

Overseas Practice on (Field Epidemiology • Collaborative Research)

2016/July/29

report form (For Student)

(Year/Month/Day)

Name	LAI LAI SAN
Laboratory	Division of Bioresources, CZC
Year (Grade)	D2
Place of practice	Department of Medical Research (Myanmar)
Period of practice	2016/06/03 – 2016/07/24
Purpose	To do research on molecular characterization of <i>Mycobacterium tuberculosis</i> clinical isolates from Mon and Kayin State TB Office, Mawlamyaing, Myanmar.

Summary of activities (about 800 words, provide photos, tables and figures that clearly show the activities during the period)

The title of the field epidemiology study is “Molecular characterization of *Mycobacterium tuberculosis* clinical isolates from Mon and Kayin State TB Office, Mawlamyaing, Myanmar.”

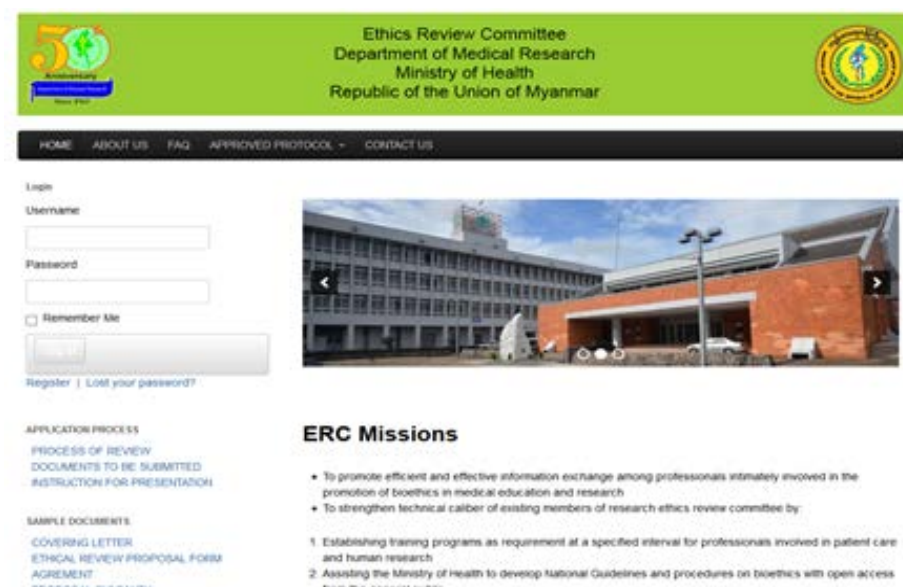
Summary of Field Epidemiology activities	
1.	Obtaining ethical approval from Ethics Review Committee by presenting the project and discussion at Department of Medical Research (DMR), Myanmar
2.	Negotiation to conduct research with the Program Manager, National TB Control Programme (NTP)
3.	Obtaining permission to conduct the research from Director General of the Department of Public Health
4.	Two Business Trips to Mon and Kayin State TB Office, Mawlamyaing.
5.	Meeting with State TB Medical Officer and staffs at the Mon and Kayin State TB Office, Mawlamyaing
6.	Management of sample collection, transportation and laboratory processing
7.	Observation of the routine laboratory work at the National Tuberculosis Reference Laboratory (NTRL)
8.	Attending BSL 2+ laboratory training course for laboratory scientists at Advanced Molecular Research Center (AMRC), DMR
9.	Performance of routine laboratory work at the BSL 2+ laboratory at AMRC, DMR
10.	Performance of laboratory work with the collected samples and discussion and training to the staffs about the procedures concerning sample collection, data collection and transportation of samples at AMRC, DMR
11.	Attending regular meetings and seminars held at the DMR

## I. Purpose of Field Epidemiology Study

The objectives of this study are to detect multidrug-resistant *M. tuberculosis* (MDR-MTB) strains by using Löwenstein-Jensen proportion method and determine the frequency and distribution of gene mutations among the strains. It also intends to find out the Beijing lineage distribution among the MDR-MTB strains by MIRU-VNTR typing. This study aims to observe and monitor the transmission pattern of the Beijing lineage MDR-MTB strains in the study area.

