

An Update on Activities at the International Emerging Infections Program, Thailand

As avian influenza faded from the front pages this quarter, IEIP was fortunate to be able to direct attention to influenza surveillance capacity. With new funding and CDC influenza branch support, expanded virological surveillance and a series of partnerships to build influenza control capacity in Thailand have been launched. Electronic surveillance has become a reality this quarter, with an active website that allows all participants in the system, from hospital administrator to provincial health officer to the Bureau of Epidemiology, to review the current surveillance data, appropriate to their own level, by simply accessing the Internet and entering their secure passcode. The threat of avian influenza remains on the horizon, making these new partnerships and surveillance tools critical. - *Scott Dowell*

## Surveillance

After 6-months of pilot testing, surveillance for acute hepatitis was formally launched in Sa Kaeo and Nakhon Phanom. Surveillance officers were trained to capture hospitalized cases of jaundice by nurse identification or elevated bilirubin. In order to eliminate patients with non-infectious causes, patients are excluded if they are  $\leq 30$  days old, had  $>30$  days of illness, or have ALT  $<3$  times normal. The goal is to generate population based data to measure the burden of vaccine preventable hepatitis infection in Thailand.

In April, CDC information technologists Rodney Murray and Charlie Miller worked with IEIP's Pornpak Boonchuen to convert the pneumonia surveillance database to an Internet-based system. Surveillance officers at community hospitals can now upload surveillance data and send it immediately via the Internet. Epidemiologists at IEIP and the Bureau of Epidemiology download the data for further analysis.

## Outbreak Response

The last human case of avian influenza was reported on March 17, 2004. There were a total of 12 confirmed cases and 8 persons died. IEIP assisted the Bureau of Epidemiology (BoE) to conduct a case-control study to identify risk factors. In addition, IEIP provided some technical assistance in 1) a serological survey of 680 exposed cullers conducted by the Royal Thai Army and National Institute of Health, 2) a serological survey among 600 exposed farm workers in 5 affected provinces by BoE, 3) survey of exposed health care workers who provided care to confirmed cases by Department of Medical Services, and 4) a study of circulating influenza viruses among pigs in Thailand by BoE. IEIP and WHO are also helping to report the clinical features of the cases. The Ministry presented IEIP with the coveted honorable shield award for their assistance during SARS and avian influenza (picture, left).



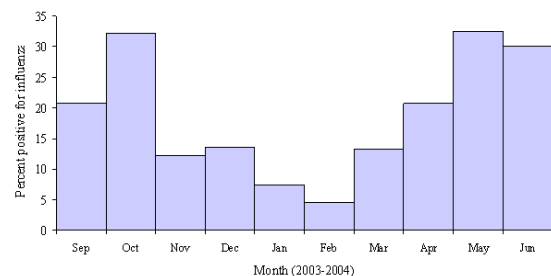
The honorable shield award presented to IEIP by the Thai MOPH for contributions during SARS and avian influenza in 2003-2004.

## Research

The viral causes for pneumonia are systematically being identified through the respiratory pathogen study. Thus far, 639 pneumonia inpatients and 930 outpatients with influenza-like illness have been enrolled with about 80% of pneumonia patients returning for follow-up convalescent serum. Early laboratory results suggest that both RSV and influenza are important causes of illness in rural Thailand, particularly among children. The study also provides data on the seasonal occurrence of these pathogens, including the current increase in influenza activity (figure, below). During the second year, a control group will be added and enrollment will be expanded to Nakhon Phanom.

## Training

In April, Leelawadee Sangsuk of the Thai National Institute of Health spent several weeks in Dick Facklam's laboratory in Atlanta learning how to serotype isolates of *Streptococcus pneumoniae*. In May, IEIP collaborators presented three abstracts at the annual National Epidemiology Seminar in Bangkok. Dr. Sunisa Levine summarized data from a *S. pneumoniae* nasopharyngeal carriage study in Sa Kaeo, Dr. Peera Ar-reerat summarized data from the pneumonia surveillance system in Nakhon Phanom, and Dr. Darin Arichokchai presented the results of the avian influenza case-control study.



Influenza seasonality among outpatients with influenza-like illness, Sa Kaeo. Viral culture results are from Thai NIH.