



MINISTRY OF HEALTH

NATIONAL HEALTH SERVICE

The Development
of Consultant
Services

LONDON: HIS MAJESTY'S STATIONERY OFFICE

1950

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NOTE

This memorandum was first produced for circulation to Regional Hospital Boards in January, 1948. Minor revisions have been made in the text for publication in its present form

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FOREWORD

The object of this memorandum is to assist Regional Hospital Boards in the planning and future development of the consultant services. The immediate duty of Boards to ensure the effective maintenance of existing services will be more satisfactorily discharged if it is seen against the background of the long-term organisation of the service. The attempt has therefore been made in this memorandum to examine the scope and content of the different consultant services ; to consider how they might best be organised on a regional basis, bearing in mind the part to be played by the Teaching Hospital ; and to estimate in terms of hospital facilities and medical staff what are the optimum future requirements of a developed service. In short, the aim has been to state objectives and to suggest methods by which over a period of years those objectives may be reached from the starting point of the existing resources in buildings and personnel.

Two points in particular should be mentioned. The first is that the memorandum is not put forward in any sense as a series of instructions which Regional Boards must follow. It seeks merely to suggest tentative answers to questions which each Board must necessarily face in considering the planning of the services for their area. The second point is the obvious one that the whole of the proposals made in the memorandum cannot be made effective immediately.

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NATIONAL HEALTH SERVICE

THE DEVELOPMENT OF CONSULTANT SERVICES

I. INTRODUCTION

1. *Historical.*—The planning of consultant services on a regional basis has been advocated in medical circles for many years. It has not hitherto been practicable, however, except in such limited fields as radiotherapy, and then only in a few regions, where progress is of recent date. The distribution of consultants has been haphazard, determined in large measure by those economic factors upon which depend the existence of private consulting practice. There have been salaried part-time or whole-time consultant posts in general hospitals but they have been relatively few; the tuberculosis service, however, and the larger infectious disease hospitals have been staffed almost entirely by whole-time salaried officers. But in the main consultant practice has been a matter of unpaid hospital responsibilities, coupled with private consultant work which has provided the whole or greater part of the consultant's income. The inevitable consequence has been an uneven distribution of consultants who are too few to meet the needs of the whole population.

2. *Increase and Distribution of Consultant Staff.*—An immediate result of the introduction of the National Health Service has been the remuneration of consultants for all their work within the Service, unless they elect to serve in an honorary capacity. Thus, for the first time, there is generally available the means of providing additional staff where it is most needed. Regional planning is now possible and will continue to be one of the most important functions of the Board. Distribution can be improved by the creation of new salaried posts, part or whole-time, beginning first in those areas where the need is greatest. The deficiency in numbers can be made good only gradually, because the training of consultants is necessarily long. Regional Boards should ensure, however, that only consultants of a high degree of competence are appointed to posts of responsibility. The mere possession of a special diploma is not in itself a qualification for consultant rank; adequate training and experience are essential.

3. *Estimation of Numbers of Consultants.*—Subsequent sections of this memorandum will deal with individual specialties in detail and an attempt will be made to forecast requirements in consultant services for a population of a given size. Such estimates must be largely speculative, for as yet there is not sufficient information on which to base even approximately accurate estimates. But a plan of development, however tentative, is needed and it is the object of this memorandum to provide material which may be useful to Regional Boards in formulating their ideas. The realisation of these ideas may not be achieved for several years, since building on the scale required will not be possible for some time and the necessary consultants cannot be rapidly produced. It is imperative to avoid the mistake of expanding consultant staffs by recruiting men and women with inadequate training and experience.

4. Estimates of numbers of consultants given in subsequent sections are in the main in terms of whole-time or half-time service at one hospital centre, but the proportion of the individual consultant's time given to the hospital service (which may include domiciliary work) will vary. Some consultants may wish to engage whole-time in the service; others may engage in private practice for part of their time. Consultants employed part-time in one hospital centre may give part-time service in another.

5. The estimates of staff required to provide a consultant service are related in the main to a hypothetical average hospital district with a population of the order of 100,000 to 120,000. A full service envisages not merely the provision of beds but also out-patient clinics, domiciliary consultations, and the pastoral visitation of general practitioner or cottage hospitals. In such specialties as pathology some facilities for investigation of the patients of general practitioners will be called for. It is undesirable and indeed impossible to interpret a consultant's responsibility to his hospital in terms of attendance between stated hours. The whole-time consultant undertakes a commitment in terms of care of in-patients and out-patients and domiciliary consultations representing a full working week. In so far as part-time consultants are concerned there will be individual variations in the distribution of their time.

6. The estimate given in paragraph 34 for the staff required in general medicine is the equivalent of three whole-time physicians spending together a total of some 100-110 hours per week in clinical activities including domiciliary consultations. The equivalent of three whole-time physicians might be provided by a combination of one whole-time physician, two giving nine-elevenths time and one four-elevenths or in any other suitable way.

7. *Background of General Plan.*—The planning of the consultant services is one of the primary duties of the Regional Hospital Boards, but it is a task which must clearly be carried out in close collaboration with the Teaching Hospitals. Each of the 14 Regional Boards will normally provide a complete range of medical services within its region. There is no wish to standardise consultant services throughout the country and each region will be able to plan these services in the way best suited to the local organisations and needs; indeed experiment and variation between regions are essential to future development. There are, however, general principles which will be applicable in all regions and it is probable that broadly similar plans will emerge in each. The present memorandum has been prepared to give Regional Boards a general background which may be useful in the preparation of their plans. It is not intended to prescribe a pattern which must be followed or which can immediately be adopted, but merely to offer suggestions as to the broad lines along which development might be guided.

8. *Distribution of Hospital Accommodation.*—The regions vary considerably in area, in population and in transport facilities; the smallest has a population of nearly one and a half millions and the largest one of over four millions. (See appendices A and B.) Each region is composed of a group of hospital districts of varying sizes and populations, each district representing the catchment area of a group of hospitals. The shape and size of a district is determined partly by the density of population and partly by the convenience of access through public transport services to the main centre of population of the area where hospitals are or should be provided. The hospitals may be grouped for administration under one or more Management Committees since it is sometimes necessary to divide a functional group into two or even more administrative units. With the main hospitals so provided smaller or special hospitals in the area are commonly associated. Within the group of hospitals in each district there should be available most kinds of consultant service. Even the smallest such district will require at least one locally resident physician, surgeon, obstetrician and anaesthetist. The smaller groups will depend to some extent on their larger neighbours for visiting consultants of other kinds and all will rely on regional units for the more highly specialised services.

9. *Staffing of General Hospital by Consultants.*—A common feature of the published reports of the Surveys of Hospital Services, undertaken during the war under the auspices of the Minister and the Nuffield Trust, was the recommendation that the clinical responsibility for hospital patients, other than those in general practitioner or cottage hospitals, should rest with consultants. It is necessary, therefore, to provide not only a sufficient number but a sufficient range of consultants. It is not enough to provide a general surgeon at a Hospital Centre and expect him to accept responsibility for all types of surgical cases. Ophthalmic surgery and the surgery of the ear, nose and throat, to take two obvious examples, each require the services of a surgeon who practises his speciality exclusively. In addition there are types of specialisation which may be developed within general medicine or general surgery and which are rarely an exclusive interest.

10. *The Distribution of Consultant Services.*—Throughout this memorandum the term Hospital Centre is used in a clinical rather than an administrative sense to describe a group of hospitals which together provide all the normal consultant services for a natural aggregation of population. Whether the hospitals are all in the same town, or one or more of them situated outside it, they may be regarded as having a functional union and sharing a common staff. This does not exclude the possibility that there may be more than one Hospital Management Committee concerned in the administration of the hospitals comprising the Hospital Centre. For the treatment of pulmonary tuberculosis, long-stay orthopaedic cases and mental diseases it may be necessary to provide in-patient accommodation at some distance from the main hospital group. General practitioner or cottage hospitals will frequently be included in the group and will be visited regularly by consultants, although their primary purpose is to provide short-stay beds in which general practitioners attend their own patients.

