THOHUN PERFORMANCE Report















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'Strong and sustainable One Health Thai University Network throughout Thailand by 2020'

Chairman's Message

With the urgent threat of emerging pandemic diseases, the importance of preventing and responding to emerging disease becomes apparent. Well-trained global health professionals are what needed to address these threats. Thailand One Health University Network (THOHUN) was established from this notion as part of Emerging Pandemic Threats (EPT) launched by United States Agency for International Development (USAID) Emerging Pandemic Threats program in 2012.

The One Health concept is a global strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment. The important notion in working under One Health is the concept of working together on the basis of diversity, whether a diversity of disciplines, organizations or individuals to achieve the benefit of health care. The university network, alongside its partners in the government and private sectors and NGOs, intends to create a new breed of health professionals who possess the needed skills as well as the right attitude to move One Health forward. These can be best cultivated and nurtured as students prepare for their future careers. These thing need cultivated from university through working and studying together. It will stay with them after they graduate.

It is with great pleasure that I present to you this publication, which provides an overview of THOHUN's development since the beginning of the project. This report outlines the success stories and THOHUN's valuable work together with our member universities in helping us achieve this goal in seeing "One Health" thrive and grow in the future.

(Assoc.Prof.Dr. Parntep Ratanakorn) THOHUN Chairman

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Acronyms

AIHD	ASEAN Institute for Health Development	
AMS	Faculty of Associate Medical Sciences	
ASEAN	Association of Southeast Asian Nations	
CMU	Chiang Mai University	
CPHS	College of Public Health Science	
CU	Chulalongkorn University	
CVM	College of Veterinary Medicine	
DRC	Democratic Republic of the Congo	
EPT	Emerging Pandemic Threats	
FE	Faculty of Economics	
FEM	Faculty of Environment Management	
FERS	Faculty of Environment and Resource Studies	
FMRH	Faculty of Medicine Ramathibodi Hospital	
FN	Faculty of Nursing	
FP	Faculty of Pharmacy	
FPH	Faculty of Public Health	
FPS	Faculty of Pharmaceutical Sciences	
FSS	Faculty of Social Sciences	
FTM	Faculty of Tropical Medicine	
FVM	Faculty of Veterinary Medicine	
FVS	Faculty of Veterinary Science	
FVT	Faculty of Veterinary Technology	
GHSA	Global Health Security Agenda	
INDOHUN	Indonesia One Health University Network	
KKU	Khon Kaen University	
KU	Kasetsart University	
MOPH	Ministry of Public Health	

MU	Mahidol University	
MyOHUN	Malaysia One Health University Network	
OH	One Health	
OHCC	One Health Core Competency	
OHCEA	One Health Central and Eastern Africa	
OHW	One Health Workforce	
P&R	Preparedness & Response Project (EPT2 Partner)	
PSU	Prince of Songkhla University	
Q1-Q4	Quarters 1-4	
SEAOHUN	Southeast Asia One Health University Network	
SPH	School of Public Health	
THOHUN	Thailand One Health University Network	
THOHUN-NCO	Thailand One Health University Network-National Coordinating	
	Office	
TQF	Thailand Qualification Framework	
TU	Thammasat University	
UMN	University of Minnesota	
USA	United States of America	
USAID	United States Agency for International Development	
VOHUN	Vietnam One Health University Network	
Y1	Year 1	
Y2	Year 2	



Introduction

Thailand One Health University Network or THOHUN was officially established in August 2012 in Bangkok, Thailand. The network is supported by DAI-RE-SPOND, one of the four projects under the program of Emerging Pandemic Threats (EPT) launched by the United States Agency for International



Identity of THOHUN can be seen from its logo composed of four symbolic elements, e.g. the animal and human footprints heading together to the same direction infers equality;

the four-rays' star of Clover leaf within the letter "U" denotes unity, initiative, fortune, and environment; the national flag circular ban hints the Thai identity; and the human holding hands together signifies collaboration.

Development (USAID) in 2009. The program seeks to build regional, national, and local "One Health" capacities for early disease detection, prevention, rapid response and containment, and risk reductions. The concept of One Health is a global strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals, and the environment.

THOHUN focuses on pre-service workforce training and strengthening outbreak response capacity. It collaboratively works with university partners, i.e. Tufts University and University of Minnesota, and South East Asia University One Health Network (SEAOHUN) to conduct a number of activities to promote "One Health" concept in the Thai society at several levels. The regional network, SEAOHUN, is composed of 10 universities and 14 faculties from Thailand. Vietnam, Malaysia, and Indonesia. These institutions have jointly exchanged academic resources and advance innovative teaching methodologies, as well as shared professional expertise.

Thus far, THOHUN comprises of two founding members: Mahidol University



and Chiang Mai University, and other four university members from each region consisting of Chulalongkorn University, Kasetsart University, Khon Kaen University, and Prince of Songkla University. It also established THOHUN National Coordinating Office (THOHUN-NCO) to facilitate and assist THOHUN members in conducting activities to foster One Health concept and approach.

Our vision Strong and sustainable One Health Thai University Network throughout Thailand by 2020'



Build, develop, and expand One Health University Network of Thailand

Develop and exchange skilled One Health professionals between universities and involved agencies

Support trans-disciplinary collaboration within and between universities and involved agencies

Promote research employing One Health approach to promote the health of humans, animals and environment







Steering Committee



Assoc.Prof.Dr. Parntep Ratanakorn **Chairman** Dean of Faculty of Veterinary Science, Mahidol University



Assoc.Prof.Dr. Pratap Singhasivanon **Consultant** Dean of Faculty of Tropical Medicine



Dr. Saengduen Moonsom **Coordinator** Faculty of Tropical Medicine, Mahidol University



Assoc.Prof.Dr. Lertrak Srikitjakarn **Committee Member** Dean of Faculty of Veterinary Medicine, Chiang Mai University



Steering Committee

Mahidol University





Dr. Witthawat Wiriyarat Faculty of Veterinary Science

Chiang Mai University





Assoc.Prof.Dr. Phongtape Weewattanadej Faculty of Medicine



Dr. Khwanchai Kreausukon Dean of Faculty of Veterinary Medicine

Kasetsart University



Prof.Dr. Apinun Suprasert Dean of Faculty of Veterinary Medicine

Chulalongkorn University







Prof.Dr. Roongroje Thanawongnuwech Dean of Faculty of Veterinary Science

Chul





Prince of Songkla University



Khon Kaen University





Assoc.Prof.Dr. Sunpetch Angkititrakul Faculty of Veterinary Medicine



Assoc.Prof.Dr. Chuchart Kamollert Dean of Faculty of Veterinary Medicine

Updated since Oct 10, 2016

Collaborative Network



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In 2013, THOHUN-NCO or Thailand One Health University Network National Coordinating Office team was built in order to conduct and facilitate any activities to promote the One Health concept. All current staffs in THOHUN-NCO and thier positions are following;



Assoc.Prof.Dr. Pratap Singhasivanon Consultant



Dr. Saengduen Moonsom Coordinator



Mr. Irwin F. Chavez Assistant for International Collaboration



Dr. Jitlada Vasuvat Networking & Communications Manager



THOHUN-NCO Team



Ms. Tanaporn Panyaniphon **Finance and Office Manager**



Ms. Wiriya Kongcharoen Administrative Manager



Mr. Kittikorn Khunratch Program and Event Manager



Ms. Waroon Boonyaudomsart Publicity Manager

The One Health Workforce project

The One Health Workforce (OHW) project is part of the United States Agency for International Development (USAID) Emerging Pandemic Threats (EPT) 2 program, which focuses on disease surveillance, training, and outbreak response. The recent emergence of the Ebola virus from West Africa and the far-reaching global threat to human and animal health, as well as national security and economic prosperity, has brought the capacity of the health workforce to prevent, detect, and respond to infectious disease threats to the forefront of global politics. Coordination and collaboration across human, livestock and wildlife health sectors is essential and is highlighted in the U.S. government Global Health Security Agenda (GHSA) which targets "a world safe and secure from global health threats posed by infectious diseases."

The 'One Health' approach acknowledges that the health of humans, animals and the environment are inextricably linked. OHW supports two regional university networks that embrace a One Health approach: the One Health Central and Eastern Africa (OHCEA) University Network and the South East Asia One Health University Network (SEAO-HUN).

These One Health university networks support local governments by identifying and addressing knowledge and skills gaps in the current health workforce and transforming the future health workforce to address the complex, transdisciplinary, and multi-sectoral one health challenges in their countries and regions. OHW supports the OHCEA and SEAOHUN networks in achieving these goals through a wide set of collaborative activities, including experiential field-based training, faculty development and networking, curriculum development, and organizational development.

