



Workshop on Epidemiology and Public Health

Facilitators:

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Dr. Shamima Akter, Chief (section head), Dept. of Epidemiology and Prevention, National Center for Global Health and Medicine, Tokyo, Japan

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Dr. Papia Sultana, Professor, Department of Statistics, University of Rajshahi, Bangladesh

Host: Global Public Health Research Foundation

Venue: Uttara, Dhaka

Duration: 5 days (9-13 February 2018)

Time: 10:00-17:00

Registration deadline: **January 25, 2017**

Online Registration Form: <https://goo.gl/forms/MnSC60aN3cIynGX73>

Content

Day 1: Principles of Epidemiology

- a. Epidemiology: concepts and terminology
- b. Review of measures of disease occurrence & association
- c. Overview of epidemiologic study designs
- d. Data Analysis Software: Stata

Day 2: Data analysis using Statistical Software

- a. Introduction to Stata
- b. Handling Stata Software in real data analysis

Day 3: Common statistical tools used in epidemiologic data analysis

- a. Review of Stata software
- b. Basic concepts about data type and analysis
- c. Practical: public health data analysis using Stata software
Chi-square, t-test, Mann-Whitney U test, ANOVA, ANCOVA, simple and multiple linear regression, logistic regression, multilevel models etc.

Day 4: Survival analysis used in epidemiology

- a. Review of data analysis
- b. Basic concepts about survival analysis
- c. Practical: public health data analysis using Stata software
Life table, Kaplan-Meier model, Cox proportional hazard model, etc.

Day 5: Medical statistical and clinical data analysis

- a. Basic concepts about clinical data and appropriate cut-off
- b. Practical: clinical and public data analysis using Stata software
ROC curve, cubic spline regression etc.

NB: Participants are required to bring a laptop to class, with Stata version 11 or more installed.

Description:

This 5 day course will introduce principles and methods of epidemiologic investigation of disease and other health states. The aim of the course is to provide knowledge on different types of study designs (including randomized trials, cohort, case-control studies, and cross-sectional study); measurement of exposures and outcomes; and risk estimation. The course will provide Stata techniques from basic epidemiology, interpreting findings, and drawing inferences; to a variety of commands to manipulate and format data to manage your own projects.

The course content covers data management, programming concepts, procedural programming, various Stata commands and constructs, and project workflow. Participants will master advanced methods of data analysis including simple linear regression and multiple linear regression, simple and multiple logistic regression, Kaplan-Meier analysis, and Cox proportional hazard model. Application of cubic splines and receiver operating characteristic curves (ROC) will also be covered.

Course fee: BDT 5,000 for students and BDT 6,000 for professionals and others (including lunch and snacks). **Please call to Administrative Officer of GPHRF before making a payment (01797-438889).** Course fee is non-refundable.

Learning Objectives:

Upon successfully completing this course, participants will be able to:

1. Understand epidemiology and how it is used in public health, and recognize how exposure, disease and health states may vary based on person, place and time
2. Describe and compare the strengths and weaknesses of epidemiologic study designs, including cross-sectional, case-control, cohort, clinical trials, and meta-analysis
3. Explain the role of epidemiologic methods in determining the etiology of disease and other health states (e.g. diabetes, cardiovascular disease, mental health) in preventing disease and improving health

4. Use Stata to visualize relationships between two continuous or categorical measures
5. Use Stata to fit simple and multiple linear regression models and be able to relate a continuous outcome to multiple predictors in one model with assessment of confounding and interaction
6. Use Stata to fit multiple logistic regression models to relate a dichotomous outcome to multiple predictors in one model and to assess confounding, interaction, and goodness-of-fit to interpret the relevant estimates from multiple logistic regression
7. Use Stata to conduct the survival data analyses with emphasis on statistical methods which are useful in medical follow-up studies and in general time-to-event studies. The following topics are included in this course: censoring, truncation, hazard and survival functions, Kaplan-Meier estimator, and Cox proportional hazards model
8. Use Stata to decide appropriate cut-off value of a continuous variable for a specific disease or health outcome.

Contact:

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