results: Of 1,365 patients diagnosed, 1,051 (77%) started on anti-TB treatment, 200 (15.6%) were referred for treatment to health facilities outside the study area and 114 (8.4%, 95% CI: 7.0%-9.9%) did not initiate anti-TB treatment (PTLFU). PTLFU was significantly higher in those with TB/HIV (18%), sputum smear-negative but Xpert-positive cases (31%) and in patients diagnosed at a moderate or high-volume facility (~10%). Of 940 patients with dates recorded, 46 (5%) had a treatment delay of more than seven days. Patients aged 45-64 years had higher risk of treatment delay compared to those aged 15-44 years. About 97% of records did not have a phone number recorded for tracking.

Conclusion: PTLFU and treatment delay were relatively low in Mandalay region. While this is reassuring, urgent steps must be taken to address those that are lost, which includes improving documentation of phone numbers to improve ‘trackability’, instituting proactive measures to trace patients lost in the care pathway and introducing an indicator in the NTP monthly report to monitor and review PTLFU. Patient subgroups with higher PTLFU should receive priority attention.

Magnitude and reasons for pre-diagnosis attrition among presumptive MDR-TB patients in Bago Region, Myanmar: A mixed methods study

Authors and affiliations

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Background: In Myanmar only 25% of the estimated multidrug resistant TB/rifampicin resistant TB (MDR-TB/RR-TB) patients were detected in 2016. This is despite the scale up of Xpert MTB/Rif® (GXP) testing sites to all districts in the country. This indicates challenges in identifying and linking presumptive MDR-TB patients to GXP testing sites (pre-diagnosis attrition).

Objectives: To assess the magnitude of pre-diagnosis attrition and to explore the reasons and solutions for pre-diagnosis attrition from health care providers' perspective in Bago Region, Myanmar

Methods: This was a sequential explanatory mixed methods study involving secondary analysis of routinely collected programme data (quantitative part) and key informant interviews (KIIs) with 32 providers (qualitative part).

Results: From October 2016 to March 2017, 5,658 patients were enrolled for TB treatment. Of these, 2,331 (41%) patients were presumptive MDR-TB patients. Of them, 1,066 (46%) had not undergone GXP testing. Patients from townships without GXP testing sites, new TB patients, patients whose HIV status was negative or unknown and extra pulmonary TB patients were less likely to undergo GXP testing. From the health care providers' perspective, the most common reasons for not testing were: a) lack of awareness of current GXP guidelines; b) challenges in sputum collection and transportation; c) human resource constraints; and d) challenges in educating patients on the importance of GXP testing.

Conclusion: Pre-diagnosis attrition was high with nearly half of eligible patients not tested. Training of TB health care providers about the latest GXP testing criteria; improvement in sputum collection and transportation systems particularly for townships without GXP testing facilities; allocation of dedicated human resource for TB activities; and improvement in recording, reporting, supervision and monitoring are urgently required to reduce attrition.

Sputum smear positive, Xpert MTB/Rif® negative TB patients: Magnitude and their treatment outcomes in Myanmar

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Setting: Myanmar's National TB Programme (NTP) uses Xpert MTB/Rif® (GXP) test to diagnose rifampicin resistance in sputum smear positive (Sm+) pulmonary TB patients. GXP test result may be negative (GXP-) for *Mycobacterium TB Complex* indicating either false positive sputum smear result, false negative GXP result or infection with *Non-TB Mycobacteria (NTM)*. Patients with NTM may respond poorly to first line anti-TB treatment.

Objective: To assess the burden of Sm+/GXP- at the national level and their treatment outcome in Yangon region.

Design: Cohort study involving retrospective record review of the data routinely collected by NTP.

Result: At the national level, in 2015 and 2016, 4% of the 25,359 Sm+ patients who underwent GXP test were Sm+/GXP-. Similarly, in Yangon Region, 5% of the 5,412 Sm+ patients were Sm+/GXP-. Smear grade (scanty/1+) and age ≥ 65 years were strongly associated with Sm+/GXP- results. Their treatment success rate was 88% on first line anti-TB treatment regimens which was similar to the outcomes of Sm+/GXP+ patients without rifampicin resistance.

