



# The 6th Joint Technical Meeting between NMCHC Cambodia and NCGM Japan

26th December 2017  
9:00 - 12:00 at NMCHC, Phnom Penh

National Maternal and Child Health Center (NMCHC)  
Phnom Penh, Cambodia

National Center for Global Health and Medicine (NCGM)  
Tokyo, Japan







# The 6th Joint Technical Meeting between National Maternal and Child Health Center and National Center for Global Health and Medicine

26th December 2017

9:00 - 12:00

at

National Maternal and Child Health Center  
Phnom Penh

## Objective

To share/reconfirm the framework and all activities of the collaboration based on the MOU between NMCHC and NCGM,  
To share the progress and achievement of each activity of the collaboration based on the MOU between NMCHC and NCGM since the 5th meeting on 16 Dec 2016.

## Participants

Professor Tung Rathavy and NMCHC team,  
Doctor Hinoshita Eiji and NCGM team,  
NCGM local staff (technical and administrative assistants/interpreters)  
Société Cambodgienne de Gynécologie et d'Obstétrique (SCGO),  
JICA Cambodia, JICA IINeoC Project, Nagasaki University,  
Phnom Penh Municipal Health Department,  
Kampong Cham Provincial Health Department

## Language

English and Khmer



# Keynote Speech

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Greetings, honorable guests, ladies and gentlemen.

On behalf of NMCHC, I am very pleased to welcome and thank Dr. Eiji HINOSHITA and Dr. Hidechika AKASHI and NCGM Team, JICA staffs, Nagasaki University team, Prof. Koum Kanal, the president of Cambodian Society of Gynecology and Obstetrics (SCGO), all NMCHC staffs and Dr. Ngy Mean Heng, the director from Phnom Penh Municipal Health Department (PPMHD), Dr. Kimsour Phirun, the director from Kampong Cham Provincial Health Department and the director of Stung Trang OD for attending in this meeting besides your busy schedule.

It is a great honor for me to participate in 6th Joint Technical Meeting between NMCHC and NCGM. I greatly appreciate Dr. HINOSHITA and Dr. Akashi's participation to share the achievement by the cooperation between NMCHC and NCGM. As Dr. HINOSHITA mentioned about cooperation between both centers as well as MOU between MoH and NCGM since 2012. The duration of the MOU is 5 years. We were concerned about the collaboration beyond the countries in the beginning, however the technical collaboration strengthened Maternal and Child Health in Cambodia.

The collaboration between staffs of NMCHC and NCGM has been since 1992. We have kept the memory of NCGM staffs who worked for JICA projects in difficult situations. For improving Maternal, Newborn and Child Health and Women's Health, we need to continue working together and the collaboration should not be only between both centers but also among municipal and provincial institutions. We also have been collaborated with SCGO to improve Women's Health focused on cervical cancer screening and early treatment. There were many obstructions for implementing activities in Cambodia. We have been lucky to have good partners, especially Japanese friends. We have good relationship and collaboration to improve the quality of our health service.

Furthermore, you can enhance it if you find the gaps and identify the problems through researches. We apply the research findings for implementation and recommendation of the strategy. A lot of findings and experiences during a year from 2016 to 2017 will be presented in this meeting and I hope they will be resources for further implementation.

I would like to suggest the officials to continue collaboration for the advantage of both Cambodia and Japan.

**Prof. Tung Rathavy**

Director,  
National Maternal and Child Health Center (NMCHC)  
Ministry of Health, Cambodia

## Keynote Speech

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Distinguished guests, Ladies and Gentlemen,

On behalf of NCGM, I would like to extend you my sincere congratulation.

Since 1992, National Center for Global Health and Medicine (NCGM) has continuously provided its technical assistance to the Ministry of Health (MoH) of Cambodia at the beginning, and then to this National Maternal and Child Health Center (NMCHC). For more than two decades, there have been four projects of technical assistance by JICA to improve the status of maternal and child health in Cambodia. Through these projects, a lot of NCGM staffs have been working with you.

It has been five years since signing a Memorandum of Understanding (MOU) between His Excellency, Prof. Eng Huot and Dr. Kasuga, the former President of NCGM to facilitate a direct collaboration between NMCHC and NCGM in December, 2012. Since then, various activities including personal exchange, training, research and technical assistance have been implemented under this framework, in addition to the currently on-going JICA project.

Moreover, the number of activities at NMCHC has been increasing since the inception of the International Promotion of Technologies Program starting from 2015, which is a new ODA scheme by the Ministry of Health, Labour and Welfare (MHLW) of Japan. I believe that all the activities are beneficial not only for improving health status in Cambodia, but also for nurturing the friendship between Cambodia and Japan as following;

As for the 'Project for Improving Women's Health Care of Factory Workers Focusing on Cervical Cancer', we started screening and early treatment of cervical cancer in factories in collaboration with the OBGY Societies of the both countries. And as for the research on the 'follow-up cohort study on factors that influence malnutrition among children under two-years-old in rural Cambodia', we also started continuous follow-up for growth and development of children in villages of Kampong Cham province, as a new approach. I heard that the preliminary results of these studies have been already reported in several academic conferences. Today I am looking forward to listening to the results of these studies in this meeting.

As a joint monitoring mechanism of our direct collaboration, I think it is very important for all of us to share the progress or plan of all activities within the framework of our MOU, in this meeting today. I also expect the fruitful discussion although the time is limited.

Last but not least, I wish NMCHC and NCGM for their success and collaboration further more as well as for our beautiful friendship forever!

Okun churan (Thank you)!

Dr. Eiji Hinoshita

Director-General,  
National Center for Global Health and Medicine (NCGM)

# 1

## Brief explanation on the overall framework of MOU between NMCHC and NCGM and the progress since December 2016



Dr. Hidechika Akashi

National Center for Global Health and Medicine, Japan



### Objectives of today

- 1) To share/reconfirm the framework and all activities of the collaboration based on the MOU between NMCHC and NCGM,
- 2) To know the progress of each activity of the collaboration based on the MOU between NMCHC and NCGM since the 5th meeting on 16 December 2016.

