

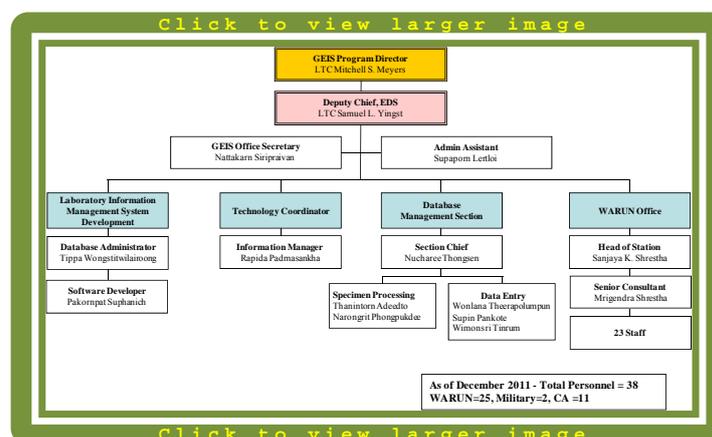
- Continue to collaborate with UVA on testing next generation molecular methods for the detection of enteric pathogens.
- Continue further study on the presence of ESBL genes and the resistant functions using site-specific mutagenesis. Explore for the presence of additional ESBL genes or other β -lactam antibiotic resistant mechanisms and roles of plasmid in spreading β -lactam antibiotic resistances.
- Continue to collaborate with NMRC to evaluate capsule genotypes of *C. jejuni* isolates by using new primer sets, especially in serotypes O:5, O:19, O:12, O:21, O:22, O:31 and O:37. Primer sets for these serotypes will be included in the multiplex PCR panel and re-evaluated with *C. jejuni* isolates at AFRIMS.
- Sequencing of other common capsule locus (O:11, O:40) of *C. jejuni* isolates in Thailand. Capsule locus will be amplified, sequenced, and analyzed by long-PCR reaction and short gun cloning or other next generation sequencing.
- Continue studies on pathogen discovery with UCSF and Washington University.
- Molecular characterization of enteroaggregative *E. coli* isolates from diarrhea cases/controls in Thailand, Nepal and Cambodia.
- Characterize antimicrobial resistances of febrile blood borne pathogens (*Salmonella typhi* and *Salmonella paratyphi A*) isolated in Nepal in 2009-2010.
- Study of epidemiology of travelers diarrhea and post-infectious sequelae is planned for implementation in CY2012.
- Study of cross reactivity of human sera of diarrhea patients with *campylobacter* infection to common capsular antigen extract in this geographical area. Evaluate higher dose (105) and multiple doses of WRSS1 *Shigella* vaccine.

DEPARTMENT OF EPIDEMIOLOGY AND DISEASE SURVEILLANCE (EDS)

DEPARTMENT MISSION

The mission of the Epidemiology and Disease Surveillance Department is to support AFRIMS and AFHSC-GEIS goals and objectives pertaining to bio-surveillance, epidemiology, and capacity building for emerging infectious disease outbreak detection and response in Southeast Asia.

PERSONNEL





IN-HOUSE TRAINING PROGRAMS AND OUTSIDE TRAINING OF PERSONNEL

In-House Biomedical Education

- EDS is actively engaged in training programs throughout the year in order to support capacity building for epidemiology and outbreak response, particularly in the area of public health informatics.

- In 2011, EDS personnel gave multiple classes to AFRIMS and outside personnel on how to use Geographical Information System (GIS) software such as ArcView GIS, Google Earth, and Epi-Map for scientific research, as well as training on MS Office Excel and Epi-Info for outbreak investigation and response.

- AFRIMS serves as a training site for U.S. military and civilian medical students, residents, and infectious disease fellows pursuing careers in tropical medicine and research. EDS helps to arrange for the approximately one dozen students who will come to AFRIMS each year to conduct AFHSC-GEIS sponsored training on HIV and tropical infectious diseases.

Outside Training Provided by Department

- EDS personnel working with the National Institute of Animal Health helped to arrange and coordinate the “Training on Biosafety, Infection Control and Laboratory Diagnostics” workshop given to 20 Department of Livestock Development Veterinarians in August 2011.

- EDS personnel working with instructors from USUHS were able to conduct a five-day workshop on the use of ArcGIS software in support of scientific research.

RESEARCH AREA DIRECTORATES (RADs)

Non-applicable

ACCOMPLISHMENTS

In 2011 EDS assisted AFRIMS science departments with several AFHSC-GEIS programs in support of their five priority surveillance pillars: respiratory infections, especially influenza; gastrointestinal infections; febrile illness syndromes, especially dengue and malaria; antimicrobial resistance; and sexually transmitted infections.

EDS instructors trained over two hundred students on the use of public health informatics software.

Assisted the Johns Hopkins Applied Physics Laboratory with translating parts of their ESSENCE syndromic surveillance program from English to Thai, and provided an evaluation of the software after using it with Royal Thai Army Unit Based Surveillance (UBS) data.

Assisted the Royal Thai Army with some of the data management considerations for the project including the securing of GEIS funding. This contributed to the UBS project winning a prestigious award this year for innovation from the Royal Thai Army.

Won 1st place for best poster presentation at the XXIst APMMC conference in Sydney, Australia, and submitted posters for several other medical conferences.

Compiled and analyzed the results of all acute respiratory illness surveillance conducted by AFRIMS science departments and our regional collaborators, and produced the bi-monthly AFRIMS Influenza Activity Report that is distributed to several organizations involved in influenza research and surveillance, and determination of the yearly northern hemisphere influenza vaccine composition.

Completed the installation of a liquid nitrogen plant at WARUN.