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Year (Grade)	D2
Place of practice	Faculty of Public Health, Thammasat University, Thailand
Period of practice	November 22nd - December 9th. 2017.
Purpose	To join surveillance of antimicrobial resistance /To gain an experience of field work

Summary of activities (about 800 words, provide photos, tables and figures that clearly show the activities during the period)

In my Field Epidemiology activity, I joined surveillance of antimicrobial resistance in *Escherichia coli* and nontyphoidal *Salmonella* in Thailand. The objective of this project was to determine the prevalence of antimicrobial resistant *E. coli* and *Salmonella* in swine farms and pork in Thailand, and to identify risk factors for the emergence and spread of drug resistant bacteria. I could join just a beginning of this project because of limited period of my activity, but I learned many things and understood the importance of collaborators during my staying in Thammasat University.

We visited the market in Pathum Thani Province, and pork samples were collected. In addition to buy the pork, pork residues on the surface of the wooden chopping block was also collected at each retail. These two samples were important to examine the prevalence of antimicrobial resistant *E. coli* and *Salmonella*, and furthermore, surface on the chopping block was expected to be one of critical control points against cross contamination of bacteria. At each visit, an interview survey was conducted as well. This sample collection and survey were organized by Dr. Apiradee Intarpuk and Dr. Watswan Prepasawat. It was impossible to carry out this activity without their corporation. I understood it was very important to find good collaborators when conducting an epidemiological survey. It is necessary to develop a strong connection among researchers, otherwise, we cannot only have obtained the epidemiological data but understand the actual situation of any infectious disease neither. Unless we know the actual burden and situation of any infectious disease, it is impossible to conduct correct research for



Figure 1. Sampling at market

infectious diseases and make a correct control measure.

We isolated *E. coli* and nontyphoidal *Salmonella* bacteria from the corrected samples. We collected 6 pork samples and 6 residues at 6 retailers. From each sample, 10 and 6 colonies at most were isolated to examine the contamination with *E. coli* and nontyphoidal *Salmonella*, respectively. In the result, *E. coli* was isolated from all samples and *Salmonella* isolates were found in 4 samples, out of 6 samples. I learned how to isolate and identify them. Indeed, I have learned the principal and the procedure in bacteriology textbooks, but unexpected results were observed often in laboratory. Theory in the textbook does not consist with practice in laboratory sometimes. Although it might not happen so often, it is important for researchers to be able to adapt to the moment and deal with situation correctly. For that reason, I have to know the principal of each medium and accumulate experience at laboratory. This Field Epidemiology was a great experience for me. I learned many things from Ms. Srirat Pornruangwong, an expert research assistant in Thammasat University. She has more than 30 years' experience and, she has found three new serovars of *Salmonella* in Thailand during her career. Hence, she was an excellent mentor. I asked her many things. I think some questions are simple but others are very



Figure 2. Laboratory Work

complicated. She answered every question kindly. When I asked her to give me the reference, she found

the research paper next day. I could understand some papers because some of them were written in Thai language, but I was happy and appreciate her. If I could understand Thai language even a little, I could get more knowledge. However, that's hard. I realized how important to find good collaborators again.

I joined other activities as well. One of them was to collect air sample to evaluate microbial contamination. Since air can play a central role as a reservoir for microorganisms, microbial monitoring is useful to measure air quality and identify critical situations in controlled environments such as a dissecting room. I took part in active sampling by using the Surface Air System. This was not related to our project, but Dr. Kanjana Changkaew kindly asked me to join it for my experience. I also had an opportunity to attend her class. She gave a lecture to students of master degree. Their measure was occupational science, so they were not familiar with bacteriology. Then I understood bacteriologist needed to take a responsibility even for other study area. This is also activity which makes



Figure 3. Air Sampling

me realize the importance of collaboration. Furthermore, I observed the water sampling at sewage treatment facility. This was a collaboration research with Technical University of Denmark. I guessed collaboration among universities worldwide would be more important and increase. Thanks to Dr. Changkaew, I had many opportunities to gain various experiences.

In this Field Epidemiology activity, I gained excellent experiences and opportunities to learn many things. Among them, it is the most important thing that I experienced how important collaborators are. Every research activity could not carry out without any support of collaborators. I would like to make what I have learned in this activity useful for the improvement of my future career. In addition, this activity was supported by Leading Program. I would like to express my gratitude and appreciate to my supervisors and the member of Leading Program office.

Field Epidemiology Evaluation by supervisor

Institution • Official title • Name	印
Describe overall evaluation on the applicant's activity in overseas practice.	

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