



MULTIDISCIPLINARY COLLABORATION OF THAILAND ONE HEALTH UNIVERSITY NETWORK, RESPONDING TO EMERGING AND RE-EMERGING DISEASES: LESSON LEARNED AND ACHIEVEMENTS

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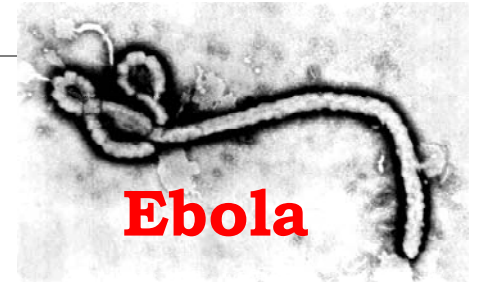
WORLD CHALLENGES

NIPAH

WEST NILE

HANTAVIRUSES

INFLUENZA

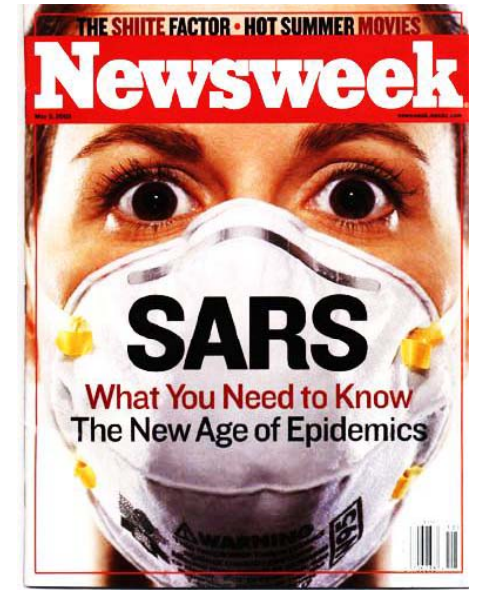


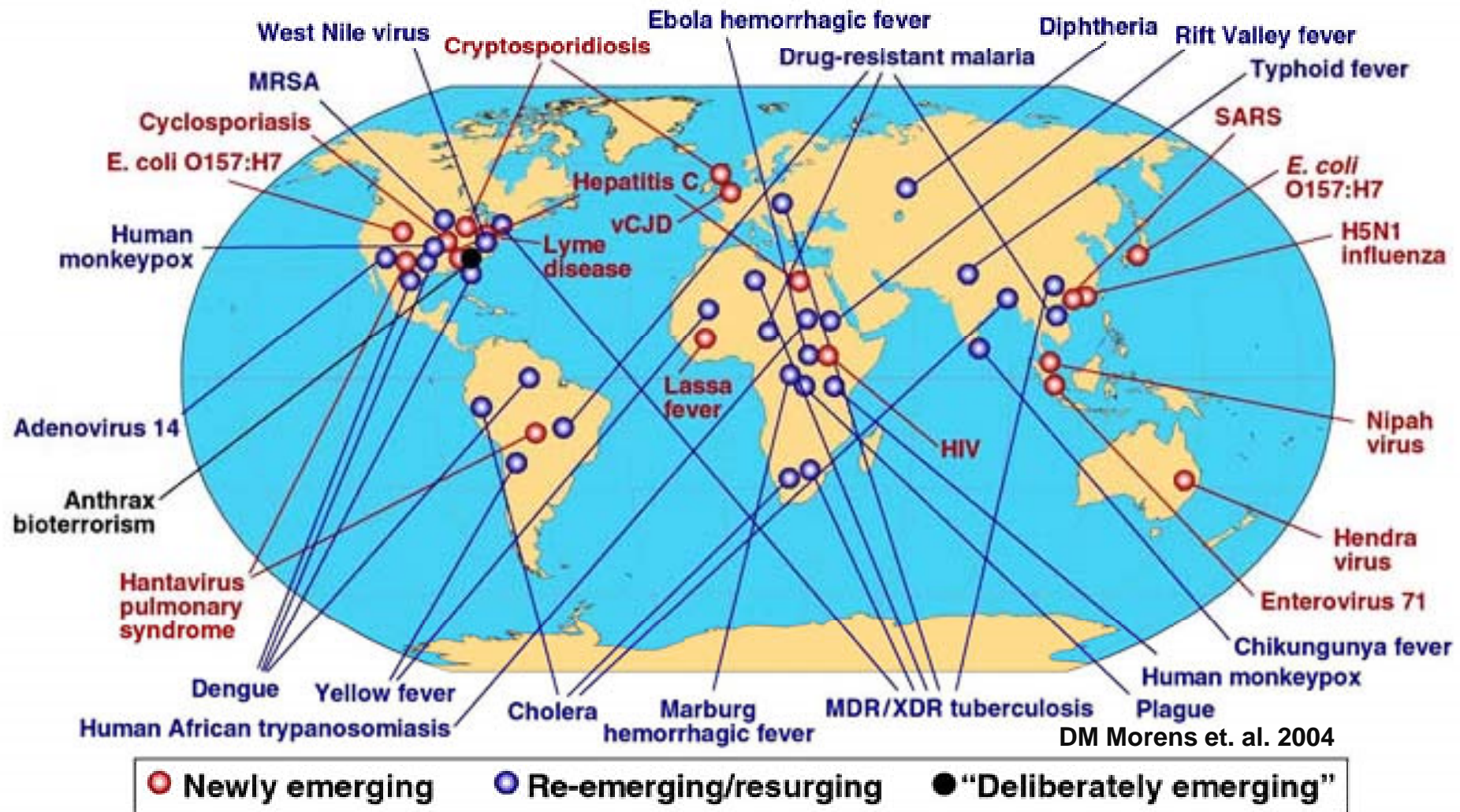
Ebola



GREENPEACE

<http://www.nature.com/news/sars-veterans-tackle-coronavirus-1.11513>. <http://www.utmb.edu/virusimages/>







The Emerging Pandemic Threats (EPT) program strengthens capacities in developing countries to prevent, detect, and control infectious diseases in animals and people with an emphasis on early identification of, and response to, dangerous pathogens from animals before they can become significant threats to human health.



