MACKENZIE ON RECORDS IN MEDICAL PRACTICE

FROM

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The recent correspondence appearing in the *British Medical Journal* between Dr. Annis Gillie (1962), following her Mackenzie Lecture (Gillie, 1961), and Dr. Andrew Garvie (1962) prompts me to publish the relevant excerpts of correspondence which Mackenzie conducted with Sir Walter Morley Fletcher, Secretary to the Medical Research Council.

Medical Research Committee,
15 Buckingham Street,
Strand W.C.2.
March 25th, 1920.

"Dear Sir James,

I am extremely sorry not to have written earlier in answer to your interesting letter and memorandum on the medical aspects of the National Health Insurance Act. . . . The fact is . . . that Sir Robert Morant wanted to talk to me about your proposals from his different point of view. . . . As you know, he was taken suddenly ill on March 8th and died on the 13th. . . . This dreadful blow . . . this irreparable loss . . . put things out of my mind. . . .

"As to your memorandum, I need hardly say that I agree most cordially with the whole line of argument. As you know, I greatly hoped that you would take the Chair of the Committee here as I understand Morant invited you to do. I am greatly interested in the last pages on the methods use at the St. Andrews Institute. I think that the methods here suggested will not only give invaluable opportunities for research but will also help greatly the adoption of a proper system of recording in the medical services that have been set up throughout the country by the practical experience and demonstration they will give.

Yours sincerely,
Walter M. Fletcher."

With impatience at delays and misunderstandings, Mackenzie replied:

St. Andrews,
29th March, 1920.

"My dear Fletcher,

These two great objects I have in front of me, (1) the establishment of rational and systematic Research in Medicine, and (2) the conversion of Fletcher to my views, for I recognize that (1) would be greatly facilitated by (2)."

In more sympathetic vein he continues:

"I have had a curious and interesting experience of the conception of Research held by authorities, and it has revealed to me the nature of the difficulties Sir Robert Morant and you have to contend with in dealing with Committees. . . . Another point I look upon as being peculiarly the function of your Committee—the prevention of hasty legislation. When a scheme is propounded the question should arise: Does the knowledge exist to carry out this scheme? There is no authority to turn to but you. When, for instance, Morant's fine conception for statistics of disease was incorporated in the Insurance Act, he was told the thing could be done, and was greatly taken aback when I demonstrated to him that medical knowledge did not permit of its being done. So, in regard to the provision of Sanatoria for Consumptives, he was assured that the early stages could be recognized, and

legislative proposals were based on the assumption that the knowledge existed, with the result that the conception has failed. Newman is preparing to dash on the same rock. This scheme of his to keep records of people before they are born till their death is bound to fail for reasons so obvious that I can only conclude he is wilfully shutting his eyes to the danger. When you come here I will demonstrate to you the difficulties, for we are attempting similar work and find the greatest difficulties in dealing with a far simpler problem."

With great tolerance and forbearance, Sir Walter replies:

April 29th, 1920.

"Dear Sir James,

. . . I am sorry you still fear my 'backsliding.' I daresay it is good for me that you should regard me as a heretic from your point of view, needing conversion. . . . I can only say . . . that I have consistently worked and fought, ever since I came to London in 1914, for the same objects that you have in view, and against the traditional spirit of mediaeval bunkum in present professional practice and education. The imperfections of our present work come, I think, not, as you suppose, from vicious intention, but only from the very absence of scientific clinical work. . . .

"Do you know, by the way, anything of a proposed Association of General Practitioners for Collective Research, started at Stockton-on-Tees? I have papers about it that Osler sent me. . . .

"Next comes, I think, the work of following up and recording the onset and the after-histories of disease. No one man can do this, even in a long lifetime, for enough cases; Hippocrates meant this when he said: '*ars longa, vita brevis.*' Only an institution can do the work on a wide enough scale, or with enough continuity. I think this needs much thought. We do not even know the best methods to use. I value your work as an earnest exploration of methods. . . ."

The exchanges between these two great men were always frank, yet ever friendly. Indeed it is evident that each held the other in great esteem.