### Who are we – NCGM ?

(former IMCJ)



独立行政法人

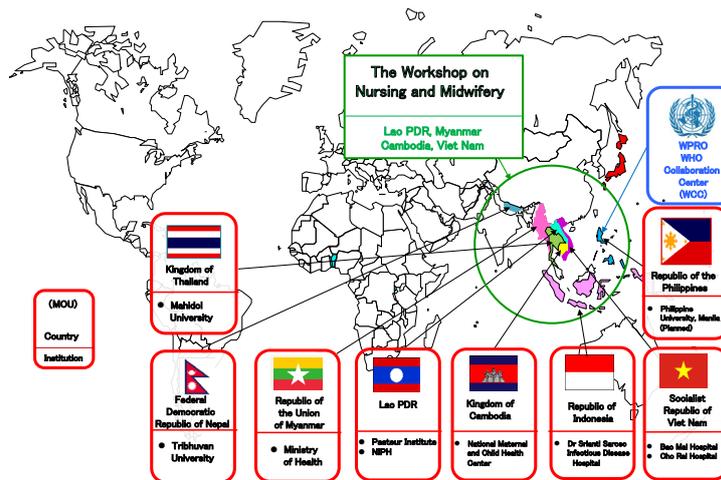
国立国際医療研究センター

National Center for Global Health and Medicine

- ✓ Core institute of Japan's international health cooperation
  - Formulate and implement projects with JICA
  - Dispatches technical advisors to many countries
  - Organize training courses in Japan and other countries



## Global Network & Partnership in



## Memorandum of Understanding (MOU) on collaboration between NMCHC and NCGM 18 Dec 2012



## Joint activities within the framework of collaboration

NMCHC and NCGM have been conducting joint activities as follows:

1. Technical cooperation
2. Training
3. Research
4. Personnel exchange programs
5. Others

## Activities and achievement under MOU since 2013

1. Neonatal mini-project to improve neonatal medical care
2. Joint research on delivery and neonatal care
3. Survey of chronic malnutrition among children
4. Project of cervical cancer and women's health
5. NMCHC accepts NCGM residents as part of their training program
6. Counterpart training in Japan (JICA project)

## All activities in 2017-2018

Partner	1) JICA	2) SCGO/ JSOG/ NCGM	3) NCGM	4) NCGM	5) Nagasaki University
Style	GR*	IPT***	Research	Research	Research
Period	2015-18	2017-19	2015-17	2015-17	2015-18
Topic	Cervical cancer Screening -TA ** /Training  Pathology Training		EENC at facilities	Child malnutrition survey	Midwifery care at health centers in PP
Presenter	Prof. Kanal		Dr. Kitamura (Dr. Sugiura)	Dr. Iwamoto	Dr. Matsui

\*GR: Glass-Roots, \*\* TA: Technical Assistance,  
\*\*\* IPT: International Promotion of Technologies (Japan's MOH)

## Advisors (Since 1992)



Dr. Tateno



Dr. Kinoshita



Dr. Murakami



Dr. Kita



Dr. Yamada

Present photos

## 5 MCH Projects (since 1995 in NMCHC)



Dr. Yamada  
1<sup>st</sup> Project Leader



Miss Kawata (Mrs. Osanai)

### Old Hospital Pet Chen March, 1997



Ward for admission



Out Patient

### New Hospital Open in March, 1997 National Maternal and Child Health Center, Cambodia constructed by Grant Aid by Japanese Government



June, 1997



Airplane crash at Pochentong Airport  
(in September 1997)



From Dr. Matsui



Road to Sihanoukville, Cambodia, 1998

Back to Normal life, Phnom Penh, 1997-1998



Kandal Hospital, 1997



ICU

Operation Theater  
In OBGY



Takeo Hospital  
1998



### Kampong Spue Hospital, 1998



We are trying new things together in NMCHC as a pioneer in Cambodia.

- Obstetric care
- Training capacity and training courses for rural Midwives
- User fees
- Hospital management
- Maintenance of medical equipment
- MCAT
- Newborn care
- Pathology, etc.

### Tariff for User fees at the entrance



## Registration and payment



## Patient document (Hospital) management



Cambodia

## Clinical Training in Developing countries



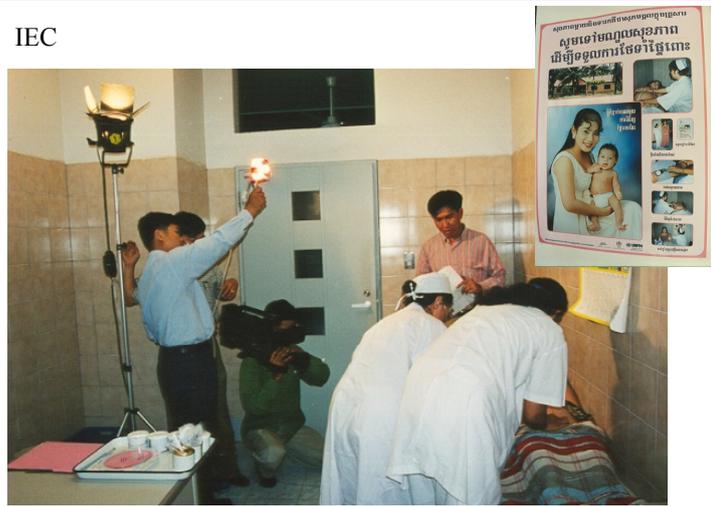
Cambodia, 1997-2000

### Training in Developing countries



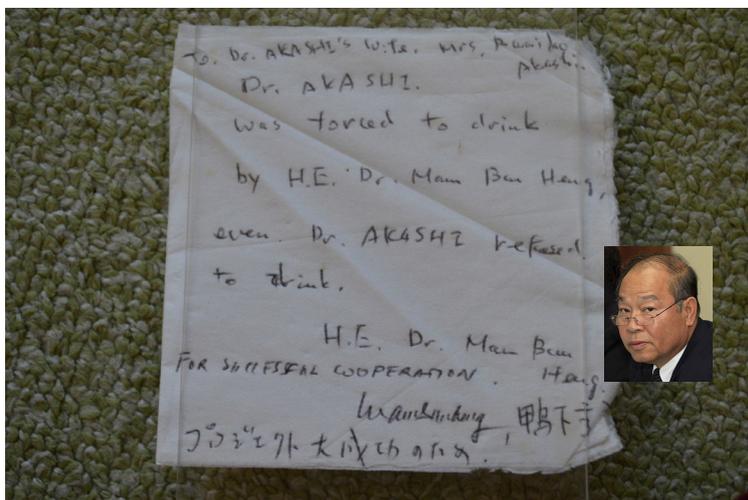
Cambodia, 1997-2000

### IEC



Cambodia

### 1998



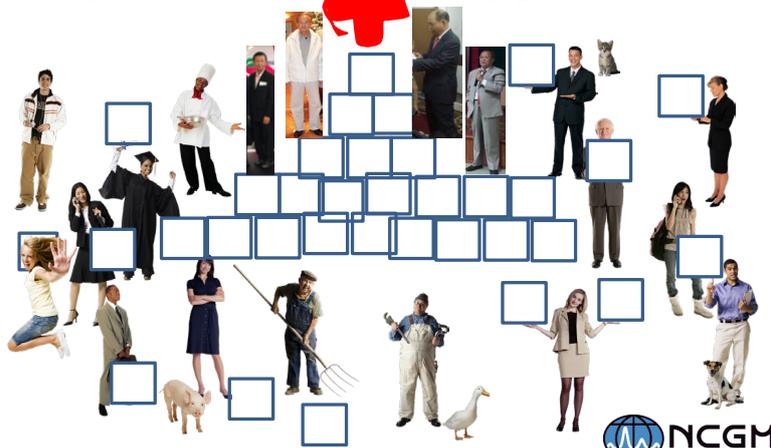
2017



Ankor Wat, 1998



**It's a Collaboration work, with other people, and Generation by generation...**



# 2

## Progress of the 'Project for Cervical Cancer Early Diagnosis and Treatment



Prof. Kuon Kanal  
President,  
Cambodia Society of Gynecology and Obstetrics



### Remember? Why the cervical cancer project is important in Cambodia now?

- In Cambodia, it is estimated that 1,500 women are newly diagnosed and about 800 women die of cervical cancer each year.
- In Cambodia, cervical cancer data is leading; it is big burden for women, and also the most importance of health issue for public health of MoH.