Conclusion: The burden of Sm+/GXP- patients is about 4-5%. The study findings indicate false positive sputum smear or false negative GXP results, rather than NTM infection as the likely cause of Sm+/GXP- results.

Tuberculosis cases among household contacts of patients with multidrug-resistant tuberculosis in Myanmar, 2016-2017

Authors and affiliations

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Background: Myanmar is considered among one of the 30 highest multidrug resistant tuberculosis (MDR-TB) burdened countries in the world. Household contacts of MDR-TB patients are at a higher risk of developing active TB. A systematic TB screening and investigation among household contacts of MDR-TB patients was implemented by patient-centered community-based MDR-TB care project in 33 townships in Myanmar.

Method: We assessed the TB screening cascade, yield of TB, and their risk factors among household contacts of MDR-TB patients registered between April 2016 and March 2017. A trained nurse visited households of MDR-TB patients, screened TB following an algorithm (Figure). Those who tested positive on smear microscopy, Xpert-MTB/RIF testing, or diagnosed clinically by the medical officers as TB were considered to be a case of active TB.

Results: Out of 620 household members of 210 index MDR-TB patients registered, all underwent TB symptoms screening, 505 (81%) received chest radiography, 231 (37%) underwent sputum smear microscopy, and 178 (29%) tested for Xpert MTB/RIF testing. A total of 24 contacts were diagnosed with TB, two of them were resistant to Rifampicin. Yield of TB among all household contacts was 3.9% (95% CI: 2.3, 6.5). Children aged less than 5 years was a significant risk factor for TB diagnosis among household contacts (PR 3.7 (95% CI: 1.2, 11.4).

Conclusion: Our study highlights the importance of the systematic screening and investigation of TB in household contacts of MDR-TB patients. In addition, infection control measure at the household level should be strengthened to prevent TB transmission among contacts of MDR-TB patients.

Treatment outcome of tuberculosis patients detected by accelerated versus passive case finding in Myanmar

Authors and Institutions

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Setting: Several tuberculosis accelerated case finding (ACF) projects are being implemented in Myanmar. There is a concern that patients detected by ACF have poorer TB treatment outcomes compared to patients detected by passive case finding (PCF)

Objective: To assess the differences in demographic, clinical profile and treatment outcomes of patients detected by ACF and PCF

Design: Retrospective cohort study of TB patients diagnosed and enrolled for treatment during 2014-2016

Results: Of 16,048 patients enrolled, 2,226 (16%) were detected by ACF and treatment success rate (cured and completed) was 88%. Higher proportion of cases detected by ACF were age >55 years, HIV negative, pulmonary sputum smear positive cases. After adjusting for differences in demographic and clinical characteristics, treatment outcomes of patients detected by ACF and PCF was not significantly different [aRR: 0.89, 95% CI: 0.78—1.00]. Male gender, age >55 years, patients with previous TB history and HIV seropositive status were independently associated with unsuccessful outcome.

Conclusion: ACF detected a significant proportion of TB cases in those townships and treatment outcomes of cases detected by ACF and PCF appears to be similar. More tailored efforts/interventions are needed to improve treatment outcomes for patients who have higher risk of unsuccessful treatment outcome

High prevalence and incidence of tuberculosis in people living with HIV in Mandalay, Myanmar: 2011 to 2017

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Setting: Two HIV clinics providing antiretroviral therapy (ART), Mandalay, Myanmar

Objective: To assess prevalent TB at enrolment, incident TB during follow-up and associated risk factors in adult people living with HIV (PLHIV) between 2011 and 2017

Design: Cohort study using secondary data.

Results: There were 11,777 PLHIV of whom 2,911 (25%) had prevalent TB at or within six weeks of enrolment. Independent risk factors for prevalent TB included being male, single/widowed, drinking alcohol daily, having CD4 counts \leq 200 cells/ μ L and anaemia. During six years follow-up in 8,866 PLHIV with no prevalent TB, the rate of new TB was 2.9 (95%CI, 2.6-3.1) per 100 person-years. Cumulative TB incidence was 9.6%, with 370 (72%) of 517 new TB cases occurring in the first year. Independent risk factors for incident TB were being male and anaemia. Incident TB was highest in the first year of ART, in PLHIV with CD4 counts \leq 200 cells/ μ L and those not receiving isoniazid preventive therapy. Incident TB declined with time on ART and rising CD4 counts.

