WIDER RESPONSIBILITIES IN ORTHOPAEDICS

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The purpose of this short paper[1] is to discuss the position of orthopaedics in countries where the evolution of this branch of surgery is still in progress. There are many of them, but they are mostly in Asia and Africa. My personal knowledge of what is happening is patchy because most of my observations have been made in countries that are parts of the British Commonwealth, so, of necessity, examples cited are taken from them. At the outset, I must ask the reader not to infer that the state of affairs in some Commonwealth countries is peculiarly unsatisfactory: on the contrary I suspect that conditions in underdeveloped countries generally are, on the average, less favourable. Indeed it was the splendid work of orthopaedic surgeons throughout the Commonwealth that impelled me to devote part of the *Robert Jones* Lecture in 1961 (Journal of Bone and Joint Surgery, 34 B, 425) to describing their achievements.

Specialisation in medicine is related to the ratio of doctors to population; more doctors, more specialisation. In Europe it is about 1:900; in Asia about 1:6500; in Africa about 1:9000. Not all of these doctors are directly concerned with the care of the sick, and the distribution of those who are is very uneven; I know parts of West Africa where there is one doctor for every 25,000 people. In India the *aim* of the government is to provide one doctor for every 70,000 inhabitants of the vast rural areas.

Unfortunately, though understandably, it is in the very countries where specialists are so thin on the ground that the need for their services is greatest. Diseases which in "western" countries have been

[1] The invitation to contribute to this Festschrift in honour of my friends *Sten Friberg* and *Gunnar Wiberg* reached me during the course of a teaching tour in India. Without access to records and books it was impossible to write a scientific article. However, the Editor has allowed me to discuss a general topic which I hope the reader will not find devoid of interest. *H. J. S.* Srinagar, Kashmir.

brought under control are still extremely prevalent. Poliomyelitis and tuberculosis are striking examples. Shortage of doctors means that every surgeon has to be good at everything surgical, a really versatile general surgeon. Yet the complexity of many of the cases coming to him, and notably in orthopaedics, would test the ability of a most experienced specialist. Thus, with joint tuberculosis for example, at a time when methods for treating this disease have improved so remarkably the means for applying them where they are needed most are lacking, or at best very deficient.

Orthopaedics happens to be singularly important. In Africa it accounts for about 40 per cent of all surgery; the same is true of India. And orthopaedics, particularly in the two great continents, is largely concerned with children and young adults; in terms of life and usefulness it yields a good return.

In the little kingdom of Jordan there is one orthopaedic surgeon. In Northern Nigeria with a population of 19 millions there is one, assisted year by year a number of the junior staff of my own hospital. In the capital city of an Indian state with a population well over that of the British Isles there is one orthopaedic surgeon at the 1,000 bed teaching hospital. There is more than enough to occupy him there, but in addition he has 50 beds for osteo-articular tuberculosis in the 600 bed sanatorium. The patients with Pott's paraplegia—I saw seven in a row in one ward—had, of necessily, to be treated conservatively in the first place because there were not enough hours in the week for operating on all but those who failed to recover spontaneously. Thus valuable beds were wasted. This picture, painted perhaps in lighter or darker shades, can be repeated almost endlessly.

I recall discussions that took up two long, hot afternoons, in an African capital where a surgeon had started a clinic for children who had had poliomyelitis and were coming from all over the country. We reluctantly reached the conclusion that with the available resources it was not justifiable to do more than correct contractures of the lower limbs (the like of which is now rarely seen in Western Europe), fit the patients with simple, inexpensive appliances and so put them into their feet. Reconstructive surgery for the hands of patients with neural leprosy was another topic; should they embark on this type of work? The answer was that this would have to wait, children with poliomyelitis affecting the upper limbs being ahead of them in the queue, because they had youth and normal cutaneous sensibility in their favour. Working out priorities of this kind is a depressing exercise.

Is it worth while trying to stem this apparently limitless flood of morbidity? An example from Hong Kong, where tuberculosis is rife, shows what can be done. There, *Hodgson* has reported that since 1951 the annual death-rate from osteo-articular tuberculosis has fallen from 325 (two-thirds of the fatalities being in children under five years of age) almost to vanishing point.

The determining factor everywhere is poverty. Until recently fatalistic ignorance was sometimes responsible for failure to make full use of such medical facilities as there were. But with the spread of education and like a wave in advance of it the demand for what medicine has to offer has swamped the existing services. No country can afford to spend more than a modest proportion of its revenue on medicine if other equally important requirements—education, agriculture, animal husbandry, soil and water conservation, industrial enterprises and communications—are not to suffer. Uganda, commonly regarded as a prosperous country, spends 10 per cent of the funds at the disposal of its government (which the United Kingdom supplements each year by £ 1 million) on medical services. This works out at eight shillings a head a year. India spends six per cent which amounts to three shillings a head a year. The United Kingdom spends four per cent, but this comes to 234 shillings a head a year.

