Editorial Note On: Epidemiology

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Epidemiological studies measure the risk of illness or death in an exposed population compared to that risk in an identical, unexposed population (for example, a population the same age, sex, race and social status as the exposed population)**.**

When disease outbreaks or other threats emerge, epidemiologists are on the scene to investigate. Often called “Disease Detectives”, epidemiologists search for the cause of disease, identify people who are at risk, determine how to control or stop the spread or prevent it from happening again.

A well-designed randomized controlled trial, where feasible, is generally the strongest study design for evaluating an intervention's effectiveness.

Epidemiology identifies the distribution of diseases, factors underlying their source and cause, and methods for their control; this requires an understanding of how political, social and scientific factors intersect to exacerbate disease risk, which makes epidemiology a unique science.

Epidemiological studies generally fall into four broad categories:

- cross-sectional studies.
- case-control studies.
- cohort studies.
- intervention studies.

For community diagnosis of the presence, nature and distribution of health and disease among the population, and the dimensions of these in incidence, prevalence, and mortality; taking into account that society is changing and health problems are changing. To study the workings of health.

The time variable is concerned with variation in the occurrence of disease in time and its seasonality or periodicity. A hypothetical example of a descriptive epidemiological study is the investigation of a group of workers in a factory who have what is suspected to be environmentally acquired lupus

Like the clinical findings and pathology, the epidemiology of a disease is an integral part of its basic description. The subject has its special techniques of data collection and interpretation, and its necessary jargon for technical terms. This short book aims to provide an ABC of the epidemiological approach, its terminology, and its methods. Our only assumption will be that readers already believe that epidemiological questions are worth answering. This introduction will indicate some of the distinctive characteristics of the epidemiological approach.

The importance of considering the population at risk is illustrated by two examples. In a study of accidents to patients in hospital it was noted that the largest number occurred among the elderly, and from this the authors concluded that “patients aged 60 and over are more prone to accidents.” Another study, based on a survey of hang gliding accidents, recommended that flying should be banned between 11 am and 3 pm, because this was the time when 73% of the accidents occurred. Each of these studies based conclusions on the same logical error, namely, the floating numerator: the number of cases was not related to the appropriate “at risk” population. Had this been done, the conclusions might have been different. Differing numbers of accidents to patients and to hang gliders must reflect, at least in part, differing numbers at risk. Epidemiological conclusions (on risk) cannot be drawn from purely clinical data (on the number of sick people *seen).*