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THE SETTING UP OF A NEW MEDICAL SCHOOL — PROBLEMS AND PROGRESS

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THE AFRICAN continent is short of doctors and the obvious place to train doctors for Africa is in Africa. This requires medical schools. But as soon as these two simple statements are accepted problems crowd upon the scene like bees round a honey pot.

What is a medical school? Who will plan it? Where shall it be? From where its students? What the entry standard? What the curriculum? What type of doctor must it produce? What degree will they have? What facilities must be provided? Whence the staff? Who the paymaster? What the likely fate of its products? What can it contribute to the common weal? Here in Rhodesia we believe we have found reasonable answers to some of these conundrums, and our definition of what a medical school is may emerge through discussion of them.

Pre-planning Background

In 1956 under the auspices of the Nuffield Foundation the University College appointed a distinguished planning committee* which in

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its second report in 1959 proposed tentative solutions to many of the problems posed above, made recommendations about buildings and staffing, and made an estimate of the possible costs of a medical school for Rhodesia. This document is a major contribution to British thinking in regard to medical education.

Major advantages stemming from the committee's work were the easy acceptance of the need for the school and of the associated financial implications by Government, the sponsorship of the school by a British University thus guaranteeing degree standards, and the appointment of an executive planning group consisting of key university and hospital personnel a year before the first intake of students was accepted. The report placed in the hands of the executive planners powerful considered arguments and opinions which have provided a basic framework from which present thinking has evolved by adoption, by adaption, or in some cases by outright rejection, for in their wisdom the Nuffield Committee reserved the right of the executive planners to discard any or all of their suggestions.

The University of Birmingham, whose interest had been aroused by the Nuffield Committee's reports and whose statutes offered no bar to the arrangement, agreed in 1961 to sponsor the Rhodesian Medical School and to award its degrees to medical students of the College. The Government (The Federal Government of Rhodesia and Nyasaland) agreed to build a 350 bed multiracial teaching hospital adjacent to the University campus, and on this being known the Nuffield Foundation offered substantial financial help towards the building of the medical school. A public subscription

list enabled the University to collect enough further money to undertake the building and equipping of the basic medical school facilities. The ideal arrangement of a medical school closely related physically to both a modern teaching hospital and a growing University thus appeared assured.

The Planning Group

The executive planning group was formed in 1962 with the appointment of the first members of the faculty (a pre-clinical professor, a clinical professor and a wise and experienced local physician), together with the consulting architects, the secretary to the proposed Board of Governors of the teaching hospital and the Matron of the teaching hospital. This group was charged with producing detailed schedules of accommodation for the medical school and hospital based on the preliminary recommendations of the University of Birmingham.

Planning was first based in Britain where close contact between the planning group, architects and Birmingham was possible, and later following completion of basic schedules of accommodation and sketch plans showing room relationships was transferred to Rhodesia where close co-operation between the planners, the College, the Ministry of Health, the Interim Board of Governors of the Teaching Hospital and the executive architects could be arranged.

During the transition period it proved possible for the preclinical and clinical planning professors to take advantage of a grant from the Rockefeller Foundation and travel widely to study problems which had been encountered in the physical and educational planning of many new or recently reshaped medical schools in developed and underdeveloped countries.

The first students entered the Faculty in March, 1963 for a six year course leading to the Degree of M.B., Ch.B., Birmingham.

Turning now to some of our problems: —

Educational

Student Numbers:

One of the difficulties facing any proposed medical school is an assessment of how big it should be. In a country short of doctors obviously the bigger the better, but most underdeveloped countries have also a shortage of school leavers of adequate standard, and medicine is only entitled to a share of this pool. The Nuffield Committee originally suggested an annual intake of 25 students, but consideration of the numbers of local students known to be studying medicine outside of Rhodesia and

the projected educational programme for secondary education, resulted in the school being planned for a annual intake of 50 students with built-in provision for expansion to an annual intake of 80. This will only just be sufficient to maintain the doctor-patient ratio in Rhodesia at its present level of one doctor to 10,000 patients in view of the rapid expansion of the population, which is expected to double in the next twenty years. That this policy was justified is shown by the fact that the number of student applications for each of the first three years of the school's life has been over 100 and is increasing steadily. The first three intakes however have been limited to 25 to 30 students because teaching has had to be undertaken in temporary accommodation.