After several years' communication and technical exchanges:

### SCGO-JSOG Joint Project - Women's Health and Cervical Cancer-



29 July 2015  
Signing of Minutes  
of Memorandum of  
the Project  
at the Ministry of  
Health, Cambodia

### JICA Grassroots Technical Cooperation Project

**PROJECT FOR IMPROVING WOMEN'S HEALTH CARE OF FACTORY WORKERS FOCUSING ON CERVICAL CANCER**  
JICA Grassroots Technical Cooperation

**HUMAN RESOURCE AND SYSTEM DEVELOPMENTS FOR CERVICAL CANCER EARLY DIAGNOSIS AND TREATMENT**  
The Program for International Promotion of Japan's Healthcare Technologies and Services funded by Ministry of Health, Labour, and Welfare Japan

Implementer



**SCGO and JSOG**

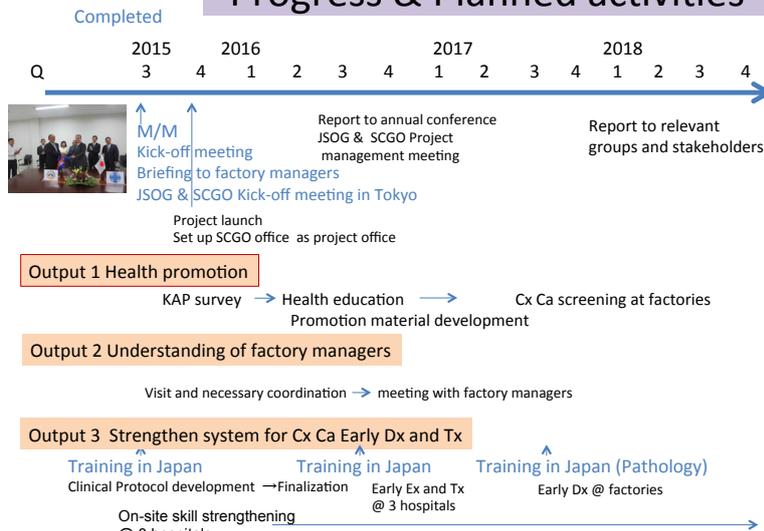


国立研究開発法人  
 国立国際医療研究センター  
 NCGM National Center for Global Health and Medicine

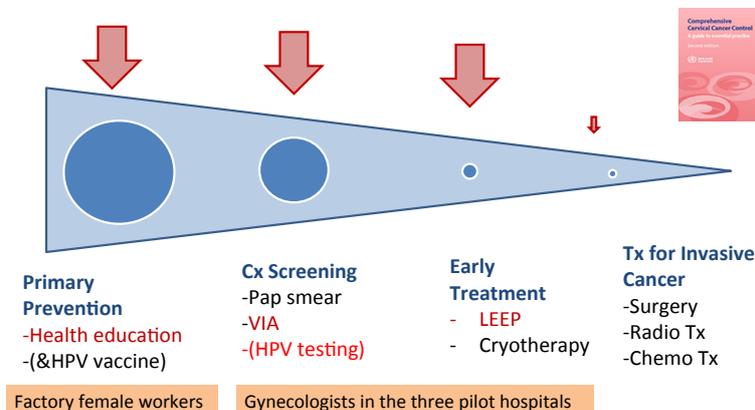
**NCGM Japan**

Period	3 years from Oct 2015	July 2015 to Jan 2017	April 2017 to March 2020
Content	For <b>female factory workers</b> - Health Promotion - Cervical cancer screening in three national hospitals - Development of a system for early diagnosis and therapy	For gynecologists in three national hospitals - Technical Training in Japan - Protocol Development	For pathologists and pathology technologists in three national hospitals and UHS - Technical Training in Japan - Support for pathology system development and specialist training

## Progress & Planned activities



## Project's Strategic Focus



Source: Comprehensive cervical cancer control- A Guide to essential practice – Second edition, WHO, 2014 (The figure was made by H Obara, based on the content of the Guide)

### KAP Survey-Interview factory worker at PPSEZ in March & April 2016

National Institute of Public Health to conduct interview factory workers at Sumi (Cambodia) Wiring System Co., Ltd.

- The aim to exploring knowledge, attitude and practices toward cervical cancer and Other reproductive health services.
- A total of 443 women in among 900 women.



### Preparation Period For Implementation

#### Training course for development of humans resources and systems for cervical cancer early diagnosis and treatment in Cambodia

- First groups 6 peoples in Sept. 2015 at NCGM & OSAKA University
- Second group 7 peoples in Sept. 2016



#### Mini-Lecture by Japanese expert during their visit By

- All Japan Labor Welfare Foundation (Feb. 2016)
- Jikei University (June 16)
- Tokushima University (July 2016)
- Keio University (August 2016 and June 2017)
- Nihon University (Nov. 2016)
- Juntendo University (Dec. 2016)
- Yokohama City University (Jan. 2017)
- Kyorin University and Tsukuba University (Sep. 2017)



## Experts Visit for updating Knowledge of ours Members by giving Mini-lecture

- Dr. Ruriko Nishino from all Japan Labor Welfare Foundation in January to February 2016
- Dr. Nozomu Yanaihara and Dr. Kuruda from Jikei University in June 2016
- by Dr. Akira Kuwahara and Dr. Akiko Abe from Tokushima University in July 2016
- Dr. Kouji Banno and Dr. Wataru Yamagami from Keio University in August 2016
- Prof. Kei Kawana and Dr. Hiromitsu Azuma from Nihon University in November 2016
- Dr. Yasuhisa Tarao and Dr. Tsuyoshi Ota from Juntendo University in December 2016
- Dr. Mikiko Sato and Dr. Naho Yokota from Yokohama city University in January 2017
- Dr. Ruriko Nishino from all Japan Labor Welfare Foundation in February 2016
- Dr. Kouji Banno and Dr. Yuya Nogami from Keio University in June 2017
- Dr. Yoriko Nishigaya from Kyorin University and Dr. Sari Nakao from Tsukuba University in September 2017