11. The term Regional Centre is used to describe the Hospital Centre at the headquarters of the region and includes the Teaching Hospital, although the latter is outside the administration of the Regional Hospital Board. Here will be provided both the range of consultant services which must be available in every Hospital Centre, and in addition those exceptional services which require the collection of cases from a large population in order to make full use of a team of experts who have made those subjects their particular interest. The four principal examples of these are Plastic Surgery, Neurosurgery, Thoracic Surgery and Radiotherapy.

12. It may happen in other fields of work, however, that certain types of case will be referred by consultants to individual colleagues, anywhere in the region, who have acquired a special skill or who have specialised apparatus. For instance, there may be some form of operative treatment for a rare disease which may be developed by one man, working at the Regional Centre or some other hospital centre, to whom these rare cases will be referred from the region as a whole. This sort of association grows up voluntarily and requires no special planning.

13. *The Integration of Hospital Services.*—The main problem of the Regional Board will be to integrate the consultant services of the Regional Centre and the Hospital Centres. In theory there are two possible ways of doing this:

(a) In the first, responsibility for the care of patients in the hospitals throughout the region would be in the hands of a large staff of senior consultants resident in or near the Regional Centre, assisted by consultants of lesser experience working under their direction in the outlying Hospital Centres. None of the Regions, however, is so small that consultants living at the Regional Centre could effectively assume responsibility

for the care of all patients in the hospitals of the region. Any attempt to operate such a plan would involve for the senior consultants an expenditure of time in travelling which could not be justified. Furthermore, to diminish the responsibility of the staffs of outlying Hospital Centres in this way and to this extent would not be in the interest either of the staffs themselves nor of the public in the area which they serve. There will commonly be some use of consultants from the Regional Centre at Hospital Centres within a reasonable distance, but wide dispersal of a consultant's activities must be avoided.

(b) The second method would appear to be the more practical one. According to this plan, the services of a complete range of consultants (except for the four regional services already mentioned) would be available at each Hospital Centre and they would be fully responsible for the hospital treatment of its population. In the smaller Hospital Centres their services would be shared with other centres. Under such conditions, linkage between the Regional and Hospital Centres would be maintained by recognising all the consultants throughout the Region as members of one team. Members of the staffs of Hospital Centres should be given the opportunity to take temporary duty in hospitals at the Regional Centre, and some grades of medical staff in the Regional Centre should similarly have opportunities of doing temporary duty in a Hospital Centre.

14. *Consultant Associations.*—Regular personal contacts between consultants working at the Regional Centre (including the staff of the teaching Hospital) and those working at the peripheral Hospital Centres should be encouraged and facilitated. With this object in view, professional associations in the various specialties should be fostered on a regional basis so that meetings can be arranged at regular intervals for discussion or clinical demonstrations sometimes at one centre, sometimes at another, probably most commonly at the Regional Centre. It is desirable that the Heads of Departments of the Teaching Hospital and other consultants of the highest standing at the Regional Centre should visit the outlying centres from time to time, to give opportunities for consultation and exchange of ideas with the consultants working there. It is by this free professional association rather than by formal inspection and supervision that the university centre will both diffuse its own influence and receive outside stimulus.

15. *Association through Postgraduate Training.*—Arrangements for postgraduate education will provide an additional link between Regional and Hospital Centres. Newly qualified practitioners will, no doubt, get much of their early experience in resident posts at those hospitals with which their Teaching Hospital is associated. For the training of consultants a series of graded appointments in the hospitals throughout the region will be organised, with the co-operation of the Department of Postgraduate Studies of the Medical School. To meet the needs of general practitioners, arrangements for revision courses and clinical assistantships will be made by the University in Hospital Centres approved for this purpose.

16. *Registrars.*—Although this memorandum is not directly concerned with the training of consultants, practitioners in the later stages of their postgraduate training are important members of the staffs of hospitals. Various designations such as registrar, first or second assistant resident medical or surgical officer or clinical assistant have been used for the posts held by such men. In this memorandum the term "registrar" is used in a generic sense where it is desired to suggest the employment of officers senior to the house physician or house surgeon grade and considered to be passing through a

probationary period of training in a specialty. The "Spens Committee" report on the remuneration of Consultants and Specialists and the terms of service of hospital medical and dental staff in the National Health Service place these practitioners in three ascending grades, which together cover a period of at least six years subsequent to the first post-qualification year. Some practitioners may start on such a career and, after a period of a year or two, turn to training in some other consultant field or to general practice. Others will continue, acquire postgraduate qualifications and ultimately, after a full period of training, emerge as consultants suitable for more senior appointments on hospital staffs. It is not possible to estimate the numbers in either group accurately. Estimates given in later sections include both groups and are to be regarded as optima, attainable only where training facilities permit.

17. Allowance must also be made for registrars who will transfer to non-clinical posts as part of their training. Such transfers will usually occur in the middle years of the training period. The obvious example is transfer of a registrar in general medicine to work in a laboratory, perhaps in the university department of Pathology. Registrars may also spend some part of their training in a specialty working in another department, e.g. registrars in neuro-surgery should have spent some time in general surgery. Transfers between Teaching Hospitals and hospitals of the Regional Board will, of course, be easily arranged.

18. *Consultant Advisers.*—This memorandum is only a general guide for the assistance of Boards in the development of their consultant services. It will often prove difficult, even impossible, to apply the general recommendations given here to particular cases. In these problems as well as in many others the Boards will need advice from experienced consultants in different branches of medicine and surgery. The Boards will therefore probably consider it necessary to appoint a number of part-time consultant advisers from among senior consultants in their Regions to assist in dealing with the problems of individual specialties. Such a course was followed by the Ministry of Health in the Emergency Medical Services and proved a sound policy.

19. *Statistics.*—No reference is made in subsequent sections to medical records and the provision of a statistical service for hospitals. Regional Boards may find it necessary to improve the records departments of hospitals, and to increase staff and accommodation in many of them as suitably trained staff becomes available. Certain Universities already have Departments of Medical Statistics and may be able to assist Regional Boards.

II. TEACHING HOSPITALS

20. Hospitals designated under the National Health Service Act as Teaching Hospitals have been given a separate identity and status. (A list is given in Appendix B.) Their Boards of Governors are required in addition to their primary functions of providing for the sick, to provide special facilities for the clinical instruction of undergraduates and postgraduates, and for research by members of the teaching staff, in accordance with the educational policy of the university or medical school concerned. It is highly desirable that there should be the closest association between the University, the Teaching Hospital and the Regional Board hospitals, with a view to the encouragement of research and the training of consultant staff as well as the routine training of students.

21. *Undergraduate Education.*—No medical school attempts to instruct its undergraduates in the diagnosis and treatment of the whole range of diseased conditions and their varieties. The aims of undergraduate instruction in this

country have been well described by the Planning Committee on Medical Education of the Royal College of Physicians, as follows: "The first object in the undergraduate course should be the teaching of method, method for elucidating the facts concerning disease, method for welding these facts into an understanding and judgment of the question at issue, method for testing the validity of this judgment; for method is a more lasting acquisition than is fact, and without method a man is lost when he meets an unfamiliar situation, as he is ultimately bound to meet it, away from his teacher's guidance. The second object should be the teaching of principle, that is to say the student should be led to understand those phenomena which recur so frequently in disease that they may be said to be of fundamental importance. The two objects should be brought before the student in such a way as to show him that the scientific method can be used in clinical study—that there is such a thing as clinical science".

22. In view of its special functions the Teaching Hospital may not be able to undertake all varieties of treatment and special investigation. It will inevitably share obligations under these headings with the hospitals of the Regional Board. The number of beds for which its Board of Governors assumes responsibility will be mainly determined by considering the optimum number which will enable it to perform its teaching and research functions efficiently.