In March, 1922, Mackenzie presented the following Memorandum upon Medical Records to the Medical Research Council.

MEMORANDUM UPON MEDICAL RECORDS

INTRODUCTION

The following Memorandum is based upon my own systematic efforts, extending over 30 years, to discover the essentials for keeping Medical Records. It also includes the experience which we have obtained in St. Andrews Institute for Clinical Research, in devising a satisfactory system of obtaining continuous Medical Records of patients seen there, upon a uniform plan.

THE PURPOSE OF RECORDS

Before explaining the system of making medical records, it is necessary to realize the purpose of records and the part which they play in the science and practice of medicine.

It may help to understand the purpose of records if we consider some fields in which they are necessary.

(a) Legislation

Accurate medical records of cases seen in general practice form the basis for ascertaining what are the diseases prevalent or of common occurrence in the community. This information does not at present exist, and it can be obtained from no other source than from doctors engaged in general practice. For example, mortality tables and records of hospital cases do not furnish the requisite data,

for the former show only the terminal and fatal forms of disease, while hospital records deal only with a small section of the community, and with cases of fully established and advanced forms of disease, which are not the same as those encountered in general practice.

Efforts hitherto made to obtain this information have been uniformly unsuccessful. Over 30 years ago a scheme of collective investigation* was launched by the *British Medical Journal*, but it collapsed. On the introduction of the Insurance Act, records were to be kept from which great results were anticipated, but they have proved to be of no value.

Knowledge, however, of what are the common diseases affecting the community is essential as a basis for any effective and intelligent legislation which may be introduced dealing with the health of the people. There is now a Ministry of Health, whose concern is with the diseases that affect the community. It is manifest that the first step is to acquire a knowledge of those diseases—a knowledge which will reveal the diseases which impair the health of the community, the course of the diseases from their onset till their end, as well as the circumstances that induce or favour their onset. It is manifest that legislation dealing with the Common Diseases has little prospect of success in the absence of this kind of knowledge.

(b) Education

Such knowledge is essential for medical education. The purpose of medical education is to train doctors to combat the diseases common among the people. If the aspects which disease presents to the doctor in general practice are not known, the education of the student will not fit him for his duties.

It has been shown that the illnesses seen in hospital patients which constitute the basis of the present clinical teaching do not represent the forms of illness found among the patients seen in general practice. Until these last are known and recognized, medical education will fail to attain a satisfactory level.

(c) Research

Research in Medicine, to be of the greatest profit, should be directed towards diseases of common occurrence, and not only to rare or unusual forms of illness.

In dealing with the diseases common among the people, it is necessary to have a full knowledge of the disease as it affects the sick individual. This can only be obtained from the records of the symptoms in individual cases. Imperfect as are the records in the past, yet they have been of such value that without them no progress would have been made in fields which to-day are recognized as the most progressive. All the triumphs of bacteriology directly depend on the records of the clinical observer . . .

(d) The Onset of Disease

One matter essential to the knowledge of disease is to know the circumstances that favour or cause the onset of disease. This is one of those obvious matters in medicine which has escaped attention. It is unnecessary to dwell upon its importance, and I merely call attention to the absence of any attempt to acquire this knowledge. It is manifest that this kind of knowledge cannot be acquired in laboratories or in hospital wards or even in the out-patient departments of hospitals. It can only be acquired by the doctor who sees the patients in their homes and who is familiar with all the circumstances of his patients, even before they fall ill. One cause of the failure of records is thus made evident, inasmuch as the only individual whose work affords him the opportunity to detect the onset of

disease and its early signs has never received any instruction how to make use of these opportunities.

(e) Practice

It is in rendering the practice of Medicine rational and intelligent that records should play their most important part. The aim is to enable the practitioner to deal more effectively with the cases under his care. They should provide adequate data (1) for the diagnosis of disease; (2) for a prognosis; (3) for estimating the value and effects of treatment.