ONE HEALTH

Intersectional approach

The One Health approach is primarily preventive and seeks to address public health threats at the source. (<http://www.phac-aspc.gc.ca/owoh-umus/>)

The collaborative effort of multiple disciplines -working locally, nationally, and globally to attain optimal health for people, animals and the environment. (The American Veterinary Medical Association)



Approach as the integration of a multi-sector approach to public health objectives (EPT-USAID)



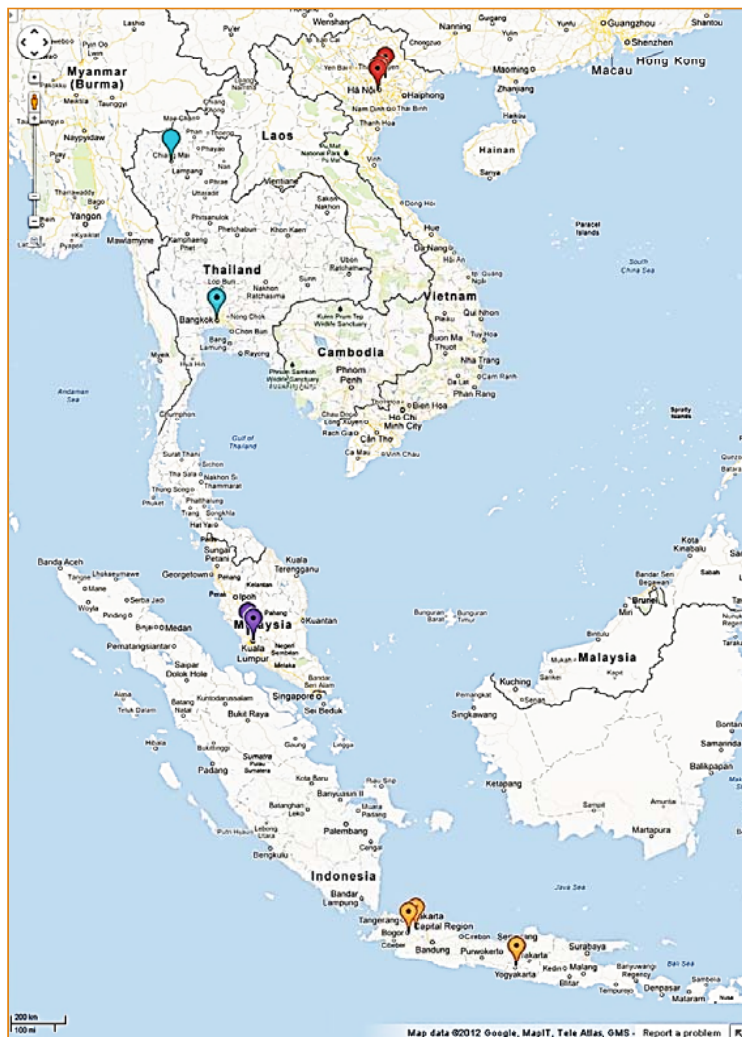
SEAOHUN
South East Asia One Health
University Network



SEAOHUN

**South East Asia One
Health University Network**
was formally established
in December 2011.





SEAOHUN Core Universities

-  Hanoi School of Public Health
-  Hanoi Medical University
-  Hanoi University of Agriculture
-  Chiang Mai University
-  Mahidol University
-  Universiti Kebangsaan Malaysia
-  Universiti Putra Malaysia
-  Institut Pertanian Bogor
-  Universitas Indonesia
-  Universitas Gadjah Mada



Financial support by DAI Inc. under the sponsorships of RESPOND-USAID, as part of the EPT program. 18-19 August, 2012. The Grand Sukhumvit Hotel, Bangkok

JITMM 2014. Towards Global Health: an Asian Paradigm of Tropical Medicine



VISION

Strong and Sustainable One Health Thai University Network throughout the country by 2017

MISSIONS



1. Build, develop, and expand the One Health University Network of Thailand.
2. Develop and exchange of skilled One Health professionals between universities and involved agencies
3. Support trans-disciplinary collaboration within and between universities and involved agencies
4. Promote research work using the One Health approach to promote the health of humans, animals and environment
5. Coordinate with other related One Health Networks in Asia

SUCCESS STORIES of THOHUN



SUCCESSFUL RESPONSE

MULTI-DISCIPLINARY COLLABORATION

FIELD EXPERIENCE

ONE HEALTH

THAILAND ONE HEALTH UNIVERSITY NETWORK

FACULTY OF TROPICAL MEDICINE AND THOHUN-ACD MAHIDOL UNIVERSITY 420/9 Ratchawithi Road, Ratchathewi, Bangkok 10400, Thailand www.thohun.org

SEPTEMBER 24-27, 2013

SAIYOK KANCHANABURI

INTEGRATION OF ONE HEALTH INTO THE FIELD BASED LEARNING

For 1st year Ph.D. and M.Sc. students in Tropical Medicine, Public Health, Nursing, Veterinary Science



02/12/2012 11:00

Leptospirosis: A good model for a One Health approach

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¹The Monitoring and Surveillance Center for Zoonotic Diseases in Wildlife and Exotic Animals (MoZWE), Faculty of Veterinary Science, Mahidol University, Thailand.