23. There will be some selection of the cases admitted to a Teaching Hospital so that suitable cases may be available for undergraduate and advanced education and for the needs of research. This selection will be principally effected in the outpatient clinics, but members of the staff of the Teaching Hospital who hold appointments in other hospitals will be able to assist in this matter and it will also be served by general collaboration between the staffs of the hospitals of the region. This collaboration is particularly important in relation to clinical research; it should extend over the whole hospital system of the region and may even cross regional boundaries.

24. It is not possible for the Teaching Hospital alone to provide all the clinical material required for undergraduate and postgraduate teaching; nor, on the other hand, are all the beds shown in Appendix B. available for teaching. In particular, arrangements will have to be made by the University or Medical School with the Regional Board for the use of facilities for instruction in tuberculosis, infectious disease and mental disease. It will in addition often be necessary to make similar arrangements for instruction of students in other subjects. Given the cordial relations which should exist between the two Boards, this should present no difficulty.

25. *Postgraduate Education.*—The organisation of postgraduate education is primarily the responsibility of the University and its Medical School. For the effective administration of the policies adopted by the University there must, however, be the closest co-operation not only between the University and the Teaching Hospital but between both these and the Regional Board and Hospital Management Committees.

26. Postgraduate education for graduates both from this country and abroad may at present be divided into four categories:—

- (a) Graded appointments for the training of consultants;
- (b) Formal courses of instruction and attendance on hospital practice for intending consultants;
- (c) Advanced revision for established consultants;
- (d) Regular teaching sessions and periodic refresher courses for general practitioners.

27. The training of consultants will be effected mainly by the provision of suitably graded posts in the departments of the University, the Teaching Hospital and hospitals of the Regional Board.

28. Facilities for the second and third categories of postgraduate education will be specially provided in undergraduate and postgraduate Teaching Hospitals and in Regional Hospitals.

29. Refresher courses for general practitioners should be provided in those hospitals under the Regional Board which have been approved for this purpose by the University. Other forms of contact between general practitioners and hospitals will be encouraged and should be developed.

III. GENERAL MEDICINE

30. Even the smallest Hospital Centre will need at least one general physician living locally. This is necessary in order to ensure continuity of supervision and the economical use of hospital beds, and also to deal with medical emergencies. In these small Hospital Centres the specialties, other than general medicine, general surgery, gynaecology and obstetrics and anaesthetics may be covered by visiting consultants from neighbouring larger centres.

31. To avoid isolation in his specialty, every consultant working at one of the smaller Hospital Centres should also be actively associated with a larger Hospital Centre. A member of the staff in the larger Hospital Centres should be available to take over his duties during holiday periods or sickness. This principle of relief is applicable to all consultant services throughout the region so that a physician's responsibilities are automatically taken over by a colleague of consultant rank and not delegated without supervision to registrars and junior medical officers.

32. The general physician will be expected in future to undertake care of the chronic sick as part of his normal duties. Admission to wards for the chronic sick should always be by way of the wards or hospitals for acute cases, and it is to be expected that facilities for the rehabilitation of the chronic sick will be better and more general than they now are; the work will be largely supervised by the general physician.

33. It is difficult to give any accurate estimate of the number of general physicians required to maintain a satisfactory consultant service. Much will depend on the extent to which general medicine may become partially sub-divided. General medicine should not ordinarily embrace paediatrics or dermatology; some general physicians may elect to give part of their time to paediatrics, but there should, nevertheless, be a paediatrician visiting each Hospital Centre. General physicians will, however, need to undertake some neurological and cardiological work, and some may also work in connection with diagnosis and treatment of chronic rheumatic diseases.

34. For a population of 100,000-120,000 in an area served by one Hospital Centre, it is probable that some 250 medical beds will be required, apart from those for the chronic sick, tuberculosis and infectious diseases. The number of beds set aside for chronic sick will depend partly on the extent to which those patients now regarded as chronic sick may come under treatment in future in general medical wards. The number of beds in this category will be about 150, making a total of 400 medical beds. Estimates of the number of physicians needed for such a centre can only be approximate. In estimating the number account will have to be taken of the amount of hospital work, whether for in-patients or out-patients, of the domiciliary

work required, of whether the physicians are employed wholly within the service or on a part-time basis, and of the gradations in seniority among them. Bearing these conditions in mind, it is suggested tentatively that a centre with a group of 400 medical beds for general medical and chronic sick and the associated out-patient work would require the equivalent of the whole time services of three physicians. This would provide for a total of approximately 100-110 hours of clinical service a week. The consultants composing this staff might be part or whole-time. Not less than two registrars and a suitable number of house officers who must be whole-time, would also be required.

35. It is undesirable that general medicine should be so rigidly sub-divided that all the cardiological or neurological work becomes concentrated in the hands of consultants engaged only in these subjects. The general physician should be kept in contact with men working in these fields and, of course, with colleagues in general medicine from other centres and, particularly the university centre. Associations of physicians on a regional basis to include those working in the specialties should be encouraged. Neurologists, cardiologists and other consultants of this kind at the Regional Centre (or at major Hospital Centres which are virtually the equivalent of the Regional Centre), should be available for consultation by their colleagues at the periphery.

36. *Rheumatism*.—The group of muscular and articular disorders included under the general heading of rheumatism causes a large amount of ill-health and loss of working time. In some regions active measures are already being taken in the investigation of this group of diseases; special diagnostic and research centres with out-patient facilities and beds at general hospitals in the Regional Centres and beds for long-stay cases in associated hospitals have been established. The subject calls for special attention from physicians and consultants in orthopaedic surgery and physical medicine and it may well become the special, though rarely the exclusive interest of a physician. Some of the large spa hospitals may provide useful accommodation for long-stay cases, provided they are closely linked with the work of general hospitals.

IV. GENERAL SURGERY

37. As in general medicine, so in general surgery, it is essential that every Hospital Centre should have a locally resident consultant. Since the acute emergency requiring immediate active intervention is commoner in surgery than in medicine, it is desirable that there should be at least two surgeons resident in each Centre, although in the smallest Centres one or both men may spend part of their time working elsewhere. As in all the other specialties, it is of the utmost importance that a man should be kept in touch with the work of colleagues; the remarks above about the desirability of professional associations of physicians apply with equal force to surgery.

38. General surgery tends more and more to be broken up into special branches. It should, for instance, no longer embrace gynaecology, even in the smallest Hospital Centres. There may be occasions when a gynaecological emergency is dealt with by a general surgeon, as for instance when the initial diagnosis is uncertain, but apart from this, gynaecology should be regarded as a distinct specialty. Similarly, orthopaedic and traumatic surgery constitute a specialty for which separate provision should be made in each Hospital Centre and this provision should include arrangements for dealing with emergencies.

39. In some branches of surgery specialism goes further than in others ; for instance, in genito-urinary surgery there is much more marked tendency to separation than in gastro-enterology. The time is hardly ripe for separating genito-urinary work entirely, except perhaps at Regional Centres. It seems more likely that, as in the case of medicine, each Hospital Centre will be served by a team of general surgeons, each of whom may develop a special interest. Thus, the surgeon who acquires particular skill in the operative treatment of diseases of the stomach may still continue to undertake other abdominal surgery. In the large centres there may be more than one surgeon specialising in each of the branches mentioned.

40. Neurosurgery, Plastic Surgery and Thoracic Surgery are much more sharply defined as specialties. It may be necessary for the general surgeon occasionally to deal with a neurosurgical emergency or some very urgent thoracic condition, but the majority of these cases will be handled, in future, by surgeons giving all their time to the specialty.

41. In estimating the number of surgeons required the same factors must be taken into account in determining the appropriate establishment as were considered in the case of physicians. Although in surgery fewer domiciliary consultations may be necessary, this may be more than balanced by the claims of urgent operative work.