Hospital Visit by Doctors at the Implementation sites

## Pathology expert visit for baseline survey of the current pathology situation in Cambodia

- Dr. Tomoko Wakasa from Kindai University in September 2017
- Prof. Toshiaki Kawai, Dr. Tomoko Wakasa, Prof. Sadayuki Hiroi, Ms. Kyoko Komatsu in August 2017
- Prof. Motoji Sawabe from Tokyo Medical and Dental University in September 2017

## Pathology Training in Japan (Nov 2017)

Participants: 4 pathologists and 4 technologist from:

- University of Health Science
- Calmette Hospital
- Preah Kossamak Hospital
- Khmer Soviet Friendship Hospital

Training at:

NCGM, Ariake Cancer Institute, Juntendo University Nerima Hospital, Dokkyo University Koshigaya Hospital, Kobe University, Awaji Medical Center, Osaka International Cancer Institute, Nitobe College, Tokyo Medical and Dental University, and Nippon Medical University Nagayama Hospital

### Pathology technologist 26 Oct - 20 Nov, 2017

Objective:

To obtain skills for preparing high-quality pathological specimen

Training at 3 pathology labs in Tokyo:

Fixation and paraffin block sectioning

Routine, special and cytology staining

Frozen section

Quality control of slides

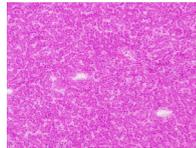
Laboratory management



Microtome maintenance



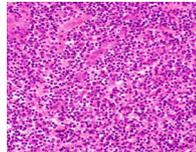
Fixation



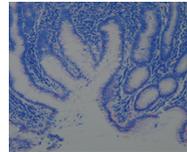
Frozen section



Microtome Cutting



Hematoxylin and Eosin



Giemsa's (H-Pylori)



**Pathologist**  
**1 Nov - 20 Nov, 2017**

Objective:  
To identify the steps required  
for improvement of  
pathology division and  
cultivation of pathologists in  
Cambodia

Program: lectures and  
hospital visits  
Role of academic society  
Cancer registration  
Collaboration between  
clinicians and pathologists  
Japanese pathology specialist  
training system  
Visit pathology labs  
Quality control of specimen  
Telepathology



Poster presentation at Japanese  
Society of Clinical Cytology

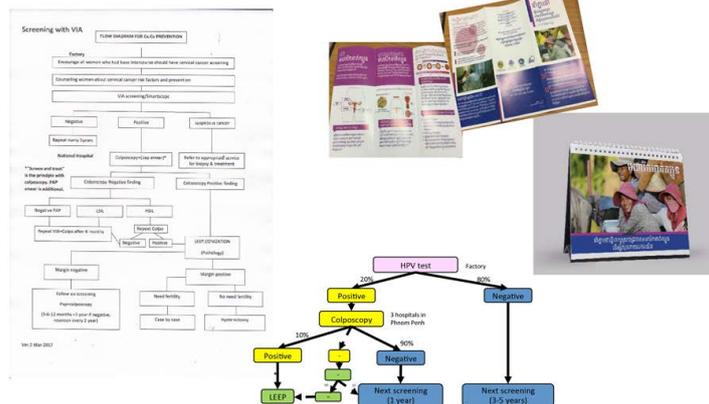
Report meeting

## Health Education Material for Factory Workers

Japanese Expert meet with implementer team  
for developing leaflet and Flipchart



## Protocol & materials development in Collaboration with JSOG Experts



## Collaboration with JSOG Experts



Manual for cervical cancer screening

Protocol development



Health message and materials for health education for  
factory workers:  
*other topics*

Style	Slides for education class	SUMI Cambodia had some classes about women's health in October
Distribution	To SUMI Cambodia	
Topics	<p>A. Women's Health ( including menstruation, vaginal discharge, daily behavior, life plan etc.)</p> <p>B. Birth Spacing (Natural methods fecundation etc.)</p> <p>C. Birth Spacing (Modern methods)</p>	

### Health Education at Factory Activities Year 2017

#### Health Education at Factory Activities Year 2017

1. Health education for factory workers at SUMI
2. Health education for factory workers at Minebea
3. Health education for factory workers at Kaneju
4. Health education for factory workers at Maru T Ohstuka
5. Health education for factory workers at Lucian
6. Health education for factory workers at Toyota Company

Total# Attendance About 1.765 peoples /times

### First Screening at SUMI on June 18, 2017

Conduct first screening for factory workers at SUMI

Place: @SUMI Cambodia  
 Topics: Doing Cervical cancer Screening  
 HPV Test  
 Providers: Dr. Chhit Maryan, Dr. Kim Lumpini  
 and 3 Nurse from Khmer Soviet  
 Supervisors from SCGO: Prof. Kanal, Prof.  
 Soeung,  
 Expert: Prof. Kimura, Dr. Nishino, Dr. Banno,  
 Dr. Noriko, Dr. Matsumoto and Dr. Noyami  
 Date: Preparation 1day (17 June 2017)  
 Implementation 1 day, 18 June 2017) at  
 morning time  
 Numbers of room: 2 rooms  
 Attendance: 44 (31 ps receive HPV test)

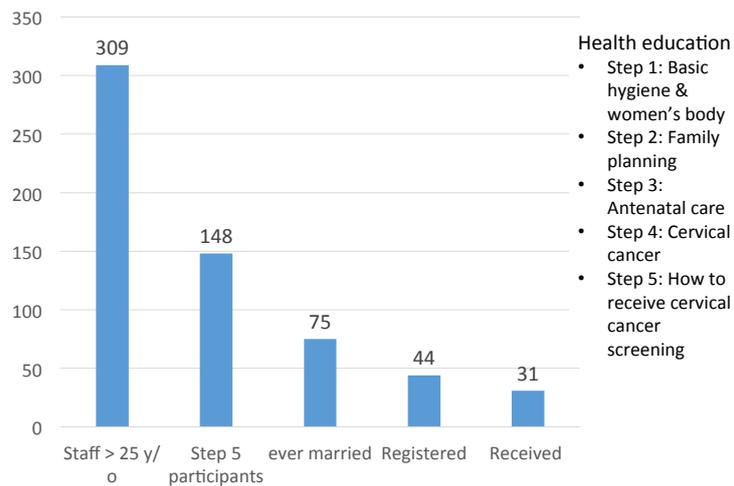


### Conduct first screening for factory workers at SUMI

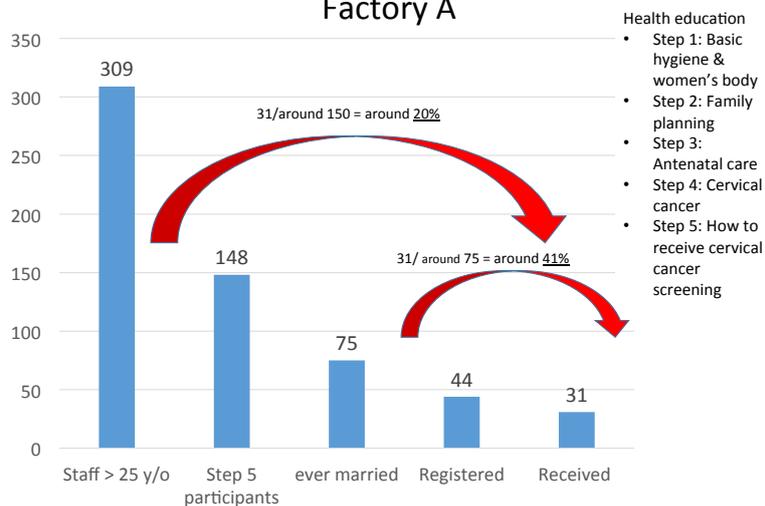


### Review of the First Cervical Cancer Screening

From Health education to Cancer screening: Factory A  
(1200 workers in total)