Conclusion: Prevalent and incident TB was high in PLHIV in the Mandalay clinics. Consideration should be given to earlier TB diagnosis using more sensitive diagnostic tools, effective ART and scaling up isoniazid preventive therapy.

Early success with retention in care among people living with HIV at decentralised ART satellite sites in Yangon, Myanmar, 2015-2016

Authors and affiliations

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Introduction: Myanmar is one of the countries in the Asia-Pacific region hit hardest by the HIV epidemic that is concentrated among urban areas and key populations. In 2014, the National AIDS Programme (NAP) launched a new model of decentralised service delivery with the establishment ART satellite sites with care delivered by HIV peer workers.

Method: ART satellite sites are implemented by non-government organisations to service high burden HIV areas and populations that suffer stigma or find access to public sector services difficult. They provide continuity of HIV care from outreach testing, counselling, linkage to care and retention in care. Anti-retroviral (ART) initiation occurs at health facilities by specialist physicians. We conducted a retrospective cohort study of people living with HIV (PLHIV) who were initiated on ART from 2015-2016 at 5 ART satellite sites in Yangon, Myanmar to assess outcomes and time from enrolment to ART initiation.

Results: Of 1,339 PLHIV on ART treatment in 2015-16, 1,157 (89%) were retained, and 5% were lost from care and 5% reported dead, at the end of March 2018. Attrition rates (death and lost-to-follow-up) were found to be significantly associated with a CD4 count ≤ 50 cells/mm³ and having baseline weight ≤ 50 kg. Median time taken from enrolment to ART initiation was 1.9 months (interquartile range: 1.4-2.5)

Conclusion: We report high rates of retention in care of PLHIV in a new model of ART satellite sites in Yangon, Myanmar after three years of follow-up. The delays identified in time taken from enrolment to ART initiation need to be explored further and addressed. This initial study supports continuation of plans to scale-up ART satellite sites in Myanmar. To optimise outcomes for patients and the program and accelerate progress to reduce HIV transmission and end the HIV epidemic, operational research needs to be embedded within the response.

Time to antiretroviral therapy among people living with HIV enrolled into care in Myanmar: How prepared are we for ‘test and treat’?

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Background: Among people living with HIV(PLHIV) enrolled into care, time to antiretroviral therapy(ART) has not been studied in Myanmar. Myanmar has implemented ‘test and treat’ strategy since September 2017 where all enrolled are eligible for ART. To inform progress, we conducted this operational research among treatment naive PLHIV (≥ 18 years) enrolled during a period of three years (2014-16) before implementation of ‘test and treat’ at Pyin Oo Lwin, Myanmar.

Objectives: To determine the i) magnitude of time to ART (from HIV diagnosis to ART initiation) and factors associated and ii) association between long time to ART and attrition (loss to follow up and death) during ART.

Method: This was an observational analytic study involving record review. The PLHIV were followed up to 5th December 2017 for ART initiation and up to 31st March 2018 (date of censoring) for attrition during ART.

Results: Of 543 enrolled, 373(69%) were found to be eligible and initiated on ART. Of 373, 245(67%) were initiated at enrolment (within six weeks of date of enrolment). The median enrolment delay and ART initiation delay was four (IQR: 1, 14) and 20(IQR: 13, 36) days, respectively. The median time to ART (after excluding the delay in eligibility and/or time interval in pre-ART care) was 29(IQR: 18, 55) days. Prevalent TB at enrolment and CD4 count ≥ 500 per mm³ were associated with long time to ART. Among 373, the annual incidence density of attrition was 12.8% (0.95 CI: 10.2, 15.7). Attrition was common in first 100 days. Time to ART (after excluding the delay in eligibility and/or time interval in pre-ART care) was not significantly associated with attrition.

Conclusion: The programme appears to be on track to initiate ART as soon as possible in a ‘test and treat’ scenario subject to interventions to reduce ART initiation delay.

