PLANNING FOR BASIC RESEARCH IN OPHTHALMOLOGY

BY

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There is a distinction between planning *for* research and planning *of* research. The former is largely carried out by the Government, local authorities, philanthropists, and other public-spirited members of society, be they professional or lay members. The latter is mainly the affair of university administrators and researchers.

There is nothing new in planning for research. The Privy Council planned for research when it appointed the Medical Research Council and when Parliament voted funds for that purpose. That this legislative foresight has been amply justified by results and by progress is beyond doubt. The nation has an enormous burden of sickness and mental and physical disability, and the Medical Research Council has the stupendous task of attempting to reduce this burden. It is highly improbable that sufficient funds have so far been available to perform this task on a scale commensurate with the enormity of the burden, but much has been done, and successfully done. To say that all aspects of physical disability have been satisfactorily covered by the work to date, supervised by the Medical Research Council, would be to invite criticism. In particular, the great burden of blindness and ophthalmic morbidity, with its financial, commercial, and humanitarian implications, has during the last generation received less generous attention than its importance merits. Surgical technique has been improved, ophthalmology has benefited by drugs and other remedies which are the result of much research outside ophthalmology, but the same great causes of blindness are with us to-day as they have always been, and insufficient organized effort, under optimum conditions, has been made to prevent these causes or remedy their effects.

Local authorities in England are charged with the financial burden of the care of the blind, and they have discharged that duty magnificently. They are consequently interested in prevention of blindness. They have for some years considered alternative methods, designed to secure the maximum success in its prevention. This subject has been viewed from many angles, and I have been successful in directing the attention of these administrative bodies towards research in ophthalmology, carried out under optimum conditions, as being the basis on which all efforts in preventing blindness should be built.

Team-work and Planning

Research in ophthalmology indicates team-work. It is by no means confined to the activities of ophthalmologists, and it is highly probable that the basic sciences physiology, biochemistry, and biophysics will play a part in the prevention of blindness greater in importance than applied ophthalmology; and much research work which is carried out in subjects not directly related to ophthalmology will quite possibly have an important bearing on the causes of blindness—e.g., W. T. Astbury's work on textile fibres (University of Leeds).

From these considerations two needs will be evident: that money must be provided, and that research in ophthalmology must be carried out in close association with the basic sciences, other research units, and clinical facilities.

Local authorities have decided that they are willing to provide the necessary funds for development in research in ophthalmology, carried out under the best possible conditions. It is here that planning is essential. A minimum amount which should be voted for the provision of this research must be estimated. The contribution of each local authority must be assessed on a basis of population. Frequent requests to local authorities for small amounts must be avoided. Many other considerations need to be made, all of which require careful planning.

Dr. F. M. R. Walshe has stated in reference to research personnel: "No planning can provide us with these men or determine the goal of their labours"; and again, "It is round the man and not round the plan that the wheels of research revolve most rapidly." These views have the concurrence of

Sir John Parsons, the Galen of ophthalmological research. The principles involved have already been adopted in the two recently established Ophthalmological Research Centres—(1) in the University of Oxford (Ida Mann); (2) at the Royal College of Surgeons and Royal Eye Hospital (Arnold Sorsby)—except that in the case of Oxford the wheels of research are revolving round the woman.

There is little doubt that a similar course would be pursued by the universities which are at present preparing their schemes if equally acknowledged researchers should become evident. If there are no candidates of the required standard of merit available or likely to be available, how much this unfortunate state of affairs is due to the lack of financial planning in the past is possibly debatable, but it is interesting to speculate how many probably distinguished researchers have been lost to research on account of the more attractive rewards in other branches of the practice of medicine.

To state that none of our most eminent surgeons or physicians, had they devoted their lives to fundamental research, would not have reached equal eminence, would indeed be rash. It would seem, therefore, that an attempt to find suitable leaders of research of proved ability should be made, and, if unsuccessful, then appropriate financial arrangements should be planned (as they have already been planned, as a minimum, in regard to five centres), providing for the recruitment and training of workers.

The rewards of research, as the most valuable branch of medicine, should be assured and ample, and efforts should be made to direct the attention of suitable junior graduates to that vastly interesting and fascinating vocation. That all selected trainees would become ideal researchers is improbable, and for this reason—if for no other, so far as medical graduates are concerned—clinical work should be combined with research work.

