

Master of Public Health (Epidemiology and Disease control) and Master of Public Health (Monitoring and Evaluation)

MASTER OF PUBLIC HEALTH (EPIDEMIOLOGY AND DISEASES CONTROL)

PHI 815: MEDICAL STATISTICS

Study designs in medical research, Measures of central tendency and dispersion. Probability and probability distribution. Baye's Theorem. Inferential statistics: confidence intervals, hypothesis testing. Central limit Theorem. T-test ANOVA and post ANOVA tests. Chi-square test. Barlett's test of homogeneity; loglikelihood test and Kolmogorov-Smirnov test of goodness-of-fit; McNemar's test, Mantel-Haenszel test. Life table construction and interpretation. Regression and correlation. Problem data. Experimental designs. Non parametric statistics. Application of statistical software in analysis of medical data. Stata, SAS, Epi info, Nudist Nvivo

HEH 800: HEALTH RESEARCH METHODS and ETHICS

Research meaning and purpose, terms and concepts. Types of research studies; descriptive, cross-sectional, observational, prospective and retrospective, case-control studies, clinical trials, community trials and experimental. Sources of confounding and bias. Sampling methods and sample size determination. Development of research instruments: questionnaires focus group discussion, direct field observation, laboratory experimental tests. Validation of research instruments. Data collection techniques; Data processing and storage. Writing a research report. Ethical issues in research. Components of research proposal. Research grant application.

HPH 802: PRINCIPLES OF EPIDEMIOLOGY

Introduction, concepts, scope, uses, and evolution of epidemiology ; Epidemiological measures of Mortality and Morbidity; Dynamics and Kinetics of disease transmission, modes of transmission ,Errors in measurements; Natural History , Spectrum of Disease and Prognosis of disease; Screening in health and ascertainment of validity of diagnostic test; Causal thinking in health; Risk in Epidemiology – Calculation and estimation of risks /Attributable risk/odds ratio/ relative risk etc Measures of association and potential impact; Epidemiological study designs- Experimental Designs, Observational designs;

HPH 803: HEALTH SERVICE MANAGEMENT, POLICY and INFORMATICS

Concept of management. Management functions: planning, implementation, evaluation; sub functions of management. Principles of management skills. Structure of organizations. Personnel management in health: manpower planning, procurement, development, compensation, integration, maintenance and separation. Financial management: definition of concepts. Health information systems management. Health policy. Health care quality assessment and control. Health information system: data, information and medical records. Health information system. Types of information systems. Computer and management of

information. Existing health information systems. Control and audit of information in health care institutions. Information for facility management. Organization of Hospital Information System care: concepts, theories, components, elements and data formats.

HPH 804: PROJECT PLANNING, MONITORING AND EVALUATION

Project management: principles, concepts and progress; Types of projects, Project life cycle. Strategic contexts of the project. Functions of management: planning, implementation and evaluation. Project management information system. Leadership: teamwork and team development. Introduction to project planning and Management and Key concepts, Introduction to and Scope of monitoring and evaluation. Frameworks – Log Frame, Results Framework, Conceptual Framework, logic model: Indicators and Information Sources, measurement tools, Strengths and limitations of information sources , Guidelines for constructing core population coverage indicators , Calculating and Interpreting Coverage Indicators-Developing and Implementing an M&E Plan, Evaluation Design , Questionnaire Design, Facilitating Use of M&E Information

HPH 805 : BEHAVIOURAL SCIENCES AND HEALTH PROMOTION

Society, culture and social perceptions of health, illness and disease. Cultural attitudes and explanations of aetiology, diagnosis and treatment of diseases. Traditional health care provision. Socio-cultural and economic barriers to health care equity and relevance: poverty, accessibility, gender disparity, community behaviour, food insecurity. Religious beliefs and practices in health. Changing socio-cultural beliefs, practices and impacts on human health. Principles and fundamentals of health education and promotion. Declarations of international conferences. Models and theories of health Promotion and Education. Declarations of international conferences. Methods of health promotion: counseling, information, education and communication. Health promotion interventions.

HPH 806: APPLIED EPIDEMIOLOGY

Epidemiological study designs and applications. Association and causation. Application of epidemiology in disease control and prevention: clinical and community trials; risk estimation and prevention. Biological inferences. Epidemiology in evaluation of health interventions and health policy. Ethical and professional issues in epidemiology. Epidemiology of selected infectious and chronic disease of public health importance. Emerging and re-emerging diseases. Pharco-epidemiology.

HPH 807: COMMUNITY HEALTH & PRIMARY HEALTH CARE

Occupational health: principles and aims and historical development. Occupational hazards/ occupational Toxicology, International occupational health standards: methods of monitoring and control. Occupational diseases. General preventive measures and treatment of common occupational diseases. Ergonomics and physiology of labor, industrial safety and prevention of accidents. Occupational health services in the public and private sector. Social security in developing countries. Labour legislation in Kenya. Occupational Health and Safety Management Systems (OHSMS) including Auditing.

