

**Thailand – Japan
Research Collaboration
on Emerging and Re-
emerging Infections**

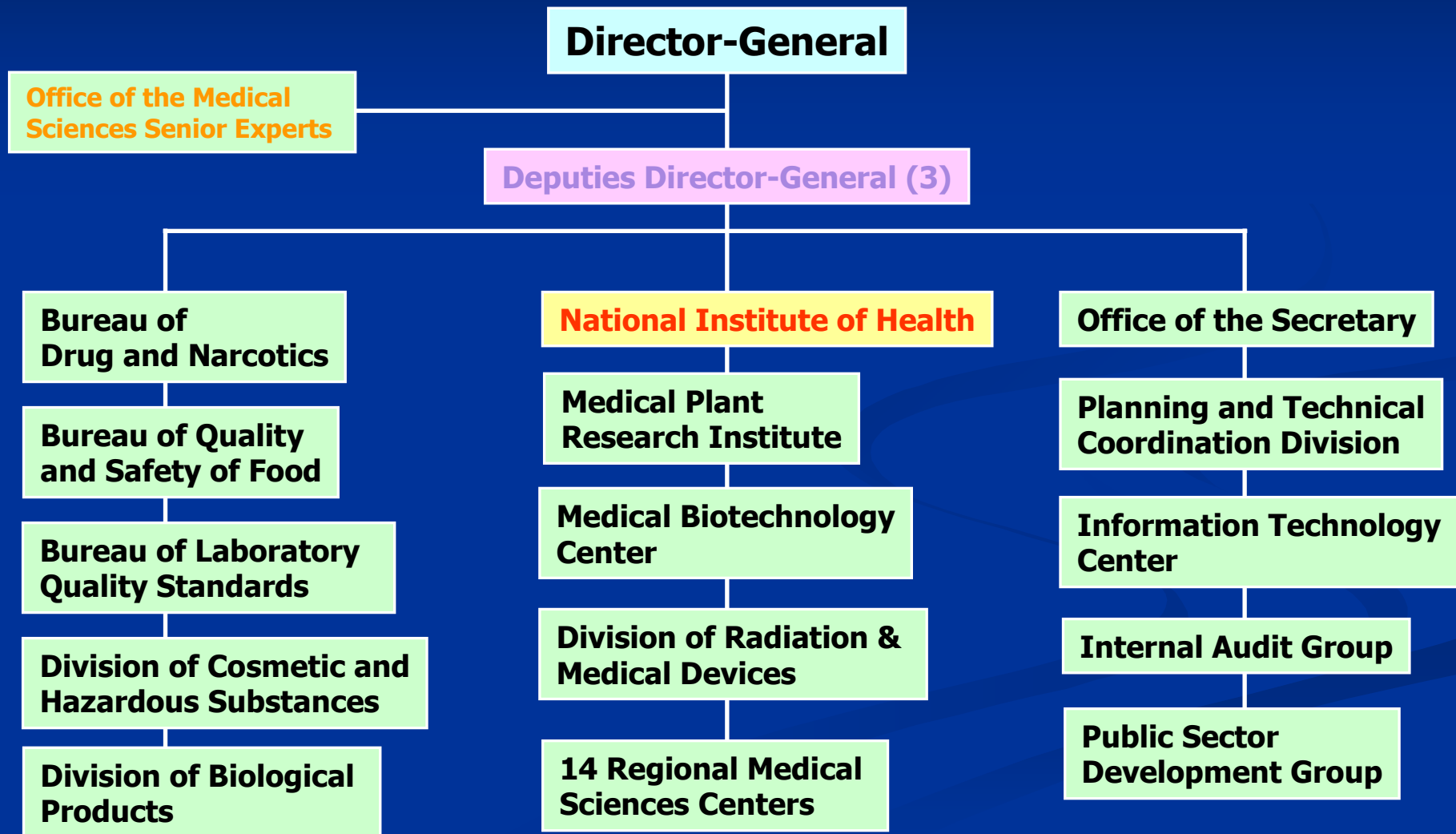
Thailand – Japan Research
Collaboration Center on Emerging and
Re-emerging Infections (RCC-ERI)

Major Emerging and Re-emerging Infections of Thailand

- Avian Influenza
- SARS
- HIV
- Multi-drug Resistant TB
- Botulism
- Hand-Foot-Mouth
- Dengue Haemorrhagic Fever

Department of Medical Sciences is one of the six departments within the Ministry of Public Health of Thailand.

