

Abstract

The goal of this research project is to establish the operation mode of the National Molecular Subtyping Network For Real Time Surveillance of Bacteria Pathogens—PulseNet Formosa Taiwan. To achieve the goal, we hold PFGE and BioNumerics workshops to train technicians from CDC regional laboratories and asked the laboratories to analyze bacterial isolates of *Neisseria meningitidis*, *Salmonella enterica* subsp. *enterica* serotype Typhi, *S. Paratyphi* and *Shigella* spp. with standardized PFGE protocol in real time. The training workshops were also given to the laboratorians from some hospital medical centers and regional hospitals, to fulfill the people capable to investigate nosocomial outbreaks of bacterial infection using PFGE technique.

In 2005, we hosted one PFGE and two BioNumerics training workshops, 30 people were trained. In the surveillance network for bacterial pathogens, a total of 186 bacterial isolates of *N. meningitidis*, *S. Typhi*, *S. Paratyphi* and *Shigella* spp. in the four Taiwan CDC regional laboratories. The Central, Southern and Eastern regional laboratories have finished analysis for all the isolates recovered, however, most of the bacterial isolates were not analyzed in the Northern laboratory. The PFGE technique has been used very well in the Central, Southern and Eastern Branch Office of CDC for investigation of shigellosis outbreaks. The application of molecular typing technique was particularly successful to the investigation of transmission of shigellosis in a long-stay psychiatric nursing center.

Keywords: *Salmonella enterica* · pulsed-field gel electrophoresis · DNA fingerprint database · PulseNet