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Inappropriate Terminology

A recent editorial in the *Lancet*[1] commented on a seminar held in July at the Rockefeller Foundation Bellagio Study and Conference Centre, in Italy. This meeting brought together a number of epidemiologists, including members of the International Epidemiological Association, to discuss approaches to the promotion of 'clinical epidemiology' in developing countries. I have become increasingly uncomfortable with this term and I believe that it is time we reviewed its origin and use. My disquiet is due partly to the possibility that the use of this title may split our subject into two parts and encourage attempts to distinguish two separate groups of practising epidemiologists; those that care for individual patients and those who do not—or are not medically qualified and thereby 'respectable'!

My own chair bears the title 'Clinical Epidemiology'. The reason for mentioning this here is very simple. Before appointment to my present position I was a senior lecturer in the Department of Medicine with an interest in, and responsibility for, the development of epidemiology. My status was clear even if my position in the Medical School was ambiguous. For a variety of reasons it was decided to create a new Department, and this was established some 21 years ago. The Dean of the Medical School and the Professor of Medicine, together with the country's senior Professor of Epidemiology, who held the Chair at the London School of Hygiene and Tropical Medicine, were involved in discussions on the title of the Department. The debate revealed the prejudices of the participants and the finally agreed title was a compromise to their different views. The Dean, a surgeon, was familiar with the work of Ryle and others and held a broad view of the responsibilities of medicine. He suggested that the term 'Social Medicine' be adopted. The Professor of Medicine, who was concerned about my status, proposed that my title should include the term 'Clinical'. The Professor of Epidemiology stressed the importance of maintaining my links with, as well as visits to, the United States and considered that the title 'Social Medicine' might hinder my communication with colleagues across the Atlantic. As a result the title, 'Clinical Epidemiology and Social Medicine' was adopted indicating that I was neither fish nor fowl and satisfying all the different interests. When the Faculty of Community Medicine of the Royal College of Physicians was created and the specialty of community medicine became well established in the UK, the title of my Department was changed to 'Community Medicine' and the position of the medically qualified members was adequately recognized, avoiding arguments about status.

Since these early beginnings the term clinical epidemiology has taken on somewhat different connotations and has been used to distinguish, or at least to attempt to distinguish, one set of practitioners from another. In view of this it is worth considering a little more carefully what the term implies and how it has been used by different groups.

John Paul, Professor of Epidemiology at Yale, was probably the first to use the term regularly and has published two editions (the latest in 1966) of a textbook called 'Clinical Epidemiology'.[2] He defines epidemiology as 'the techniques whereby one explores human ecology' and clinical epidemiology as focusing on those aspects of the techniques which are of importance to 'some few physicians and clinical investigators'. Paul emphasizes that applied aspects of epidemiology—ie decisions about what to do about the findings or how to alter circumstances so as to prevent or stop a disease—are peripheral to his concerns. While acknowledging that these concepts do have their place, he considers that applied epidemiology falls mainly under two separate headings, namely preventive medicine and the care of the public health.

Paul distinguishes two different types of epidemiologist. First, the health department epidemiologist, who is concerned with large populations and biostatistical aspects of the science, and practices epidemiology on a broad scale, dealing with large numbers and wide geographical areas. The functions of such an epidemiologist include measuring the effects of climate, usually in a given district, on the frequency of a disease such as pneumonia, and the effects of local social conditions on the prevalence of, for example, ischaemic heart disease or tuberculosis. The clinical epidemiologist, Paul states 'may have similar interests but has a more intimate task. He is to the statistical epidemiologist what a gardener is to a farmer. He can start with a single patient and his or her family, and branch out cautiously into the community. His first efforts are to search out and discover clinical or subclinical clusters of disease similar to that of his original patients. These may be associated with the patient's kindred, locale, occupation, way of living, and so on—a true exercise in clinical investigation'.

In his opinion the work of the academic clinical

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epidemiologist is best described by three British commentators: J N Morris, who emphasizes that doctors have much to learn from and to contribute to epidemiology through contributions to the completion of the clinical picture and natural history of a disease; Charles Fletcher who holds that there is continuity between the work of clinicians and epidemiologists and hence that they should maintain continuous professional contact; and Sir James Spence who considers that clinical research must be equipped to carry out observations beyond hospitals to gain a full picture of a disease. Paul comments that epidemiologically minded clinicians are the exception, but adds that physicians have tried to be epidemiologists for many centuries.

In 1969 Sackett wrote a commentary on clinical epidemiology in the *American Journal of Epidemiology*.[3] He defined clinical epidemiology as 'the application, by a physician who provides direct patient care, of epidemiologic and biometric methods to the study of diagnostic and therapeutic processes in order to effect an improvement in health'. He considered clinical epidemiologists to be individuals with extensive training in both direct patient care and epidemiology, including biostatistics. It did not, he believed, constitute a distinct or isolated discipline. But it was essential to distinguish clinical epidemiology from survey epidemiology on the one hand and traditional clinical research on the other, since many clinicians are not adequately trained in epidemiology and biostatistics and most epidemiologists do not have sufficient training in clinical medicine. These categories he stressed were not mutually exclusive; practitioners of epidemiology must retain contact with each other and one category must not consider the other as a rival. He ended his commentary with the hope that it might stimulate responses, but I have not found any in the literature.