Organization of the Department of Medical Sciences



Roles of DMSc concerning Emerging and Re-emerging infections

- National reference laboratories for clinical diagnoses and epidemiological studies of infectious and non-infectious diseases (including toxicology)
- Conducts and co-ordinates laboratory research projects for reference lab and product development, e.g. test methods, test kits, vaccines

Research facilities for infectious diseases

The National Institute of Health has laboratories for conducting research in virology, bacteriology, mycology, parasitology, immunology, and radioisotopic assays. Present in these laboratories are essential equipment for research in infectious diseases such as biosafety cabinets, autoclaves, CO₂ incubators, microscopes (including scanning and transmission electron microscopes), PCR machines, DNA sequencers, FACS machines, beta counters and biosafety level-3 containment laboratories for in vitro and in vivo experiments

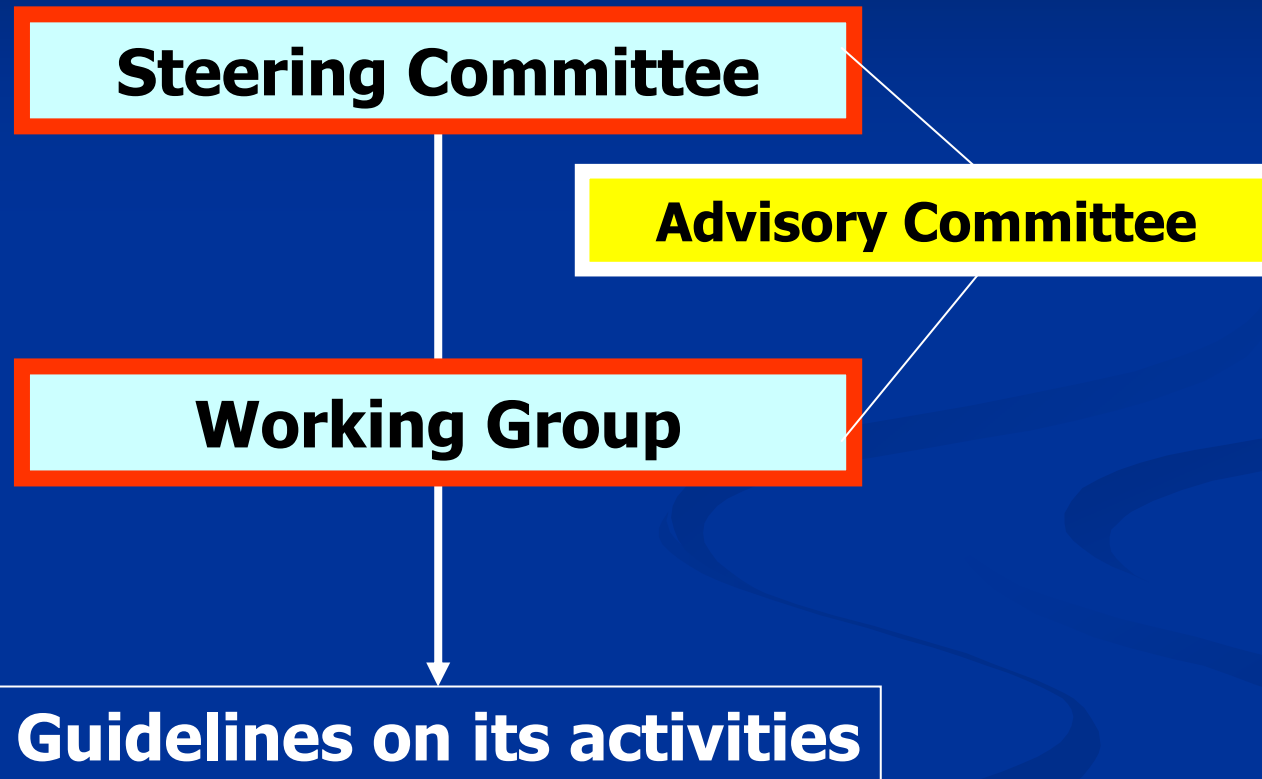
Thailand – Japan collaborations from past to present

