

The following draft curriculum can assist faculty in developing each of the core courses.

Epidemiology 101

I. History, Philosophy, and Uses of Epidemiology

- Historical contributions and modern uses of epidemiology — Development of epidemiologic thinking and placement of epidemiology in historical and modern perspective.
- Ethics and philosophy of epidemiology — Appreciation of the links between epidemiology and broader ethical and philosophic traditions and concerns.

II. Descriptive Epidemiology

- Condition, frequency, and severity — The basic tools of epidemiologic analysis, including case definitions and populations, incidence, prevalence, and case-fatality rates.
- Data regarding disease or injuries — Vital statistics, public health surveillance, and measures of health status, including methods for describing quantitatively the natural history, frequency, and changes in infectious and chronic diseases and injuries.
- Patterns of disease and injuries — Application of the basic tools of epidemiology to generate hypotheses regarding person, place, and time; changes and differences in rates; exposures; incubation periods; and disease spread.

III. Association and Causation

- Estimation — Measures of strengths of association, graphical display of data, risk, relative risk/risk ratios, and attributable risk.
- Inference — Concepts of statistical significance and confidence intervals
- Bias, confounding, and adjustment — Identification of bias, confounding, and effect modification/interaction and methods to prevent and take into account their impact.
- Causation — Risk factors and other determinants of diseases and conditions.

IV. Analytic Epidemiology

- Basic epidemiologic study designs and their application to population health including: ecologic or population comparison, cross-sectional, case-control, and retrospective and prospective cohort.
- Experimental studies — Randomized clinical trials and community trials and their applications to the efficacy and effectiveness of disease or injury etiology and the efficacy and effectiveness of interventions

V. Evidence-Based Public Health and Evidence-Based Recommendations

- Harm, benefit, and cost analyses — Evidence-based decision analysis regarding risks, benefits, and cost-effectiveness of interventions.
- Intervention efficacy and effectiveness — Evidence-based analyses of interventions' capacity for producing desired results and measurement of the accuracy or success of prevention and control efforts for diseases or injuries.

VI. Applications to Policy and Basic and Clinical Sciences

- Outbreak investigation, testing, and screening — Application of epidemiologic methods and basic and clinical science.
- Public health policy — Application of results from investigations and analyses to influence policymaking.
- Special epidemiologic applications — Molecular and genetic epidemiology, environmental and occupational health and safety, unintentional injury and violence prevention, and behavioral sciences.