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Following the completion of a MPH and a PhD in Epidemiology from University of California at Los Angeles in 2006, Dr. Sopon returned to FETP and started to collaborate with many organizations to expand in-service training in epidemiology to other health professionals including nurses, pharmacists and veterinarians. His areas of technical expertise include infectious diseases modeling, influenza and HIV research. He was appointed to be Director of FETP-Thailand in 2009.

He was Chair of the Drafting Group for “Emerging Infectious Disease Preparedness and Response” resolution in the Thai Health Assembly in late 2009 and incorporated “One Health” concept into the development of the “Thailand National Strategic Plan for Emerging Infectious Diseases Preparedness and Responses 2013-2016”.

Over the last 10 years, Dr. Sopon has supervised several FETP trainees to establish and/or evaluate surveillance systems and investigating many important disease outbreaks around the country. In early 2012, he worked with his collaborators in the Field Epidemiology Training Program for Veterinarians (FETPV) in the Department of Livestock Development, Department of Natural Parks, Wildlife and Plant Conservation and Zoological Park Organization to train “One Health Epidemiology” teams in 5 provinces of Thailand. This combined didactic and on-the-job training course was specially designed for professionals who work for human health, livestock health and wildlife health sectors to utilize “One Health” concept and “Epidemiology” methods to improve surveillance and investigation of infectious diseases at Human-Animal-Ecosystems Interface.

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EXPERIENTIAL FIELD TRAINING AND ACTIVE SIMULATIONS

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INTRODUCTION

In the last decade, high profile infectious disease outbreaks including Severe Acute Respiratory Syndrome (SARS), highly pathogenic avian influenza (HPAI) H5N1, and pandemic H1N1 influenza, have demonstrated the need for prompt epidemiological investigation and response, and the importance of teamwork and improved communications among multiple sectors. Field-based training has demonstrated its effectiveness in response to major epidemics worldwide, and has become a key strategy to strengthen disease prevention and control capacity in many countries.

In 1980, the Thai Ministry of Public Health's Department of Disease Control (DDC) established Thailand's Field Epidemiology Training Program (FETP) in response to the country's need for competent field epidemiologists with disease outbreak and surveillance experience capable of responding promptly and effectively to public health emergencies. FETP-Thailand is modeled after the US CDC's Epidemic Intelligence Service (EIS) program with support from the World Health Organization (WHO). In the past 3

decades, the program has graduated over 200 field epidemiologists. Although initially only physicians were enrolled in the FETP's 2 years for field-based training, in 2005 the program was expanded to include other health professionals (including veterinarians) who focus on public health work.

During the SARS crisis in Asia in 2003, Thailand's DDC proposed a novel disease prevention and control strategy by having every province set up at least two operational teams consisting of a physician, an epidemiologist, a lab technician and a disease control officer, tasked with identifying persons with possible SARS. The teams were on duty 24 hours a day, 7 days a week. Following a notification of a suspected SARS case, a local team was immediately deployed to visit the patient and begin a field investigation. Due to the success of this strategy, the health emergency response team concept was gradually incorporated as an integral component of the national system for disease surveillance and response.

In early 2004, HPAI (H5N1) outbreaks were

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Surveillance and Rapid Response Team (SRRT)