Background

Leptospirosis is a highly infectious zoonotic disease affecting humans and animals. The causative agent of the disease is a spirachete belonging to the genus Leptospira. Although Leptospira are maintained naturally in the environment and genetic hosts of related species, the organisms are shed through urine with high concentrations and are shed through urine with high concentrations into surface water streams and rivers, infection of animals in human occur by direct contact with infected urine or indirectly from contaminated environment. The animals considered as common reservoirs of Leptospira are cattle, pigs, dogs, horses, buffaloes and goats. Among these reservoirs, cattle are well-recognized carriers of the disease and they are the major animal species that can shed Leptospira throughout their lifetime without clinical manifestations, in contrast, accidental hosts such as humans can suffer from acute but sometimes fatal infection (Fig. 1). Leptospira infection worldwide is a most common zoonotic and zoonotic area with high impact. Since leptospirosis affects humans, animals and environment a One Health approach can be applied for this zoonotic. In the present study, we reported Leptospirosis in dogs which are zoonotic animals that are closely to humans and have a role for Leptospira transmission.

Method

The suspected cases of dogs for leptospirosis were recruited from small animal hospital of Faculty of Veterinary Science, Mahidol University during May to October 2012. Urine samples for leptospirosis were collected at a diagnostic laboratory of the Monitoring and Surveillance Center for Zoonotic Diseases in Wildlife and Exotic Animals (MoZWE), Faculty of Veterinary Science, Mahidol University. Canine urine samples were collected from suspected dogs and all collected samples were processed within 48 hours. Amplification of IS490, LipL32 and LipL41 genes by conventional PCR were employed to detect Leptospira DNA in canine urine samples.

Results

The total of twenty-nine urine samples from suspected dogs were submitted to Leptospira detection during May to October 2012. Of these twenty-nine, ten and sixteen canine urine samples were submitted during only season (May-July) and non season (Aug-Oct), respectively. Only three of these sixteen canine urine samples (23.8%) in the non season cases were positive with Leptospira. Leptospira species by PCR, the amplified partial gene of IS490, LipL32 and LipL41 of Leptospira detected from each positive urine sample were highly confirmed by sequencing. The identities of Leptospira Leptospira in canine urine samples during previous season (May-July) and non season (Aug-Oct) was summarized in Table 1.

Species	Number of samples	Number of positive ^a	Specificity
Leptospira	20	3	15
Leptospira	10	1	10
Total	20	3	15

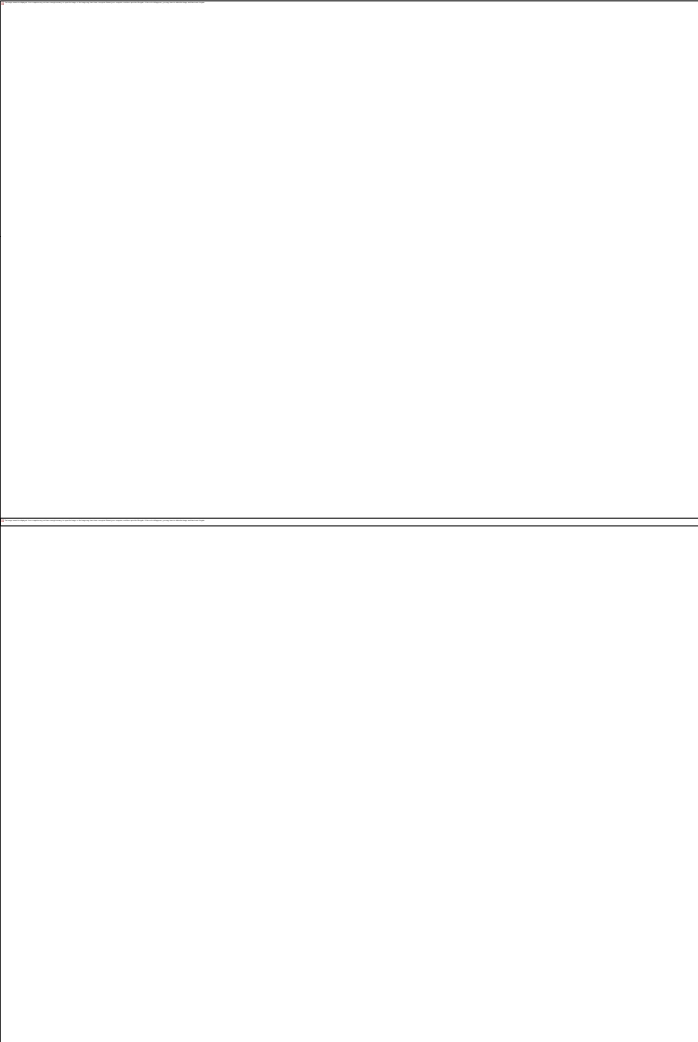
^aNumber of samples that were positive by IS490, LipL32 and LipL41 PCR

Discussion

Our study showed the positive cases of Leptospira infection in dogs which are significant in the area of public health and zoonotic disease. The presence and detection of Leptospira in the environment will provide important information about the transmission route. The Leptospira infection in dogs is an important zoonotic disease and the detection of Leptospira in dogs should be considered as a public health problem. The detection of Leptospira in dogs should be considered as a public health problem. The detection of Leptospira in dogs should be considered as a public health problem.

USAID Emerging Pathogens Threats Program

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Core Competencies are defined as knowledge, behaviors, and attitudes needed by every member of a One Health outbreak team for prevention, surveillance, or response.

OHCC Regional Domains by Country July 2012 Workshop Results

**SEAOHUN
Regional
Domains
October 2012**



Malaysia	Indonesia	Thailand	Vietnam	SEAOHUN Regional Domains October 2012
Management	Management	Planning and Management	Planning and Management	Management
Communication	Communication	Communication and Informatics	Communication and Informatics	Communication and Informatics
Culture and Belief	Culture and Belief	Culture and Ethics	Culture and Beliefs	Culture and Beliefs
Leadership and Professionalism	Leadership and Professionalism	Leadership	Leadership	Leadership
Collaboration and Partnership	Collaboration	Collaboration and Partnership	Collaboration and Partnership	Collaboration and Partnership
Ethics	Values and Ethics		Values and Ethics	Values and Ethics
Systems Thinking	Systems Thinking	Systems Thinking	Systems Thinking	Systems Thinking
		One Health Knowledge	Policy, Regulation and Advocacy	