Allowance must be made for the fatigue of prolonged operative work, and hospital responsibilities should be so arranged as to provide for adequate reliefs. For example, the surgical work might be divided between units or services each staffed by two consultants so that one is always available.

42. Bearing these conditions in mind, it is suggested that to serve a population of 100,000-120,000, a group of 180 surgical beds and associated out-patient clinics should be provided and that the staff required would be the equivalent of three whole-time surgeons. This would provide, as in medicine, for a total of approximately 100-110 hours of clinical service per week, and the consultants composing this staff might be part or whole-time. Not less than two registrars and a suitable number of house officers, who would be whole-time, would also be required. (See paragraph 4.)

43. It will be appreciated that the chronic sick, though requiring surgical attention on occasion, do not need the same amount of supervision by surgeons as by physicians, but the orthopaedic surgeon will be in demand, and some of the vascular conditions of old age are now to an increasing extent relieved by surgical treatment.

V. OBSTETRICS AND GYNAECOLOGY

44. These two allied subjects constitute one specialty, although, rarely, a consultant may concentrate on one or the other side. As the service develops, gynaecology will cease to be undertaken by general surgeons.

45. Midwifery alone, on the other hand, is not a service restricted to consultants. A domiciliary service is provided under Parts III and IV of the National Health Service Act by midwives and general practitioners with experience in midwifery. In addition Local Health Authorities continue to provide ante-natal and post-natal clinics. Institutional midwifery is the responsibility of the hospital and consultant service, which will need also to provide consultant aid for domiciliary emergencies, consultative ante-natal and post-natal clinics (normally at the hospitals), and beds for abnormal cases.

46. It is clear from the foregoing that co-ordination of the three branches of the service will be essential, and that in particular Regional Boards will need to make arrangements for close co-operation with the Local Health Authority services provided under Part III of the Act.

47. The number of maternity beds theoretically required for a given population varies with the birth rate, but for some years to come all the beds which can be made available and staffed will be necessary. It is probable that, in present conditions of housing and availability of domestic staff, the great majority of women would elect to be confined away from home. The present aim should be institutional provision for at least three quarters of the births recognising that improvements in housing conditions and the availability of domestic help may modify this in the years to come. A population of 100,000 would, therefore, require 60 to 75 lying-in beds (as the birth rate ranges between 16 and 20), and about 30 ante-natal beds.

48. The main maternity units should be at general hospitals rather than in separate maternity hospitals. A unit of 100 beds is considered the ideal, but a larger department of perhaps 200 beds forming part of a general hospital group can be satisfactory, if suitably divided and adequately staffed. It is probable, however, that in large urban areas, with a population exceeding a quarter of a million, conveniently placed separate homes of about 40 beds will be established for normal cases. Although these separate units may be large enough to have resident medical staffs, they should be under the supervision of the obstetric staff of the main unit. In small towns which have no Hospital Centre, units as small as 20 beds may be provided under the care of general practitioners with experience in obstetrics. Consultants from the nearest Hospital Centre would visit these units and exercise a general overall supervision.

49. It is estimated that one gynaecological bed is required for a population of 4,000. The Hospital Centre serving 100,000 population would, therefore, require 25 gynaecological beds, but this number would have to be increased to provide for abortions and 5 to 10 additional beds would be needed for this purpose.

50. The Hospital Centre with 100,000 population would, therefore, require a total of some 90 maternity beds, including ante-natal beds, and 30 to 35 gynaecological beds including those for abortions. The staff required for such a group would be two half-time or one whole-time obstetricians and gynaecologists and one registrar—whole-time—with other senior and junior resident medical staff.

51. Both the gynaecological and obstetric work should be closely associated with other consultant services. The paediatrician should have the oversight of the nurseries of maternity units. Physicians should supervise the treatment of certain cases in ante-natal wards, e.g. patients with heart disease. Radiological, pathological and biochemical services, including facilities for endocrine investigation, must be available. The gynaecological out-patient service should include the provision of Infertility Clinics.

VI. PAEDIATRICS

52. Paediatrics is, briefly, medicine applied to the maintenance of health and the treatment of disease in children. For this purpose children may include persons up to the age of 14, though children over the age of 12 will usually be admitted to wards for adults.

53. Fully staffed paediatric departments, distinct from those of general medicine, should be provided in every Regional Centre, usually associated with a University Institute of Child Health. A paediatric department should also be established in every larger Hospital Centre, not as a subsidiary of that of the Regional Centre, but as an independent special department responsible for the care of all children's medical wards in the area. They will also be centres which are too small to provide sufficient work for a locally resident paediatrician and in these a service should be provided by a visiting paediatrician, even though there may be available a general physician with a special interest in paediatric work.

54. It is of the utmost importance that hospitals or wards for infectious diseases should be closely associated with paediatric departments, since so many of the patients are children and the problems are similar. Equally, the work of orthopaedic surgeons, cardiologists and tuberculosis consultants must be co-ordinated with paediatrics. Paediatricians should have the oversight of nurseries in maternity units.

55. It is also important that paediatricians working in hospitals should be associated with the preventive clinic services for children which are maintained by the Local Education and Health Authorities. This is especially desirable at the university teaching centre. Suggestions for co-ordination with the Local Health Authority Services have been made to Regional Hospital Boards separately.

56. In the larger centres separate children's hospitals may continue their separate existence, or a self-contained children's unit should be provided in a general hospital group. A self-contained unit is much easier to administer from the point of view of nursing staff and tends to attract the type of nurse specially interested in children. In the smaller centres the children's unit should be part of the general hospital. It is particularly important that such units should be in the charge of the visiting paediatrician.

57. It is desirable, as in other specialties, to encourage an association of the paediatricians working in outlying centres with the university centre. The number of men engaged in this specialty will be much smaller than in general medicine and there is, therefore, a greater likelihood of isolation unless care is taken to ensure that the influence of the Regional Centre extends to the periphery.

58. The number of hospital beds which should be provided for children has been stated as 0.5 beds per 1,000 of population. This is probably insufficient. The number of whole-time paediatricians required, according to the British Paediatric Association, is about six to eight per million of population, but the number available at the present time falls very far short of this and it will be some years before there are sufficient fully trained men to meet the needs of the country. On the basis of these proposals it is suggested that for the standard population of 100,000-120,000, 50 general children's beds should be provided. As to staffing, half the time of one paediatrician with a whole-time registrar would be the minimum for such a population.

59. The surgery of diseases of children is not a separate specialty in the same way as paediatric medicine. It is usual and beneficial for surgery in childhood to be a special interest of some general surgeons, but there is not the same distinction between surgery in the child and in the adult as between paediatrics and general medicine. Other specialties, such as ophthalmic and orthopaedic surgery, should be in the hands of the same consultants as for adults. A paediatrician should have general oversight of all these beds, especially in relation to epidemiological control.

60. *Hospital Schools*.—Certain residential institutions which are, in fact, continuation hospitals for the reception of young patients requiring prolonged retention under hospital care while education is gradually re-started, were transferred to the Minister under the National Health Service Act. These establishments are administered by Regional Boards and are commonly described as hospital schools. Their educational side is conducted by Local Education Authorities or voluntary governors. The number of beds in hospital schools is likely to be increased, especially for the accommodation of children with cardiac rheumatism. These institutions should be closely linked with the main hospital provision for children and should be supervised by the paediatric staff of such hospitals. The need for this association must be borne in mind in the planning of hospital schools.

VII. PATHOLOGY

61. Pathology, which includes morbid anatomy, biochemistry, bacteriology and haematology, must be organised in every Hospital Centre as a consultant service. This need not embrace the provision of facilities for Public Health bacteriology, because a separate Public Health Laboratory Service is being instituted for that purpose (para. 180). Where there is no Public Health Laboratory in the vicinity, however, public health bacteriology may have to be done by the hospital staff in the hospital laboratory, by arrangement between the Regional Board and the Public Health Laboratory Service. It is essential that close contact should be maintained between hospital laboratories and Public Health laboratories and it may often be convenient and desirable to house them in the same building.