## II. Procedure to get ethical approval and permission to conduct research

This is also the collaborative research work and it is necessary to get ethical approval from the Ethics Review Committee, DMR, Ministry of Health and Sports (MOHS), The Government of the Republic of the Union of Myanmar. To get ethical approval, I presented my proposal at the meeting for the ethical defense and discussed about the procedures to conduct research. The official documents had to be reviewed, revised and submitted to the committee to get official approval. After getting approval, I prepared official documents to get permission from the Department of Public Health.

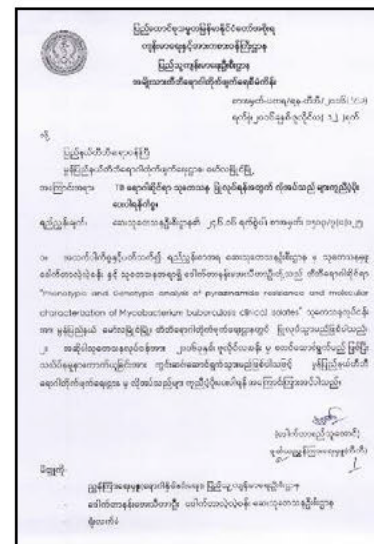
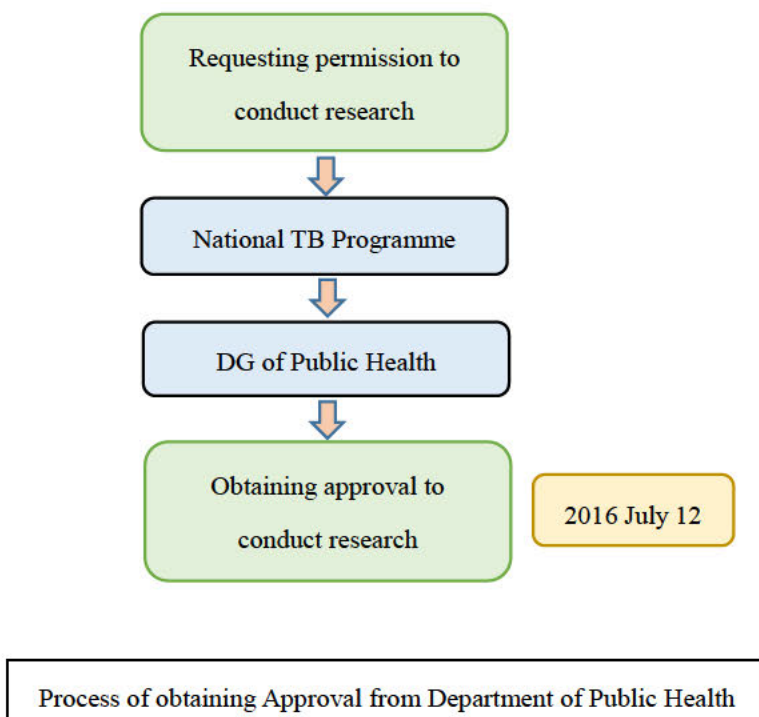