Entry Qualifications and Degrees:

Medical Students from Rhodesia have been accustomed to obtaining degrees in South Africa or Britain which are in fact registerable with the General Medical Council; the University College is in special relationship with London University for its other degrees; and the sixth forms in the secondary schools in Rhodesia are geared to the British "A" level examination standard, so that there was no argument raised against the acceptance of the British entrance standards of the Northern Universities Joint Matriculation Board which automatically followed with the Birmingham Degree. The Matriculation Board agreed to ease its second (foreign) language entry requirement which might have proved a stumbling block to many applicants. I believe that the acceptance of this high entry standard was a correct decision as experience in Tanganyika and in other countries with attempts at lower entry levels and a lesser standard of degree has revealed that this finds little favour with prospective students and is likely to prove unworkable.

Curriculum:

The first decision to be taken by a new medical faculty is what sort of doctor is the school trying to produce. The Nuffield report suggested that it should be a multipotential or general practitioner. I believe, as I have said elsewhere (Davidson, 1964 a and b) that it is impossible to train any man in his undergraduate years to be the competent physician, surgeon, obstetrician, paediatrician, and public health expert, that country practice in an African environment requires, and that therefore our aim should be to produce a young graduate sufficiently educated to learn competence in either general practice or in some other special

field—for general practice in Africa is undoubtedly a speciality—during an eighteen-month to two-year planned internship.

Our aim of the production of an educated man capable of teaching himself from the available store of knowledge is reflected in the proposed curriculum. On the advice of the University of Birmingham the premedical year of science has been made compulsory. First because teaching in some of the secondary schools in this country is not broadly enough based to give our students the background to go straight into the preclinical years, and second because of the nature of the course being offered in this first year. The course has only two subjects, Biological Sciences and Physical Sciences. Both of these are orientated towards medicine by the use of medically relevant examples as often as possible. They also introduce disciplines such as genetics, statistics, radio-biology and general physiology on the other hand, and biochemistry and biophysics in the other.

This year is an example of integrated teaching both horizontally between the departments of Botany, Zoology, Chemistry and Physics and also vertically in that the student is introduced to the principles of physiology and to these other usually later subjects. In addition, the student is introduced to sociology and medical anthropology in class and in the field, and visits the hospital to see the relevance to clinical practice of his first year's studies. One visit shows him cases infested with parasites he has already studied, another shows how the physical principles he has been learning are applicable in the fields of anaesthesiology, radiology, and electrodiagnosis.

It is proposed that the two preclinical years develop towards a course in human biology including basic pathology but there have been difficulties in planning this course owing to staffing problems. The time spent on anatomy has however been drastically curtailed (almost by 50%) from the old standard British curriculum along the lines already adopted by Birmingham (Thompson, 1962) and includes field studies in physical anthropology and growth, and clinical demonstrations weekly or bi-weekly. Histological studies are closely dove-tailed to the dissecting programmes, use human tissue almost exclusively, and include introductory slides demonstrating the alteration of normal microscopic architecture by disease, shown by members of the Department of Pathology who also assist in the teaching of normal histology. Proposals for the teaching

of physiology include close co-operation with the Department of Medicine in the demonstration of clinical cases illustrating physiological principles, participation of clinical staff in teaching, close backward and sideways co-operation with the Department of Anatomy and throughout a firm orientation towards human and away from animal physiology.

Concurrently with the latter half of the physiology course the student will receive his introduction to clinical medicine, and his basic course in principles of pathology, so that by the time he reaches the three clinical years we believe that he will be educated in the techniques of learning, and able to adopt a more active role than is usually allotted to him in the running of the hospital practice.

Other ideas we propose to implement are to make the final undergraduate year a year of junior resident internship, to introduce a project period of three months at the end of the fourth year, to leave free the last six weeks of the course for studies of the student's own choice, to have the student spend a few days acting as a nurse during his course, and to retain at least two long vacations during the clinical period in which the student can return to his often distant home, and during which he will be expected to spend some time working in the local medical station.

Any medical school in Africa must be aware of the community and its problems to a far greater extent than a school in a more sophisticated environment. We are therefore developing an outstation in a rural community about fifty miles from the medical school where the student will spend some time in residence working under the conditions of a normal government station and seeing at first hand the hard realities of everyday life in this country. This community teaching will be the responsibility of the faculty rather than of any one department and the course provided in it will be another example of careful inter-departmental co-operation. Major problems which have arisen in other medical schools' attempts to set up a community of this type have resulted from over emphasis of one discipline, from lack of knowledge of the sociology and customs of the community, and from lack of interest in this type of approach by heads of clinical departments, whose attitude soon communicates itself to the student body. Further problems which arise here include that of deciding what should be taught as so little is known about the social problems and customs, the morbidity, the disease patterns, and the

public health and the health education needs of the indigenous peoples of Africa. We hope that our community studies will in time solve this both by providing the opportunity for basic research into these problems, and also the opportunity for the Faculty and Government to develop co-operative studies of the best use of health personnel.