62. Pathology is a completely defined specialty which should not be practised in conjunction with general medicine or with any other clinical branch. A pathologist should be available for consultation and should supervise the laboratory work in even the smallest Hospital Centres. In centres serving a population of less than 50,000, there may not be enough work for a pathologist living locally; in these cases the routine work should be done by a technician supervised by a pathologist visiting regularly from a neighbouring centre. Calls on the laboratory service will certainly increase and eventually even these smaller centres may need at least one pathologist. In no case should a hospital rely on a postal service or on the services of a technician not under the supervision of a pathologist.

63. In the larger Hospital Centres there will be laboratories employing more than one pathologist though not all necessarily of full consultant rank. If there are several hospitals in a centre it is generally desirable that there should be one co-ordinated service of pathology for all of them. Where there is work for more than one pathologist it is desirable to develop some further degree of specialisation in the branches of pathology, for instance the special techniques and micro-methods applicable to young children. Smaller centres, by grouping with each other or with neighbouring major centres, may also develop some degree of specialisation, as each individual pathologist may have his own particular interest. But such arrangements should not preclude the reference of specimens for further opinion, when necessary, to the university or other large laboratory.

64. The laboratory must be brought into the closest possible touch with clinical work. Both clinician and pathologist have much to gain by consultation in the wards, the laboratory and post-mortem room. The pathologist should always be responsible for conducting autopsies.

65. In pathology, even more than in most other specialties, it is necessary to develop close links between the Regional Centre and the other Hospital

Centres. The quality of laboratory work depends very largely on the contact between the individual workers and regular meetings of the pathologists of the Region, including those in the University Department and Teaching Hospital, should be arranged.

66. Machinery will be needed for providing advice on pathological subjects to the Regional Board, and this might consist of a committee of pathologists of whom one should be Adviser in Pathology to the Regional Board.

VIII. MENTAL HEALTH SERVICE

67. The suggested framework for the organisation of the Mental Health Services is set out in greater detail in R.H.B. (47) 13. The following paragraphs indicate generally how those services will dovetail with the other hospital and consultant services of the Regional Board. Owing to the special problems of the Mental Health Service, each Regional Board will require on its central staff a psychiatrist to act as its adviser for Mental Health. His concern will be the co-ordination of the consultant services for mental health throughout the region and his function will be to co-ordinate—not to dictate. Although much of his work will be administrative, it is desirable that he should retain some direct contact with clinical work.

68. The regional psychiatric service will be based mainly on the mental hospitals, which will usually serve large groups of population. The number of beds required in mental hospitals is estimated to be 3.8 to 4 per thousand of population. The present size and distribution of mental hospitals derives largely from old local government affiliations and will be modified with the passage of time. The desirable maximum number of beds in a mental hospital is considered to be 1,000; there will thus be a need for three to four such hospitals for a population of one million. The number of psychiatrists, exclusive of junior assistant staffs, required for a non-teaching hospital of a thousand beds including its out-patient service and domiciliary work, is of the order of five, though not all of these need be of full consultant status.

69. All psychiatrists at mental hospitals should be associated with the out-patient work for the area served by the hospital. It is not considered desirable that psychiatrists should have experience only of in-patient or only of out-patient work. The out-patient service will be provided as part of the out-patient activities of the Hospital Centre, and clinics will usually be held in the out-patient departments of general hospitals. These clinics will be staffed by psychiatrists from all available sources. Their size will vary with the range of work undertaken, but even at the smaller clinics with limited scope, which may well be affiliated with the larger centre, there should be at least two doctors working part-time and the necessary ancillary staff.

70. Some beds should be available in the general hospitals where clinics are held. These beds would be used for patients who do not show marked behaviour disturbances and who require admission for a limited period for diagnosis or short-term treatment.

71. In addition it is probable that increased use will be made of Neurosis Centres for patients suffering from early and milder forms of mental illness not requiring admission to mental hospitals under the Lunacy and Mental Treatment Acts. Such centres might be established in association with mental or general hospitals or alternatively a larger centre could be set up to serve several hospital areas.

72. It can be assumed that at every Regional Centre the University will provide a teaching psychiatric unit which should be in close liaison with the appropriate mental hospital and it is desirable that the Professor of Psychiatry

at the Teaching Centre should have access for teaching purposes to mental hospital beds. It is not anticipated that there will be any difficulty in arranging, by agreement, for the necessary clinical facilities to be provided. Conversely, the medical staff of the mental hospital should participate in the work of the teaching psychiatric clinic.

73. It is essential that psychiatrists should be in close contact with consultants in other fields. They should be available for consultation freely in the general hospitals and should make use of other consultants for consultation on cases in mental hospitals. The increased use of neurosurgery in the treatment of mental illness suggests the desirability of selecting certain mental hospitals for the treatment and rehabilitation of suitable patients. These hospitals should be near Neurosurgical Centres.

74. The mental health of children will be the concern partly of the education authorities and partly of the Regional Board. Local Education Authorities will set up child guidance centres under the supervision of the school medical officer or the educational psychologist. The services of a psychiatrist will be required for diagnosis and advice and to carry out short-term treatment. The Regional Board will set up clinics for child psychiatry to deal with cases which are medical rather than educational and will carry out long-term treatment.

75. It is hoped that these two types of clinic will be closely associated through the expert staff. Child psychiatric clinics should be located in paediatric clinics and it is important that there should be co-operation between the paediatrician and the child psychiatrist. In-patient treatment for children will be provided through the Regional Board.

76. *Care of Mental Defectives.*—The burden of the care of defectives falls partly on the Local Health Authorities and partly on the Regional Board. Local Authorities are responsible for the ascertainment of defectives and the care of defectives in the community other than those who are on leave or licence from institutions. Children of school age will normally be "ascertained" only when they are reported by the Local Education Committee for the purposes of the Mental Deficiency Act, 1913, on the ground that they have been found incapable of receiving education at school.

77. Provision of institutional care is made by the Regional Board and it is probable that the ultimate number of beds required will be about two per thousand of the general population. Colonies vary much in size and stage of development. The smallest complete colony in which satisfactory classification is possible will have about 800 beds; the maximum size should not exceed 2,000 beds.

78. Colonies should be under the supervision of consultants in mental deficiency and it is desirable that their special knowledge should be utilised in adult clinics and in child guidance work. Colonies should, of course, have ready access to the help of consultants in other fields, particularly paediatricians and physicians.

IX. ANAESTHETICS

79. The practice of anaesthesia has been highly developed in many of the larger centres in this country but anaesthetists of consultant status have not been sufficiently widely available, nor has the speciality been adequately recognised elsewhere. The administration of an anaesthetic is a major procedure and for the most part anaesthetics should be given either by consultants, or under the supervision of consultants, or by medical practitioners with special experience. To avoid anaesthetic complications

all anaesthetists should, as part of their responsibility, co-operate in any necessary pre-operative treatment and post-operative care. It is of particular importance that experienced anaesthetists should be available for the administration of anaesthetics in emergency cases, whether by day or night, since these are often the worst operative risks and in special need of skilled attention. Anaesthetics for obstetric cases in hospital should be given by practitioners with experience and the same rule should apply to dental and casualty work. It may well be that those who do this work will not all be of consultant status but they should have had considerable experience in this special field.

80. The specialised techniques of Neurosurgery, Thoracic Surgery and, to a less extent, of Plastic Surgery require correspondingly specialised anaesthetic techniques, and skilled anaesthetists should be attached to these departments to meet their particular needs.