ONE HEALTH SHORT COURSES

15 Modules

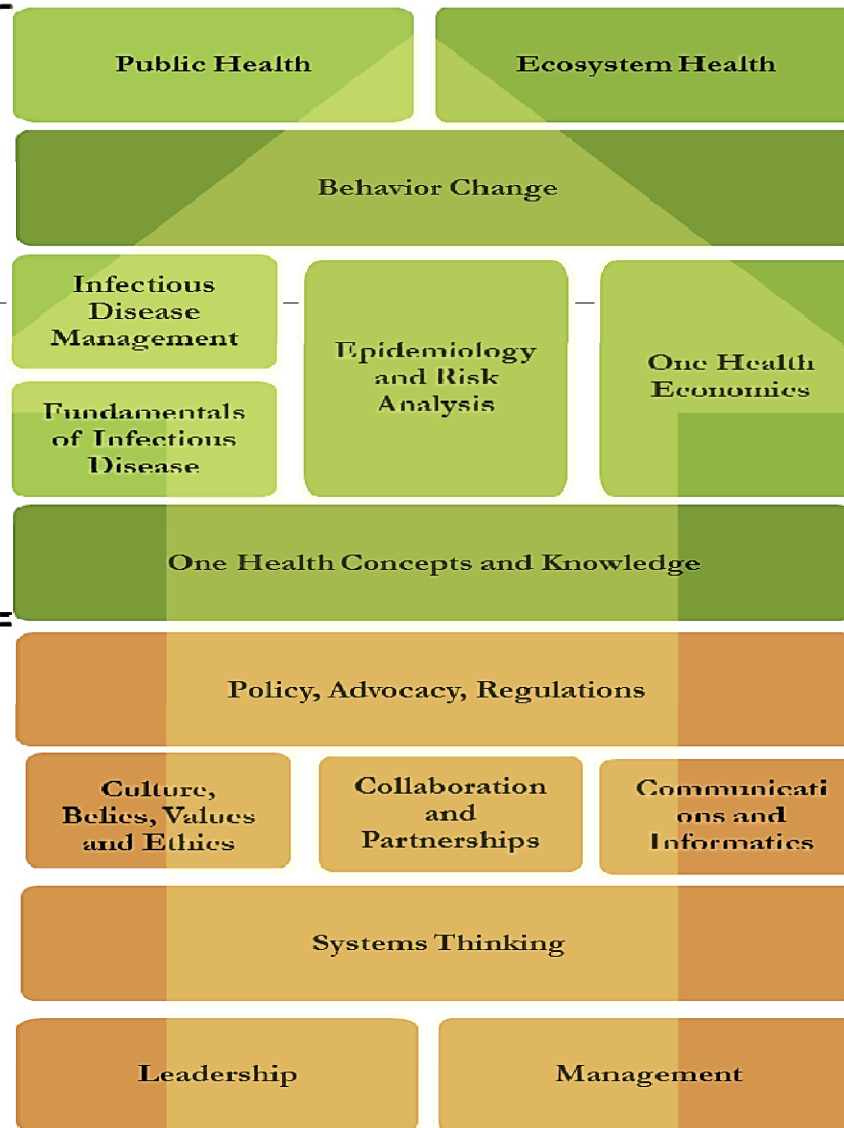
SEAOHUN One Health Technical Competencies

Dr. Abu Tholib Aman,
Mr. Irwin Fernandez Chavez
Dr. Jeein Chung
Dr. Ede Surya Darmawan,
Dr. Stanley Fenwick
Ms. Louise Flynn
Dr. Karin Hamilton
Dr. Latiffah Hassan
Ms. Kimberly Kennedy
Dr. Nongyao Kasatpibal

Dr. Sumalee Lirtmunlikaporn
Dr. Roslaini Bin Abd. Majid
Dr. Mohd Rizal Abdul Manaf
Dr. Walasinee Moonarmart
Dr. Saengduen Moonsom
Ms. Pornthip Rujisatian
Dr. Sarmin MP,
Dr. Pham Hong Ngan
Dr. Felicia Nutter
Dr. Kriangkrai Thongkorn

Dr. Mohd Sham Bin Othman
Dr. Pham Duc Phuc
Dr. Trioso Purnawarman
Dr. Jennifer Steele
Dr. Agik Suprayogi
Ms. Roberta Talmage
Dr. Metawee Thongdee
Mr. Luu Quoc Toan
Dr. Ronald Enrique Morales Vargas
Dr. Le Thi Huong

SEAOHUN One Health Core Competencies



ONE HEALTH SHORT COURSES

15 Modules

<http://seahunonehealth.wordpress.com/leadership/>

2013/Introduction

2013/Facilitator's guide

2013/Student guide



LEADERSHIP



LEADERSHIP





SEPTEMBER 24-27, 2013

SAIYOK KANCHANABURI

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of Ph.D. and M.Sc. students in Tropical Medicine, Public
Health, Nursing and Veterinary Science