The main objectives of OHW

Support African and Southeast Asian One Health University Networks to participate with government, academia, and other key partners in defining One Health workforce needs.

2 Pre-service training

Define

OHW needs

Support networks to assist government ministries to train the future OH workforce.

3 In-Service training

Support the networks to assist government ministries to train the current OH workforce.

4 Faculty development Support developed country universities under OHW in strengthening faculty Capacities for OH teaching, research, and community outreach for the African and South East Asian University Networks.

5 Organizational development

Positioning the One Health Networks as long- term sustainable leaders in One Health.

Integration into OH Workforce

Facilitating OH Networking & Collaboration

Applied Learning Experiences & Community Engagement

Transfer of Knowledge & Skills

Creating a Supportive Policy/ Learning Environment

Building Awareness & Appreciation

One Health Transformation Pathways/Levels. Different levels of transformation towards the development of the One Health Workforce.



OHW supports two regional One Health university networks (OHCEA and SEAOHUN) and four national One Health university networks (INDOHUN, MyOHUN, THOHUN, and VOHUN). The map above displays current member countries (dark red) and anticipated future member countries (in light red). Project headquarters are located at the University of Minnesota (USA). Our US-based implementing partner, Tufts University, is located in Boston, Massachusetts (USA). In addition to Tufts University, the University of Minnesota sub-awards to the following regional and national networks:

1. One Health Central and Eastern Africa (OHCEA)

The Secretariat for OHCEA is based in Kampala, Uganda. It was created in 2010 under OHW's predecessor, the RESPOND Project (EPT1 Program). The Secretariat handles the financial and administrative operations for the entire network and coordinates the planning and implementation of technical activities with member universities. The top decision-making body of the Secretariat is the Dean's Summit, comprised of the deans from all 14 members schools/colleges located in DRC, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda. Core member schools/colleges include Schools of Public Health and Colleges of Veterinary Medicine, although OHCEA activities commonly include other health disciplines such as Nursing. Each country team is represented by a Country Administrator (employed by the Secretariat) and a Focal Person (one faculty member from each member school is contracted as a focal person for their university's activities within the network).

OHCEA Member Schools/Colleges

<u>DRC</u>

University of Kinshasa (SPH) University of Lubumbashi (SVM)

<u>Ethiopia</u> Jimma University (SPH, (SVM) Mekelle University (CVM)

<u>Kenya</u> University of Nairobi (SPH, FVM) Moi University (SPH)

<u>Rwanda</u> Nat'l University of Rwanda (SPH, FVM)

Tanzania Muhimbili University of Health & Allied Sciences, (SPH & Social Sciences Sokoine University of Agriculture (FVM)

<u>Uganda</u> Makerere University (CVM, SPH)



Southeast Asia One Health University Network (SEAOHUN)

2.

3.

6.

7.

Indonesia One Health University Network (INDOHUN) INDOHUN Member Schools: Gadjah Mada University; University of Indonesia

- 4. Malaysia One Health University Network (MyOHUN) MyOHUN Member Schools: Universiti Kebangsaan Malaysia; Universiti Putra Malaysia
- 5. Thailand One Health University Network (THOHUN) THOHUN Member Schools: Chiang Mai University; Mahidol University; Kasetsart University; Chulalongkorn University; Prince Songkhla University; Khon Kaen University

THOHUN Member Faculties/Colleges/Institute

Mahidol University: AIHD, FMRH, FERS, FN, FPH, FVS, FTM Chiang Mai University: AMS, FE, FM, FN, FP, FSS, FVM Kasetsart University: FE, FVM, FVT, Chulalongkorn University: CPHS, FN, FPS, FVS, Prince Songkhla University: FEM, FVS, FN, FPS Khon Kaen University: AMS, FD, FN, FPH, FPS, FVM

Vietnam One Health University Network (VOHUN) VOHUN Member Schools: Hanoi School of Public Health; Hanoi Medical University; Hanoi University of Agriculture







Activities are categorized into three groups according to sources of funding:

- 1. Sub-Award activities are funded by RESPOND project of the U.S. Agency for International Development or USAID through THOHUN-NCO and is divided into main five categories:
 - Project Management
 - Operations
 - Transportation and Travel
 - Activities
 - Media and Information
- 2. Direct Assistance (DA) activities are funded directly by USAID (through Development Alternatives Inc. or DAI). These activities are managed and organized directly by THOHUN members.
- 3. A number of activities have been organized and funded solely by RESPOND-DAI



- 1. THOHUN One Health Core Competencies and Curriculum Mapping Workshop
- 2. THOHUN One Health Short Course Workshop
- 3. THOHUN Deans' Meeting
- 4. Thailand One Health Core Competencies, Curriculum Mapping, and Evaluation Workshop
- 5. THOHUN Annual Meeting 2014

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THOHUN One Health Core Competencies and Curriculum Mapping Workshop

On October 8-19, 2013, THO-HUN-NCO organized the workshop on THOHUN-One Health Core Competencies and curriculum mapping at Metropolitan Hotel, Thailand. Its core goals were to finalize the OHCCs of Thailand and learn how to map and integrate the OHCC domains and their competencies into the Thai standard curricula. The instructors of the workshop were from University of Minnesota, Tufts University, and RESPOND-DAI. The attendants included 44 professionals from 6 universities consisting of:



- 1. Chiang Mai University (Faculty of Economics, Faculty of Medicine, Faculty of Nursing, and Faculty of Veterinary Medicine)
- 2. Mahidol University (Faculty of Environment and Resource Studies, Faculty of Nursing, Faculty of Public Health, Faculty of Tropical Medicine, and Faculty of Veterinary Science)
- 3. Chulalongkorn University (Faculty of Veterinary Science)
- 4. Kasetsart University (Faculty of Veterinary Medicine)
- 5. Khon Kaen University (Faculty of Veterinary Medicine)
- 6. Prince of Songkla University (Faculty of Environmental Management and Faculty of Nursing).

Achievements

By brainstorming, the participants were able to finalize the Thailand OHCCs and categorized them into three levels; novice, mid, and expert. The Thailand One Health Core Competency consists of seven domains: Planning and Management, Communications and Informatics, Culture and Ethics, Leadership, Collaboration and Partnership, Systems Thinking, and One Health Knowledge.



Seven domains of Thailand One Health Core Competencies

The participants also learned how to map the OHCCs with their existing curricula. This process was aimed to identify the current gaps in curricula, leading to an opportunity to fill those gaps for further improvement or revision of the curricula. Participants also learned how to integrate Thailand OHCCs into their teaching courses by using a backward design, which is an approach to design a course module by beginning with the desired educational result, goals, and what students are supposed to learn. Defining certain competencies, their levels, goal, measurable and observable learning objectives, teaching methods, and assessment methods are of importance of designing a course.

According to the workshop's evaluation, more than 70 percent of participants stated that the OHCC was "new" to them, while approximately 12 percent said that they never heard about this concept before. Many found that the workshop was useful and would like to integrate the OHCCs into their existing courses. Some also shared their experiences in adapting the idea to their programs.

Challenges

Although most participants admitted that the concept could immensely benefit students, the main challenge was the difficulty of integrating some domains into the existing courses. The field of economics was an example. In this case, according to a participant, the Values and Ethics domain might be somewhat difficult to integrate into their courses since it might undermine some fundamental principles of the discipline. Additionally, a gap among different disciplines particularly between Social Science (such as Political Science, Economics. etc.) and Applied Science (such as Medicine, Nursing, etc.) hampered the reconciliation between these two fields. Assoc. Prof. Dr. Raymond Hyatt, the instructor of the workshop, responded to one comment and said "we don't talk to each other that much (because we) don't talk in the same language".

Potential solutions

The adapted courses might succeed through learning from lessons from other experienced universities. The expertise exchange programs or any further activities that allow professionals from different fields to interact with one another could also lead to better understanding between them, resulting in bridging the gap between those fields.



THOHUN One Health Short Course Workshop

The workshop was organized on January 14 - January 17, 2014. The objective of the workshop was to introduce One Health Short Courses and demonstrate innovative teaching techniques to participants so that they could develop various skills and knowledge in accordance with core competencies and technical competencies. The workshop was also aimed for the participants to share ideas of application and integration of One Health Short Course modules into their existing courses or programs. 14 trainers of this workshop, known as THOHUN trainers, were selected from the participants in the previous training of THOHUN trainers on One Health Short Course workshop4. They collectively prepared and practiced all activities in the workshop on January 14, 2014, a day before the training of 41 participants in THOHUN One Health Short Course workshop.

