Lectures and Addresses

GROUP STUDIES IN GENERAL PRACTICE*

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In choosing to discuss group studies in general practice I am making a distinction from individual studies which will not, I hope, be misinterpreted. The opportunities for a singlehanded and single-minded general practitioner to observe the interplay of health and disease in his practice are unique, and it is by the few who have taken these opportunities that the greatest discoveries have been made in the past. It is because we can be satisfied that men like Budd, Mackenzie and Pickles will be followed by other singlehanded observers of like calibre that I will concentrate on group studies tonight.

Historical Background

Group research, " collective investigation " of our grandparents, is not new. The peculiar possibilities of general practice for co-ordinated study of the natural phenomena of disease were recognized in the mid-eighteenth century when John Fothergill made a study of the influenza epidemic of 1775 and invited contemporary colleagues to join him in making epidemiological observations. Contributions were received from many practitioners and physicians, some among the most learned of their day, and these were published with the description of the disease originally circulated by Fothergill.

Group research received a good start in this way, and subsequent epidemics of influenza were studied similarly, in increasing depth of detail, by other observers. Epidemics in 1782 and 1803 received particular attention, the latter studies receiving indirect help from the Government, for the Postmaster General allowed correspondence concerning it to be carried free of cost; probably the first instance of state-aided general-practitioner research, and we hope by no means the last.

Always taking slightly different forms, as would be expected when differing conditions were being studied, the principles of collective investigation were applied to the treatment of smallpox in 1819, and later (1847) taken up by the Provincial Medical and Surgical Association which shortly afterwards became the British Medical Association. Studies of treatments for burns, and of the medicinal use of arsenic were among the first attempted, with the first attempts to collate the observations of many observers of disease and weather

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conditions. For reasons we may shortly discover, no real success followed these efforts.

Collective investigation reached its zenith in the 1880's when, at the inspiration of Dr F. A. Mahomed, a committee was set up to conduct observational studies on a wide scale, using specially designed " cards of inquiry " to be completed on the spot by doctor-observers, for later analysis by the central organization. At this time it was beginning to be suspected that tuberculosis was a communicable disease, and one study set out to demonstrate this convincingly; it did not quite succeed. Pneumonia, chorea, acute rheumatism and diphtheria were studied, the results of the investigations appearing in special supplements to the *British Medical Journal.*

I do not wish to recapitulate the history of these studies further than to indicate the recognition which the principles of group study have received in the past. The reasons for the failure of the effort of the 1880's were partly personal—the death from typhoid fever of Dr Mahomed—and partly technical, lack of the knowledge of statistical technique such as we have today. Suffice it that, after an efflorescence which for a time extended to the U.S.A. and most European countries, collective investigation dropped from fashion. The wheel is turning now and perhaps the increasing interest of today augurs well for its future.

The Principles of Group Study

The qualities of the method of observational research which we now call group study are such as to make the method particularly applicable in general practice where it is characteristic that, in a given period of time, opportunity arises for a large number of observations to be made, though each be of a superficial and simple nature. This is in contrast to the opportunity met in hospital where fewer patients can be examined and investigated more thoroughly and in greater detail. As general practitioners we see many hundreds of patients in a year, most for a short time, but sufficient for us to make and record observations about what we find in them. The observations may be simple, the methods of recording also, yet the conclusions based on such simple methods may be accurate and valuable.

A critical factor in the application of group study principles in practice is the frequency of occurrence in nature of the condition which it is desired to observe. We in our day have accurate statistical techniques to help us. A condition may occur often enough to allow of a sufficient number of observations being made upon it within a reasonable time in one man's practice, or in a partnership, and here the " group " may be a group of one. More often, how-

ever, a condition occurs less frequently and a disproportionately long period would be needed if sufficient observations were to be collected from one practice. The real group at once comes into its own, provided that methods of collection and recording of information can be standardized between its members.

While one year's work may afford ample opportunity for the study of coryza in a practice, many years would be required to accumulate enough information on such conditions as epilepsy, or diabetes, which occur less frequently in the population, but when it is desired to conduct simultaneous studies in a number of practices so as to gain sufficient cases, problems of co-ordination come in, as well as decisions on the right number of observations to make; the largest number, of course, not being of necessity the right number, for accuracy may be achieved when working to calculated limits, and perhaps unnecessary work and effort may be avoided.

The College and Group Studies

Let us now consider some of the ways in which we are trying to apply the principles of group study today, and if I limit myself to those studies organized by the research committee of Council it will be because of my greater familiarity with them.