From Health education to Cancer screening:  
Factory A



## Results of Care-HPV test

Total participation: 31  
HPV test: NMCHC +  
Calmette

Total 4 cases positive of  
HPV high risk HPV  
(both positive 2: either  
positive 2)



Confirmation by Prof.  
Kawana's labo (by HPV DNA  
typing)

Accuracy rate was  
30/31=96%, both NMCHC  
and Calmette

Double check will increase  
accuracy rate, but single  
check is acceptable for the  
next screening. (cost vs.  
accuracy)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
MCH	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calmette	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kawana	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Project Future Plan - Year 2018

Month	Main Activities
Dec 2017	Health education (Toyota), preparation of screening
Jan 2018	-2 <sup>nd</sup> Cervical Cancer screening (14 January) -Start reviewing protocol -Evaluation of health education
Feb 2018	Health education for screening (Kaneju, Sumi, Minebea)
Mar 2018	-Review of screening -Evaluation and reviewing protocol <b>-5<sup>th</sup> ICOE training program (10-11 Mar)</b>
April 2018	-3 <sup>rd</sup> Cervical Cancer screening (22 or 29 April) -Project evaluation, Preparation of Seminar
May 2018	-Annual conference in Japan -Results of evaluation of the project shard at Women health seminar (26 May 2017)
June 2018	<b>-6<sup>th</sup> ICOE training program (June 30-July 01)</b>
July-Aug 2018	<b>CME program provincial sites</b>
Sept 2018	Submit final report to MoH, Future plan, End of the project
Oct 2018	Preparation of 17 <sup>th</sup> symposium
Nov 2018	17 <sup>th</sup> Symposium (Nov 02-03, 2017)
Dec 2018	Prepare budget plan and work plan for next year



### SCGO-JSOG Project

Project for Improving Women's Health Care of  
Factory Workers Focusing on Cervical Cancer

We, Ob/Gyn doctors protect  
**women's health throughout their lives**

## Question and Answer

### Q1

Do you have a plan to expand cervical cancer screening to other health facilities in Phnom Penh?

(Dr. Ngy Mean Heng, Director of PPMHD)

### Answer

We selected the women at the factories as a target because it is easy to control. We need to collect clear data. Related to the expansion of the screening program, we should submit the clear result to MoH first. We need an approval from MoH before expansion. The association with PPMHD and SCGO will be feasible after the approval of MoH. The number of pathologist is not enough in Cambodia and it is less than 10. If you would like to expand the cervical cancer screening around the country, we need more pathologists.

(Prof. Kanai)



# 3

## Progress of research activities on scientific evaluation of 'women-friendly care'



Dr. Mitsuaki Matsui  
Nagasaki University  
School of Tropical Medicine and Global Health

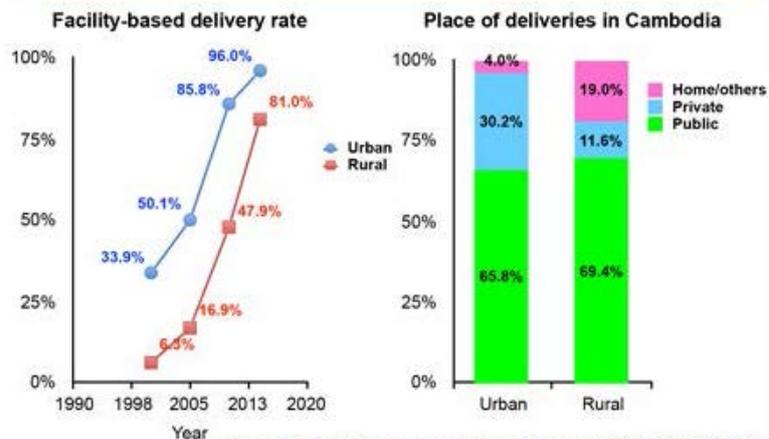


### Effect of implementation of "individual midwifery care" on medical interventions during delivery and birth and on maternal and neonatal health in Phnom Penh, Cambodia

MATSUI Mitsuaki  
Nagasaki University  
School of Tropical Medicine and Global Health

Report in a joint technical meeting, 26 December 2017, Phnom Penh

### Background: increase of facility-based delivery in Cambodia



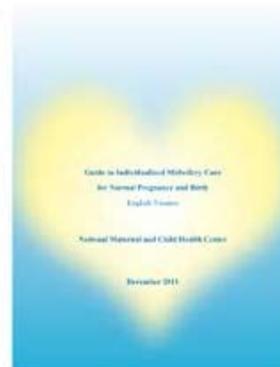
Source: Cambodia Demographic and Health Surveys, 2000, 2005, 2010, 2014

## Several basic documents in Cambodia



- **Guide to Individualized Midwifery Care for Normal Pregnancy and Birth**

- First guide emphasize 'midwifery' in Cambodia
- Focuses on
  - Women-centred care
  - Evidence-based care
  - Continuity of care



## Several basic documents in Cambodia



- **Training curriculum for Health Centre Midwife**

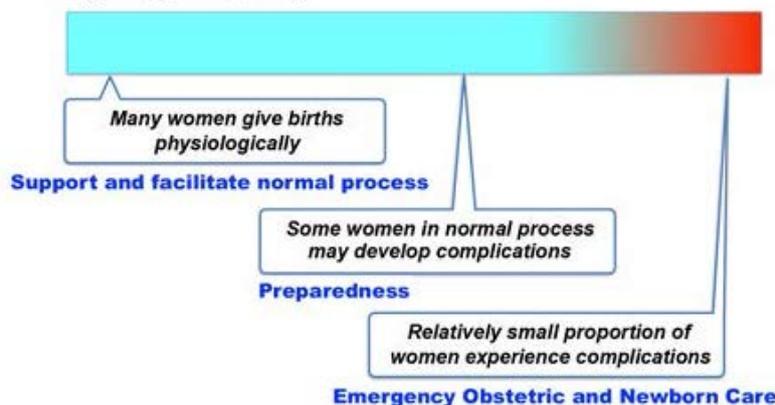
- Integrated document by using previous training materials and guidelines
- Currently under revision process (details will be mentioned later)



## Characteristics of delivery and midwifery care



### Pregnancy & Delivery



## Midwifery practices and its target



### Practices

### Target population

Support and facilitate normal process

Preparedness

Emergency Obstetric and Newborn Care



All pregnant women

Women with complications

## Midwifery practices and principle of evidence-based care



### Practices

### Evidence-based care

Support and facilitate normal process

Preparedness

Emergency Obstetric and Newborn Care



These practices should be provided to those who need them.