41 workshop participants were from

the faculties of Economics, Medicine, Nursing, Veterinary Medicine, Environmental Science and Resource Studies, Public Health, Tropical Medicine, Veterinary Science, and Environmental Management from six THO-HUN member universities including Chiang Mai University, Chulalongkorn University,



Kasetsart University, Khon Kaen University, Mahidol University, and Prince of Songkla University. Some of the THOHUN trainers from the training for THOHUN trainers on One Health Short Course workshop and THOHUN One Health Short Course work-

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shop were selected for a half-day training of THOHUN as part of the GHI Thailand workshop in February 2014.

Activities in the workshop during January 15 – January 17, 2014 could be grouped into five categories: introduction, demonstration, practice/application, wrap-up, and daily reflections. The workshop began with introduction activities, allowing participants to understand One Health concept, One Health Core Competency and One Health Core Competency domains, SEAOHUN One Health Short Course (OHSC) modules, as well as to comprehend how to use facilitator and student guides in the SEAOHUN-OHSC modules. One Health courses comprised of fifteen modules: seven One Health core competency modules and eight technical modules as follows:

ONE HEALTH CORE COMPETENCY	ONE HEALTH TECHNICAL COMPETENCY
Modules	Modules
 Collaboration and Partnership Communication and Informatics Culture and Beliefs & Values and Ethics Leadership Management Policy, Advocacy and Regulation Systems Thinking 	 One Health Concepts and Knowledge Fundamentals of Infectious Disease Infectious Disease Management Epidemiology and Risk Analysis Public Health Ecosystem Health Behavior Change One Health Economics

The SEAOHUN-One Health Short Course modules

In addition, participants had a chance to work in small groups to design their own half-day courses in order to apply One Health knowledge and innovative teaching techniques obtaining from learning or the practice from this workshop. Each group had to choose one of One Health core competency domains or SEAOHUN-One Health Short Course modules that was different from what the other groups had chosen as the target for course design. The One Health Core Competency domains in which their courses developed, consisted of Communication and Informatics: Culture, Beliefs, Values and Ethics; Management; Collaboration and Partnership; Leadership; and Systems Thinking. In the design, each group had to include target audience, learning objectives, type of learning, timing, equipment and materials, and pre-class assignments (if needed) in their course designs. After the presentation of each group, the whole participants also collectively discussed on strengths and challenges of each designed course as well as new ideas the course generated. Some groups additionally demonstrated activities by allowing other group members to join the mock-up of their activities.

At the end of the workshop, wrapup activities were organized to recap lessons learned from the entire workshop, and to discuss on possible ways to integrate One Health knowledge and approach into the existing courses. Furthermore, daily reflections was created to improve the workshop day by day, therefore, participants could see that their thoughts and feelings were recognized and would be improved by trainers and staff.


Demonstrated activities by modules conducted in THOHUN One Health Short Course workshop

According to the workshop evaluation, most of the participants were impressed with the workshop and indicated that they understood One Health concept better. Their proficiency of all One Health Core Competency domains were considerably developed. Almost all stated that they would like to integrate One Health knowledge and new teaching methods into their current courses. Some of them planned to create a new One Health course as an elective course in their home universities and initiate a One Health research team. The most popular domains that the participants would like to apply in work, in order of preference, were Collaboration and Partnership, followed by Communication, and Leadership. Some participants also stated that they would like to apply all domains in work.



The meeting was organized on May 3, 2014, to present the One Health concept, THOHUN's background, SEAOHUN Foundation, EPT programs of USAID, and outputs and outcomes of THOHUN activities implemented during the EPT-1 to THOHUN members.

Participants included 33 deans (or their representatives) from 30 member faculties from six universities (Faculty of Veterinary Science,



Khon Kaen University; Faculties of Nursing and of Veterinary Medicine, Chiang Mai University; Faculty of Veterinary Science, Chulalongkorn University; Faculty of Veterinary Medicine, Kasetsart University; and Faculties of Environmental Management, Nursing, Veterinary Sciences (Establishment Project), Pharmacy, Prince of Songkla University;



Faculties of Veterinary Science and Tropical Medicine, Mahidol University), four staff from DAI-RESPOND, six staff from USAID, and four staff from THOHUN-NCO.

Representatives of THOHUN member faculties discussed possible roles of THOHUN in the EPT-2 as well as shared experiences on existing projects or activities related to One Health in their faculties. Thailand One Health Core Competencies, Curriculum Mapping, and Evaluation Workshop

The workshop was organized on May 7-9, 2014 by THOHUN-NCO for participants to learn how to map Thailand OHCC domains with Core Competencies under the TQF-2 for Higher Education and identify strengths and gaps within the Thailand OHCC domains in existing Thai curricula. This information will be used to improve the integration of One Health into existing courses. Participants were expected to learn the fundamentals of evaluation as well as to design evaluation plans aligned with course and/or program objectives.

Participants included 78 lecturers and staff from THOHUN university members who are involved in curricula, education, and development of OHCCs. The faculties in attendance included Nursing, Veterinary Medicine/ Science, Medicine, Tropical Medicine, Public Health, Associated Medical Sciences, Pharmaceutical Sciences, Dentistry, Environment Science and Resource Studies, and Environmental Management form Chiang Mai University, Chulalongkorn University, Kasetsart University, Khon Kaen University, Mahidol University, and Prince of Songkla University. There were also participants from the ASEAN Institute for Health Development and Institute of Molecular Biosciences of Mahidol University. Seven trainers/instructors came from mo Faculty of Tropical Medicine and Faculty of we Environment Science and Resource Studies, atio Mahidol University; School of Medicine, Tufts To University; DAI-RESPOND, and the College we of Education and Human Development, University of Minnesota. Four THOHUN-NCO

The first part of the workshop began with the introduction of the global and Thailand's OHCCs as well as TQF-2 for Higher Education followed by mapping methods for OHCC domains with existing university curricula. Participants also learned about matrix which is a tool for mapping curriculum. Participants were then assigned by discipline to brainstorm on mapping the Thailand OHCC domains with core and compulsory subjects of their existing courses. This enabled them to identify the strengths and gaps within the courses and appraise how well their current courses are aligned with the Thailand OHCC domains.

staff served as facilitators.

In the second section of the workshop, participants learned the basic principles of evaluation, its different levels data collection methods, holistic assessments, and the logic model used in evaluation planning. Participants were divided into small groups to create evaluation plans for program and course objectives. To the program evaluation group, small groups were assigned to evaluate different scenarios of the One Health Short Course workshop.



An example of the logic model used in evaluation planning

For the course objective evaluation, a subgroup was assigned to evaluate objectives of their existing course. The evaluation plans of the One Health Short Course workshop and course objectives were presented separately and then discussed within the large group. Although the two large groups worked independently, the processes, lessons learned, and evaluation plans were shared to all participants during the plenary discussion. Thus, all the participants were able to learn evaluation planning for both program and course objectives.

According to the workshop evaluation, majority of the respondents said that the workshop effectively provided knowledge of curriculum mapping and evaluation, which allowed them to gain first-hand experience making it easier for them to understand. They said that there were plenty of opportunities to learn from participants with different perspectives as well as to build a collaboration network in the future by a number of brainstorming activities with professionals from various fields in the workshop. Many of them were satisfied with the evaluation techniques that could easily apply to their work. Some also complimented trainers and staff for their efforts and support.

THOHUN Annual Meeting 2014

The THOHUN Annual meeting 2014 was organized on May 22-23, 2014 by THOHUN-NCO to present THOHUN activities following the completion of year one of Sub-award. Those who successfully applied the One Health approach to education or disease surveillance and control were invited to submit abstracts for oral or poster presentations in the meeting. Participants had the opportunity to discuss strategies to enhance collaboration for the EPT-2.

Eighty participants came from THO-HUN member faculties from Chiang Mai University, Chulalongkorn University, Kasetsart University, Khon Kaen University, Mahidol University, and Prince of Songkla University. There were also two staff from DAI-RE-SPOND, two staff from the Ministry of Public Health, three staff from the Department of Livestock Development of the Ministry of



Agriculture and Cooperatives, three staff from USAID, and four staff from THOHUN-NCO.