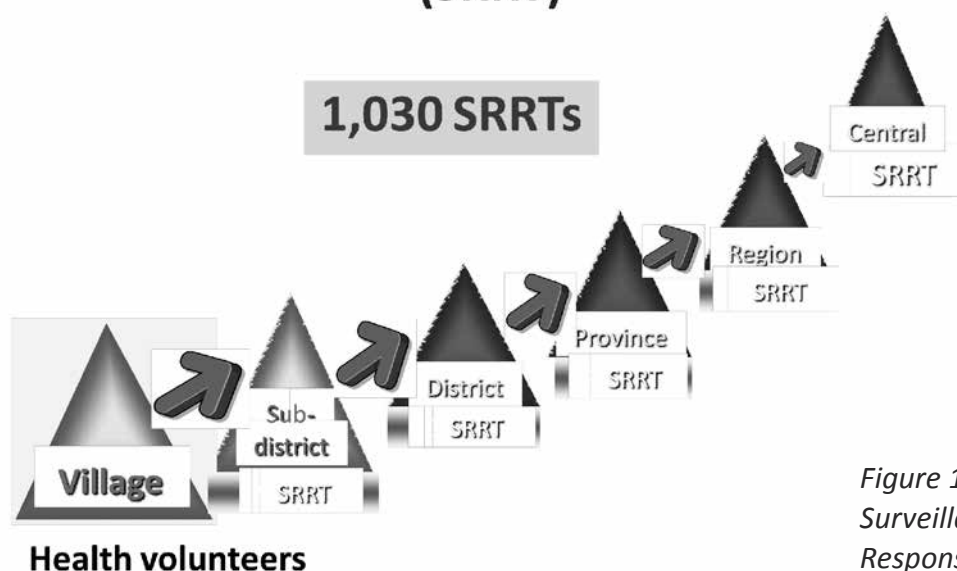


Figure 1. Network of Surveillance and Rapid Response Teams in Thailand

detected in several provinces of Central Thailand. The new crisis stimulated the Thai Ministry of Public Health (MoPH) to launch a policy to establish 1,030 Surveillance and Rapid Response Teams (SRRTs) nationwide (Figure 1). The strategy approved by health authorities was for a team in every district and at least one provincial SRRT in every province, including Bangkok. At the regional level, there is a SRRT in all 12 regional offices of DDC. At the national level, a central SRRT, responsible for coordinating response to all outbreaks of national importance, is staffed by experienced FETP graduates and senior officials from the Bureau of Epidemiology (BoE).

The SRRT members receive training and mentoring from experienced trainers of FETP-Thailand with support from FETP graduates working at different levels of the public health service, both in the Ministry of Public Health and in other ministries. A short-course training called “Field Epidemiology and Management Training” (FEMT) was designed

by faculty members of FETP-Thailand with the objective to provide a 6-month in-service training for SRRT leaders who are physicians and public health professionals. The training assignments include one field outbreak investigation and one surveillance evaluation study.

COLLABORATION ON TRAINING OF VETERINARIANS

In 2005, the first cohort of veterinarians was enrolled in the FETP-Thailand with strong policy support from the Department of Livestock Development (DLD) of Thailand. Animal doctors and physicians received field-based training and joined hands to investigate disease outbreaks. Furthermore, in 2009 with support from FAO, USAID and U.S. CDC, the collaboration was expanded to establish a Regional FETP for Veterinarians (FETP-V). The program aims to

strengthen animal health personnel and promote multi-disciplinary response capacity for diseases in animals. It is closely linked to FETP and focuses on surveillance and investigation of outbreaks in animal diseases and zoonoses. As of December 2012, a total of 15 veterinarians have graduated from the FETP-V, including eleven Thai and four veterinarians from neighboring countries in Southeast Asia. Currently, five international trainees and two Thai trainees are enrolled in the program. In addition, a total of 38 international and 44 Thai participants were trained during a one-month FETP-V prerequisite course. The program has promoted a number of field-based activities in Thailand. Several surveillance activities and outbreak responses to both zoonotic and non-zoonotic pathogens were conducted by trainees and alumni, including human Streptococcosis caused by Streptococcus type 2 from pigs, human and animal Brucellosis, Rabies, Anthrax and Avian Influenza.

In July 2011, a special meeting among government officers from human health, animal health and wildlife health, university professors and NGOs was held to form the Thai One Health Network. At the end of the meeting, a One Health Declaration was drafted and approved by meeting participants. The goal is to strengthen Thailand's capacity for better preparedness and response to emerging infectious diseases (EIDs) through multi-sectoral and multi-disciplinary collaborations.

MOVING TO ONE HEALTH EPIDEMIOLOGY TRAINING

In 2012, building upon long term experiences

with FETP and SRRT training, a multisectoral project to "Support Training to Strengthen One Health Epidemiological Teams at the Provincial and District Level" was planned based on a collaboration between FETP-Thailand, the Field Epidemiologist Association of Thailand (FEAT), FETP-V, DLD, the Zoological Park Organization (ZPO), the Department of Natural Parks, Wildlife and Plant Conservation (DNP), the USAID's RESPOND project, and U.S. CDC. This applied outbreak response training and capacity building activity was conducted in 5 different regions of Thailand, and involved key medical epidemiologists, veterinarians and wildlife experts. Faculty members from five universities were invited to be project advisor for the field-based projects and the relationship has led to an improvement of government-university collaboration in the country. Subsequently, in late 2012, the Chair of Thailand One Health University Network was invited to co-chair the Thai One Health Network and discussion on continuing activities through additional projects as well as in-service training.