81. At present there are too few practitioners of consultant status in this specialty although practitioners with experience of the more commonly used techniques are fairly numerous. There is room in this specialty both for the man of consultant status with a comprehensive range of techniques at his command and the man with a more limited range but adequate experience within those limits. It is estimated that the surgical work of a Hospital Centre serving a population of 100,000-120,000 would require five men giving their whole time to anaesthetic practice, of whom two might be consultants, one a registrar and two resident anaesthetists. But men in the Senior Hospital Medical Officer grade might well replace some of the members of this team. At least one full consultant should, of course, be available. The number of consultants needed at centres where special services such as neurosurgery are provided will be greater.

X. CARDIOLOGY

82. At each Regional Centre there should be a special unit for the study of all problems connected with the heart and vascular system. The regional cardiovascular unit will be recognised as the clinic to which patients can be sent for a second opinion and for special investigation and treatment. It need not be a large unit and should not be responsible for the diagnosis and treatment of all cardiovascular disease throughout the Region.

83. The routine diagnosis and treatment of cardiovascular disease will be in the hands of the general physicians in the various hospitals in the region and patients suitable for reference to the Regional Centre will be selected by those physicians.

84. It should be possible for members of the staff of the central unit to visit regional hospitals from time to time and in that way maintain the standard of cardiovascular work throughout the region. In the larger hospitals in more concentrated areas of population a local physician may develop a special interest in cardiology and be able to form an associated cardiovascular unit.

85. The functions of the staff of the central unit might be summarised as follows:—

(1) To act in a consultative capacity in all questions concerning cardiovascular problems in the region. Cases would be referred to the unit from other consultant physicians and special departments, e.g., Department of Child Health, Thoracic Surgery, Neurosurgery and Obstetrics.

(2) To undertake the treatment of a number of cases of cardiovascular disease, more especially from the standpoint of research into the methods of diagnosis and treatment and also to provide clinical material for teaching.

(3) To undertake research into cardiovascular physiology, pathology and therapeutics.

(4) To afford clinical teaching in cardiovascular subjects, properly integrated with the curriculum in general medicine, for undergraduates and especially post-graduates in the University of the region.

86. To carry out these various functions the regional cardiovascular unit should be situated in close proximity to those special departments with which co-operation is desirable. In some regions the Teaching Hospital may not be able to supply all the necessary accommodation and the requisite number of beds, and where this is the case a nearby hospital could be utilised. For the investigation and treatment of in-patients about sixty beds should be available—thirty for men and thirty for women.

87. The department, like any special department, would require a waiting room, examination rooms, rooms for the medical staff, and in addition screening and electrocardiographic rooms and the necessary accommodation for clerks, technicians and the keeping of records. Some departments of this character already exist in London and the provinces, and deal with large number of out-patients. Laboratories for physiological and pathological research should be readily available.

88. The staff required for the running of such a department, including both in-patients and out-patients, should be under a physician-in-charge, assisted by a deputy. Either the physician or his deputy should be employed whole time. At least one whole-time registrar would also be required.

XI. DENTISTRY IN HOSPITALS

89. The value of dental treatment as an adjunct to certain forms of medical treatment is not sufficiently appreciated and it is only rarely that a hospital provides adequately for dental care. Those hospitals which do provide dental treatment too often limit it to emergency measures.

90. The hospital service should in future provide a wider range of dental care of in-patients. Full dental treatment is not practicable for all cases admitted to a general hospital, especially when the duration of stay is short but it should be provided in all long-stay hospitals. Where time allows, however, and particularly when the health of the patient is directly affected by his dental condition, it is desirable that a state of dental fitness should be achieved while he is under treatment. For such patients, facilities for full conservative dental treatment and not merely for extractions should be provided.

91. With a fully equipped department able to deal with all ordinary forms of dental care, one whole-time dental surgeon should be available for each 500 hospital beds to ensure adequate dental care for all patients. He should be assisted by one or two dental house-surgeons, one of whom in the larger hospitals should be resident.

92. In addition to this provision for routine dental care, two or three beds should be provided in every Hospital Centre for patients needing major dental operative treatment; in a general hospital or group of hospitals of 1,000 beds, four should be set aside for each sex for this purpose preferably.

in general surgical wards. It is advisable that a dental surgeon specialising in oral surgery should be available in a large centre or for a group of smaller centres. One such consultant, working whole-time, would probably meet the needs of a population of about 300,000; he might supervise generally the work of any resident dental staff, some of whom should be consultants in training.

93. Within each region facilities must be provided for dealing with facio-maxillary injuries and diseases and injuries in which close collaboration between dental surgeon, general surgeon and plastic surgeon is needed. Further reference to this will be found in the section dealing with Plastic Surgery.

XII. DERMATOLOGY

94. At the present time fully trained dermatologists are only found in large centres of population, although in some centres general physicians or general practitioners with considerable experience in the subject have staffed dermatological clinics. An efficient dermatological service cannot be maintained without consultant staff. It may be some years before a sufficient number of experienced dermatologists will be available to meet the needs of all Hospital Centres, but it should be the aim to provide such a complete consultant service as soon as fully trained staff can be provided.

95. The greater part of the dermatological service is provided in the out-patient department, and clinics should be held at all Hospital Centres. Beds should be available in association with out-patients clinics, but in the smallest Hospital Centres the number needed would not justify a separate unit. It is probable that ten beds will prove sufficient for a population of 100,000, but such a unit is small and there would be advantage in grouping the beds at one centre, where one dermatologist serves two units of this size. Separate hospitals for diseases of the skin are undesirable, except as part of a special postgraduate training and research unit, as contemplated in London.

96. Three dermatologists giving their whole-time or four giving two-thirds of their time to hospital work would be needed for every million of the population. One whole-time dermatologist could undertake the work of three centres each serving a population of 100,000 to 120,000. One registrar and a number of clinical assistants mainly recruited from General Practitioners in the area will be required in each group. Large groupings are preferable so that there can be adequate provision for reliefs and for contacts with others working in the same speciality.

97. The out-patient service should provide facilities for daily treatment of patients, on the prescribed lines, by specially trained nurses and male orderlies. Provision for radiotherapy and actinotherapy should be concentrated at the larger Hospital Centres. Radiotherapy should be prescribed by the dermatologist but the apparatus should be calibrated and supervised by the radiotherapist and physicist. It is essential that there should be co-operation in this work, as radiotherapy for malignant dermatoses is properly the province of the radiotherapist.

98. Special provision for the treatment of lupus will be required. Each Regional Centre might have a unit for the treatment of this disease by special forms of actino-therapy, but it is probable that residential accommodation need not be provided in more than two centres in the whole country.

99. Provision for teaching must be made at the Regional Centre. It will probably be necessary to have a demonstration unit with some beds in

the Teaching Hospital with the balance in the beds in the hospitals of the Regional Board. Staffing should be on generous lines to allow for teaching, most of which would be undertaken in the out-patient department.

XIII. DISEASES OF THE CHEST

100. This section is mainly concerned with the tuberculosis services which has been hitherto largely separated from general medicine. While there is good reason for dealing with tuberculosis as a separate epidemiological and social problem, the detachment of this one form of pulmonary disease for entirely separate study has great disadvantages alike for the tuberculosis officer and the general physician. The proper lines of development are to employ in this specialty physicians whose training and experience equip them to diagnose and treat other pulmonary diseases as well as tuberculosis and to extend the scope of the specialty to all diseases of the chest as the availability of experienced consultants permits. The clinical training of the physician specially concerned with diseases of the chest should be in line with that of other consultant physicians, with a sound background of training in general medicine but it must also be combined with training in the epidemiological and social aspects of the tuberculosis problem, as in the past. The recommendations which follow assume that general medicine includes provision for chest diseases and that, to an increasing extent, there will be common use of staff.