During the first day, presentations on EPT and One Health workforce from USAID's perspective, SEAOHUN visions and its possible roles in EPT-2, preparedness on responding emerging and re-emerging infectious diseases from government sector's perspective, and the past one-year THOHUN activities. A panel discussion on THOHUN's roles in EPT-2 on One Health workforce was held. The second day provided opportunities to THOHUN members and those who successfully conducted One Health-related projects or research to present their outputs and outcomes. The presentations were divided into four sessions: oral presentations of THOHUN and THO-HUN-NCO projects/activities, oral presentations by THOHUN project investigators, oral presentations of research projects related to One Health, and poster presentations of projects related to human, animal, or environmental health. Each session was moderated by a chairperson. Time was allocated for discussions with the audience. Names of presenters and their presented topics are shown in the tables below:

Session: THOHUN project activities Chaired by Prof.Dr. Roongroje Thanawongnuwech		
Торіс	Name of presenter	
One Health integration into the field trip of Faculty of Tropical Medicine	Mr. Irwin F. Chavez - Faculty of Tropical Med- icine, Mahidol University	
THOHUN initiatives in training of One Health Short Courses	Dr. Saengduen Moonsom - Faculty of Tropical Medicine, Mahidol University	
Curriculum mapping of Thailand One Health core competencies and evaluation	Dr. Ronald Enrique Morales Vargas - Faculty of Tropical Medicine, Mahidol University	

Session: THOHUN project investigators' activities Chaired by Assoc.Prof.Dr. Usa Chethanond and Asst.Prof.Dr. Umaporn Boonyasopun

Торіс	Name of presenter
The implementation of "One Health" approach to Mahidol community	Dr. Sivapong Sungpradit - Faculty of Tropical Medicine, Mahidol University
Enhancing capacity on communication for control and prevention of zoonotic diseases transmission	Assoc.Prof.Dr. Patcharaporn Aree – Faculty of Nursing, Chiang Mai University
Trans-disciplinary capacity building for Strep- tococcus suis infection prevention: One Health approach	Asst.Prof.Dr. Nongyao Kasatpibal – Faculty of Nursing, Chiang Mai University
The Global One Health Institute (GHI) – Thailand 2014: Focusing on One Health leadership	Dr. Warangkhana Chaisowwong – Faculty of Veterinary Medicine, Chiang Mai University

Session: One Health Chaired by Assoc.Prof.Dr. Prasarn Tangkawattana and Assoc.Prof.Dr. Pakimol Mahannop

Topic	Name of presenter
Patterns of antimicrobial resistance observed in Methicillin resistant Staphylococci isolated from humans and healthy swine in northern Thailand	Dr. Usanee Anukool – Faculty of Associated Medical Sciences, Chiang Mai University
Lawa model: Integrative control targeting dis- ease dynamic and community participation	Asst.Prof.Dr. Sirikachorn Tangkawattana – Faculty of Veterinary Medicine, Khon Kaen University
Strengthening of rabies control in the upper northern part of Thailand by rabies free area establishment strategic, integrated under One Health network (Livestock Public Health and local administration): A best practice	Dr. Pranee Rodtian – The Fifth Regional Livestock Office, Ministry of Agriculture and Cooperatives
Climate change and earth system environ- ment education	Dr. Warangkana Jutidamrongphan – Faculty of Environmental Management, Prince of Songkla University

Торіс	Name of presenter	
Environmental health		
Mechanism underlying the association be- tween environmental qualities and health condition among US population in southern region	Dr. Sariyamon Tiraphat – ASEAN Institute for Health Development, Mahidol University	
Animal health		
Sustainable assessment through eco-efficiency criteria for Thai small pig farms	Dr. Cheerawit Rattanapan – ASEAN Institute for Health Development, Mahidol University	
Expression and characterization of trypsin- like serine protease from Tsetse (Glossina morsitansmorsitans)	Dr. Ruttayaporn Ngasaman – Faculty of Vet- erinary Science Establishment Project, Prince of Songkla University	
Human health		
Prevalence of skin lighteners (or bleachers) use and its social correlates among university students in 26 countries	Prof.Dr. Karl Peltzer – ASEAN Institute for Health Development, Mahidol University	

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DIRECT ASSISTANCE ACTIVITIES

- 1. One Health One Mahidol Workshop
- 2. Training of Trainers: Trans-disciplinary Capacity Building of THOHUN for *Streptococcus suis* Infection Prevention
- 3. Integration of One Health into the Field-Based Learning
- 4. Training of THOHUN trainers on One Health Short Course workshop
- 5. Enhancing Capacity on Communication for Development
- 6. Global Health Institute (GHI): Thailand 2014

One Health One Mahidol Workshop

One health One Mahidol workshop consists of three modules. The first meeting of three workshops of the "One Health One Mahidol workshop" was held on July 31, 2013 at Mahidol University, Thailand to advocate One Health to Mahidol Community. The workshop was aimed to encourage participants (i.e. representatives from faculties, centers, institutes, and colleges in Mahidol University) to share and learn about the aspects of One Health that are related to their disciplines and other fields.

The activities included presentations and One Health knowledge sharing conducted by invited speakers and group discussions. The workshop was divided into two main periods. The first discussion was aimed to identify wicked problems generate and combine issues identified by each group (e.g. communication problem, teenage pregnancy, global warming, waste management, etc.). The second half of the workshop aimed to apply the One Health approach to solve a wicked problems with the examples given by the invited.

Participants gradually obtained One Health skills through this workshop. The output from group exercise could be applied to real situations in the future. The workshops were deemed successful in transferring One Health knowledge as well as establish a network within the Mahidol community.

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In addition, the second module of One health One Mahidol workshop was organized on March 10, 2014 by the Faculty of Veterinary Science, Mahidol University. It was the second installment of the "One Day, One Workshop, One Health" series which aims to share knowledge and experiences in One Health within the Mahidol community. This workshop focused on introducing the community study and field sites and preparedness for Module 3. Basic information on villagers' ways of life, establishing good relationship with the villagers, and how to capture the real problems were provided. Participants were 70 representatives of faculties, centers, institutes, and colleges in Mahidol University who also attended the first workshop.



Training of Trainers: Trans-disciplinary Capacity Building of THOHUN for *Streptococcus suis* Infection Prevention

here are three activities under the project "Training of trainers: trans-disciplinary capacity building of THOHUN for Streptococcus suis infection prevention". The first activity was "Trans-Disciplinary Capacity Building of THOHUN and VOHUN for S. suis Infection Prevention: Training of the Trainers #1". The Faculty of Nursing, Chiang Mai University and DAI-RE-SPOND organized the training during October 16-28, 2013, to establish and strengthen trans-disciplinarily collaborative network between THOHUN and VO-HUN with the main goal to develop training program and educational materials for prevention of S. suis infection. This workshop resulted in the preventive model for S. suis prevention that would benefit population in both Thailand and Vietnam. Participants included 27 professionals in the field of health sciences such as



nurses, medical doctors, veterinarians, public health officers and epidemiologists.

The training methods of this workshop consisted of lectures, small group discussions, case interviews, brainstorming, and presentations. During the workshop, participants learned about the collaborative network, the basic knowledge of One Health, *S. suis* infection in pig and human, surveillance of *S. suis* infection, prevention of *S. suis* infection from farm to table, and how to diagnose, treat and care for *S. suis* patients. Through hands-on experience, participants had a chance to learn how to conduct an outbreak investigation of *S. suis* infection.

The workshop was co-organized by the Faculty of Nursing, Chiang Mai University and DAI-RESPOND on December 18-20, 2013 in Chiang Mai. It was the second workshop under the project "Training of trainers: trans-disciplinary capacity building of THOHUN for S. suis infection prevention". The main goal of this workshop was to develop training program and educational materials for prevention of S. suis infection. Participants included 27 professionals in the field of health sciences such as nurses. medical doctors, veterinarians, public health officers, and epidemiologists. Through brainstorming, participants collaboratively identified target groups as well as designed course and activities, expected competencies, educational materials, and teaching methods.

The second workshop was co-organized by the Faculty of Nursing, Chiang Mai University and DAI-RESPOND on December 18-20, 2013 in Chiang Mai. The main goal of this workshop was to develop training program and educational materials for prevention of S. suis infection. Participants included 27 professionals in the field of health sciences such as nurses. medical doctors, veterinarians, public health officers, and epidemiologists. Through brainstorming, participants collaboratively identified target groups as well as designed course and activities, expected competencies, educational materials, and teaching methods. At the end of the workshop, participants successfully planned for details of upcoming activities by creating themes and developing learning materials.

Themes

- Eat raw pork, beware of hearing loss.
- Eat cooked pork, do not suffer from hearing loss.
- Safe life, let's eat cooked pork.
- New generation without hearing loss, must not eat raw pork.
- Eat cooked pork, preventing hearing loss.