HPH 808: INFECTIOUS DISEASES DYNAMICS

Definition of terms: infection, pathogen, disease, infectious disease; principles of pathogen dynamics, basic principles of immunology; immunology of infection; nutrition and infection; emerging and re-emerging infections and zoonoses; relationship between environment, disease and host; dynamics of acute viral infections; dynamics of acute bacterial infections; dynamics of hospital infections, dynamics of protozoan and helminth infections; chronic and persistent infections; opportunistic pathogens; water and sanitation; diagnostic methods; epidemiology and control of infectious diseases; explore ADIS; Tuberculosis, Malaria in detail.

HPH 809: OCCUPATIONAL HEALTH AND ENVIRONMENTAL EPIDEMIOLOGY

The concepts of community, health and disease; population dynamics; distribution and determinants of health and disease in communities. Principles and practice of community health care: goals, attitudes, training, participation, equity, access, gender, lobbying, and empowerment; Historical development of community health and comparative analysis of health status. Introduction to Primary Health care: maternal and child health services, school health services, services for the disadvantaged groups and the elderly; home based care systems. Principles and elements of PHC. Historical development: Alma Atta Declaration, Bamako Initiative. Health care delivery. Community Strategy. Planning, implementation, and evaluation of PHC programmes.

HPH 810: IMPACT EVALUATION

Fundamentals of impact evaluation: importance, definitions, evaluation questions, evaluation designs, methods for estimating program impact, evaluation plans. Statistical models for evaluating program impact: types of models (structural and reduced form models), issues for model specification/estimation/interpretation, evaluating programs with models for continuous responses and cross-sectional data. Evaluating programs using regression analysis: binary response models (logit and probit), categorical response models, multi-level models. Methods for experimental design: checking for representative sample, random assignment, selective participation, and selective attrition. Endogeneity: instrumental variables models, fixed effects models, difference-in-difference models. Targeted program placement: matching techniques models.

HPH 811: MONITORING & EVALUATING MATERNAL, CHILD HEALTH AND NUTRITIONAL PROGRAMS

Overview of monitoring and evaluation frameworks: reproductive health, maternal mortality, child health. Calculating, interpreting and utilizing coverage indicators. Monitoring family planning service quality: service provision assessment (SPA), and Quick Investigation of Quality (QIQ). Gender-integrated reproductive health programs: gender-based violence, constructive male engagement. Dietary assessment tools: 24-hour recall, food frequency, food record, household level recall for developing countries. Interpretation of dietary data: reference standards, dietary guidelines, pyramid servings; usual intake, intra/inter-individual variability. Measures of diet quality: diet diversity and diet quality indices in developing countries. Food consumption knowledge and behaviour: child care feeding practices, indicators, child feeding index. Anthropometry: growth and development, assessment of anthropometric status, height and weight data, reference standards, conversion to z-scores,

indicators for stunting, wasting, and low weight, BMI-for-age curves, body composition assessment tools. Food security and economic indicators: definitions and frameworks

HPH 812: MONITORING AND EVALUATION OF MALARIA CONTROL AND PREVENTION PROGRAMMES

Role of monitoring and evaluation in design of malaria control programs. Roll Back Malaria (RBM) recommended malaria control interventions: vector control (insecticide-treated nets and indoor residual spraying), prevention of malaria in pregnancy, case management. Program monitoring: sources of data, monitoring service utilization, monitoring program organization, health information systems. RBM and President Malaria Initiative (PMI) indicators: PMI monitoring indicators, guidelines for core population coverage indicators, management information system (MIS) indicators. Use of surveys in malaria control program evaluation: multi-stage cluster design. Measuring health practices, morbidity and mortality: examples from DHS, MICS, and MIS. Malaria operations research: Kenyan and other African examples. Modeling malaria impact: applying the child survival IMPACT model. .

HPH 813: MONITORING AND EVALUATION OF HIV/AIDS AND TB PROGRAMS

Introduction to M&E of HIV/AIDS and tuberculosis programs (A) Behavior Change Communication (BCC) Programs: Role of BCC in HIV/AIDS; Program components to monitor; Indicators; M&E methods and tools (participatory monitoring; qualitative and quantitative monitoring); Data use and influence on data collection and analysis; (B) Voluntary Counseling and Testing Services (VCT): Monitoring VCT programs (goals and objectives. (D) Clinical care and treatment programs: definition of clinical care; essential elements of anti-retroviral therapy (ART (E) Orphans and Vulnerable Children (OVC) Programs: Definition of OVC; Monitoring OVC programs; Developing, goals, objectives, and M&E questions; indicators; Monitoring methods and tools; Evaluating OVC programs. (F) Tuberculosis Programs: Technical and programmatic approaches:

HPH 815: Thesis