## What if ?



### Practices

### Evidence-based care is not provided !

Support and facilitate normal process

Normal physiological process of birth will be disturbed

Preparedness

Possible complications will not be found and treated

Emergency Obstetric and Newborn Care

Complications will become worse and eventually kill women & baby

## Our hypothesis



### Practices

**Support and facilitate normal process**

**Preparedness**

**Emergency Obstetric and Newborn Care**

### Positive consequences

**Number of normal birth with healthy baby will be increased**

**Early detection of complications will be done and treated earlier**

**Complications will be appropriately managed**

*If 'evidence-based care' is appropriately provided, 'outcome of mothers & newborns' will be improved.*

## Summary of previous findings



- **Direct observations of 302 deliveries were performed in health centres (incl. CPA-1 RHs) in Phnom Penh.**
- **Care and intervention during childbirth were not appropriate**
  - Auscultation of FHR (BCF) : 0 - 68%, 1 - 16%
  - Invasive medical interventions : intramuscular injection of oxytocin, fundal pressure, etc.
- **Outcome both for women and babies were unfavourable**
  - Laceration : 3<sup>rd</sup> degree - 13%, 4<sup>th</sup> - 1%, cervical - 3%
  - Acidosis : pH < 7.20 - 20%

## Next steps



- **Additional trainings with continuous support to birth attendants are required:**
  - › **Appropriate observation of foetus during delivery**
  - › **Appropriate management of foetus, if any signs of acidosis found**
  - › **Gentle delivery process to avoid lacerations**
- **Additional training should be based on the existing HC-MW curriculum**

## Revision of curriculum



- Technically supported by NCGM and JICA IIneoC project.
- Financially supported by Toyota Foundation through Nagasaki University.
- Points of revision are:
  - › Updating recent scientific evidences
  - › Make the contents corresponded with other documents (i.e. Safe Motherhood Protocol, WHO guide, etc.)
  - › Observation and assessment methods during labour

## Comparison of the documents



HC-MW curriculum

Safe Motherhood protocol

WHO - IMPAC



## An example of comparison



HC curriculum	-During pregnancy, the woman needs more food more than usual meaning she should have <b>meal 5 times a day including snacks 2 times.</b>
Safe Motherhood	-Advise the woman to eat all kinds of food and many times per day during pregnancy. She should eat <b>four meals a day</b> -Advise the woman that she should <b>gain weight at least 1 kg per month in the 2nd and 3rd trimesters of pregnancy</b>
IMPAC	- Advise the woman to eat a greater amount and variety of healthy foods, such as meat, fish, oils, nuts, seeds, cereals, beans, vegetables, cheese, milk, to help her feel well and strong (give examples of types of food and how much to eat).

## Next steps



- **Plan a short-course (around one week) of assessment of competencies of birth attendants, followed by basic training**
  - **Target population : birth attendants in selected health centers and referral hospitals in Phnom Penh**
- **Ethical approval should be renewed in February 2018**

## Question and Answer

### Q1

When was the data collected?  
(Dr. Ngy Mean Heng, Director of PPMHD)

### Answer

We will finish it in the next year.  
(Dr. Matsui)

### Q2

Is the result bivariate or multivariate analysis?  
(Dr. Ngy Mean Heng, Director of PPMHD)

### Answer

It is multivariate analysis and confounding factors such as socio-economic factors of mothers are adjusted.  
(Prof. MOJI)

### Q3

Do only selected SBAs receive obstetric emergency care training such as BEmOC and CEmOC?

(Dr. Matsui)

### Answer

We have to select SBAs from health facilities though we would like to train all of them. We do not have enough resources. Emergency obstetric service is available in only 180 health facilities. SBAs in non-EmOC health facilities also need to have training to transfer patients to EmOC health facilities.

(Prof. Rathavy)

# 4

## Progress of research activities on follow up for chronic malnutrition among children in Steung Trang district, Kampong Cham province



Dr. Azusa Iwamoto

National Center for Global Health and Medicine, Japan

Ms. Asuka Miyazaki

Nagasaki University

School of Tropical Medicine and Global Health



### NHAM survey !

(Nutrition for Health of Acha-cha and Mothers)



### Background

- Child mortality in the world has been decreasing consistently. However, around 5.9 million children died in 2015 and 45% of them were with malnutrition (WHO,2015).
- Malnutrition during 'the first 1000 days' (from pregnancy period to two-year- old of the child) crucially affects physical and mental development, performance in the long perspective.
- Cambodian Demographic and Health Survey in 2014 said 24% children under-five-years-old were underweight (low weight-for-age: WFA) and 32% were stunted (low height-for-age: HFA).
- Factors that influence on **chronic malnutrition\*** especially in transition period from neonatal to infant age has been still unknown.
- There are various factors which induce/determine the significance of chronic malnutrition. Therefore, countermeasure against chronic malnutrition with multi-sectorial cooperation is recognized as a difficult challenge until now.



**\* Chronic malnutrition :**  
Children whose height-for-age Z score is below -2SD from the mean of the reference population of WHO child growth standards (stunting) (CDHS,2014)

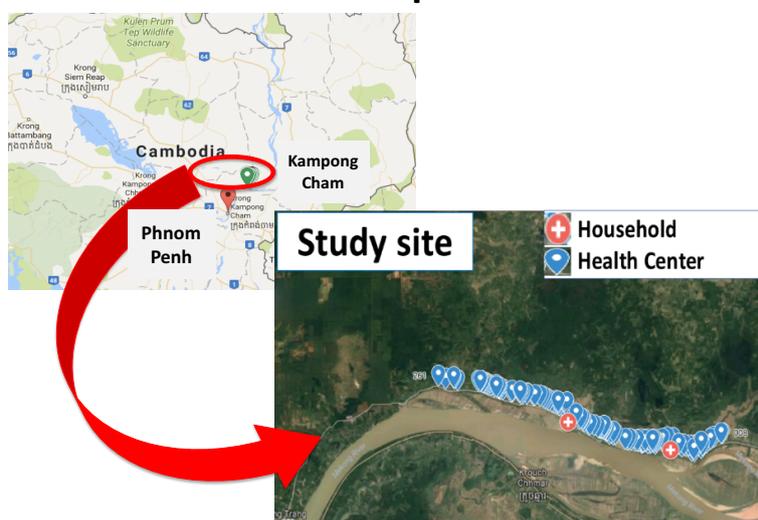
## Objective

- This research aims to grasp the real situation of chronic malnutrition among children until two-years-old in rural Cambodia.
- To detect factors, which influence on the occurrence of child malnutrition, we have launched a prospective cohort study in 12 villages of Stung Trang in Kampong Cham.
- This is a report of birth cohort study which we started to register all newborn infants since 1 April 2016.
- In addition, we will report the living environments of children and associate factors with child malnutrition, base on a cross-sectional study.

