

## **EPIDEMIOLOGY AND INFECTION**

**Version number:** 1  
**Level:** M  
**Credit value:** 20 (ECTS 10)  
**Effective from:** September 2014

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### **PRE AND CO-REQUISITES**

None

### **AIMS**

This is a core unit of the MSc Public Health and can be accessed as a CPD unit. The unit aims:

- To enable the student to assess the health status of populations served.
- To apply the assessment to determine the need for health services.
- To identify the factors that influence the health status of populations served
- To critically appraise and monitor system effectiveness.
- To develop the skills to plan and evaluate health services and technologies used

### **INTENDED LEARNING OUTCOMES:**

Having completed this unit the student is expected to:

1. Demonstrate in-depth knowledge and understanding of epidemiology and a mastery of a complex and specialised area of knowledge and skills.
2. Critically evaluate the aetiological relationships and the risk factors associated with a specific disease or group of diseases as well as handling the complexity of the cause-effect relationship within the bounds of professional practice.
3. Systematically analyse epidemiological data with aetiological hypotheses developed either clinically or experimentally.
4. Critically examine and evaluate preventive procedures as well as social and public health policies, and anticipation of the effect of policy changes upon the delivery of health and social care services.
5. Critically review and analyse the role of social and public health agencies in maintaining health and social well-being of the population.

### **LEARNING AND TEACHING STRATEGIES**

The unit will utilise a wide range of teaching and learning methods including lectures, seminars and practical sessions and student-led presentations. The participants will also undertake critical analysis of epidemiological reports and research via workshops and guided individual study.

## **ASSESSMENT**

### **Summative Assessment**

Learning outcomes 1-5 will be assessed by a one coursework assignment of 5000 words (100%)

### **Indicative assessment**

The assignment will be presented in the form of a report which details the systematic analysis of the data and the implications of the findings. A critical review of the process will be evident as well as a personal reflection on the process and derived learning.

Outcome 3 will be assessed by the participant accessing public data relating to an aspect of epidemiology and undertaking a secondary analysis.

Outcomes 1, 2, 4 and 5 will be assessed by a thorough and rigorous review of the report and analysis, its methodology and a consideration of the implications for public health in relation to their practice.

## **INDICATIVE CONTENT**

- Terminologies, language of epidemiology and population at risk.
- Methods of epidemiology, study design, sampling techniques, major sources of error and ethical issues in epidemiological research.
- Basic measurements in epidemiology: counts, proportions and rates (crude, adjusted and specific rates).
- Management of data, including the process of inference from sample to study population and from study to target population in epidemiological research.
- The concepts of reliability and validity in epidemiological studies.
- The epidemiological principles in population-based studies (in health and social care settings) including:
  - Measures of outcome occurrence (measures of disease frequency); Causation (aetiology): Measures of risk; Formation of causal hypotheses; Evaluation of causal hypotheses.
- The concept of disease clustering, including analysis and assessment of a disease clustering report in the community.
- The epidemiology of specific common chronic and acute ill-health (e.g. cancer, cardiovascular diseases, asthma, occupational diseases, etc.).
- The epidemiology of modern infectious diseases, infectious diseases notification, contact patterns and infectious diseases.
- Public health epidemiology e.g. travel and health, food health and safety, childhood infections and immunisation.
- Environmental epidemiology and molecular epidemiology.
- Early life environment and adulthood disease, including a critical analysis of the foetal origin of heart disease.
- Public health measures to control outbreaks of infectious diseases.

## **INDICATIVE KEY LEARNING RESOURCES**

Bonita, R., 2007. *Basic epidemiology*, 2<sup>nd</sup> ed. Geneva: World Health Organisation.

Farmer, R. and Laurenson, R. 2004. *Lecture notes on epidemiology and public health medicine*. 5<sup>th</sup> ed. London: Blackwell Scientific Publications.

Gerstman, B. B., 2013. *Epidemiology kept simple: an introduction to classic and modern epidemiology*. Chichester: Wiley-Liss.

Rothman, K.J. and Greenland, S., 2008. *Modern Epidemiology*. 3<sup>rd</sup> ed. Philadelphia PA: Lippincott-Raven Publishers.

### **Journals**

BMJ

Epidemiological Bulletin

Epidemiology & Infection

Epidemiologic Perspectives & Innovations

Journal of Public Health Policy

Journal of epidemiology and community health

International Journal of Epidemiology

Public Health

### **Web-based sources**

<https://www.gov.uk/government/organisations/department-of-health>

<http://www.hpa.org.uk/>

<http://www.who.int/en/>

Websites containing statistical data such as cancer registry, Stroke Association, Diabetes UK, British Hypertension Society, British Heart Foundation, Intelligence units, Infectious diseases, Food Standard Agency, Environment Agency.