Testing uptake, prevalence of HIV, Hepatitis B and Hepatitis C and retention in care amongst people who inject drugs and are enrolled for methadone maintenance therapy in Yangon, Myanmar: 2015-2017

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Background: People who inject drugs (PWID) are at risk of HIV, hepatitis B (HBV) and hepatitis C (HCV) infections. Of several harm reduction interventions, methadone maintenance therapy (MMT) is effective and recommended. Myanmar has a large, growing problem with PWID and more information is needed about prevalence of HIV, HBV and HCV and retention of PWID on MMT.

Objectives: In PWID enrolled for MMT in Yangon, Myanmar, between 2015-2017, objectives were to determine: i) testing uptake, and results for HIV-serology, HBsAg and anti-HCV antibodies; ii) factors associated with HIV, HBV and HCV infections; and iii) retention in care and factors associated with loss to follow-up (LTFU).

Methods: This was a retrospective cohort study using secondary data from MMT registers and electronic databases in two drug treatment centers (DTCs), Yangon.

Results: There were 642 PWID, of whom 578 (90.0%) were tested for HIV, HBV and/or HCV. Overall, 404 (69.9%) were infected, with 316 (78.2%) having one infection and the remainder having dual/ triple infection. Testing uptake was above 90% in 2015 and 2016 but 79% in 2017. Annual prevalence of infection was 15-17% for HIV, 4-7% for HBV and 68-76% for HCV. Independent factors associated with HIV and HBV were increasing age after 30 years and with HIV long duration of drug use. Being single was a factor independently associated with HCV. Retention in MMT at six months, one, two and three years were 76%, 65%, 53% and 46% respectively. Independent factors for LTFU were being drugs used experimentally or administered by routes other than intravenous and needle sharing.

Conclusion: There were high rates of HIV, HBV and HCV in PWID enrolled in the MMT programme in Yangon and retention in care declined as expected with time. Ways to develop individual tracking and improve Anti-Retroviral Therapy (ART)/HIV care linkage are needed.

Uptake of Antiretroviral in HIV-positive women ever enrolled into Prevention of Mother to Child Transmission programme, Mandalay, Myanmar—A Cohort Study

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Background: Early initiation and longer duration of anti-retroviral therapy (ART) in HIV-positive pregnant women prior to delivery have huge impact on reducing mother to child transmission (MTCT) of HIV, maternal morbidity, mortality and increasing retention in care. In this study, we aimed to determine the followings in a prevention of MTCT (PMTCT) programme in Central Women Hospital, Mandalay, Myanmar: uptake of ART and factors associated with the uptake, duration of ART/antiretroviral (ARV) prophylaxis received by HIV-positive pregnant women prior to delivery, factors associated with ART/ARV prophylaxis initiation after delivery and factors associated with shorter duration of ART/ARV prophylaxis (≤ 8 weeks prior to delivery).

Method: This was a retrospective cohort study using routinely collected data from PMTCT programme. We used multivariable Cox proportional Hazard model or log binomial models to assess the association between socio-demographic and clinical factors with a) uptake of ART/ARV prophylaxis, b) initiation of ART/ARV prophylaxis after delivery, c) duration of ART/ARV prophylaxis for less than 8 weeks prior to delivery.

Results: Among 670 ART naïve HIV-positive women enrolled to PMTCT programme between March 2011 and December 2016, 588 (88%) were initiated on ART/ARV prophylaxis with 35% initiated on the day of enrollment. In adjusted analysis, only natal stage at enrolment was significantly associated with initiation of ART/ARV prophylaxis. Of 585/670 (87%) who had delivered babies on or before the date of censoring, 522/585 (89%) were on ART/ARV prophylaxis. Women who lived outside Mandalay were more likely to be initiated on ART after delivery. Among women who were initiated on ART/ARV prophylaxis before delivery (n=468), 59% got ART/ARV prophylaxis for >8 weeks before delivery. Women whose spouses' HIV status was not recorded had 40% higher risk of short duration of ART/ARV prophylaxis.

Conclusion: This study shows high uptake of ART/ARV prophylaxis (88%) among those enrolled into the PMTCT programme. However, about 13% did not receive ART before delivery. Among those initiated on ART before delivery, nearly half of them receive ART less than 8 weeks prior to delivery. These aspects need to be improved by addressing challenges to eliminate mother to child transmission of HIV.

