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Research Article

PRESIDENT'S ADDRESS

CLINICAL EPIDEMIOLOGY [1]

JOHN R. PAUL

(From the Department of Internal Medicine, Yale University School of Medicine, New Haven)

In an attempt to predict some of the trends along which Clinical Investigation may proceed in the next few decades, the subject of Preventive Medicine naturally arises as a field for these activities. The term, Clinical Investigation in Preventive Medicine, is cumbersome and so I will not use it. In fact even the term, Preventive Medicine has never seemed ideal. It implies a little too much in the way of Propaganda. It presupposes the existence of a so-called sister science, Curative Medicine, and both sciences are committed perhaps too definitely to a therapeutic program. Clinical Investigation in Epidemiology is better for the purposes at hand; Clinical Epidemiology is best, and really what I mean. In fact this is the name I would like to propose for a new science; a new discipline in which this Society might take an important part. It is a science concerned with circumstances, whether they are "functional" or "organic," under which human disease is prone to develop. It is a science concerned with the ecology of human disease. But it is more than that, for any science worthy to be qualified by the name Clinical, should involve some attempt at the interpretation of the circumstances with which it deals. It must face the question of "why," as well as "how." Clinical Epidemiology differs, therefore, from the orthodox science of Epidemiology both in its aim, and its locale, as it were. The orthodox epidemiologist must of necessity deal dispassionately with large groups of people. It is the multiplication of observations which give him his results. The clinical epidemiologist, on the other hand, must of necessity deal with small groups of people; people whom he knows well and groups no larger than a family, or small community. The restriction of the size of the group rests on the fact that clinical judgment cannot be applied wholesale, without the risk of its being spread too thinly to be effective. Fortunately or unfortunately the amount of personal attention requisite for the exercise of clinical judgment is set by physiological limits which most of us cannot exceed. The clinical epidemiologist, therefore, can dispense just so much of this attention power at one time. He starts with a sick individual and cautiously branches out into the setting where that individual became sick,—the home, —the family, and the workshop. He is anxious to analyze the intimate details under which his patient became ill. He is also anxious to search for other members of the patient's family, or community group who are actually, or potentially ill. It is his aim to thus place his patient in the pattern in which he belongs, rather than to regard him as a lone sick man who has suddenly popped out of a healthy setting; and it is also his aim to bring his judgment to bear upon the *situation,* as well as on the patient.

Obviously there is nothing new to the family doctor about this concept of Medicine. It is the heart and soul of family practice and probably has been, as long as family practice has existed. But now that the emphasis, for this Society at least, has shifted away from the home and into the Hospital and Dispensary, clinical epidemiology will be practiced only if we take thought about it. It is a foreign concept for most intramural clinical investigators whose contact with the actual circumstances under which their patients became ill may be limited to a page in the hospital history, or a supplementary talk with the social worker.

To give a single but well-known example of work in clinical epidemiology which has been accomplished in well-known Institutions in this country, I will name the studies of Dr. Opie and his coworkers on the spread of tuberculosis through families. As a contribution to the field of tuberculosis, and also to other infectious diseases this work speaks for itself. But the approach is not limited to Infectious Diseases. It is being used by Dr. Canby Robinson in the study of circumstances which are prone to give rise to a variety of types of illness which bring patients to

[1] Part of the President's Address before the American Society for Clinical Investigation at its Thirtieth Annual Meeting held at Atlantic City, N. J., May 2, 1938.

the Dispensary of the Johns Hopkins Hospital. Clinical epidemiology is also something more than family visits. As an example of another direction, and a most important direction it has taken, are the recent investigations concerned with the pathogenesis of pernicious anemia, and of nutritional deficiencies. In these fields members of this Society have played no small part,—and, as such, the Society may also be said to have already had some share.