(1) *Diagnosis*.—At the present time the majority of cases encountered in general practice cannot be diagnosed. One of the first steps taken at the Institute was to make a census of the cases encountered in general practice. The cases of about 1,000 consecutive patients seen in general practice were carefully recorded and analysed, with the result that it was found that in the great majority of such patients it was impossible to arrive at a diagnosis of their condition. A great many complaints had to be recorded by the most prominent symptom, the nature of the disease being unknown. Of the diseases which were recognized many were probably not the primary complaint (such as kidney disease, arteriosclerosis, gastric ulcer, angina pectoris), but the origin of these conditions could not be traced. Further, apart from the acute infections and diseases, the direct result of injuries, which form but a small percentage, there was no knowledge of the early stages of any disease. In the majority of cases the patients showed no recognizable and understood physical signs, but they showed many symptoms and were obviously ill.

The symptoms shown included such complaints as exhaustion, loss of appetite, nausea, pain, and little could be detected on physical examination save pallor, modification of the pulse in character, rate and rhythm, with pain on pressure in certain regions, or contraction of portions of the muscle of the abdominal wall.

These are some of the symptoms present in the early stages of disease, and when we come to look closely into them, though they are so common, the mechanism of their production is practically unknown. If we take exhaustion, for instance—the most common of all symptoms in the early stages of disease and the most instructive—in all books on the symptoms of disease it is either overlooked or treated as of no importance, whereas we are finding that there are different kinds, and each kind has a specific significance.

Probably nothing will bring out more clearly the defect in Medical knowledge which hampers the making of useful medical records than a consideration of *The Nomenclature of Disease*, issued by such a responsible authority as the College of Physicians. In an endeavour to make a census of the Diseases common among the People, we took this book as our guide, but we found it not only useless but misleading. Although the volume ostensibly deals with the nomenclature of Diseases, its compilers evidently had no clear idea what constitutes a disease and what constitutes a symptom, hence the book contains a jumble of terms which indicate symptoms, groups of symptoms and diseases, and even physiological signs, so mixed up as to render the book of no value. . . .

THE PRINCIPLES OF RECORD-KEEPING

Having recognized the purpose of Records, the next question is, What principle should guide in the recording of a person's ill-health? In order to find a principle, it is necessary to call attention to a great defect in the conception of medicine which is dominant to-day.

Disease is made manifest only by the symptoms it produces. When a man falls ill every organ in his body may be disturbed. The disturbance of one organ may react on other organs, so that in a sick individual there may be present symptoms incalculable in number and infinite

*Sir James Mackenzie was probably referring to a project described in a memorandum by Dr. Frederick Mahomed, of which the larger part was printed in the *British Medical Journal* of January 3, 1880, under the title "Suggestions Concerning the Scientific Work of the Association."

in variety. Thus it is that an ailing individual may consult a number of specialists, each of whom has no difficulty in detecting symptoms belonging to his specialty. Hitherto, in a measure, the recording of cases has been but the uncoordinated enumeration of a great number of those symptoms, and as these are plentiful there is never any lack of phenomena to record.

Although it may have been recognized that sick individuals can exhibit a great number of symptoms, the significance of the fact has not been appreciated. The significance lies in recognizing that so long as phenomena are uncoordinated the mere detection and enumeration of these will but add to a mass of detail which tends to obscure the path of progress. All branches of knowledge pass through this stage, and they only become sciences when the phenomena are classified according to their affinity in nature. While the individual phenomena are infinite in number and variety, the laws governing their production are few. The symptoms of disease are infinite in number and variety, but again, the vital processes concerned in their production are few. The recognition of these vital processes at once permits of the classification and arrangement of the symptoms based on a fundamental principle. It is the absence of the recognition of the vital processes which renders the records of disease of so little value.

In the St. Andrews Institute we recognized at the outset the necessity for discovering the vital processes concerned in the production of symptoms. . . .

For the equally essential matter of prognosis, a somewhat different type of symptom has to be sought for. At present the vast majority of diseases are undiagnosable, but in practice there exists a kind of knowledge which enables the doctor to recognize the presence or absence of danger. Such symptoms, for instance, as the character of the pulse, the state of the tongue and the appetite, the patient's appearance and his mental state, give information of this useful kind, in both acute and chronic illness. With the better recognition of the mechanism of symptoms and their association, a great field for useful inquiry is opened up.