Attrition among HIV positive children enrolled under Integrated HIV Care Programme in Myanmar: 12 years cohort analysis

Authors and Institutions

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Background

In Myanmar, HIV seropositive children are being enrolled in an integrated HIV care (IHC) Program for HIV treatment and care since 2005.

Objectives

To assess the: a) attrition (death or loss-to-follow-up) rates among children (aged ≥ 18 months to < 15 years) enrolled into the programme before and after initiation of anti-retroviral therapy (ART) (pre-ART and ART periods); b) demographic and clinical factors associated with attrition during these two periods.

Methods

Children enrolled in IHC Programme and their status (death, lost to follow-up, regular follow-up or transferred out) was assessed as on 30th June 2017. Attrition rates (per 100 person-years) at pre-ART and ART periods were calculated and the association between demographic and clinical characteristics with attrition was assessed using Cox proportional hazards model.

Results

Among 2783 children enrolled, pre-ART attrition rate was 19.1 per 100 person-years of follow-up (95% CI: 17.2-21.3) and ART attrition rate was 3.9 per 100 person-years of follow-up (95% CI: 3.5-4.3) with higher levels during the initial few months of enrolment. The 36-month retention rates during pre-ART period was 75% (95% CI: 72-78) and during ART period was 87% (95% CI: 86-88). The children ‘at enrolment’ with relatively lower levels of haemoglobin, immune deficiency, underweight for age, higher WHO clinical stages, presence of hepatitis B infection had higher hazards of attrition in both periods.

Conclusion

The attrition rates are high particularly among children with relatively poorer clinical profiles at enrolment. The study suggests the urgent need for improving adherence counselling especially during the initial few months of enrolment and early ART initiation.

Lists of publications and submitted manuscripts from Myanmar National SORT IT courses

Myanmar SORT IT 1 (2015-2016)

No	Participant	Study title	PubMed ID (PMID)
1	Dr. Htet Myet Win Maung	The contribution of a non-governmental organization's Community Based Tuberculosis Care Programme to case finding in Myanmar: trend over time	28366173
2	Dr. Ohnmar Myint	Active case-finding for tuberculosis by mobile teams in Myanmar: yield and treatment outcomes	28571575
3	Dr. Thin Thin New	Engagement of public and private medical facilities in tuberculosis care in Myanmar: contributions and trends over an eight-year period	28859677
4	Dr. Wai Wai Han	Different challenges, different approaches and related expenditures of community based tuberculosis activities by international non-governmental organizations in Myanmar	28335801
5	Dr. Kyaw Thu Soe	International non-governmental organizations' provision of community based tuberculosis care for hard-to-reach populations in Myanmar, 2013–2014	28335830
6	Dr. Thae Maung Maung	Household ownership, access and utilization of bed nets in artemisinin resistant areas of Myanmar	29571301
7	Dr. Moe Kyaw Myint	Efficacy and safety of three artemisinin-based combination Therapies for <i>Plasmodium falciparum</i> along the Myanmar-China and Myanmar-India border areas.	28388902
8	Dr. Thet Win New	Malaria profiles and challenges in artemisinin resistance containment in Myanmar	28438194
9	Dr. Wint Phyo Than	Knowledge, access and utilization of bed-nets among stable and seasonal migrants in an artemisinin resistance containment care of Myanmar	28903759

Myanmar SORT IT 2 (2016-2017)