Themes and learning materials planned to use for prevention of *S. suis* infection



Educational materials and its detail

Radio spot

- Daily announces in community (in Thai language and its Northern dialects)
- 3-5 minutes for each spot

Poster

- Provides definition, causes, and symptoms of the disease
- Depicts impacts of the disease in cartoon form
- Suggests preventive measures

Trainer manual

- Chapter 1: *S. suis* infection and prevention in human and in animal
- Chapter 2: One Health concept
- Chapter 3: Collaboration network
- Chapter 4: Communication skills
- Chapter 5: Ethics

Flip board

This material is optional.

The third workshop "Finalizing training program and educational materials for *S. suis* prevention" was organized by the Faculty of Nursing, Chiang Mai University on March 27-28, 2014. The main goal of this workshop was to finalize two-day training program as well as the educational materials developed in its second workshop.

Core contents of the workshop included basic knowledge of *S. suis* infection in pigs and humans, One Health concepts, collaborative network for the prevention of *S. suis* infection, and communication skills. Five

of the educational materials including video, manual, poster, and spot were created to promote prevention of *S. suis* infection to both healthcare personnel and laymen in the community.



Integration of One Health into the Field-Based Learning

On September 24-27, 2013 the Faculty of Tropical Medicine, Mahidol University organized a field-based activity for Master and Ph.D. students from the Faculties of Tropi-

cal Medicine, Public Health, Nursing, Veterinary Science/ Medicine, and Environmental and Resource Studies. Members of the USAID-RESPOND team, Ms. Amy Pekol and Dr. Karin Hamilton from the University of Minnesota, also joined the activity. The main goals for this field trip were: 1) for participants to gain a better understanding of the meaning and practice of One Health competencies, 2) explore tropical medicine issues in the village of Ampur Sai-Yok, Kanchanaburi, and 3) work in interdisciplinary teams to understand and address the various community health problems.

Students worked in groups to develop assessment and diagnostic plans to address community problems related to health. In order to



obtain in-depth knowledge related to health situations in the community, they interviewed villagers, visited local clinics and hospitals, and collected water, stool and insect samples. The ful cases of university collaboration and faculty development (The universities included Mahidol University, Chiang Mai University, Khon Kaen University, and the University of



Minnesota.), the field experience also allowed Mahidol University's faculty members (Dr. Saengduen Moonsom, the deputy coordinator of THOHUN-NCO) an opportunity to translate their OHCC knowledge into practice by integrating it into the existing curriculum. The students were assessed for their development of OHCC skills (collaboration and partnership, communication, management, culture and beliefs, value and ethics, leadership, and systems

qualitative and quantitative data together with the samples collected were aimed to determine main health issues in the study site and then provide recommendations to improve community health.

Apart from being one of the success-

thinking) with standardized rubrics before and after learning the modified course. As a result from of partaking in different types of activities during the three-day field trip experience, the students had shown improvements their OHCC skills. 50

Training of THOHUN trainers on One Health Short Courseworkshop

The workshop was co-organized by DAI-RESPOND and THOHUN-NCO on December 6-7, 2013. 28 trainees from 6 university members were trained in the prototype of the course curriculum, layout of SEAOHUN One Health Short Course modules, overview of module contents, and innovative ways to integrate and teach the materials in existing curricula. The workshop aimed to produce trainers who deeply understand One Health concepts, familiar with One Health Short Course modules as well as effectively deliver them to other THOHUN members in the upcoming THOHUN workshops. The trainees were from the faculties of Nursing, Environmental Management, Veterinary Science, Veterinary Medicine, Public Health, Tropical Medicine, Environmental Science and Resource Study, and Medicine, and also College of Public Health Sciences of 6 universities. These universities included Mahidol University, Chiang Mai



University, Chulalongkorn University, Kasetsart University, Khon Kaen University, and Prince of Songkla University. Trainers were from Training Resource Group (TRG), Tufts University, University of Minnesota (UMN), and DAI-RE-SPOND.

Enhancing Capacity on Communication for Development

The five-day training course, organized by the Faculty of Nursing, Chiang Mai University, was intended to help participants to gain more understanding of control and prevention of zoonotic diseases and communication for development (C4D). The workshop would like participants to attain more skills on application of the C4D for control and prevention of zoonotic diseases transmission. Participants included 16 lecturers from Chiang Mai University and Mae Fah Luang University, one public health staff, and one nurse from Nong Kwai municipality.

The course was divided into two phases. The first phase was held on January 6-8, 2014. It focused on lecturing and discussing on the fundamental knowledge of zoonotic diseases and transmission, control and prevention of the zoonotic diseases, communication channel and analysis, the C4D concept, and behavior analysis. The second phase, organized on January 30-31, 2014, provided the participants an opportunity to apply the knowledge gained from the previous workshop into practice. They were divided into three small groups, and each had to explore a community in Nong Kwai Sub district of Chiang Mai Province, from different aspects including (1) behavior for control and prevention of zoonotic diseases transmission in community, (2) community network, and (3) communication channel, messages, and media.

Global Health Institute (GHI): Thailand 2014

The GHI 2014 course was organized on February 3-13, 2014, by the Faculty of Veterinary Medicine, Chiang Mai University in collaboration with Schools of Public Health, Nursing, and Medicine, and the College of Veterinary Medicine of the University of Minnesota (UMN), THOHUN, South East Asia One Health University Network (SEAO-HUN), and DAI-RESPOND. It was the



second GHI course held in Thailand. The first GHI course, successfully conducted in 2012, focused on One Health leadership, and provided participants an opportunity to obtain basic knowledge and develop skills required for One Health professionals. The 2014 course continued to emphasize examining leadership in the context of One Health and identifying opportunities for fostering collective actions to the benefit of public health, food security, and eco-health system.

The main objectives of the course were that participants would gain the better understanding of One Health "grand challenges", i.e. complex and multi-factorial issues emerging at the convergence of public health, animal health, economic health, and environmental health; and (2) SEAOHUN network would be expanded and strengthened. Participants comprised 52 people who were young- to mid-level



skills, intercultural understanding, trans-disciplinary collaboration across countries, risk communication, collaboration and strategic thinking, active speaking skills, paradox and problems, and SEAOHUN One Health wicked problems. As a part of the activities on February 7, THOHUN-NCO allocated funds under Sub-award and asked

university professionals as well as master and doctoral students from SEAOHUN university members and Chulalongkorn, Kasetsart, Khon Kaen, and Prince of Songkla Universities of THOHUN.

The first-five days of the course (February 3-7) emphasized developing One Health leadership and technical capacities. The topics of activities included wicked problems, self-awareness/social types, active listening six THOHUN trainers to support organizing a half-day training. Participants of this section learned about One Health Short Courses and experienced innovative teaching methods under Collaboration & Partnerships and Leadership modules through the Marshmallow challenge and diffusion of innovations activities. According to the training evaluation by THOHUN, most of respondents were impressed by the activity.



The next four days (February 8-12) provided two different technical tracks consisting of environmental health and epidemiological surveillance, in which participants could select to attend. Teaching methods of both tracks were lecturing and learning from through field experience. The final day of the course was served for a wrap-up activity, bringing together the One Health concepts and specific contents learned from the whole course.



DAI-RESPOND ACTIVITY

THOHUN Launching Meeting

56) THOHUN Launching Meeting

THOHUN Launching Meeting Held on October 24, 2013, this meeting was aimed to introduce THOHUN to the four new university members: Chulalongkorn Univer-



sity (CU), Kasetsart University (KU), Khon Kaen University (KKU), and Prince of Songkla University (PSU). Representatives of existing

THOHUN members Mahidol University (MU) and Chiang Mai University (CMU), USAID, DAI, and THOHUN-NCO also attended the meeting.

The presentations covered the introduction of EPT, RESPOND-DAI, South East Asia One Health Network (SEAO-HUN), THOHUN, and THOHUN's work plan and activities from June 2013 to June 2014. This meeting provided an opportunity for representatives (most are Deans of the faculties) of new members to share ideas on direction or feasibility of the network with the existing members of THOHUN. Furthermore, the new university members were officially invited to become a part of the Steering Committee (two representatives from each university) to increase the number of the Steering Committee to 16 members.