In recording the progress of a case, there is more required than the noting of some of the symptoms. There may be many symptoms present, and the question arises, Which are to be recorded? The answer to this question is to be found in the clear recognition of where lies the danger to the patient. Thus, in watching the progress of a patient with an affection of the heart, it is necessary to recognize that the danger is the onset of heart failure. The competent observer must therefore have a knowledge of the symptoms of heart failure, and he must be on the outlook for their appearance.

It is the same in regard to the disease of every other organ; there must be a knowledge of the symptoms provoked by the failure of the function. In general diseases, as tuberculosis and cancer, the danger is so insidious that irreparable damage is often done before the disease is detected, and an urgent call is therefore made for the study of the early signs of disease with a precision that has not hitherto been given to them—a study, it is to be noted, which can only be carried out on the principles and by the methods recommended in this memorandum. . . .

THE CONTINUOUS RECORDS OF DISEASE

The recognition of the progress of disease is naturally difficult when the observer's opportunities are limited to hospital patients. It is practically impossible to get continuous records of individual cases, and this is recognized and the difficulty is supposed to be overcome by taking a large number of patients at different stages of the disease and piecing the results together. No doubt much of value is thus obtained, but the result falls far short of what is required, and at the best is a poor substitute for the results which can be obtained from the study of individual cases.

As an illustration, I cite my experiences in an attempt to find out the changes which follow a damage to the mitral

valve, so common after rheumatic fever. This damage results often in stenosis of the mitral orifice. For over 60 years the murmur peculiar to this condition has been recognized, and every physician reckons to have studied it fully. Forty years ago I was struck with the frequency of this disease, and I had some disastrous experiences, especially in patients in whom pregnancy occurred. I resolved then to make a careful study of my patients.

METHODS OF TAKING RECORDS AT THE ST. ANDREWS INSTITUTE

From what has been said it will be seen that satisfactory records are impossible until a great deal of preliminary research has been undertaken. The lines of research have been made clear to us in our attempts to get records. The first couple of years have been spent in finding the best methods, and now we see our way clearly, though every day as our experience increases our methods improve. . . . All cases are watched and re-examined from time to time, and the records are read and discussed at meetings of the whole staff. . . . Methods of keeping these records have been worked out, and a system of indexing is employed which enables immediate reference to all patients who have exhibited any symptom or group of symptoms. . . .

Resignation of Sir James Mackenzie

And finally, in July, 1924, seven months before he died, Mackenzie wrote:

"My dear Fletcher,

On account of health I have resigned my position as Director of the Clinical Institute. . . . The work done in the records department is full of promise, though it may seem as if little progress has been made. We realized more and more as years went on that some system other than the mere chronicling of details must be employed to render the records of value. There is slowly emerging a principle which is yet but dimly perceived, but which it is hoped will enable us to develop the method of record-taking that can be applied not only in Institutes and Hospitals but in the routine practice of the general practitioner. . . ."

The research potentialities of using suitable medical records in both panel and private practice were, in general, appreciated by this great triumvirate of Fletcher, Mackenzie, and Morant. If they differed in detail, they certainly agreed in principle. As a lay person and civil servant, Morant was most enlightened and saw clearly how medicine and the medical services should evolve. It is tempting here to speculate where medicine and medical research would stand to-day had the vision of these great men become reality. But Fate decreed otherwise.

BIBLIOGRAPHY

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— (1962). *Ibid.*, 1, 559.
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All reports reaching the World Health Organization suggest that malaria will be eradicated from the whole of continental Europe by the end of 1962. Figures presented to the W.H.O. Regional Malaria Advisers meeting, which opened in Geneva on April 11, indicated that in 1961 there were only 141 new cases of malaria in a total population of 304 million Europeans living in previously malarious areas. These findings resulted from detailed investigations including the examination of 6,350,000 blood samples. The eight countries of continental Europe now in the final phase of these eradication programmes are Albania, Bulgaria, Greece, Portugal, Rumania, Spain, the U.S.S.R., and Yugoslavia.