Ethics Review Committee

webpage: <http://www.ercdmrlm.org/#>

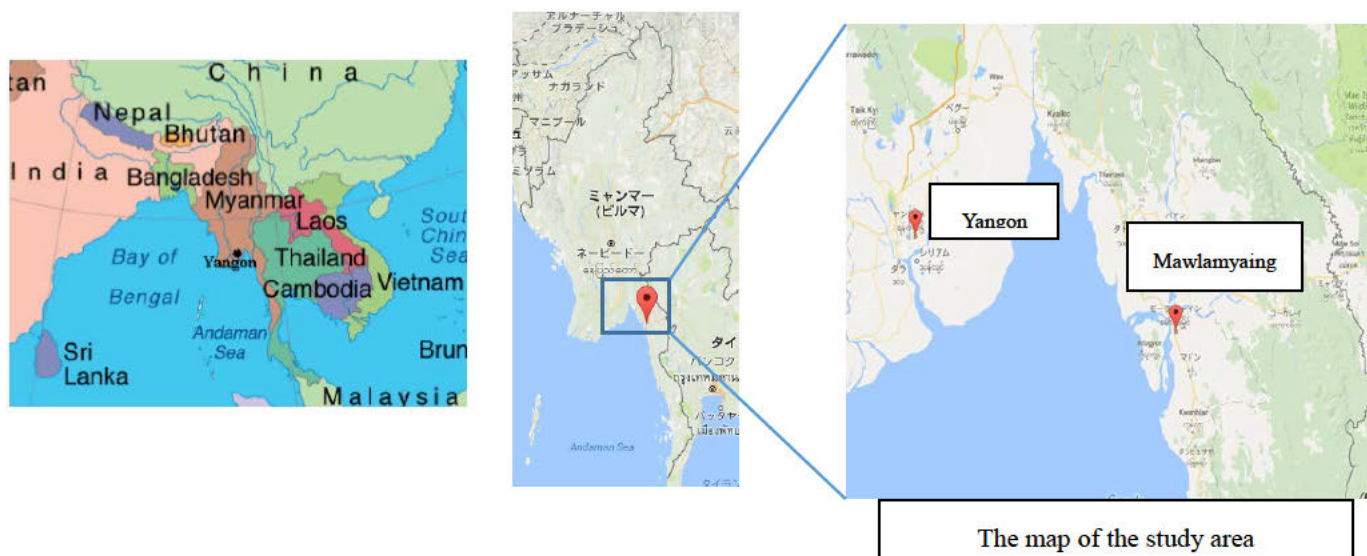


Document of Ethical Approval



Document of Approval to conduct research

### III. Business Trip to Mawlamyaing



During this time, I went to Mon and Kayin State TB Office, Mawlamyaing and discussed with the State TB Medical Officer to conduct research in that area. The reason for choosing this region is that Mawlamyaing is the fourth largest city of Myanmar and the largest city of Mon state. The population is 325,927 according to the record in 2010. The migration of the population is higher in this area because of the cross border working in Thailand and this is one of the contributing factors for the transmission of tuberculosis among the population. It was necessary to get approval to carry out research from Department of Public Health, MOHS. The official documents were prepared and applied to that department. I went to this State TB Office for the second time and performed sample collection and demographic data collection. According to the protocol, the smear positive sputum samples from the patients attending the State TB Office were collected. The samples were necessary to transport to Yangon to perform isolation of *Mycobacterium tuberculosis*, drug sensitivity testing (DST) and DNA extraction at the AMRC, DMR. At that time the detailed procedures of sample collection, sample transportation and data collection were discussed with the State TB Medical Officer and staffs for the collaboration of the research work. This procedure is ongoing until it reaches the target samples.



Mon and Kayin State TB Office



Sample collection area

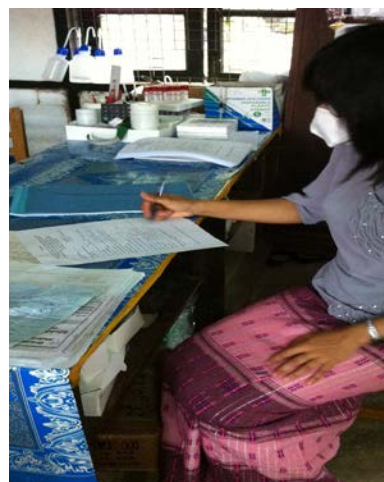




Discussion with the State TB Medical Officer



Sample collection and processing



Data Collection by interviewing



Morphological Identification of MTB



Gene Xpert for detection of Multidrug-resistant MTB

#### **IV. Observation of the routine laboratory procedures and participation at the National TB Reference Laboratory, Aung San TB Hospital, Yangon, Myanmar**

At the National Tuberculosis Reference Laboratory (NTRL), Yangon, the routine procedures for media preparation, identification of the organism, drug sensitivity test and MGIT (Mycobacteria Growth Indicator Tube) test were observed. The data collection methods of the NTP were also observed and learned.



Observation and participation of the routine laboratory procedures

#### **V. Attending Seminars and Scientific talk**

I attended the seminar of “operational research on patient-centered TB care, what have been done and what are the future?” on 2016 June 11. The main aim of this seminar was to achieve goals and targets of TB control through evidence based findings and analysis. By attending this seminar I could learn the current situation of TB control practice and the needs to be improved for TB control in Myanmar. I also attended the seminars held at the DMR.