101. The in-patient and out-patient services for tuberculous patients, provided at sanatoria and tuberculosis dispensaries, are part of the Regional Board's hospital service. The service should provide in-patient facilities, partly in special sections of general hospitals and partly in sanatoria, under the care of consultants in diseases of the chest. The out-patient service should be related to these in-patient units and should be established, where possible, in a section of the out-patient department of the Hospital Centre. In rural areas it will be necessary to keep some outlying dispensaries for the convenience of patients. The consultant staff will be available for domiciliary consultations.

102. It is essential that consultants undertaking work at out-patient clinics should also be in charge of beds for pulmonary tuberculosis in sanatoria and general hospitals. This is necessary not only to maintain the quality of the work of the individual consultant but to give continuity in the supervision of treatment. It may be that, in larger sanatoria, a resident physician will give less of his time to out-patient work and more to the supervision of in-patients, especially where the other physicians have to live in areas where they hold their out-patient clinics, at some distance from the sanatorium.

103. It is undesirable that the treatment of tuberculosis should be divorced from the treatment of other medical conditions of the chest, even if separate institutions or wards are used. The chest physician undertaking tuberculosis work must be freely available for consultation in the general hospitals of the centre to which his sanatorium beds are related. Reference to the surgical treatment of pulmonary tuberculosis is made in the section on Surgery of the Chest. It is sufficient here to mention the necessity for regular consultation between chest physicians and chest surgeons.

104. The chest physician dealing with tuberculosis must necessarily concern himself with the epidemiological and social aspects of the disease. He will work in close co-operation with the paediatrician and orthopaedic surgeon and will be associated in the diagnosis and treatment of non-pulmonary tuberculosis. He will be jointly appointed by the Regional Board and the

Local Health Authority and will collaborate with the Medical Officer of Health on the preventive and social aspects of the disease. The attendance in the tuberculosis clinics of the Health Visitors of the local health Authority will help to secure further co-operation.

105. There is much to be said for the view that in all radiological work for diseases of the chest the consultant radiologist should be associated. This does not mean that chest physicians would cease to screen their patients. They would naturally continue to do so, but it would be an essential feature of the arrangement proposed that the advice of the consultant radiologist would be available at all times, and that he should see and express an opinion on all radiographs of the chest and its contents. The same association is necessary in the work of mass miniature radiography units. The Medical Officer of Health must also be closely concerned on the epidemiological aspect of Mass Radiography.

106. The Regional Board will need appropriate advisory machinery in the field of Diseases of the Chest. A member of their central regional staff will be needed to give at least part of his time to the administrative aspects of the tuberculosis scheme, although it is important that he should retain an active clinical interest in this subject.

107. A population of 100,000-120,000 will need more than one chest physician. It is probable that the number required will be of the order of 15 per million of population, working whole-time, with appropriate staff of registrar grade, mainly employed in hospitals and sanatoria but also undertaking out-patient work under supervision.

108. Sanatorium units should serve a large population and should have a minimum of 200 beds, but the general hospital serving a population of 100,000-120,000 should have a unit of about 20 beds for the investigation of patients in whom the diagnosis is doubtful. In addition, small units for advanced cases may be placed in various hospitals.

XIV. SURGERY OF THE CHEST

109. Thoracic surgery is one of the specialities which will be based on the Regional Centre. It was developed by general surgeons, not all of whom have subsequently limited their practice to this specialty. In future it is likely to be an exclusive specialty, and will include the surgical treatment of all conditions within the thorax, the greater proportion of which are non-tuberculosis, but every thoracic surgeon should have been thoroughly trained in general surgery before undertaking the specialty. As in neurosurgery the apprenticeship in this field is long and searching.

110. The regional thoracic surgical unit will require more beds than can be found for it in the Teaching Hospital. Either the complete thoracic unit will be provided at one of the Regional Board's hospitals with additional beds in an associated sanatorium, or a unit of 30 beds in the Teaching Hospital might be associated with say 170 beds in the hospitals of the Regional Board. Such a group of 200 beds, together with 100 beds in a sanatorium should prove ample for a population of two and a half millions but may need division between two or more specialist units. There are real advantages in keeping the tuberculosis cases in sanatoria, even though the unit must therefore be divided. In larger regions, associated units with an appropriate number of beds will be needed in some other large centres of population, apart from the Regional Centre, since the aggregation of all

thoracic surgical cases from a population of say four millions would require too large a unit. The work of these units must be closely linked with that of the Regional Centre.

111. The staff of a regional unit should consist of a surgeon and either two assistant surgeons and one registrar, or one assistant surgeon and two registrars. This establishment is stated in terms of whole-time staff; if part-time staff are employed the numbers will have to be increased. The surgeon in this unit will work in the closest touch with physicians specially interested in diseases of the chest, including those who are primarily concerned with tuberculosis. Surgery for pulmonary tuberculosis includes a large amount of minor surgery and some of this might be undertaken at large sanatoria and not at the Regional Centres.

112. Operative work is only one, and that the smaller part of thoracic surgery; pre-operative and post-operative care are equally important and require close personal supervision by consultant staff. The present practice in some centres, where periodical operating sessions are held by surgeons visiting from long distances with insufficient opportunity for the supervision of pre-operative or post-operative treatment should be discontinued as soon as suitable regional arrangements can be made.

113. Thoracic surgery is essentially a matter of team work between surgeons, physicians and radiologists. It is not enough that a thoracic surgeon should simply see patients who have been selected by the physicians for operation. Where this course is followed, the early cases which might benefit most from surgical treatment are not always seen by the surgeon at the best time and the physicians in charge of hospitals and sanatorium beds do not acquire the same judgment in the selection of cases. It should be the aim of a thoracic surgical service to ensure that the thoracic surgeon is consulted about many more cases than are ultimately found suitable for operative treatment.

114. While the greater part of the consultative work of the thoracic surgeon will probably be done at the Regional Centre it is desirable also that he or members of his team should hold consultative sessions both at the large Hospital Centres and at sanatoria in the region. There must be reasonable discretion about this, because economy in the use of the surgeon's time must be considered, until more consultants trained and experienced in this type of work are available.

XV. SURGERY OF THE EAR, NOSE AND THROAT

115. The surgical treatment of diseases of the ear, nose and throat, is properly the province of a surgeon who restricts his practice to this specialty. Every Hospital Centre should have an ear, nose and throat department, including out-patient and in-patient departments. Beds should be provided in separate ward units, not mixed with general surgical beds, so that nursing staff may acquire special experience and skill in the management of these cases.

116. It is undesirable to establish special Ear, Nose and Throat Hospitals. A separate ear, nose and throat unit in a hospital group may be desirable but the usual arrangement would be the setting aside of a self-contained unit or a floor in a general hospital. The nature of the acute infections of the ear, nose and throat is such that it is highly desirable to have a large number of single-bed wards in any unit provided for these conditions. The preponderance of children treated in this branch of surgery also makes

desirable the provision of a substantial proportion of single-bed wards. In larger hospitals it is an advantage and may be necessary to have separate operating theatres.

117. Although an ear, nose and throat department is necessary in every Hospital Centre it does not follow that there will be sufficient work for a locally resident consultant in the smallest Hospital Centre. Wherever possible a locally resident consultant should be provided. Otherwise, a consultant should visit at regular and frequent intervals from the nearest larger centre. An experienced resident medical officer should be available and the consultant should be on call. In extreme emergency one of the locally resident general surgeons might have to take immediate responsibility for urgent treatment.

118. In larger Hospital Centres there may be more than one acute general hospital and a separate infectious disease hospital, children's hospital and sanatorium. An ear, nose and throat surgeon should be on the staff of each of these hospitals and, in particular, should be responsible for the treatment of appropriate cases in isolation hospitals. An attempt should be made to concentrate the bed provision for ear, nose and throat cases at one or at most two of the hospitals. Where there is a central hospital with the main out-patient department and a peripheral hospital with the majority of the beds, it may be necessary to divide the in-patient accommodation but one in-patient unit should be provided where possible.