No	Participant	Study title	PubMed ID (PMID)
1	Dr. Pwint Mon Oo	The burden of dengue, source reduction measures and serotype patterns in Myanmar between 2011 and 2015	29118655
2	Dr. Phyoe Theingi	National scale up of TB-HIV collaborative activities in Myanmar from 2005 – 2016 and TB treatment outcomes for patients with HIV-positive TB in the Mandalay Region in 2015	29361150
3	Dr. Kyaw Ko Ko Htet	Rifampicin resistant TB patients in Myanmar in 2016: How many are lost to follow-up before treatment?	29562985
4	Dr. Myat Kyaw Thu	High treatment success rate among multi-drug resistant tuberculosis patients in Myanmar, 2012-14: a retrospective cohort study	29351672
5	Dr. Phyoe Aung Naing	Public awareness of malaria and treatment seeking behavior in persons with acute undifferentiated fever, Myanmar	29213208
6	Dr. Kyawt Mon Win	Control of transmission of filariasis in endemic regions of Myanmar: results of 16 years of anti-filarial activities	29720887
7	Dr. Pyae Phyoe Wai	Community-based MDR-TB care project improves treatment initiation in patients diagnosed with MDR-TB in Myanmar	29596434
8	Dr. Pyae Phyoe Wai	Patients with MDR-TB on domiciliary care in programmatic settings in Myanmar: effect of a support package on preventing early deaths	29261669
9	Dr. Kay Khaing Kaung Nyunt	Factors associated with death and loss to follow-up in children on antiretroviral care in Mingalardon Specialist Hospital, Myanmar, 2006-2016	29621302
10	Dr. Yadanar Aung	Major gaps in Condom distribution and HIV testing uptake among Female Sex Workers and Men who have Sex with Men, Myanmar 2014-15: A mixed method study (submitted to WHO Southeast Asia Journal of Public Health)	Under Review
11	Dr. Sandar Aye	Evaluation of a tuberculosis active case finding project in peri-urban areas, Myanmar: 2014-2016	29476901
12	Dr. Zaw Zaw Aung	Are death and lost-to-follow-up still high after rapid ART scale-up and improved guidelines? A large cohort study in government hospital-based setting, Myanmar: 2013-2016 (submitted to PLOS One)	Under Review

Myanmar SORT IT 3 (2017-2018)

No	Participant	Study title		Submission status
1	Dr. Nay Yi Yi Linn	How are the Village Health Volunteers delivering malaria prevention and control services and what are the challenges they are facing? – a mixed methods study in Myanmar	BMC Tropical Medicine and Health	Submitted
2	Dr. Kyaw Thu Hein	Low uptake of malaria testing within 24 hours of fever despite appropriate health seeking among migrants in Myanmar: a mixed-methods study	BMC Tropical Medicine and Health	Submitted
3	Dr. Shwe Yi Linn	Barriers in distribution, ownership and utilization of insecticide-treated mosquito nets among migrant population in regional artemisinin-resistance initiative areas of Myanmar: A mixed methods study	Infect Dis Poverty	Submitted
4	Dr. Aung Pyae Phyo	High treatment success and patient perspectives from patient-centred multidrug-resistant TB care through community-based volunteers in Yangon, Myanmar.	PLOS ONE	Submitted
5	Dr. Ei Ei Win	How many sputum samples should be assessed during follow-up of tuberculosis patients in Myanmar: two or one?	Public Health Action	Submitted
6	Dr. Ko Ko Htwe	Pre-treatment loss to follow-up and treatment delay among bacteriologically confirmed tuberculosis patients diagnosed in Mandalay Region, Myanmar	Trans Roy Soc Trop Med Hyg	Submitted
7	Dr. Tun Oo	Magnitude and reasons for pre-diagnosis attrition among presumptive MDR-TB patients in Bago Region, Myanmar: A mixed method study	Global Health Action	Submitted
8	Dr. Moe Hnin Phyu	Sputum smear positive, Xpert MTB/RIF® negative TB patients: Magnitude and their treatment outcomes in Myanmar	Public Health Action	Submitted
9	Dr. Khaing Hnin Phyo	Prevalence, incidence and risk factors for tuberculosis in people living with HIV in Mandalay, Myanmar	Int J Tuberc Lung Dis	Submitted
10	Dr. Kyaw Myo Htet	Early success with retention in care among people living with HIV at decentralised satellite sites in Yangon, Myanmar, 2015-2016	Frontiers Public Health	Submitted
11	Dr. Kyaw Zin Linn	Delay in enrolment and ART initiation and its association with attrition among PLHIV on anti-retroviral therapy in Myanmar	Global Health Action	Submitted
12	Dr. Nyein Su Aye	Testing uptake, prevalence of HIV, hepatitis B and C and retention in care amongst people who inject drugs and are enrolled for methadone maintenance therapy in Yangon, Myanmar	Global Health Action	Submitted