SUCCESSFUL RESPONSE

MULTI-DISCIPLINARY COLLABORATION

FIELD EXPERIENCE

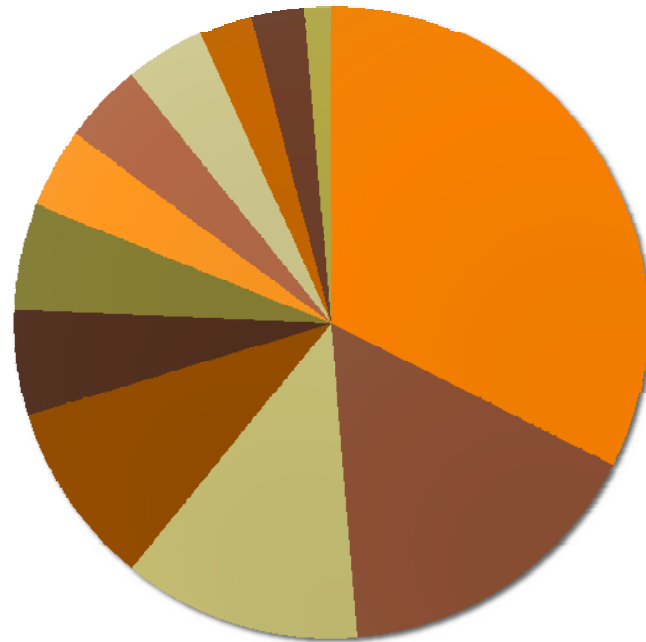
ONE HEALTH

THAILAND ONE HEALTH UNIVERSITY NETWORK

**FACULTY OF TROPICAL MEDICINE AND THOHUN-NCO
MAHIDOL UNIVERSITY**



Fields of study



- 24 Tropical Medicine
- 12 Veterinary Science/Medicine
- 9 Microbiology and Immunology
- 7 Public Health
- 4 Helminthology
- 4 Protozoology
- 3 Biotechnology





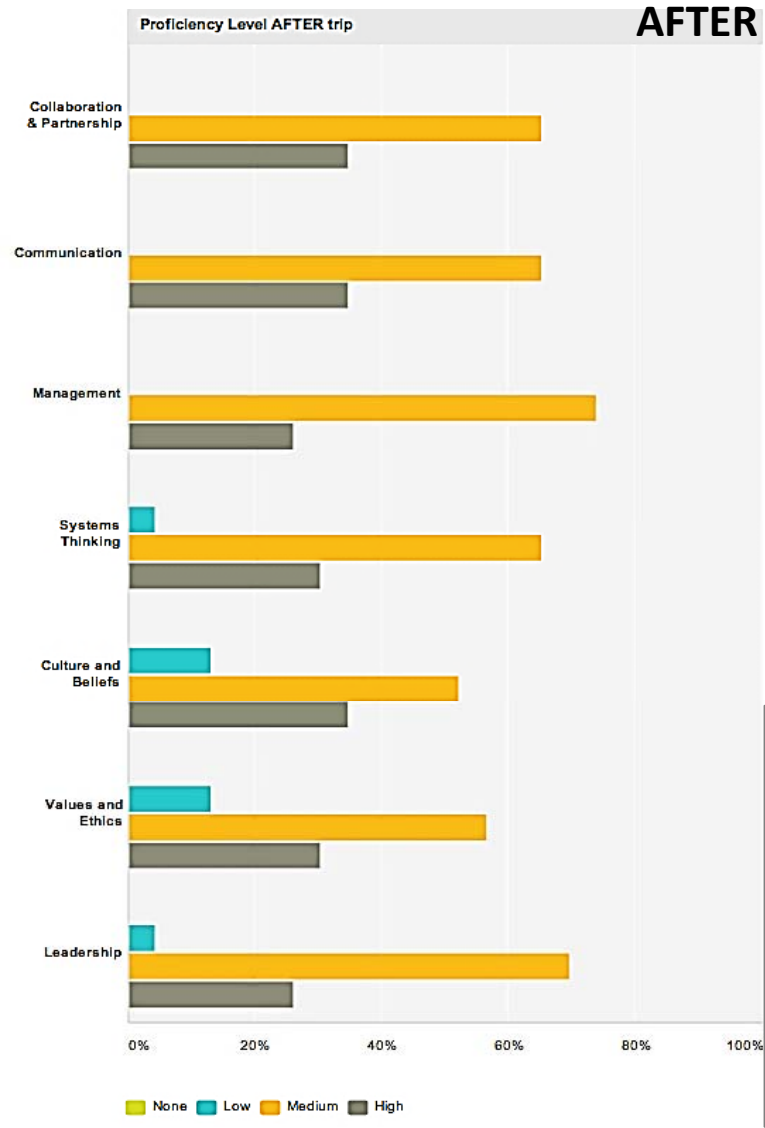
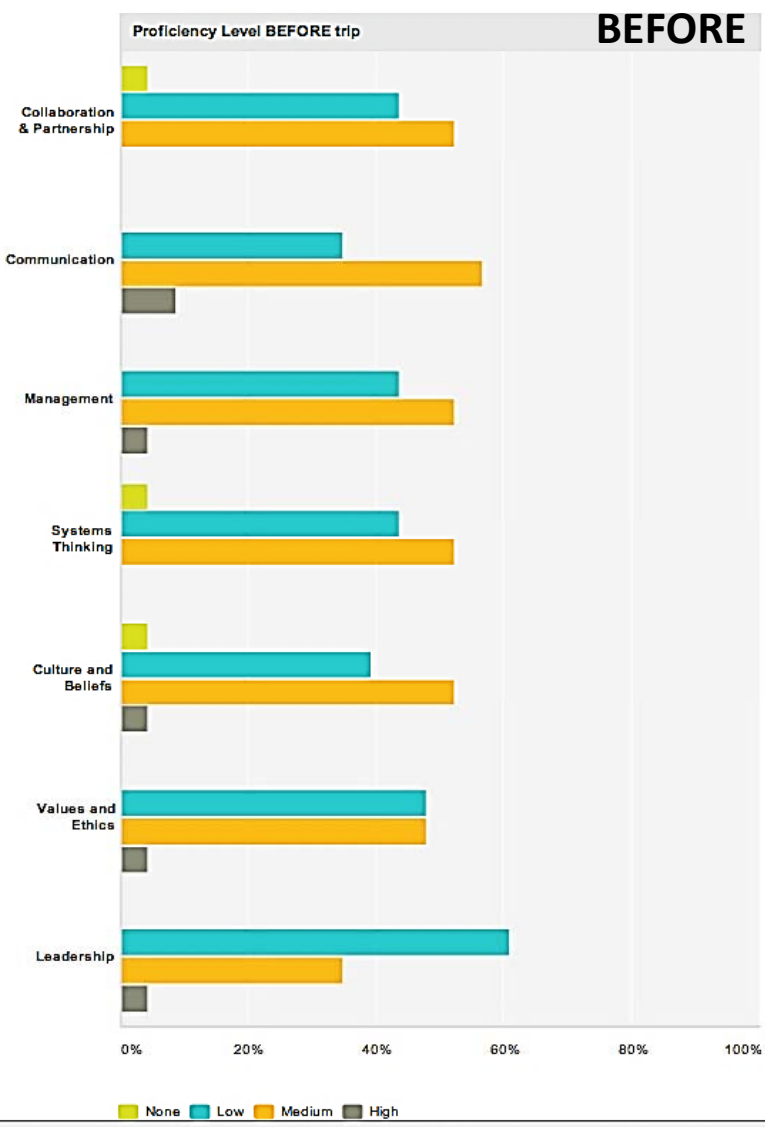
JITMM 2014. Towards Global Health: an Asian Paradigm of Tropical Medicine