## Method for cohort study

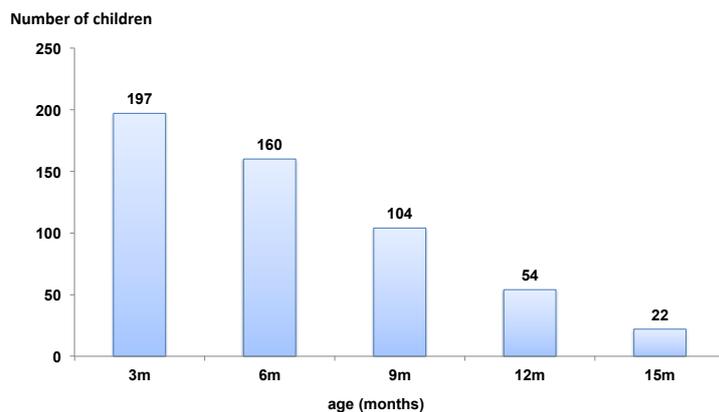
- The survey team visited all households of children under two-years-old in 12 villages covered by two health centers in Stung Trang, Kampong Cham.
- The survey team measured weight and height of children and interviewed their caregivers about their feeding practices and health conditions, after getting informed consent, every three months.
- Using the soft (WHO Anthro Version 3.2.2), we described nutritional status for age (months) and sex.
- All collected data was analyzed with STATA software (STATA 14).
- This study was approved by both ethical committees of the Ministry of Cambodia and NCGM.

## Map



## Result (1) Number of follow-up visits

(by August 2017)



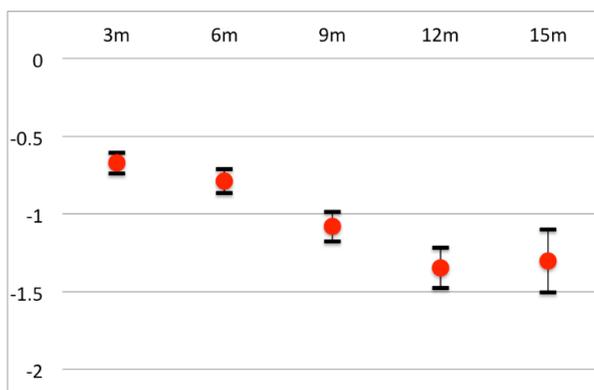
## Definition

- **Underweight:**  
Children whose weight-for-age Z score is below -2SD from the mean of the reference population of WHO child growth standards
  - **Stunting:**  
Children whose height-for-age Z score is below -2SD from the mean of the reference population of WHO child growth standards
  - **Wasting:**  
Children whose weight-for-height Z score is below -2SD from the mean of the reference population of WHO child growth standards (CDHS,2014)
- Z-score: degree of SD (standard deviation) below/above from mean of the reference population
  - Malnutrition: when Z-score is below -2SD
  - WAZ: Z-score of weight-for-age
  - HAZ: Z-score of height-for-age
  - WHZ: Z-score of weight-for-height



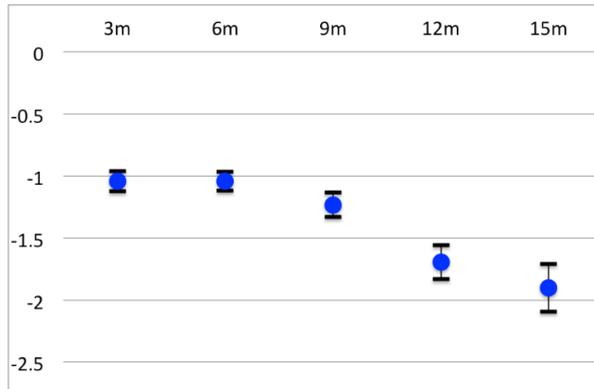
## Result(2) Comparison of WAZ

by age-group (months)



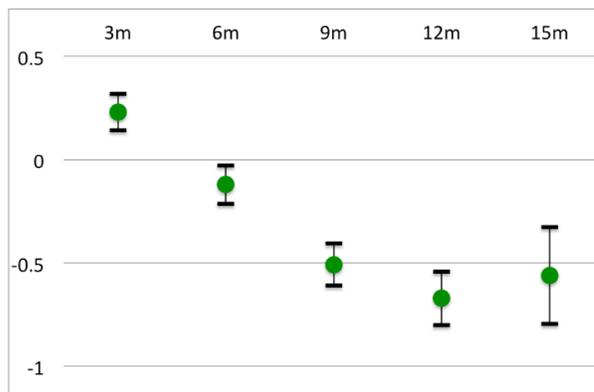
Values are shown in mean +/- SE

### Result(3) Comparison of HAZ by age-group (months)



Values are shown in mean +/- SE

### Result(4) Comparison of WHZ by age-group (months)



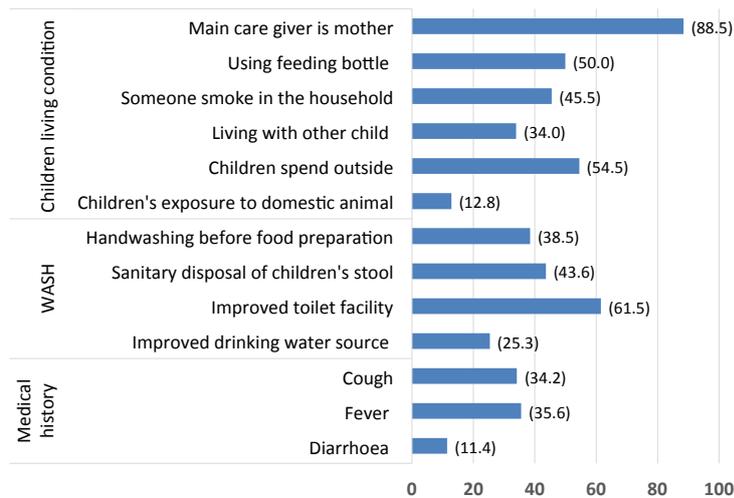
Values are shown in mean +/- SE



## Risk factors on child malnutrition *results from a cross-sectional survey in 2017*

MIYAZAKI Asuka  
Nagasaki University School of Tropical Medicine and Global Health

## Result (5) Living Environments of the children



## Results (6) Associate factor in child nutrition

Negatively affecting factors	Coefficient	95% CI
Age	-0.12	[-0.19, -0.06]
Living with other child aged less than 5 years	-0.39	[-0.80, 0.00]
Using a feeding bottle	-0.50	[-0.90, -0.10]

Positively affecting factors	Coefficient	95% CI
Hand washing with soap before food preparation	0.42	[0.05, 0.79]

Factors with no association with malnutrition	Coefficient	95% CI
Sex [male]	-0.05	[-0.40, 0.30]
Socio-economic status [lowest quintile group]	-0.23	[-0.69, 0.23]
Recent medical history [cough]	-0.32	[-0.70, 0.06]

## Conclusion

- The prevalence of malnutrition gradually increased as children grew up.
- In our cohort study, we could not find significant difference between boys and girls as there were in our cross-sectional survey in 2016.
- In a cross-sectional study by Ms.Miyazaki, we identified 'living with other children aged less than five-year', 'using a feeding bottle', and 'no washing hand with soap always before food preparation' as risk factors of child malnutrition.