And these pittances have to cover public health as well as curative services. It is in just these countries that scourges we have almost forgotten, malaria, sleeping sickness, smallpox, cholera and other enteric diseases are active, and controllable only by unremitting vigilance. What is remarkable is that the curative services achieve anything at all and yet they do so, sometimes with distinction and always with an economy that rebukes the profligate expenditure of the West. Those confronted with this situation for the first time either see salvation in spending far more money, which is not available, or leaving the curative services as a token force, the main effort and expenditure being concentrated on preventive medicine. There is something to be said for the latter. In saving of life these mass-production methods are cheap and effective; and it is true, too, that expenditure on curative medicine is a bottomless pit.

Yet even the most ardent exponents of preventive medicine have need of the clinical arm. A district cannot be cleared of yaws except by treatment of infected individuals. The campaign against leprosy got nowhere until effective drugs for the treatment of the disease had been discovered and administered on a large scale. It is possible that tuber-

culosis could be brought under control by B.C.G. inoculation alone; yet even in India it has been thought worth while to mount the impressive Madras experiment—sponsored jointly by the Government of India, the World Health Organization and the Medical Research Council of Great Britain—which already seems to show that the established disease can be mastered by domiciliary drug treatment. What the public health man deplores, and rightly so, is the squandering of resources on curative services beyond what a country can afford. Rigidly controlled expansion is necessary.

Thus the need for economy in the hospital services is very great. The deployment of doctors is important. In the Commonwealth territories of East and West Africa the policy for the vast areas outside the cities has been to give district medical officers wide commands, to pay them well and to supply a large subordinate staff for public health and for curative medicine alike. Competence in public health is regarded as specially meritorious and rewarded accordingly. In this way it is possible to make tolerably good provision on the basis of one doctor for every 15,000 people. India has decided to have many more doctors and medical schools have been established all over the country; there are now in all nearly seventy of them. The aim, as has already been said, is to supply one doctor for every 70,000 people in the rural areas, a much more modest provision than has been made in some of the more remote parts of Africa with fewer doctors in relation to the population. Yet in India the ratio doctor/population is 1: 6000, which means that more than nine-tenths of the doctors are in the towns. Most of India's 30 million people live in the countryside. These observations are made simply to show that increasing the number of doctors in itself is no answer. It is their distribution that counts; this means state control. However alien this may be to our conceptions of professional freedom, intelligently planned distribution encourages the differentiation of functions on which the progress of medicine depends. In the smaller units the government is bound to provide men skilled in the four primary requisites, medicine, surgery, obstetrics and gynaecology, and pathology: in the larger ones, the additional and hardly less important departments of paediatrics, orthopaedics, ophthalmology and radiology.

Since the second World War we have gradually been learning to think as citizens of the world. The United Nations Organization, in spite of many faults is a great power for good, and of its various agencies none has acquitted itself better than the World Health Organiza-

tion. In this great work Scandinavia has played a noble part. Two Secretaries-General of U.N.O. were Scandinavians: one of them, a Swede, lost his life in the course of duties that would have broken the spirit of lesser men. In the field of international medicine the Scandinavians have distinguished themselves. Their work in Korea, for example, is well known. In orthopaedics Malaya owes a debt to A.G. Karlen, who occupied the chair of orthopaedics in Singapore with great distinction from 1956 to 1961. The British, conscious of the need for continuing a task by no means half done, established a new governmental agency last year called the Department of Technical Co-operation. It became responsible for services formerly provided by the Colonial Office, such as education, medicine and agriculture, but its activities are not to be limited entirely to countries within the British Commonwealth, though these will head the list. Under the Colombo Plan Britain, Australia and New Zealand have already done excellent work in South-East Asia. There is, indeed, as with the great missionary movement of the 19th century, an almost embarrassing proliferation of agencies.

In the field of medicine certain clearly defined lines of action are emerging. Putting them into effect depends ultimately on the vision, goodwill and energy of senior men in medical schools; without their co-operation little can be done. This, above all, is the reason for this essay. Here are the crucial points.

1) Material aid, in the form of buildings or equipment, is most valuable, sometimes essential, but what counts far more is the aid of skilful and devoted men and women. I was once involved in a medical emergency, an epidemic of poliomyelitis in which 2,000 children and young people were stricken. Excellent equipment, was sent promptly and on a generous scale. But the organization required to provide effective treatment was lacking. Then five physiotherapists and one occupational therapist were brought in and within six months they quietly achieved a revolution that extended far beyond their immediate field of work. After their efforts the surgical organization presented no difficulty.

2) The most potent form of aid is teaching the teachers, for it is on their continuing influence that the orderly evolution of a country's medical services ultimately depends. It is not always convenient to find a place in a university medical department for a young lecturer or associate professor from abroad: yet the good that can come from so

doing may be incalculable. It is not only the acquisition of certain skills that counts; the atmosphere of the place will influence him profoundly. Whether in years to come his heart is in the advancement of medicine or in advancing himself may be determined by the example of those he has encountered in his impressionable years.