ONE HEALTH WORKFORCE DEVELOPMENT ACTIVITIES

- 1. One Health Core Competency Identification of the Current Workforce
- 2. International Short Course on Ecosystem Health: Health Issues at the Human-animalenvironment Interface
- 3. Integrative One Health Modules for Current and Future One Health Workforces
- 4. Development of Fundamental One Health Core Competency Course for Multidiscipline Students
- 5. Development of a One Health Online Course for Academic Staff and University Students
- 6. Developing a Short Training Course on Surveillance and Rapid Response of Emerging Infectious Disease Outbreaks in Communities for Public Health Personnel in Thailand
- 7. Training the Current OHW to Recognize and Response to Emerging Infectious Diseases (EID) Suspected/ Infected in Companion and Exotic Animals
- 8. Development of One Health Workforce of Thai University Network for Community-Based Learning on Infectious Diseases Prevention

One Health Core Competency Identification of the Current Workforce

In order to formulate an effective goal-oriented One Health workforce development program for the government sector, current needs and gaps need to be accurately identified to leverage existing strengths and complement weaknesses. The Thai current Workforce from Public Health sectors and stakeholders



were parts of identification of different levels of their own One Health Core Competencies (OHCCs). These activities were served as a crucial precursor to solidly define the 5-year goals for ministry workforce development. Authorities from the target ministries were made awareness of their organization's position under a One Health framework and allowed them to identify their future roles and potential contributions during the OHW project. This activity aimed to identify One Health Core



Competency domains of Thailand current workforce that will be used for further development of specific competencies, and training packages to improve the skills, knowledge, and attitudes of the current workforce to effectively prevent, detect, and respond to future infectious disease outbreaks in Thailand.

The workshop was held on March 23-25, 2016 with approximately 50 participants representing 6 Ministries who are partners under "The One Health Collaboration Network" including The Ministries of Agriculture and Cooperatives, Education, Natural Resources and Environment, Public Health, Social Development and Human Security, Labor, and the Thai Red Cross Society together with the representatives from THOHUN university members.

A set of six OHCC domains (i) One Health Professionalism, (ii) Communication and Informatics, (iii) Culture, Values, Ethics and Beliefs, (iv) Collaboration and Partnership, (v) Leadership, and (vi) Planning and Management was successfully developed and agreed upon by all the participants. The final definitions of six OHCC domains for the current Thai workforce are shown as the table below.

This workshop was the first step in a process to identify OHCC domains for the Thai current workforce. The workshop results will be circulated widely in the ministries and to other relevant stakeholders for comments and feedback. Once high-level approval is received, these competency domains will be utilized by the ministries in partnership with the universities to develop specific competencies within the domains, and to use these to develop training packages to improve the skills, knowledge, and attitudes of the current workforce to effectively prevent, detect, and respond to future infectious disease outbreaks in Thailand.



A giant step towards collaboration between the Thai Red Cross Society, seven Thai ministries, and THOHUN





One Health Core Competency (OHCC) Domains of Thailand's Current Workforce

International Short Course on Ecosystem Health: Health issues at the Human-animal-environment Interface

n order to enhance future health workers learning experiences through multidisciplinary teamwork and fieldwork with complex human health problems approached from the perspective of the interconnection of human, animal, and environmental health—also known as One Health—the Thailand One Health University Network (THOHUN) organized the International Short Course on Ecosystem Health: Health Issues at the Human-Animal-Environment Interface, a 3-week short course held on June 6–24, 2016 at Pung-Waan Resort, Sai Yok, Kanchanaburi, Thailand. A group of 20 multidisciplinary (veterinary, human medicine, public health, education, environmental management, nursing) post-graduate students from THOHUN, VOHUN, INDOHUN, and MyOHUN member universities; Myan-



mar; Tufts University; and University of Minnesota worked together in the short course.

This short course curriculum was focused on project-based learning and included a visit to the One Health Village. The students were educated on the One Health Core Competencies (OHCCs), fundamental knowledge of infectious diseases, various tools and skills related to data analysis and visualization—such as systems mapping, biological hazard detection, risk analysis and risk communication, and a geographic information system (GIS), participatory approach and social entrepreneurship Using the One Health Village as a demonstration site, participants identified, investigated, and control of infectious diseases in the future.

The overall course was a huge success. It utilized a mix of lectures, interactive discussions, practice, and fieldwork on a wide variety of subjects. The students contributed to a large part of the success of the course. They were very dedicated, worked hard, were very professional, had realistic expectations and collaborated very well, even with the mix of backgrounds,

and found potential solutions for managing infectious diseases and other health problems by integrating domestic/wild animal. environmental, and human behavior and social factors. During the course, students also engaged and networked with each other, especially during the group work, which helped improve their OHCCs that are crucial for their effective prevention, response





disciplines, experiences, and home countries. According to the students' self-evaluation on their OHCCs before and after the course, majority of them showed significant improvement in each domain as shown in the graphs:



Proficiency in Collaboration & Partnership Domain



Proficiency in Communication Domain



Proficiency in Management Domain



■ None ■ Low ■ Medium ■ High


■ None ■ Low ■ Medium ■ High



■ None ■ Low ■ Medium ■ High

Proficiency in Leadership Domain



■ None ■ Low ■ Medium ■ High





Integrative One Health Modules for Current and Future One Health Workforces

A number of One Health-associated activities have been implemented in northern region, but only a small subset of One Health workforce in the northern region has been trained. Most of trainees are students and academic staffs. Therefore, some technical modules to develop One Health skills for other professional levels of the

One Health workforce should be promoted. In 2015 new One Health modules have been developed under the collaboration of THO-HUN members, stakeholders and students with aimed to increase more selections of one health modules, therefore, some other technical modules will be developed again in 2016

workforce should be promoted.

The proposed project entitled "Integrative One Health Modules for Current and Future One Health Workforces" aims to train the current and future One Health Workforce in Thailand. To sustain the program, an attractive academic system encouraging both under-



graduate and graduate students and One Health working people from other professional sectors, especially in Northern region will be developed and evaluated by Chiang Mai University. The developed system can be a model system for other academic institutions in Thailand, which will certainly ensure the quality and quantity of One Health Workforce in Thailand as the following activities;

- One Health Workforces Needs Brainstorming was held in Chiang Mai during 17-18 March, 2016. This activity was conducted to identify the challenges and the needs in current One Health working areas, three areas including communication and informatics, knowledge and awareness, and integration/collaboration were identified as the needs from various professional in THOHUN university network, stakeholders, and other professional sectors.
- One Health Modules development I & II was held in Chiang Mai during 19-20 April, 2016 and 18-19 May, 2016. These activity were conducted to develop 2 new One Health modules including module A (knowledge, collaboration) and module B (communication and informatics).
- New One Health Modules Training was held in Chiang Mai during 7-8 July, 2016. This activity was performed to ensure the quality and quantity of developed modules by using with the targeted sectors.
- Evaluation Workshop for New Module Implementations was held in Chiang Mai during 18-19 August, 2016, and was done to assess the effective implementation of training course and aims to adjust and improve the effectiveness of the modules.

Development of Fundamental One Health Core Competency Course for Multidiscipline Students

The One Health concept is a worldwide strategy for expanding interdisciplinary collaborations and communications for solving health problems of humans, animals and the environment. This course is designed to introduce Thailand one health core competencies to undergraduate students in Kasetsart University,



using the 21st century interactive learning. Core competencies are defined as knowledge, behaviors and attitudes that are needed by every member of a One Health outbreak team for prevention, disease surveillance or response. This multidisciplinary approach will amalgamate the related disciplines, enabling the students to better co-ordinate and implement

> OH concepts. The students will finally work in their professions and will be able to join the OH workforce in the future. This activity was held on 22 March 2016 and 1 - 5 August 2016. 49 students from five departments of Kasetsart University participated this activity.

The five continuing days course was interested by multidiscipline students beyond expectation. There were more than 100 students applied for the course. However interactive learning activity resulted in limited seat. Fifty students were chosen from different discipline. As a result, Core competencies were evaluated before and after the course by students. Facilitators also evaluated student individually and as a group by their behavior and homework depending on the topics. The results showed that every core competencies have increased.



Development of a One Health Online Course for Academic Staff and University Students

Avian and swine influenza, dengue fever, zika virus, rabies, leptospirosis, Streptococcus suis, seasonal smog, foodborne infections are only few of the diseases and complex problems that continue to affect the people of Thailand. Effective surveillance



and early detection of these diseases are known strategies to control their spread and prevent them from reaching outbreak levels. However, these diseases and problems are multi-factorial that conventional strategies eventually prove ineffective. The One Health (OH) approach is a known strategy centered on active multidisciplinary collaborations and communications in all aspects of health care: human, animal, and environmental health. As good as the OH approach is, it however this concept is still, however, novel to many scholars. Therefore, the need to promote and advocate the One Health approach in academic world is vital.