One has only to read the biography of Sauter in order to realize that, although a man's ambitions and interests may at one period of his life be concentrated on a certain type of occupation, his interests may be diverted and be productive in an entirely different pursuit. Sauter's greatest ambition was to become an engineer; he was apprenticed to a chemist much against his will, and it was due to the ingenuity of his principal, who deliberately and secretly broke his chemical apparatus in order that the engineering ability of his apprentice could be exercised, that the apprentice's attention was eventually diverted to chemistry. Gradually Sauter found chemistry to be of greater interest than engineering, and eventually gave to the world—morphine.

Choice of Research Workers

An unfortunate idea seems to have developed that ophthalmological research should normally be the sphere of action of an ophthalmic surgeon. While a certain knowledge of applied ophthalmology is useful, there is ample reason to believe that it is to the university laboratories rather than to the out-patient room to which we must look for any real addition to our basic knowledge of the causes of blindness. The provision of a larger number of selected junior researchers specially concerned with the biophysics, biochemistry, and physiology of the eyes seems to be indicated as the most promising approach to prevention of blindness, and it is now certain that financial assistance will be forthcoming in support of this. By this method the choice of the man or woman around whom the "wheels of research will revolve" will be much wider, and he or she will have had the advantage of appropriate basic training—so necessary in modern research. When one considers the haphazard methods, empirical in the extreme, by which researchers in bygone days carried out their investigations, it is amazing that anything was ever discovered.

There was no planning for research in the days of Antonj Leeuwenhoek. His university was the draper's shop. He was despised by the pundits of his day because he could not write his observations in Latin. One cannot imagine the present-day scientist getting his training for experiment among bolts of gingham, listening to the tinkle of the bell of the cash drawer, and being polite to an eternal succession of Dutch housewives; but that was Leeuwenhoek's apprenticeship, and

later he had his own draper's shop. By day he sold gewgaws; by night he melted the metallic ore to make his rudimentary microscope and ground his wonderful lenses by which he could see things never dreamt of by his forebears. We have advanced a little since Leeuwenhoek's days, but even now the descendants of Leeuwenhoek's critics exist. Encouragement, organization, and financial provision are slowly but surely taking the place of professional jealousy and *laissez-faire*.

The recent decision by the County Councils Association and the Association of Municipal Corporations to provide a minimum sum of approximately £20,000 per annum for ophthalmological research, with a definite bias towards prevention of blindness, is an epoch-making measure in ophthalmology, and furnishes universities and Royal Colleges with sufficient immediate financial assistance for considerable reorganization of research personnel, trained and to be trained.

It may be possible to secure the release from the Services of any outstanding researchers with the necessary experience if they are not employed on war work of vital importance: the flow of suitable candidates for junior posts and for training may be slow until the end of the war, but in the interim the decision of the Local Authorities Associations will enable selected centres to begin work on ophthalmological research and to draft and plan for extension as personnel becomes available.

THE PUBLIC HEALTH SERVICES

ADDRESS BY MINISTER OF HEALTH

The Minister of Health was the principal guest at the annual luncheon of the Society of Medical Officers of Health. In proposing the toast to the Minister, Dr. R. H. H. JOLLY, president of the society, said that members of the public health service as a rule did not air their grievances or their anxieties in the medical or lay press, but some of them, particularly those in maternity and child welfare work and school medical work, were wondering what place would be found in the new health service for the preventive and educational structure which had been so well built up by them during the last twenty-five years. They were conscious of a vague shape ahead—not, indeed, a black cloud, but a White Paper.

Mr. WILLINK began by paying a tribute to the public health services, the general result of whose work was greatly to the credit of those engaged in it. He said that the provisional rates showed a fall in maternal mortality from 2.47 per 1,000 births in 1942 to 2.29 in 1943. The crude rate of infant mortality had fallen from 49 to 48, and the final corrected figure for 1943 was likely, for the first time in the records, to be below 50. In the first quarter of 1941 the number of deaths from diphtheria was 841; it fell in the corresponding quarters of 1942 and 1943 to 627 and 498 respectively, and for the first quarter of this year to 285. It was evident that these figures were closely related to the campaign for diphtheria immunization, the fall having chiefly occurred in the age group 1-15. On the other hand the provisional crude death rate from respiratory tuberculosis in 1943 was higher than in 1942, being 557 per million of the population as compared with 506, an increase related no doubt to the influenza epidemic, which reached its peak in December, 1943. But in 1918, the corresponding year of the last war, the figure was 1,322. The incidence of venereal diseases had also increased, although it was not so high as in the last war.