The project goals are to strengthen national capacity in preparedness and response through collaborative work of a multisectoral team of health professionals through:

- Improved mentoring skills of supervisors;
- Strengthened disease surveillance and joint response to public health events of national and international concern;
- Enhanced communication and knowledge among the sectors;
- Education to improve knowledge and technical skills of SRRT members;

- Closer collaboration with university faculty to exchange ideas on enhanced training methods, materials and curricula to improve knowledge and adult learning techniques; and
- Encourage managers in all sectors to improve teamwork and the use of timely and accurate disease and outbreak information to protect the public's health and limit the impact of EIDs, including zoonotic diseases, on national productivity and economic growth.

This One Health-focused training project involved two one-week national workshops, and five provincial-level field projects over six months involving zoonoses which are a priority for Thailand (Q fever, tuberculosis, Melioidosis, Brucellosis, West Nile virus). A final seminar was held to showcase results and lessons learned from the projects completed (Figure 2). Experienced field epidemiology trainers from multiple sectors and a representative of university faculty reviewed and modified the training curriculum based on national priorities. Five pilot provinces, namely, Chiangmai, Chonburi, Nakhon Ratchasima, Songkhla and Kanchanaburi were selected based on the presence of both FETP alumni and health professionals and university faculty interested in strengthening EIDs preparedness and responses through "One Health" approach.

West Nile encephalitis has been listed as one the potential EIDs in Thailand. No human cases have been identified or reported. In preparation for a potential West Nile outbreak in Thailand, an active simulation was initiated with a focus on developing effective surveillance for the disease. A joint investigation was conducted to identify the

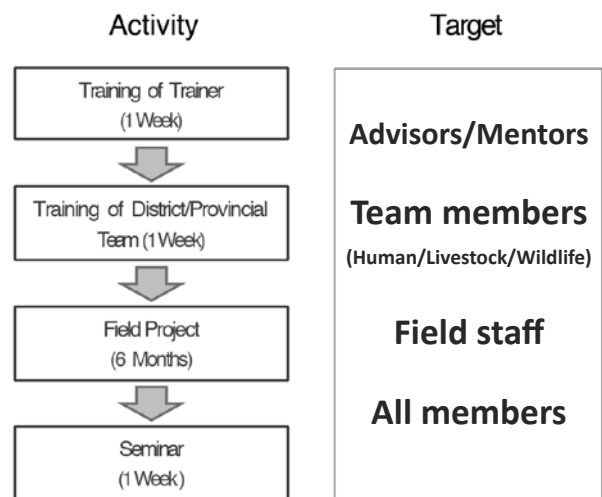


Figure 2. Structure and Stakeholders of "Training of One Health Epidemiological Teams at the

etiology of encephalitis cases with unknown cause. Participating organizations were from different health sectors, including public health, the vector control unit, the livestock office, and wildlife health sectors in the province. Following a notification of a suspected human case of encephalitis of unknown etiology, a multi-disciplinary team will be deployed to investigate the human case, identify possible vectors of disease and animal reservoirs in both livestock and wildlife.

CONCLUSIONS

Working collaboratively in the design, planning and implementation of applied epidemiology

training at the provincial and district levels has improved teamwork and the capacity among the multiple sectors responsible for disease surveillance and outbreak response. The “One Health”-based curriculum and training experience can serve as a guide for future One Health training workshops in the nation and region. Collaboration between government agencies and universities should be stressed in developing curricula to strengthen One Health knowledge and skills. Trust-based cross-sectoral collaboration will contribute to timely sharing of surveillance information and enhanced emergency response capacity, resulting in improved EID prevention and control. Collective leadership, trust and policy commitment are vital factors for the success and sustainability of the One Health network in the provinces and country.

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