Even though the One Health approach is essential in multidiscipline; most of academic staff and university students are very busy with their teaching and studying. Therefore, 'One Health Online Course' must be designed to fit the need and time for those academic staff and university students. If we can delivery key message of One Health online, it will involve many disciplines into One Health world. Twenty academic staff and experts in IT and online course development from Faculties of Nursing, Medicine, Associated Medical Sciences, Pharmacy, Veterinary Medicine, Education, and Humanities, Chiang Mai will be gathered to develop an outline and the essential contents, teaching materials, and strategies for the online One Health teaching for 2 days in Chiang Mai, Thailand.

The objectives of this activity were 1) To survey a basic knowledge about One Health and needs of academic staff and university student toward One Health Online Course. 2) To create an outline and contents of the developed One Health online course for academic staff and university students. 3) To create teaching materials developed and teaching strategies used in the project, which includes: course content, handouts, presentations, exercises, and other relevant materials. 4) To evaluate materials used or developed for the online course development.

This workshop gave an experience of

active learning process from various disciplines about how to develop outline and contents for one health online course by using group discussion and sharing the experience among multidiscipline, which was the most satisfaction that mentioned by participants. Since participants were from various disciplines, they had a chance to make a professional network from this activities. 72

Developing a Short Training Course on Surveillance and Rapid Response of Emerging Infectious Disease Outbreaks in communities for Public Health Personnel in Thailand

communicable diseases still remain the most common public health problems. Its high incident can cause huge social and economic burden and impact quality of life of population in South East Asia, including Thailand. Besides, emerging diseases such as Influenza A (H5N1), re-emerging infectious diseases such as dengue hemorrhagic fever, and chikungunya represent recurrent threats which also cause human suffering and economic loss in the region. Public health administrators need information to prioritize the problems, to plan and to monitor public health activities in order to appropriately and effectively use of limited resources. Surveillance is an important epidemiological method use to collect public health problems.

Public health personnel need to have knowledge and understanding of epidemiolo-



gy, method and benefit of disease surveillance and have to use information from disease surveillance effectively in their work. The more surveillance information is utilized, the more effective public health problems are prevented and controlled. They should be able to apply epidemiology and one health concept to prevent disease occurrence in their areas.

This training was conducted to educate public health personnel on surveillance and rapid response of Emerging Infectious Diseases (EID) and Re-EID using a developed short training course on "Surveillance and Rapid Response of Emerging and Re-emerging Infectious Disease (EID) Outbreaks in a Community Using One Health Concept" and to evaluate the effectiveness of the developed short training course and educational materials using for training public health personnel who take responsibility in disease prevention and control in sub-district level. The goals of this activity were to conduct a short training course on "Surveillance and Rapid Response of Emerging and Re-emerging Infectious Disease (EID) Outbreaks in a Community Using One Health Concept" for public health personnel at district and sub district levels in Khon Kaen and Chiang Mai province and to evaluate the appropriateness and effectiveness of the course including participants' opinions towards course contents, course duration, training methods and educational materials.

Results in assessing participant knowledge before and after training showed that approximate 85% participants obtained more score after training.



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Training the Current OHW to Recognize and Response to Emerging Infectious Diseases (EID) Suspected/ Infected in Companion and Exotic Animals

Most emerging infectious diseases (EIDs) are zoonotic and a vast number of microbial pathogens exist in various species of wild and domestic animals. While domestic companion animals such as pets and exotic animals may serve as intermediate hosts to expand the extent of human contact, which is the real threat of new emerging pathogens from the animals. MER-CoV from camels in Middle-East countries. Ebola virus from bats, suspected/infected pets in USA and Spain and wildlife animals in Africa, to name a few. Thus, guidelines, well-trained workers, response teams and a new generation of workforce should be prepared for risks involved to ensure that workers can manage effectively and safely.

To respond quickly and effectively to new outbreaks of zoonotic infectious diseases, workers in the field relating with human health, animal health, environmental health



systems and other related fields must have adequate training in the skills required to handle suspected/infected companion and exotic animals (both legally and confiscated animal) and collaborate across other disciplines in charge of responding to EID outbreaks in humans. The outcomes of this training will provide stronger collaboration and communication mechanisms between workers in these fields, especially among university personnel and government workers who are expert in animal health, human health, and environmental health providing the activities in One Health workforce services to prevent and control the EIDs from infected animal to community. Moreover, the activities relating with EIDs active surveillance in exotic animals is an excellent area for strong collaboration with PREDICT 2 project. This activity aimed to support the networks to assist government ministries to train the current OH Workforce. This activity was separated into three modules, modules I, II, and III, that were held on 25-27 May 2016, 7-8 July 2016, and 26-29 July 2016, by Faculty of Veterinary Science, Mahidol University, respectively.

The recommendation to recognize and response to EID suspected/ infected in companion and exotic animals was designed base on responding procedure of Thailand animal and human diseases control authorities and was also adopted from "Interim Guidance for Dog or Cat Quarantine after Exposure to a Human with Confirmed Ebola Virus Disease". The recommendation was then developed and tested by three scenario-based simulations following:

• The procedure to response EID in companion and exotic pet exposed with the pet owner who infected with EIDs.

• The procedure to response EID in companion and exotic pet exposed with EIDs from the unknown source.

• The procedure to response EID in imported companion and exotic pet. In the last module, the participant had the opportunity to learn for the knowledge that necessary

for EIDs control in pet and also practice about the procedure to handle the animals that suspected/infected with EIDs. The data from the participants' survey indicated to the success of the workshop in several aspect. Development of One Health Workforce of Thai University Network for Community-Based Learning on Infectious Diseases Prevention

Khon Kaen University (KKU) was established as the major university in the Northeastern part of Thailand. The university's major mission is to prepare future global citizens to work in a continually changing world.

Most of Thai people living in rural areas are working in the agricultural fields. Health problems among human and animals in these areas are current issues that many organiza-

tions participate and try to solve them. Many infectious diseases such as Avian Influenza, Foot and Mouth Disease (FMD), Haemorrhagic septicemia, Fasciolosis, Opisthorchiasis, Rabies, Melioidosis, etc. are diseases still causing economic losses, health problem and death in the country-side communities.

To prevent the infectious diseases, it is needed to educate people and collaboration



Prince of Songkla University) from differing

backgrounds, disciplines and sectors will join together to form a workforce planning group in this project. The objective of this project aimed to strengthen the students to understand and gain their competencies in One Health workforce, and the researchers or instructors participating in this project would also gain a broad view in multidiscipline collaboration that could be integrated into class teaching and the graduate curriculum. Student preparation phase (July 10-11, 2016), lectures of One Health knowledge was delivered to students by staffs and invited experts. Participants were then join on-site activities such as building of a good relation and collaboration to the community, collecting data using questionnaires about human health, animal health, environment care, and developing plans and activities with the community during July 12-22, 2016 in Nong Bua Lam Phu province.



Health problem solving plans for Tha Lard community

	Short-term plan	Long-term plan
Human	 Local health promoting hospital advice Health monitoring by hospital Health promoting program by hospital 	 Health educating by hospital Changing of behavior consumption Health care promoting program
Animal	 Survey and record animal population Animal vaccination 	1. Animal health management education 2. Animal registration
Environment	 Insect control e.g. glue and herbal repellant Proper waste management of fish process 	 Develop appropriate process for dried fish Set wastewater treatment system





The dashboards present some of THOHUN's performance statistics from 2013 to 2016.



















The financial dashboards illustrate THOUN's performance alongside expenditure from 2013 to 2016.

















THOHUN Finacial Management 2014

Budget Allocation to Faculty Member in 2014







THOHUN Finacial Management 2015

Budget Allocation to Faculty Member in 2015



Budget Allocation to Faculty Member in 2015





THOHUN Finacial Management 2016



Budget Allocation to Faculty Member in 2016

Budget Allocation to Faculty Member in 2016





ACRONYMS

AMS	Faculty of Associate Medical Sciences	
CMU	Chiang Mai University	
CPHS	College of Public Health Science	
CU	Chulalongkorn University	
CVM	College of Veterinary Medicine	
FE	Faculty of Economics	
FEM	Faculty of Environment Management	
FERS	Faculty of Environment and Resource Studies	
FMRH	Faculty of Medicine Ramathibodi Hospital	
FN	Faculty of Nursing	
FP	Faculty of Pharmacy	
FPH	Faculty of Public Health	
FPS	Faculty of Pharmaceutical Sciences	
FSS	Faculty of Social Sciences	
FTM	Faculty of Tropical Medicine	
FVM	Faculty of Veterinary Medicine	
FVS	Faculty of Veterinary Science	
FVT	Faculty of Veterinary Technology	
KKU	Khon Kaen University	
KU	Kasetsart University	
MOPH	Ministry of Public Health	
MU	Mahidol University	
PSU	Prince of Songkhla University	
SPH	School of Public Health	
TU	Thammasat University	



Annex

Emerging Pandemic Threats (EPT)

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.