The crux of these investigations in the various fields just mentioned lies not only in the discovery of new intrinsic or extrinsic factors, which may be found either indoors or outdoors, but in the discovery of new concepts. The concept of certain new etiological forces which lie back of those which were once thought to be basic, such as for instance, the factors which lie back of the pneumococcus as a cause of pneumonia. This is all so obvious that it hardly seems worth mentioning and yet a dominant thing about some of our present notions of causative factors is that unless they fit into a modern pattern of our own liking they are apt to be overlooked. Of late years conservative opinion does not allow anything to be really considered as "etiology," unless we can succeed in getting it into a test tube, unless we can precipitate it,—unless we can crystallize it as it were. This is due of course to our current methodology which has, perhaps, become more of a religion than most of us realize. I think it may have led to a slightly narrow interpretation of clinical investigation on our part, for clinical investigation certainly should be given the opportunity to spread itself up into philosophy, if it will, as well as down into the basic sciences.

Now this is not a plea for more papers describing philosophical concepts of epidemiology, for if they are really important they will find their way into our programs of their own accord without having to be plead for. I only say that we ought not to be frightened by them. We ought not to be frightened by the word clinical investigation in the field of Public Health, or clinical investigation outside the Hospital. For, if we are frightened, then it may be true what our critics say, that we have become so attached to our own pet methods and points of view that we have drifted away from the progressive ideals for which this Society was founded.

But there is still another aspect to Clinical Epidemiology which deals with the meaning of disease. For instance, we may now have to dispel a smoke screen that the folklore of both Preventive Medicine and Curative Medicine has thrown out which consist in a sort of censorship about the meaning of disease, in which there are at least two assumptions. These are: (A) that all disease is bad and hence all attempts to prevent it, or cure it are good, regardless of its cause or the conditions under which it arises; and (B) that disease is something which an unkind fate has put upon us; in other words disease is not of our own making but it comes from elsewhere. It is always the "French disease." To turn the spotlight of investigation upon these assumptions is the first duty of the clinical epidemiologist. It involves a certain amount of risk,—the risk of trifling with religious tenets, and as such of being anti-social. It might be anti-social if we found, for instance, that all disease is not necessarily bad, but that a wise Providence inflicts some one with arteriosclerosis or even tuberculosis as a just reward for his "bad living"; or that children's diseases are rained upon us as a means of furnishing us not only with specific immunity, but who knows, how much nonspecific immunity too, which may be of inestimable value to us in adult life. It might also be something of a betrayal of our clan if we found that a good deal of illness may be laid at our own feet, that is, illnesss caused by "ultra-modern therapeutics," *viz.*, the creation of invalidism through overzealous treatment,—through meddlesome treatment, and through the whole wretched system of abused sick benefits to which we meekly bow our heads. Although such functional causes of invalidism as these cannot be so easily put into a test tube, and cannot be precipitated or crystallized they are powerful etiological factors, intrinsic in our modern civilization, and responsible for a good deal of *preventable illness*. Strangely enough they have not yet been regarded (by this Society at least) as a particular legitimate field for clinical investigation. Better to stick to something like bubonic plague for which the blame can conveniently be put on the rats, is a code we have followed too much in the past.

If these fields are eventually to be investigated, it is the man with clinical judgment who can best

blaze the trail, for it is the prime responsibility of the clinician to do the work. It is his responsibility far more than that of the Public Health man, or the bacteriologist, or the chemist. To do this the clinician will, however, have to adopt a new technique, and a new uniform. Gone is the glamorous rôle of the microbe hunter for this type of investigation, and in his place all we can see is something like a rank sociologist.

But still more important for the clinical epidemiologist than questions of technique and uniform, is his point of view. From the onset he cannot accept as Galenic truths, all the creeds,—all the rituals of medical research that the generation just preceding his, has professed. He is called upon instead to strike out anew without much in the way of organized backing. But there is nothing really alarming or radical about this. Nor should it require the rôle of a crusader, at least as far as this Society is concerned. It merely reflects the same type of incredulity about methods of studying human disease, which, if I am not mistaken, was the force which brought this Society into being, a generation ago.