Acknowledgments



From left to right: Karin, Saengduen, Amy and Poom

1. Dr. Karin Hamilton and Ms. Amy Pekol who designed and analyzed both pre- and post-evaluation for the program and student learning. We are very appreciated by the success story entitled **One Health Field Experience, Tropical Medicine Course**
2. Dr. Jeein Chung
3. David W. Chapman, Birkmaier Professor of Educational Leadership
4. DAI-RESPOND-USAID



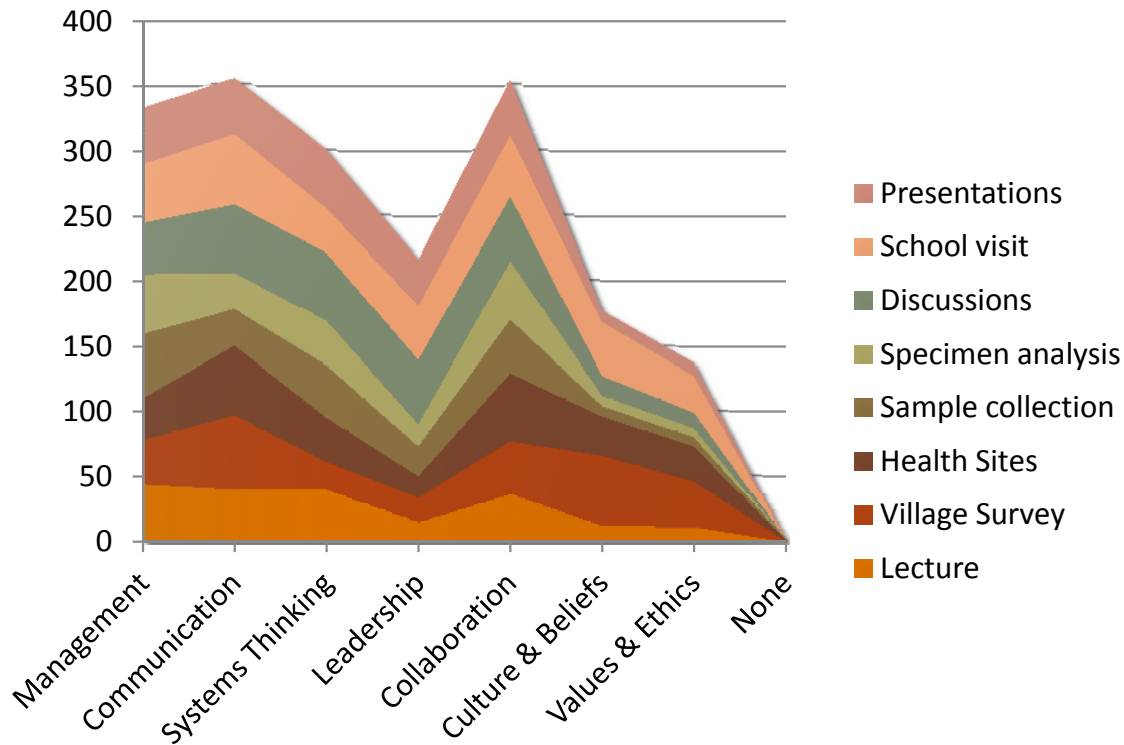
Greatest Gains:

Overall, students reported greater proficiency in all OHCC domains as a result of this trip.

The OHCC domain areas of **Collaboration & Partnership**, **Communication**, and **Management** showed the most significant gains from day 1 to day 4.

Still Developing:

Though much improved, proficiency in the areas of **Culture & Beliefs**, **Values & Ethics**, **Systems Thinking**, and **Leadership** remains low in comparison.



High Performing Activities:

The **primary school visit, group discussions, village survey, and group presentations** addressed the greatest number of OHCC domains (4-5 OHCCs each).

The **primary school visit, group discussions, and village survey** received the most votes for addressing OHCC domains.

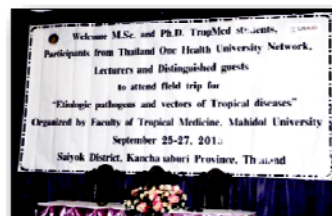


RESPOND SUCCESS

ONE HEALTH FIELD EXPERIENCE, Tropical Medicine Course

Kanchanaburi, Thailand— During the week of September 23, 2013, Amy Pekol and Dr. Karin Hamilton, from the University of Minnesota, joined colleagues from Mahidol University for a One Health field experience. Mahidol University's Faculty of Tropical Medicine (MU-FTM) is one of 14 faculties that are part of the USAID funded RESPOND project's SEAQHUN (Southeast Asia One Health University Network).