Another problem is that of integrated studies. We prefer to approach this as a problem of inter-departmental co-operation which will result in a logical sequence of presentation of material and the exclusion of tedious reduplication—a stream-lining and we hope a more thoughtful presentation by the staff of many departments consecutively and by staff members teaching in more than one department, rather than the currently popular approach of splitting the body into systems dealt with *in toto* from embryology to degeneration. This, as presently practised, requires too high a staff student ratio and too high an expenditure of staff time for our situation. Our proposed curriculum has also raised problems about the timing and content of examination, but we believe that we will be able to avoid the situation of many British Schools where the student who fails an examination has his studies further prejudiced by the timing of a supplementary examination, which forces him to concentrate on the subject he has failed while his brighter colleagues are acquiring vital new knowledge in other disciplines.

This is perhaps the point to say that while we are extremely grateful to the University of Birmingham for providing our new medical school with its degree and supervising its standards our long-term planning must be toward the time when the University College of Rhodesia gives its own degree. We believe it is possible to plan towards a three-year degree in human biology and yet still maintain the vital continuity of the six-year full medical course with clinical studies appearing early to light the way for the future doctor, while basic science subject matter re-appears late to round out knowledge. We expect also to introduce an honours course in basic or medical sciences in association with this degree. Another difficulty in the planning of our still very fluid programme is the inevitable lack of the presence of all the medical school staff at and before the time the first students began their studies. Much of even the first year course will need revision in the light of advice of staff members yet to be appointed because their teaching commitments come so much later in the course.

Two further points are worthy of note. The University of Birmingham has agreed that as soon as the clinical departmental staff are in post, a few students from Birmingham will come here for their final year thus giving the clinical staff full teaching responsibility at the earliest possible opportunity, and the Faculty has agreed with Birmingham and the College to introduce a College Post Graduate Diploma in internal medicine in Africa of a standard similar to current British diplomas in Tropical Medicine. This will form an orientation course for overseas graduates who wish to work in Africa, and will also form a valuable part of the postgraduate teaching programme which we acknowledge to be just as important a part of a medical school's function in Africa as is undergraduate teaching.

Staffing

In a country which has not previously had a medical school most of the staff must be imported from abroad, and in English speaking Africa this usually means Britain or the older Commonwealth countries which by their own internal standards are short of doctors. New schools in Africa are unlikely to obtain many staff members from the Americas because of major differences in salary scales and the current major programme of medical school expansion in the United States. The political situation in many countries in Africa acts as a deterrent to some groups of prospective staff members, but this aside, the challenge of the African continent and of participating in a new venture such as ours appeals only to a certain type of person who is probably more easily found among those in clinical fields than in the non-clinical departments. Even among these the specific terms of service offered may be of critical importance in influencing their decision to come to Africa. Rhodesia has always been a country in which people settled rather than one in which people came for a tour of duty, and initially the terms of service offered by the University College reflected this. Recent changes following the break-up of the Rhodesian Federation have resulted in the College's terms of service coming into line with other Universities employing expatriate staff and the college is particularly fortunate in being situated in one of the most beautiful and sophisticated cities in Africa outside South Africa, one which has almost an ideal climate, and one in which educational facilities for staff families are first class.

The two approaches in current use for staffing an embryo school in Africa are to invite senior

men who are about to retire to come and spend two to three years setting up a department and meanwhile appoint a young man to succeed to the department or, to seek for someone who is presently of acceptable status and is prepared to give a considerable part of his most active years to setting up and developing his own department and the medical school in a challenging environment such as ours. The college authorities backed by Birmingham have chosen the latter course as being on all counts the most likely to result in a cohesive successful faculty. For a faculty is only as good as its staff, and the first type of approach inevitably results in a change of departmental and even faculty direction at a most critical period in a young school's life, and leaves the inheritor with a department planned by someone else yet scarcely fully functional. One of the attractions which our own project offers is in fact the chance for each new head of department to plan his own department, and in the case of clinical heads to plan their own clinical facilities in addition. So far, the college has succeeded in obtaining staff in the second category in time to prevent any serious hindrance to the development of the school, but there have been delays and difficulties due to political factors outside our control which have prevented us from implementing our ideal programme from the beginning.