Thus there is little conflict about the work of a clinical epidemiologist ie research on the causation, prevention and cure of disease. The major distinction, highlighted particularly by Sackett, is that clinical epidemiologists also care for patients, while other epidemiologists deal only with populations. In the last few years numerous articles and letters have appeared, particularly in the British literature, on the subject. The need for epidemiological training for clinicians and the interest of some epidemiologists to retain responsibility for patient care are recurrent themes, for example in commentaries by Acheson,[4,5] Mann[6] and others.[7–10] This problem stems partly from the rigidity of organization and training definitions, possibly parochial to the United Kingdom. However, all authors are united in the conviction that clinicians should understand epidemiology, best expressed by Roberts in his textbook 'Epidemiology for Clinicians'.[11]

Ever since its foundation in 1954, the International Epidemiological Association has been concerned with education and promotion of the wider application and use of epidemiology. An editorial in the December 1965 issue of the *Bulletin of the International Epidemiological Association*[12] was concerned with the need for the Association to consider its purpose in view of the increasing scope of epidemiology, as more people wished to practise epidemiology and felt it had something to offer, particularly as the need for epidemiology in developing countries was growing fast. An editorial in the following year (1966)[13] concentrated on whom the Association should be educating. It posed a series of questions: 'Do we try to educate those who are practising public health and teaching the subject? ... Do we educate internists, general physicians, general surgeons? If so will they appreciate it properly or will they merely become amateur epidemiologists and vie with each other in producing more worthless papers? Do we consider that epidemiology is essential in the undergraduate period and of importance to the medical student? Most of us, of course, feel that this is so, but to what depth are we going to teach?'

The problems of terminology and the application of the science have thus been with us for a long time. But what are the implications of some of these terms? Is the present use of the term clinical epidemiology in anyway useful and, equally, are the older concepts of any greater relevance? As a result of recent developments there are a number of people of great distinction in the world who describe themselves as epidemiologists but have no medical qualification. Their work is directly related to the development of knowledge and concepts of epidemiology as our forbears defined it. Are they any different from medically trained people specializing in epidemiology and should the term 'epidemiologist' be reserved only for the latter?

I am convinced that the term clinical epidemiology has served its purpose but is now no longer of any use. It is not helpful to describe specifically a small group who practise both epidemiology and medicine. They are no different from the haematologist or the biochemist who practises clinical medicine and also undertakes biochemical examinations. The Professor of Haematology who cares for patients as well as looking after his laboratory does not call himself a clinical haematologist nor does the chemical pathologist with a similar division of interest. We all believe that through practising epidemiology, we are performing a useful function. And irrespective of whether or not we are also involved in clinical medicine, we all practise epidemiology.

The question of education and the dissemination of epidemiological knowledge is another matter. Such knowledge should not be developed exclusively in either

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a clinical or a non-clinical environment. The use of the term clinical epidemiology can create the misleading impression that one form of teaching is more appropriate than another. In some situations it is simple and perhaps more relevant to teach epidemiology via the clinical method. Certain aspects of epidemiology can, for example, be taught through the medium of ward rounds with a clinician looking at particular cases and considering the findings in terms both of the epidemiology of the condition and of their clinical significance. This method, however, is limited because it is not easy to introduce students to the techniques and tools of epidemiological research. Thus in other situations it is better to approach epidemiology through survey methodology as is successfully practised in some medical schools in the UK and in other countries such as Venezuela. The concern of the Association should be to continue to spread the 'gospel' of epidemiology, taking care that methods of teaching are promoted that will ensure the widest appreciation of the epidemiological approach. But we must not lose sight of the overall context in which epidemiology is applied: in any given situation approaches other than the epidemiological one may also be relevant.

Any consideration of the contribution that epidemiology can make to the health of a population must include an awareness of the prevailing social circumstances. Thus the methods and place of teaching can be important in fashioning (and, if inappropriate, distorting) students' perceptions of the priorities and needs of that society. In the Western World, where social and environmental factors have largely been dealt with, the clinical approach to teaching epidemiology may have some relevance and importance. In countries whose major needs are environmental and social, however, it it questionable whether focusing attention mainly on individual, clinical medicine will yield as much benefit, in terms of improving the overall level of health in the population, as will population medicine. Thus in developing countries the concentration of the teaching of epidemiology within the clinical context is unwise and is more relevant when put in the context of population surveys related to the particular problems facing that society. Furthermore, in developing countries those concerned with clinical care tend to be inundated and overwhelmed by these responsibilities. Under such circumstances it is unlikely that a clinician will have sufficient time away from the daily demands of clinical duties to develop epidemiological methods or to carefully plan or implement well thought out, relevant research. Thus overemphasizing the clinicians' responsibility for epidemiological research and teaching might be detrimental to the identification and resolution of important health problems in developing countries. The place of epidemiology in primary health care, although particularly relevant to developing countries, is an issue that has not been considered seriously enough. Only Kark and Abramson have considered this in any detail.[14] In Western countries the training of primary care practitioners in epidemiology has often been neglected. And while many general practitioners in the UK base their research on epidemiological methods relatively few have exploited the potential of primary care as a medium for advancing the teaching of epidemiology. In developing countries primary care is perhaps the ideal place in which to teach and demonstrate epidemiology—certainly it is more appropriate than within the context of hospital medicine.

I have tried here to review some of the ideas and thoughts of epidemiologists, as well as some of my own ideas, aroused by the use of the term clinical epidemiology and by my own guilt in retaining this title. I hope that this will serve as a stimulus for further discussion.

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