Three faculty members from MU-FTM, Dr. Saengduen Moonsorn, Irwin Fernandez Chavez, and Ronald Morales Vargas, attended the Global Health Institute co-led by Chiang Mai University and University of Minnesota in early 2012 in Thailand. At the institute, they learned a variety of leadership and teaching techniques that could be applied to One Health teaching and learning. Over the last year and half, the trio has modified a predominantly laboratory-based tropical medicine course into an experiential, multidisciplinary field experience. This year's course involved a core group of master's degree and PhD students and faculty members from MU-FTM, along with a contingency of graduate students and faculty members from other MU faculties and universities in Thailand including Chiang Mai University and Khon Kaen University. Disciplines represented include Tropical Medicine, Nursing, Public Health, Veterinary Medicine, Helminthology, Molecular Biology, and Biomedical Sciences.



Official Welcome Sign



Over 80 graduate students and faculty members from four universities attended the field training experience

Disciplines represented include Tropical medicine, Nursing, Public Health, Veterinary Medicine, Helminthology, Molecular Biology, and Biomedical Sciences.



RESPOND SUCCESS

ONE HEALTH FIELD EXPERIENCE, Tropical Medicine Course

Student groups were initially given background information on several villages in the Western Thai province of Kanchanaburi. In groups, students developed assessment and diagnostic plans to address community concerns. The day before the field experience began, the students were given a lecture on One Health and related competencies and given an opportunity to modify their work plans.



Above: Students learn how to take water samples from wells for water quality and bacterial testing.

Below: Students practice plating water samples for bacterial testing



Above: Student prepare human fecal samples for examination for parasites and bacteria

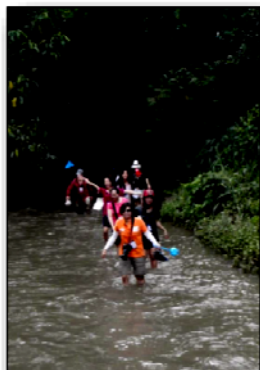


For three days, over 80 faculty members and students visited Bongtl villages in Kanchanaburi to interview villagers, visit local clinics and hospitals, collect water and mosquito samples. Multidisciplinary groups of students analyzed survey responses as well as fecal, water, and insect samples to determine predominant health issues and make recommendations for prevention. At the culmination of the field experience, student groups synthesized their qualitative and quantitative data to give a final report of findings and recommendations for improving community health.



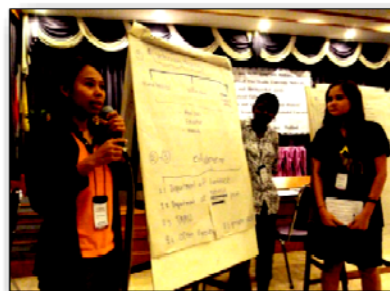
RESPOND SUCCESS

ONE HEALTH FIELD EXPERIENCE, Tropical Medicine Course



Left: students wade through a briskly moving river to collect mosquito larvae for identification

Above: Amy Pekol (lower right) assists students in hanging mosquito light traps near the goat house on the Kanchanaburi campus of MU



Student groups present their findings and recommendations

Pre- and post- assessments and evaluations were completed by both students and faculty members in order to assess student learning and inform future programming. In addition, faculty members observed and recorded observations of student One Health Core Competency (OHCC) learning and behavior throughout the three-day field experience using a standardized rubric. Students reported gains in proficiency for all targeted OHCCs (collaboration and partnership, communication, management, culture and beliefs, values and ethics, leadership, and systems thinking). The biggest gains were reported in the areas of collaboration and partnership, leadership, and systems thinking. Proficiency levels for the culture and beliefs and values and leadership competencies started and remained relatively low compared with other OHCCs, but still showed improvement.



RESPOND SUCCESS

ONE HEALTH FIELD EXPERIENCE, Tropical Medicine Course

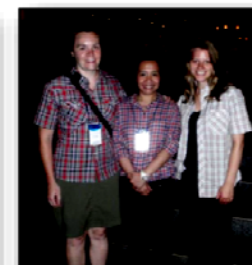
This field experience also proved to be a successful example of university collaboration and faculty development. The trip brought faculty together from Mahidol University, Chiang Mai University, Khon Kaen University, and the University of Minnesota. It also provided MU-FTM faculty members an opportunity to put their OHCC knowledge into practice as they modified the curriculum and student assessments to reflect and measure OHCC teaching and learning. They plan to write about their experience and lessons learned from this trip so that other faculty and schools may benefit from their experience.



Left: graduate students played games with primary school students to teach them about malaria and dengue; in this picture, the students competed in groups to complete puzzles which were story boards about malaria

Below left: after students completed their puzzles, the graduate students used them to tell a story about malaria

Below right: Karin and Amy pose with Saengduen in their "country" shirts for cultural night





Collaboration

It's Not Easy Being Queen

LESSON LEARNED

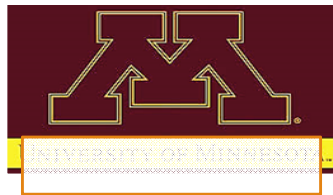
Amanda Hirsch | amandahirsch.com | Twitter: @amanda_hirsch