Facilities

The estimated time required for the building of our hospital and medical school from the initial planning brief to final completion is a little over seven years, and it is therefore inevitable that the planning of the permanent facilities, the development and staffing of the faculty, and the teaching of students have to proceed simultaneously. This again raises major problems of which the most important are the provision of temporary medical school accommodation and clinical teaching facilities, and that, since it is manifestly impossible to recruit the total medical school staff for the initial planning, the expert knowledge required in the planning of the school and even more particularly the hospital has frequently not been available when required. For instance, the architectural programme for the hospital currently demands that immediate major decisions be taken in regard to the operating theatre complex although the Professor of Surgery has not yet been appointed. With regard to temporary accommodation we have been particularly fortunate. The fact that the non-

medical part of the College is still expanding has enabled us to house the anatomy, physiology and biochemistry departments in laboratory, classroom, and office accommodation which is eventually destined for other uses within the college. This has provided space for the two annual intakes which must pass through these departments before the new medical school now under construction is completed. Similarly, the Rhodesian Government has not only made provision for clinical facilities in its main Salisbury Hospitals, but is also providing within the shell of a future ward block temporary office and laboratory facilities for the clinical departments. Negotiations are taking place between the Government, Faculty and Hospital Staffs to resolve the many administrative difficulties of running a hospital within a hospital but these are taking place in such a co-operative atmosphere that we do not anticipate any difficulties on this score. The second difficulty, the lack of expert technical advice for planning purposes, has been of more serious concern. It was anticipated as far as possible in the preplanning by the appointment as consulting architects of Professor Lord Llewellyn Davies and his group with their vast and indeed almost unique experience of hospital design and planning, and it has been further mitigated in its effects by the sterling support of members of the Birmingham Faculty. Nevertheless, due to the loss of time and delay in staff appointments occasioned by the financial and political uncertainty through which we have passed, this represents our most pressing problem at present. Another problem is the relationship between the teaching hospital, the University, and the Government of a small country. From the point of view of Government the teaching hospital provides a substantial contribution to the bed service of the community and cannot be considered in isolation from the rest of its health service, while from the University point of view it is the classroom and research laboratory of the clinical departments, must always be staffed above a certain minimum level as regards nursing and all other staff, and cannot be allowed to become overcrowded as is so often the case with hospitals in Africa. The University also has the responsibility of ensuring the suitability of the hospital staff for their teaching role. Again we have been fortunate. The solution to this problem which was found acceptable to all parties was the creation of an independent Board of Governors charged with the administration of the hospital and the provision of

facilities for clinical teaching. This body provides a forum in which the sometimes conflicting interests of the Government, University, the community at large, and the clinical staff of the hospital can be represented and resolved. An Interim Board of Governors was appointed by the Federal Ministry of Health as long ago as 1961. It was a most effective body until it died with the death of the Federation in December, 1963. We are at present awaiting the appointment of a new Board following appropriate Southern Rhodesian legislation. The absence of a Board from the beginning of 1964 until the present while negotiations about the future of the medical school have been going on has again been a major disappointment, because consultations between the planners, the University, the executive architects and the Government have proved difficult without it.

Finance

Our financial problem has been unusual in that the breakup of the Federation of Rhodesia and Nyasaland resulted in the disappearance of the paymaster for both college and hospital and it was only after a delay of some six months that intergovernmental consultations between the British and Southern Rhodesian Governments resulted in full restoration of the necessary capital and recurrent monies. Planning progress and staff appointments were in consequence delayed for well over six months and this has led to the considerable difficulties which have been mentioned earlier. We are still hopeful that the lost time may be recouped, but

have had to make plans for failure to do so, plans which would at the same time not prejudice the educational experience offered to our future graduates who are already with us. I believe we have succeeded in doing this.

Conclusion

In conclusion we may again ask the question what is a medical school? I submit that a medical school is people. It stands or falls by the calibre of its staff and the relationship between them, and by the calibre of its students. All else follows, buildings, curriculum, research and service to the community. I believe our new school will be a success for it is the product of seed sown in good ground by men of vision, seed which has been watered by men of goodwill, which is being tended by devoted servants, and above all it is seed which is being fertilised by the almost incredible enthusiasm of our students.

I would like to acknowledge the stimulus to my thinking of many discussions with my colleagues here and in Birmingham.

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