3) Visit of longer or shorter duration by senior men to the developing countries can be valuable too. In Great Britain we have before us an outstanding example in the late Julian Taylor who devoted the last years of his life to teaching surgery in Khartoum. (A friend of mine is now taking his place.) His influence was enormous for he identified himself completely with the Sudanese and was idolized by his students. American surgeons are working, some at their own expense, on a shift system in countries as diverse as Jordan and India.

4) For the broadening of a young man's mind a period of work in another country has long been regarded as desirable. Years ago the British went to Germany, to Vienna, to Paris; now the great magnet is the United States of America. For the keen ambitious young clinician or scientist this is still almost essential. To suggest that he should turn his thoughts to Asia or Africa is hardly realistic, for there are few schools in these continents of any great distinction. However, there are some, as several young Englishmen have discovered to their advantage.

But we tend to forget that among our students there are a number who do not aspire to eminence, who are not endowed with great originality, yet are remarkable for their pioneering spirit and love of adventure. They correspond to the missionaries and colonial officers of the last century; to the men who were willing to face the great hazards (as they were then) of an unhealthy climate, to forego the amenities of family life, to forfeit whatever claim they might have had to public recognition, for the satisfaction of creating something out of nothing and knowing that in one remote corner of the world they were indispendable. Today, conditions are far easier. Yet the ardour of youth is still there and it is too precious to be wasted. It is helpful if medical teachers and administrators can so order affairs that these young adventurers (they must be good at their job) can work for a time in countries where their help is welcome without losing their footing on the ladder at home. This can be and is being done by a process of secondment so that the young clinician, or student of preventive medicine, is assured of a good place on his return. A few, by natural selection, find their vocation abroad, and then a service has been rendered

to a country short of well-trained men. The majority, those who return, bring back with them a poise and confidence borne of having shouldered great responsibilities under often irksome conditions.

The scientific opportunities are considerable too. If, as is desirable, arrangements have been made for the young man to devote a good deal of his time to a particular problem he will be able to collect his observations with a speed that cannot be approached in more sophisticated countries, simple on account of the wealth of material. His work will have a quickening influence on his new colleagues, perhaps on his seniors, and at the end he will have done something to advance medicine in a part of the world less favoured than his own.

For ourselves there must be an awareness of these obligations; a willingness, perhaps at some sacrifice, to meet them by giving the most practical encouragement to our colleagues, senior and junior, who feel drawn to participate directly in this pioneer work.

SUMMARY

Although specialization in medicine depends on there being an adequate ratio of doctors to population, it cannot be regarded as a luxury because the need for special medical or surgical services is greater in poor countries than in those in which medical care is highly developed. In orthopaedics, for example, a number of crippling conditions which used to occupy the attention of surgeons, such as poliomyelitis and joint tuberculosis, have been largely eliminated in, say, Western Europe. This has not yet come about in many parts of Asia and Africa. The difficulty is that expenditure, necessarily very limited, must be devoted primarily to the promotion of public health; the curative services, important as they are, must take second place.

This essay contains suggestions on how help can be given where it is most needed.

ZUSAMMENFASSUNG

Obwohl Spezialisierung in der Medizin davon abhängt, dass eine hinreichende Anzahl von Ärzten im Verhältnis zur Bevölkerungsdichte vorhanden ist, kann sie doch nicht als ein Luxus angesehen werden, da das Bedürfnis für medizinische und chirurgische Spezialhilfe in armen Ländern grösser ist, als in jenen, in denen die medizinische Fürsorge hoch entwickelt ist. In der Orthopädie zum Beispiel sind

eine Anzahl von verkrüppelnden Zuständen, die den Chirurgen sehr beschäftigten, wie Poliomyelitis und Gelenktuberkulose, in Westeuropa sozusagen weitgehend ausgeschaltet worden. Die Schwierigkeit ist, dass die Ausgaben, die notwendigerweise sehr begrenzt sind, vor allem zur Förderung der öffentlichen Gesundheit aufgewendet werden müssen, während die Heilungsvorsorge, so wichtig sie ist, erst an zweiter Stelle steht.

Der Aufsatz enthält Bemerkungen über die Möglichkeit dort Hilfe zu geben wo sie am meisten benötigt wird.

RESUME

Bien que la spécialisation en médecine dépend du nombre des médecins qui existent par rapport à la population, elle ne peut pas être considérée comme un luxe, car le besoin de spécialistes en médecine et de services de chirurgie est plus élevé dans les pays pauvres que dans ceux où le niveau des soins médicaux est hautement développé. C'est ainsi qu'en orthopédie, certaines formes d'invalidité qui retiennent généralement l'attention des chirurgiens, comme par exemple celles découlant de la poilomyélite et de la tuberculose articulaire, ont été en grande partie éliminées en Europe occidentale. La difficulté rencontrée par la spécialisation réside évidemment dans le fait que les fonds qui sont nécessairement limités doivent être utilisés en premier lieu au progrès de la santé publique et que les services de cure, quelle que soit leur importance, viennent au second rang.

Cet essai montre comment l'aide la plus nécessaire peut être apportée.