BACKGROUND

Nearly 75 percent of all new, emerging, or re-emerging diseases affecting humans at the beginning of the 21st century are zoonotic (i.e. originated in animals). Notable reminders of how vulnerable the increasingly interconnected world is to the global impact of new emergent diseases include HIV/AIDS, severe acute respiratory syndrome (SARS), the H5N1 strain of avian influenza, and the 2009 pandemic H1N1 influenza virus. The speed with which thes diseases can emerge and spread presents serious public health, economic, and development concerns. It also underscores the need for the development of comprehensive disease detection and response capacities, particularly in "hot spot" areas such as central Africa, South and Southeast Asia, and Latin America where a confluence of risk factors may contribute to disease emergence.

THINK GLOBALLY, ACT LOCALLY

The Pandemic Influenza and Other Emerging Threats (PIOET) Unit supports two major lines of work: H5N1 Avian Influenza, and Emerging Pandemic Threats. <u>H5N1 Avian Influenza:</u> Since 2005, USAID has strengthened the capacities of more han 50 countries for monitoring the spread of H5N1 avian influenza among wild bird populations,



domestic poultry, and humans, to mount a rapid and effective containment of the virus when it is found, and to help countries prepare operational capacities in the event a pandemic capable virus emerges. USAID's efforts have contributed to dramatic downturns in poultry outbreaks and human infections, and a dramatic reduction in the number of countries affected; with five of these countries (Indonesia, Vietnam, China, Bangladesh and Egypt) as the primary reservoir of the virus.Although these successes are significant, the H5N1 virus remains a serious threat and sustained vigilance is required. Mindful of the need for vigilance USAID continues its efforts to build on its successes and further consolidate itsprograms in the highest risk countries.

Emerging Pandemic Threats: As a complement to USAID's work in H5N1, the PIOET Unit launched the Emerging Pandemic Threats program in 2009 to aggressively pre-empt or combat other diseases that could spark future pandemics. This second line of work is composed of four complementary projects operating in 20 countries —PREDICT, PREVENT, IDENTIFY, and RESPOND-with technical assistance from the U.S. Centers for Disease Control and Prevention (CDC). The EPT global program draws on expertise from across the animal and human health sectors to build regional, national, and local "One Health" capacities for early disease detection, laboratory-based disease diagnosis, rapid response and containment, and risk reduction. At the country level, the EPT partners are working with governments and other key in-country and regional partners to enhance the understanding of viral distribution and key drivers of disease emergence-from deforestation and land use change to wildlife trade and livestock product demands. This information, along with other EPT investments to strengthen country-level capacities for routine infectious disease detection and outbreak response, will be used to improve surveillance and response as well as risk-mitigation strategies. These efforts will safeguard human and animal health and livelihoods in locations in Africa, Asia, and Latin America where new pandemic threats are likely to emerge.



PARTNERS AND ACTIVITIES

<u>PREDICT project:</u> implementing partners are University of California-Davis, EcoHealth Alliance, Metabiota Inc. (formerly Global Viral Forecasting Inc.), Smithsonian Institution, and Wildlife Conservation Society with support from Columbia and Harvard universities.

PREDICT focuses on detection and discovery of zoonotic diseases at the wildlife-human interface. Specific activities include: strengthening surveillance and laboratory capacities in order to monitor wildlife and people in contact with wildlife for novel pathogens that may pose a significant public health threat; characterizing human and ecological drivers of disease spillover from animals to people; strengthening and optimizing models for predicting disease emergence and using this information to improve surveillance; and supporting outbreak response when requested.

PREVENT project: implementing partners are FHI 360 and Metabiota Inc.

PREVENT focuses on characterizing risks associated with disease transmission between animals and people and developing risk-mitigation strategies. Specific activities include: characterizing specific practices and behaviors (e.g. bushmeat hunting and butchering, raising wildlife for trade and consumption) that expose people to zoonotic diseases; and developing and deploying risk-mitigation strategies, including a tool for extractive-industry workers to decrease their exposure to emerging zoonoses.

<u>IDENTIFY project:</u> implementing partners are Food and Agriculture Organization (FAO) of the United Nations, World Health Organization (WHO), and World Organization for Animal Health (OIE).



IDENTIFY focuses on strengthening laboratory capacity to safely diagnose and report common animal and human pathogens. Specific activities include: improving laboratory assessment tools to allow for better targeting of technical support and training; developing and rolling out training modules on diagnosing highly-infectious diseases; improving laboratory management practices related to biosafety and biosecurity; "twinning" labs with developed country labs; and expanding monitoring of antimicrobial resistance rates among priority bacterial pathogens.

<u>RESPOND project:</u> implementing partners are Development Alternatives Inc., Tufts University, University of Minnesota, Ecology and Environment, and Training Resources Group.

RESPOND focuses on pre-service workforce training and strengthening outbreak response capacity. Specific activities include: networking 34 schools of public health, veterinary medicine, and environment in both Africa and Southeast Asia to promote a "One Health" approach among future graduates; developing an outbreak response algorithm for health events where the cause has not yet been identified; and supporting outbreak response when requested.

CDC

USAID-funded CDC activities focus on pathogen detection as well as outbreak investigation and response. Specific activities include: strengthening surveillance and lab capacity; enhanced monitoring for zoonotic pathogens in people with frequent contact with wildlife; in-service Field Epidemiology Training Programs (FETP); and supporting outbreak response when requested. To further enhance coordination and link to CDC's expertise, two CDC technical officers have been seconded to USAID to directly manage EPT projects focused on One Health, pre-service epidemiology training and laboratory capacity-building within the PIOET portfolio.

> Retrieved from: https://www.usaid.gov/sites/default/files/documents/1864/PIOETFact%20SheetApril2013.pdf



EPT-2

In 2009, the U.S. Agency for International Development (USAID) launched the Emerging Pandemic Threats program (EPT-1), a 5-year program targeting "the early detection of new disease threats; enhanced 'national-level' preparedness and response capacities for their effective control; and a reduction in the risk of disease emergence by minimizing those practices and behaviors that trigger the 'spill-over and spread' of new pathogens from animal reservoirs to humans." EPT-1 complemented an ongoing line of work USAID has supported since 2005: to control the threat posed by the highly pathogenic H5N1 avian influenza (AI) virus.

Both of these efforts grew out of a recognition that we are now in an era of new, re-emerging and recurring global health threats that argue for a longer-term, more strategic approach to global health security. EPT-1 and AI work has been focused on building those capacities and expanding the evidence base that contributes to mitigating the impact of novel "high consequence pathogens" arising from animals. Using a "risk-based" formula that targeted those places, populations and practices that contribute to the emergence and spread of new microbial threats, our EPT-1 and AI work has laid the foundation for a next generation of investments that seeks to consolidate these efforts into a highly coordinated program spanning pandemic influenza and other emerging threats to further minimize their potential for global impact. EPT-2 will also make major contributions to the Global Health Security Agenda to more effectively address threats posed by the natural emergence of new disease threats, as well as the intentional and/or accidental release of dangerous pathogens.



Like its predecessors, EPT-2 has three overarching purposes: the prevention of new zoonotic disease emergence; the early detection of new threats when they do emerge; and their timely and effective control. EPT-2 will build on the lessons and knowledge from its predecessors and bring heightened focus to those "places and practices" that enable not just "spill-over" of new microbial threats, but also potentiate its "amplification and spread." EPT-2 will also invest in the One Health policies and capacities needed for their prevention and control. At the core of EPT-2 are seven new areas of strategic focus:

- 1. Developing longitudinal data sets for understanding the biological drivers of disease emergence
- 2. Understanding the human behaviors and practices that underlie the risk of "spill-over, amplification and spread" of new viral threats
- 3. Promoting policies and practices that reduce the risk of disease emergence
- 4. Supporting national One Health platforms
- 5. Investing in the One Health workforce
- 6. Strengthening national preparedness to respond to events of public health significance
- 7. Strengthening global networks for real-time bio-surveillance

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'Strong and sustainable One Health Thai University Network throughout Thailand by 2020'



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