Seminar of "Operational research on patient-centered TB care, what have been done and what are the future"



Attending seminars at Department of Medical Research

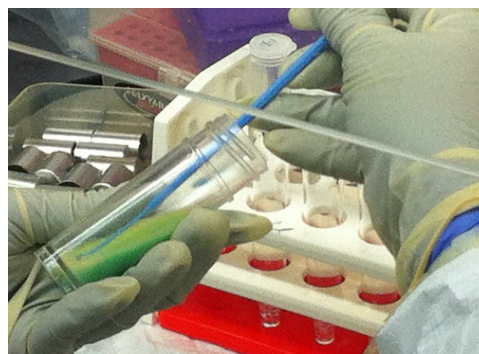


Scientific talk at AMRC, DMR

## VI. Attending Laboratory training course and Laboratory work

I participated in BSL 2+ laboratory training course for staff Scientists in the BSL 2+ laboratory at the AMRC, DMR. I observed and performed the laboratory work in DNA extraction of *M. tuberculosis* and drug sensitivity testing procedure by MIGIT test. I also performed sputum sample preparation and isolation of *M. tuberculosis*.





Laboratory training and work at AMRC, DMR



BSL 2+ laboratory training course

Advanced Molecular Research Centre, DMR Certificate of Completion					
Training Course	BSL 2+ training course for staff Scientists				
Period	2016 June 7				
Validated to	3 years (expiry date 2019 June 6)				
Trainee	<table border="1"> <tr> <td>Name</td> <td>Dr. Lai Lai Sun, MD</td> </tr> <tr> <td>Affiliation</td> <td>Chemical Toxicology Research Division DMR</td> </tr> </table>	Name	Dr. Lai Lai Sun, MD	Affiliation	Chemical Toxicology Research Division DMR
Name	Dr. Lai Lai Sun, MD				
Affiliation	Chemical Toxicology Research Division DMR				
Trainer	<table border="1"> <tr> <td>Name</td> <td>Dr. Wai Wah Aung, PhD</td> </tr> <tr> <td>Affiliation</td> <td>Advanced Molecular Research Centre, Department of Medical Research, Myanmar</td> </tr> </table>	Name	Dr. Wai Wah Aung, PhD	Affiliation	Advanced Molecular Research Centre, Department of Medical Research, Myanmar
Name	Dr. Wai Wah Aung, PhD				
Affiliation	Advanced Molecular Research Centre, Department of Medical Research, Myanmar				
Training Items	<ul style="list-style-type: none"> <li>• Introduction to Biosafety</li> <li>• Practice BSL 2+ SOP</li> <li>• Handling Biohazard wastes (liquid, solids)</li> <li>• Emergency drill</li> <li>• Confirmed by trainer (Wai Wah Aung) that the trainee (Lai Lai Sun) had obtained adequate knowledge/skill to work in the BSL 2+ laboratory</li> </ul>				
<p>The trainee is certified to access AMRC BSL 2+ according to AMRC Internal Biosafety regulation</p> <p>2016 June 7</p> <p>Biosafety Committee, Advanced Molecular Research Centre, DMR</p>					

Certificate of completion of BSL 2+ laboratory training course

## VII. Conclusion

According to the field epidemiology study, the advantage to me was the better understanding of insight into the tuberculosis disease condition, the current practicing of the diagnostic procedures, treatment and control for the disease in Myanmar. I realize that we still need to improve every sector in the better prevention and control of tuberculosis in Myanmar.

(Field Epidemiology • Collaborative Research) Evaluation by supervisor



Institution • Official title • Name	Hokkaido University Research Center for Zoonosis Control • 印 Professor • Yasuhiko SUZUKI
Describe overall evaluation on the applicant's activity in overseas practice.	

- ※1 Send the electronic file to the Leading School section, International Affairs Office, also submit the original print out with seal of supervisor to the Leading School section, International Affairs Office.
- ※2 The Steering Committee of the Leading Program will first confirm the content of this report and the report will be forwarded to the Educational Affairs Committee for credits evaluation.

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