

Epidemiological Methods for Health Research

17-21 September 2012, Ho Chi Minh City

- *Organization and coordination:* Regional Emerging Diseases Intervention (REDI) Centre-Singapore, Institut Pasteur of Ho Chi Minh City, HKU-Pasteur Research Centre and Institut Pasteur International Network

Aim and objectives

- Objectives: Provide a broad basis of the practical knowledge for design, implementation, and reporting clinical research of infectious disease in a local setting. Primary focus will be on the logistics of collection, storage and analysis of high quality data to address relevant and well-framed research questions to support public health-oriented research throughout the SE Asia/Mekong region.

Participants

- *Profile:* Health personnel from the region involved in surveillance activities and outbreak investigation. The course is particularly aimed at individuals in the health sector wishing to acquire the necessary skills to quickly set up databases, enter collected data and perform a variety of standard statistical analyses. The course will be conducted in English.
- *Number of students:* Maximum 24 participants, mainly from Cambodia, Laos, Myanmar, the Philippines and Vietnam (contingent on the level of financial support). A course committee comprising members of the teaching team and of the organizers will be set-up for the selection of the participants.

Preliminary Curriculum

The course will be based on introductory lectures (25% of the time) completed by directed computer-based tutorial with experts and local tutors (25% of the time). The remaining 50% will be dedicated to individual computerized practical exercises.

Module 1: Excel for Research

- Formula and logical functions
- Validation and formatting dataset
- Creating chart with Excel
- Simple functions and basic statistics
- Guided exercises using Excel

Module 2: Methodology and study design

- Epidemiological studies (cohort, case control)
- Bias, third factor, choice of a reference group
- Development of Protocol, Ethical issues
- Scale of measurement, central tendency, measure of dispersion
- Case study (part 1)
- Power and Sample Size Calculation
- Guided exercises using OpenEpi (part 1)

Module 3 - Basic of Data Management with EpiData

- Overview EpiData and program installation
- General principles of and basic data-management procedures
- Defining the variables (type, format ...)
- Setting up a data entry system, development of a QES file
- Minimizing errors during data entry: setting-up a check file
- Creating a REC file
- Organizing data entry
- Guided exercises using EpiData

Module 4: Analyzing data

- Point estimate, confidence intervals
- Hypothesis testing, p-value
- Tests of association
- Risk estimates
- Tables, graph and diagrams
- Practical session: using OpenEpi (part 2)

Deliverables

By the end of the course, students should be able to use the advanced functions of Excel and EpiData for the creation of a data entry system based on an existing questionnaire, for the development of a database, and for the prevention of data entry errors through the writing of a check program. Finally the participant will be familiar with the use of the Open Epi rapid calculator and will be able to perform a variety of standard statistical analyses including sample size calculation and the ad-hoc computation of cross tabulation and risk measurements.

The course will also be the first international teaching program supported by the Institut Pasteur International Network in the newly established Teaching Center of Institut Pasteur of Ho Chi Min City. Importantly, it will allow maintaining the strategic collaboration between Institut Pasteur International Network, REDI Center, and the Regional Expert Teams in Public Health and Epidemiology which has gained momentum and widespread recognition over the past three years.