The birth and growth of the College has made the establishment of a co-ordinating centre possible, and much of the work of its research committee is concerned with this function. It is also closely concerned in the design of investigations so that the best use may be made of the efforts of the doctors taking part and the correct number of observers be employed on a project to achieve an accurate result. We are all the time balancing the factors of frequency of occurrence of the condition against number of observers required, and both against the time which has to be taken to achieve the answer to our question.

You will be familiar with many of the methods with which we are experimenting, for we realize that every study we undertake is a trial of method as well as a research project in its own right, and you will know that our basic " group " is the research register of Council, which now numbers just under six hundred practitioners whose research interests have been collected and classified on our files. We have extended the group further, to the whole membership of the College as in the pink disease study, or even more widely to the whole profession by invitation in leading Journals as in the pernicious anaemia study. Most of our work is, however, done with the help of those on the research register.

We have a working assumption that a group of observers may be potential as well as actual, and on this we base the Epidemic Observation Unit, through which we hope to follow up the studies

of Fothergill, and our other exemplars. The observers are there all the time, distributed throughout the country in their practices, even though the disease which is to be watched is not present in all simultaneously, and indeed may not occur in all in even the most widespread epidemic. A method of notification is required, the Red Warning System, together with the machinery for the analysis of returns made by the observers to the central organization. Here also time is a factor; we are determining the spread and movement of a disease through the community, and, we must adapt our methods to this additional " dimension ".

The type of investigation in which a number of observers combine to study a condition constantly present in the community is in some ways simple, though it has complications of its own. Nearly always the condition studied is one which is comparatively uncommon, or it is one in which there are good reasons for making many observations in the period of the study. By group study we can determine the incidence of asthma in the children in our practices and observe different aspects of the disease. Here we believe a group of about fifty observers will give us the information we need. Diabetes is a condition occurring with approximately the same frequency, and a study is planned which will, we hope, involve work in fifty practices also.

Where the detail of the study is closer larger groups are necessary, and in the College studies of epilepsy and chronic bronchitis the observer-groups number over one hundred practitioners apiece. In no two studies is the investigation technique the same, and each calls for a different size of observer group, optimal (we hope) for that particular study.

We today have two advantages which were denied to our predecessors, statistical technique and foreknowledge of our observer practitioners. Statistical advice enables us to design effective questionaries for each study which can be completed simply, at the bedside or the surgery desk. This problem was first tackled in the epidemic of 1803, and we are now perhaps some way towards its solution. Perhaps our greatest advantage, however, is that we can match the need for a study with the means to conduct it. The research register contains a measure of the interest among doctors in a given subject, and we can gauge the support which a study is likely to receive.

There is much work to be done yet. We have to learn how best to conduct group studies, and to minimize not only between-observer errors (a difficult task, for the diagnostic terminology of no two doctors is quite the same) but also within-observer errors—differences in assessment by one man at different times. Methods of recording of our material, of analysis and sifting, and

of presentation of the results and conclusions all require further work.

The Future of Group Study

The principles which I have sought to describe can undoubtedly be applied with increasing skill and accuracy as we learn more about them; and the range of conditions to which they can be applied will certainly widen. Observational research by family doctors who will increase their own skill and value as observers by self-training is in its infancy, and may one day give us fundamental knowledge of the influence of environment on men.

A development on which we are at present working presents group study in a new form. The College Records Unit will, it is hoped, carry out a continued and continuous watch on the illnesses of the community through the eyes of an observer-group of perhaps a hundred practitioners. In many ways this watch will resemble that kept on the weather by the Meteorological Office, where reports from numerous field observers are co-ordinated and translated quickly into information of value to us all. We hope that this will be a truly three-dimensional group study for it will be in continuous operation, showing changes in the pattern and distribution of disease in the community very soon after they take place, so making it easier for us and for others to take such action as may be necessary.

It may be that we are moving into an age of preventive medicine, and if so our responsibility as general practitioners will be heavy. Preventive medicine depends on knowledge of natural history, the natural history of disease as we see it in the homes of our patients. It will be our task, with whatever help we may receive, to bring the sources of family illness to the surface, to measure their effects, and to take steps to prevent spread or further occurrence. The impetus towards this, and perhaps in part the solution, may well come from the type of research which I have attempted to describe.

REFERENCES

McConaghey, R. M. S. (1956), *Practitioner*, **176**, 663-669.
McConaghey, R. M. S. (1956), *Brit. med. J.*, **1**, Supp. 266.

Clinical Trials

Messrs Pfizer Ltd. held a Symposium on Clinical Trials at the Royal Society of Medicine in April, 1958. The chairman of the meeting was Sir Charles Dodds and papers were read by eight distinguished speakers.

The Report of this Symposium has now been published Dr W. Williams of Pfizer Ltd., Folkstone, will be pleased to send a copy to any member interested.