- **JICA** = technology transfer by experts; fellowships for training in Japan, and provision of scientific equipment (bought in Japan and sent over to Thailand – no after sales services)
- **SEAMIC** = organize workshops in Thailand with some Japanese experts
- **JST** = research collaboration in the Development of Prime/Boost HIV Vaccines
- **RCC-ERI** = research collaboration on Emerging and Re-emerging Infections

- Memorandum of Academic Exchange
between DMSc and Osaka University, August
29, 2005

- Memorandum of Agreement between DMSc
and RIMD of Osaka University
December 3, 2005

Management of RCC-ERI



Roles of Committees and WG

- *Advisory Committee (6 experts)*
 - Provide overall direction and oversee
- *Steering Committee (Co-chaired by DG and Director of RIMD)*
 - Approve principles of collaboration
 - Approve Five-Year Strategic Plan
- *Working Group (Co-chaired by Thai-side and Japanese-side Directors)*
 - Approve specific projects
 - Manage the projects

Organization

- **RCC-ERI Administration:**

Professor Yoshitake Nishimune
Japanese-side Director

Dr. Pathom Sawanpanyalert
Thai-side Director

RCC Sections:

1) Research on Bacterial Infections

Associate Professor: Toru Taniguchi

Postdoctoral Fellow: Kazuhisa Okada

Research Fellows: Yukari Tanaka , Orapim Puiprom

2) Research on Viral Infections and HIV/AIDS

Associate Professor: Masanori Kameoka

Assistant Professor: Takeshi Kurosu

Postdoctoral Fellow: Yong-Gang Li

Research Fellows: Piraporn Utachee, Piyamat Jinnopat, Panjaporn
Chaichana

3) Research on Bioinformatics

Professor: Yoshitake Nishimune

Postdoctoral Fellow: Uamporn Siripanyaphinyo

Research Fellow: Udayanga Chandimal de Silva

Research Projects under RCC-ERI

(1)

Bacterial Groups:

- Application and Development by using principle of LoopAMP and PCR method for detection the pathogenic bacteria in specimens in Thailand
- Development of Immunological-based rapid diagnostic kit for differential detection of enteropathogenic bacteria
- Epidemiology study of contributing factors in the development of gastric cancer initiated by *Helocobacter pylori* infection

Research Projects under RCC-ERI

(2)

Bacterial Groups:

- Application of loop-mediated isothermal amplification (LAMP) on the rapid detection and discrimination of pathogenic mycobacteria
- Impact of respiratory virus-bacteria-host interaction on the occurrence and outcome of acute lower respiratory infections
- Molecular epidemiology of *Mycobacterium avium* complex (MACS)

Research Projects under RCC-ERI

(3)

Viral Groups:

- Research and development of diagnostic kits for detection of antibody and antigen of Avian Influenza virus by ELISA
- Study on molecular mechanism of HIV-1 replication
- Characterization of dengue virus spreading in Thailand
- Antigenic and genetic characterizations of rotavirus, norovirus and sapovirus in Thailand

Research Projects under RCC-ERI

(4)

Viral Groups:

- Study on viral evolution in HIV-1 infected individuals living in Chiang Rai Province, Thailand
- Genotypic and phenotypic characterization of human isolates of influenza A viruses (H1, H3 and H5) in Thailand

Research Projects under RCC-ERI

(5)

Viral Groups: (these two projects are going to accomplish)

- Evaluation of rapid test kit (Japan) for detection of influenza A, B and A/H5
- Study on prevalence of hepatitis E virus in pigs, rodents and sewage water from Nakhon Pathom and Ratchaburi of Thailand

Research Projects under RCC-ERI

(6)

Bioinformatics Groups:

- Structural study on the drug targets of HIV-1 isolated from Thailand
- Genomic analysis of HIV-1 samples collected from different districts in Thailand

Expectations from DMSc on RCC- ERI Project (1)

- Japanese and Thai NIH researchers sharing the research work, i.e., can divide the work into different parts and each side handles separate parts or some Thai NIH researchers working together with the Japanese researches.
- Both sides can benefit from the microorganisms indigenous of Thailand and not merely collecting and shipping indigenous microorganisms to Japan.

Expectations from DMSc on RCC- ERI Project (2)

- The research projects should be initiated equally by both sides. [Not all initiated by the Japanese side.]
- Both sides should monitor the project together by using the Working Group Committee as the mechanism, so as to adhere to the terms of the MOA

Let us try to make
Science a virtue to
mankind, rather than a
vice!