## **Future plan for our cohort study**

- **We could not obtain enough number of data especially for the children more than one-year old.**
- **We will add more results from September 2017 to March 2018 (seven months).**
- **We want to continue the registration until the total target number will be 500. By increase of total number, we will be able to grasp the real situation easier than now.**
- **In the future, we also want to know the risk factors for each individual child's growth and development.**

## **Notes**

- **This research was supported by the Grant for NCGM (27-5).**
- **A part of this study has been conducted in collaboration with Nagasaki university, London School of Hygiene and Tropical Medicine, and East Anglia University.**

# 5

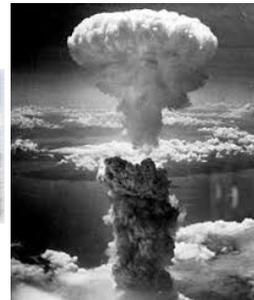
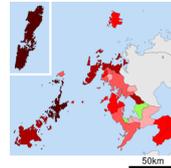
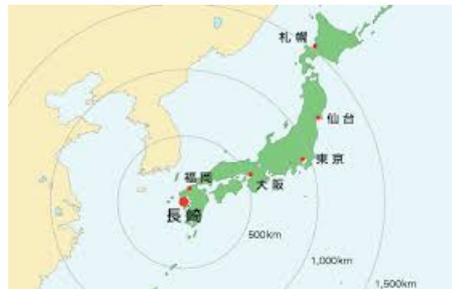
## Scope of collaborative research between NMCHC, NCGM and Nagasaki University



Prof. Kazuhiko Moji

Nagasaki University

School of Tropical Medicine and Global Health



### **Nagasaki University (since 1857)**

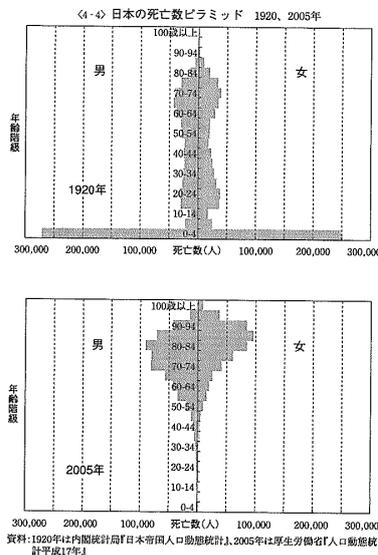
- 1857 Dr. Pompe open the first medical school in Nagasaki
- 1942 Institute of Endemic Diseases
- 1967 Institute of Tropical Medicine
- 2006 Master Course of Tropical Medicine 12 x 1yr
- 2008 Master of Public Health (IHD) 10 x 2 years
- 2010 Collaboration with NCGM
- 2015 School of Tropical Medicine and Global Health
- 2017 Satellite campus at NCGM (Tokyo) +10
- 2018 PhD in Global Health (from October)

## New Nagasaki University Graduate School of Tropical Medicine and Global Health

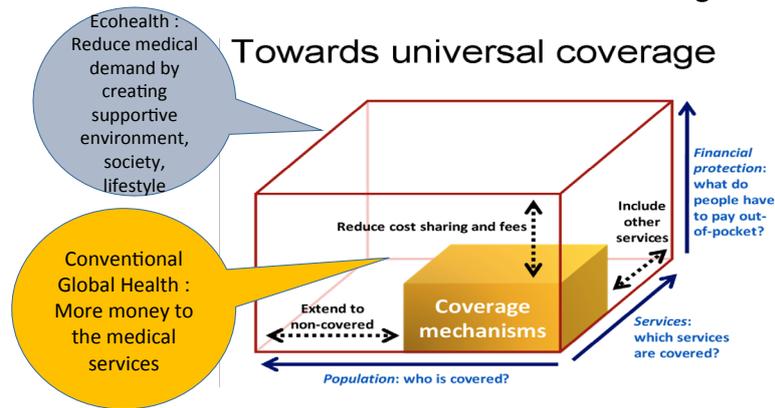
Course	Degree	# Students	Year	AP	Language	Entrance	Field study
Tropical medicine	Master of Tropical Medicine	12+α	1	MD	English	October	+
Health innovation	Master of Science	5+α	2	-	English	October	+
International Health Development	Master of Public Health	10+α	2	-	English	October	1+8 months

## Nagasaki University School of Tropical Medicine and Global Health

- Established in 2015 (Still new!). All in English
- Three courses and degrees (MTM, MPH, MSc)
- Integration of Research, Education, and Practice
- Solution-oriented, field-oriented (MPH 2nd yr)
- Collaboration with NCGM (Satellite)/JICA
- Collaboration with London LSHTM for JD-PhD
- Accepting 2 MPH JDS students annually from Cambodia since 2018.
- Maternal & Child Health/Gender has priority.
- Collaboration in MCH in Cambodia (NCGM, etc.)



**Universal Medical Coverage  
vs. Universal Health Coverage**



**Different approach to health: Global Health Vs EcoHealth**

**Conclusion**

More collaboration  
on  
**Science/Research,  
Education/Capacity Building,  
Service Implementation/Improvement,**  
on  
MCH + Alfa  
among  
NMCHC, NCGM, NU-TMGH + others  
in  
Cambodia

Thank you for your attention!



# Closing Remarks

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We shared the achievements of the cooperation between both NMCHC and NCGM as well as among other institutions in this meeting. We have worked together with JICA, Nagasaki University, Phnom Penh and provincial health departments, SCGO and Japan Society of Obstetrics and Gynecology, and factories. We get better results if we work together. We can continue the good experiences and findings which are recommend today for further expansion.

I wish all of you good luck and health in New Year, 2018.

Prof. Tung Rathavy

Director,  
National Maternal and Child Health Center (NMCHC)  
Ministry of Health, Cambodia



NMCHC-NCGM

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**The 6th Joint Technical Meeting between  
National Maternal and Child Health Center and  
National Center for Global Health and Medicine**

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