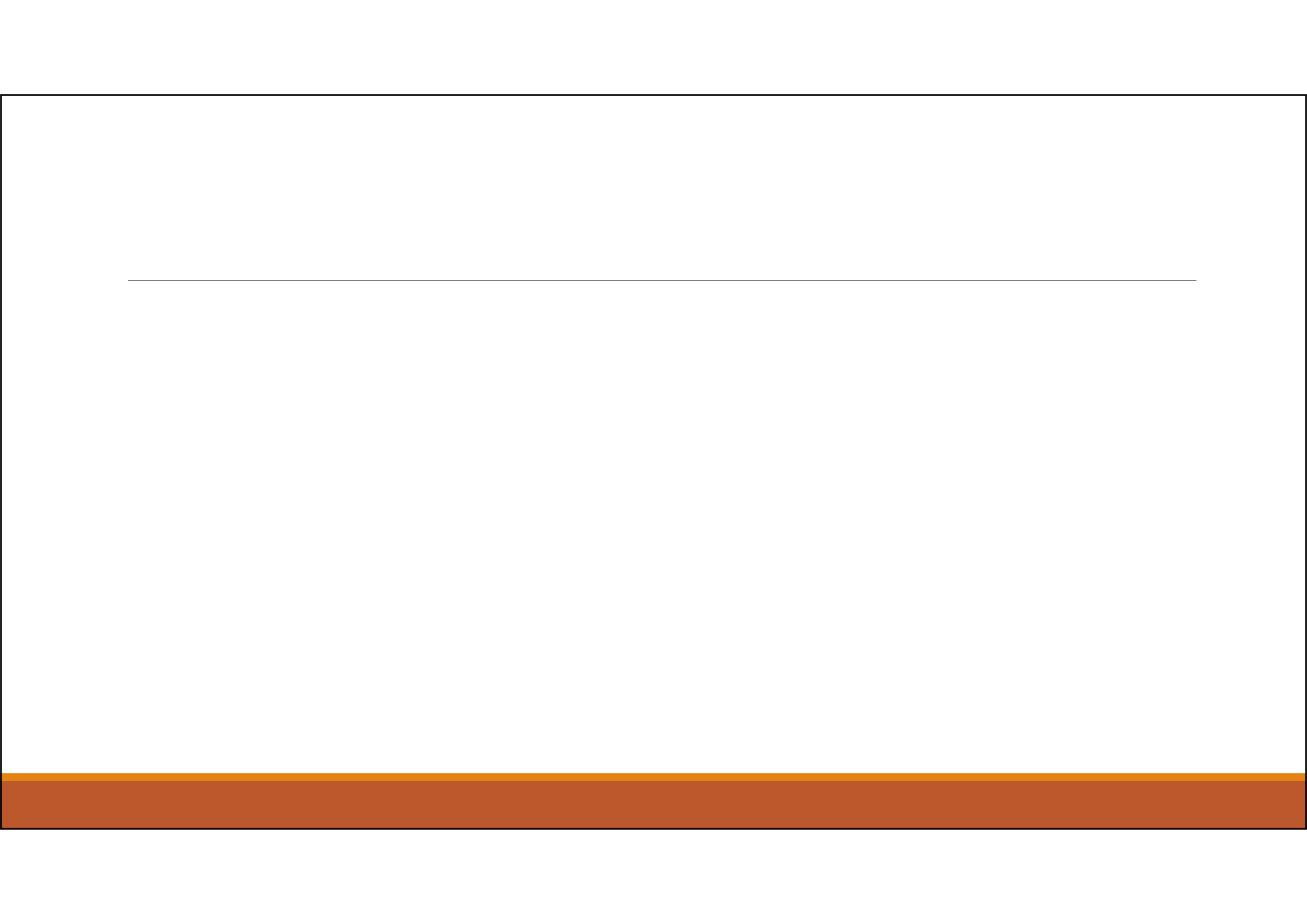
USAID
FROM THE AMERICAN PEOPLE

Emerging Pandemic Threats Program

PREDICT • RESPOND • PREVENT • IDENTIFY



THANK YOU FOR YOUR ATTENTION





Final Thailand One Health Core Competencies domains

MANAGEMENT

Includes competencies that enable partners to state current status, categorize problems, plan, formulate goals, implement, monitor, evaluate the effectiveness and revise the OH program

CULTURE AND BELIEFS

Includes competencies that identify norms and wisdom between local and neighboring histories, ability to understand, analyze, evaluate, appreciate social, religious, and historical diversity across different cultures, explore impacts of culture and beliefs on OH issues, implement OH concepts and develop cultural sensitivity

VALUES AND ETHICS

Sub-domains: Professionalism, Team and Organization

Includes competencies that enable partners to define, communicate, and consistently exemplify an organization's value and ethics, behave, demonstrate, actively support, share, respect and accountability and develop standard procedures at multiple levels with integrity, honesty, trust, fairness, accountability, adaptability in diverse contexts



Final Thailand One Health Core Competencies domains

COLLABORATION AND PARTNERSHIP

Includes competencies focusing on effective collaboration and partnership to different stakeholders and partners, implementing appropriate strategies, developing collaboration, partnership networks, formulating and evaluating strategies to harmonize collaboration and partnership across disciplines

LEADERSHIP

Includes competencies recognize professional and cultural diversities among disciplines, operate effective interdisciplinary communication, appreciate roles and responsibilities, develop inter-professional relationships, create and formulate strategic plans to solve a problem



Final Thailand One Health Core Competencies domains

COMMUNICATION AND INFORMATICS

Sub-domains: Effective management and communication to various audiences, Effective quantitative and qualitative data (IT) management

Includes competencies that enable partners acquire, identify, analyze informatics, practice active communication skills, disseminate and customize, apply and demonstrate motivation and approach teaching, justify fact of information and culture beliefs, organize data management and develop appropriate strategy order to establish, enhance, and promote One Health actions

SYSTEMS THINKING

Sub-domains: Systems connection, System management, Impact assessment

Includes competencies that enable partners to identify, analyze elements and interconnection of OH systems, generate web of causation of the impact that affect OH



SUB-AWARD NO. G-DAIBNK-006
Under
COOPERATIVE AGREEMENT NO. GHN-A-00-09-00015-00
For
US Agency for International Development, Emerging Pandemic
Threats Program, RESPOND Project

Sub-Awardee: **Faculty of Tropical Medicine, Mahidol University**

Coordinator: Assoc. Prof. Pratap Singhasivanon, Deputy Coordinator: Dr. Saengduen Moonsom

Sub-Project Name: **Thailand One Health University Network (THOHUN) National
Coordinating Office (THOHUN-NCO)**

TUFTS ENVIRONMENTAL LITERACY INSTITUTE 2013

COMMUNICATING ENVIRONMENTAL ISSUES THROUGH EDUCATION

Training in USA May18-June 22



Dr. Sivapong Sungpradit
Mahidol University, Faculty
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Dr. Saengduen Moonsom
Mahidol University, Faculty of Tropical Medicine
Thailand