The Government's Proposals

Turning to the Government's proposals for a National Health Service, the Minister said that he had invited discussion and criticism, and the invitation had been accepted. These proposals were not going to be put into legislative form in a hurry, and the Society of Medical Officers of Health was exactly the sort of body from which he hoped to receive constructive criticism. He had heard comments made that in this field, as in that of nursing, the references to the public health services were meagre. But he felt that he could point to first-class evidence of the importance attached by the Ministry to the work for which M.O.s.H. were responsible. It was a great

satisfaction to him to have obtained the services as additional Deputy Chief Medical Officer of Dr. J. A. Charles, M.O.H. for Newcastle. He hoped it would be possible, notwithstanding Dr. Charles's acceptance of that appointment, for him to maintain his close connexion with the society. Here also Mr. Willink congratulated the president-elect of the society (Prof. R. M. F. Picken), who was a member of his Medical Advisory Committee.

"Taking the general nature of the proposals," Mr. Willink continued, "I cannot help thinking that many of the proposals which the society itself has made are to be found in the White Paper—universality of service, treatment available without charge at the time of treatment, larger areas especially for hospital services, full use of voluntary hospitals within the service, establishment of Health Centres, closer contact between preventive and curative medicine, central and local professional consultative bodies, and a new outlook and emphasis on social medicine. All these matters are common to your proposals and those of the Government. The differences are really in method and not in principle and intention."

Three Main Differences

There were three main differences between the society's proposals and those of the White Paper. The society had suggested one central department to absorb all governmental health functions and to be concerned with health and nothing but health. That issue was faced in the White Paper, but it was felt that there were Government Departments which needed medical advice if they were to fulfil their functions, although health was not their main function. Any peril of cleavage could more appropriately be met by close liaison and community of staff. Then the society had suggested—as the National Association of Local Government Officers had also done—that a one-purpose authority should be created in each area, not a Joint Authority as the Government proposed. This question had been dealt with in the third appendix of the White Paper.

"The society will realize that their proposals mean a complete recasting of our whole local government system. That would be a large and prolonged undertaking, and we do not feel that the new health service can await the end of so long a process. But I should like to say that the Joint Authorities which we contemplate will require, in view of the functions we suggest for them, a medical staff of the highest status, with work to do which I imagine will be of immense interest and responsibility. We feel that the planning of the health services in these areas in consultation with the constituent local authorities and with professional and with voluntary hospital experts will be a business calling for high gifts, and that we shall get very great assistance from members of your society."

The third and most controversial of the proposals was that a whole-time salaried service should be instituted for all branches of medical practice. "Of all subjects that is the one on which I should be least wise to embark on this occasion. It is sufficient to say that I feel pretty sure that you realize that you are making a proposal of very wide scope!"

Mr. Willink said that he appreciated the natural anxiety which some of them must feel as to the future of the service. If it was felt that there was likely to be any loss of efficiency, let the Ministry be told and consulted. As against this, he knew they would set on the other side the new statutory duty of securing a full hospital and consultant service, the new responsibilities in relation to home nursing and to Health Centres, possibly also in relation to dental and ophthalmic services. In all these ways there must be immense additions to the scale and importance of the work of medical officers of health.

In a number of fields he got the impression that medical officers—and general practitioners also—under present arrangements had more purely administrative work than was desirable. That was something to be watched in the new arrangements. The importance of educating the public in health matters was something to which he hoped they would pay attention. He had learned a great deal of the work of the Central Council for Health Education, he had seen something of the work of health visitors.

"In all these fields and in the field of what is to-day described as social medicine and positive health you have a great and increasing part to play. I hope that you will deal with all these matters, provided for only in outline in the White Paper. We have in mind to a very full extent, in spite of the brevity of the reference to medical officers of health in the White Paper, the contribution which they are going to make."