119. In some large towns there are separate clinics with a few beds where operative treatment for tonsils and adenoids is undertaken. These should be abandoned as soon as possible. Proper facilities and accommodation for an adequate stay in hospital before and after operation should be provided.

120. Special provision will be needed for the treatment of deafness. Special arrangements have been made for the investigation of patients and the provision of hearing aids. Some diagnostic centres for patients and hearing aid distributing centres, have been established and more will be added as the need arises and the provision of hearing aids expands. Suitable patients can be referred from diagnostic centres to distributing centres for trial with the standard Medresco hearing aid. In the light of experience further aids and ear pieces will be developed as the need arises, and it is hoped in the near future that all diagnostic and distributing centres will be provided with a standard pure tone audiometer.

121. A Hospital Centre serving a population of 100,000-120,000 will require about 50 beds for ear, nose and throat cases. The staff required for such a population group would be at least one whole-time surgeon or the part-time equivalents and one registrar whole-time. This, however, may be an under-estimate and it may prove that three consultants and two registrars are required for two such Hospital Centres.

XVI. INFECTIOUS DISEASES

122. Provision for the treatment of notifiable infectious diseases was the responsibility of Local Authorities in the past and consultant experience in the treatment of these diseases has been very largely confined to whole-time medical officers. It is probable that Regional Boards will wish to re-group the accommodation for infectious diseases, making use either of special sections of general hospitals, or in the largest towns, of separate hospitals associated with general hospitals. The isolation section at a Hospital Centre should be regarded as accommodation available for the isolation of any suitable type of case and not solely for the treatment of patients suffering

from notifiable infectious disease. The care of a patient thus isolated because of some non-specific infection should remain in the hands of the appropriate consultant e.g., the gynaecologist in puerperal sepsis.

123. A number of whole-time medical officers from the larger infectious diseases hospitals were transferred to the staffs of Regional Boards. Some of these officers may be accepted as of consultant standing and able to take their places as members of the consultant staff of the Hospital Centre. Other whole-time and many part-time staff though experienced in this work will hardly achieve the full status of consultants.

124. In the smaller hospitals for infectious diseases the supervision of patients suffering from infectious disease has often been undertaken by part-time officers who may also be district Medical Officers of Health or general practitioners. It will probably be necessary to continue arrangements of this kind for a time, but a primary object of the re-grouping of hospitals should be to secure that consultants in the treatment of infectious diseases are available for consultation at the small centres where there are no whole-time consultants. The aim should be to secure that the patient suffering from an infectious disease is under the supervision of a consultant. It will also be necessary to ensure that resident medical officers are available for all infectious disease hospitals, except perhaps where a small remote isolation hospital must continue for the time being owing to lack of more central accommodation.

125. The majority of patients in infectious disease hospitals have in the past been children; but the changing age incidence of some diseases and the use of isolation accommodation for other infections may alter this. It is difficult to see to what extent in future the clinical care of patients suffering from infectious diseases may become merged in the provision for other diseases of children or of medical conditions generally. It may be that in years to come this specialty will be in the hands of paediatricians or general physicians with a special interest in the treatment of infectious disease. In any event the paediatrician should be closely associated with this work. The otologist should also be called in to treat patients with otitis or other complications of infectious disease coming within his province.

126. It is important that consultants in infectious disease (employed by the Regional Board) should be available to general practitioners for consultation on the diagnosis of cases before their admission to hospital. The Medical Officer of Health has a special statutory responsibility in relation to the recognition and control of infectious disease, but the advice of a clinical consultant should always be available to him. Equally, of course, to aid him in his preventive work, the Medical Officer of Health must have free access to all necessary information about patients in infectious disease hospitals.

127. A population of 100,000-120,000 might not require the whole time of one consultant in this subject. A large centre serving a population of 500,000 might have a hospital unit of 300 or more beds and a staff of three whole-time consultants who should also supervise the work of senior residents in one or two associated centres. The extent to which this specialty gradually merges into general medicine and paediatrics obviously affects the size of the staff required.

XVII. NEUROLOGY AND NEUROSURGERY

128. These two specialties will always be linked together in a regional service, and psychiatry will be closely associated with them. The peculiar administrative problems of psychiatry, however, have caused it to be considered under the separate heading of the Mental Health Services. Ideally

Neurology, Psychiatry and Neurosurgery should be included together in one department, but even in the Regional Centres such a comprehensive arrangement is not likely to be feasible for some years.

129. *Medical Neurology.*—There are not yet enough neurologists to provide a complete neurological service and it will be necessary at first to make use of physicians who do not restrict their practice entirely to this specialty. There should, however, be neurologists at the Regional Centre who devote the whole of their time to neurology.

130. The first essential is to create a neurological department at the Regional Centre. It is unlikely that all the beds needed for the region can be provided in one hospital and still less likely that the needs can be met by the teaching Hospital alone. A demonstration unit could, however, be established in the Teaching Hospital, with a much larger number of beds in another hospital. In the larger regions subsidiary units may ultimately be needed at Hospital Centres. These may be instituted in the first place by Consultants from the Regional Centre holding out-patient clinics and transferring cases for in-patient treatment to the Regional Centre or, where conditions permit, providing for their care in beds at the Hospital Centre, in charge of a general physician with a special interest in neurology. All patients admitted to hospital with nervous diseases cannot be directly under the care of a neurologist, but it is necessary to ensure that a neurologist is available for consultation.

131. It may be possible for one unit at the Regional Centre to maintain a consultative service for the whole region, but generally neurologists should be provided at Hospital Centres serving large concentrations of population.

132. It has been suggested that from 100 to 150 beds per million of population should be available for neurological cases, including those which are chronic and stay in hospital for long periods. The staff required at the Regional Centre will vary with the size of the region because, in the early years at least, they will be responsible not only for in-patient and out-patient duties at the centre, but for consultative clinics at Hospital Centres. Their services will also be needed in advising on the rehabilitation of certain of the chronic sick. At least one senior and one assistant neurologist giving at least half of their time will be needed for every 50 beds. They will be assisted by such whole-time registrar and junior staff as may be necessary.

133. *Neurosurgery.*—The requirements for organising a service in this specialty are much the same as for neurology and the plan should follow the same general lines.

134. A strong team at the Regional Centre is essential and it is preferable to arrange for all operative work to be done there wherever possible. Because of the time-consuming nature of neurosurgical operations, relatively generous staffing is necessary to provide a satisfactory service, including consultative duties in the region. Many Hospital Centres may urge the appointment of a neurosurgeon to their staff, but it will be impossible to satisfy them all without a wasteful use of manpower and, in most cases, because the full establishment which the work demands cannot be provided. Experience will show if efficiency can be improved by establishing associated centres in the larger regions.

135. The head injury service should be part of the general traumatic service. Some complicated types of head injury are better treated at the neurosurgical centre and should be transferred to it, but most head injuries do not need to be moved. It is impossible and, what is more, unnecessary that every head injury should have consultant neurosurgical supervision. It is, however, desirable that the general surgeon should have opportunities for

acquiring such instruction and experience in the care of head injuries as he may require. Much more attention should be given to the rehabilitation of cases of head injury and closer links should also be forged between the department of neurosurgery and those for rehabilitation and physical medicine.

136. The optimum size of an active surgical unit is about 40 beds. For a population of a million, probably from 75 to 100 beds may be needed for neurosurgery and these can be divided between two units.

137. *Ancillary Services.*—It is most important that the services of a pathologist with a sound knowledge of the special methods of neuropathology should be available. An anaesthetist with special experience of this work should be attached to every neurosurgical team. The radiological department should provide special assistance, for neuro-radiology needs experience and is time consuming, and the closest collaboration is essential, particularly with neurosurgery. Special equipment is also needed. An electro-encephalograph, operated by trained staff, must be available.

XVIII. OPHTHALMOLOGY

138. The service of ophthalmology provided by Regional Boards will ultimately comprise a complete eye service including the provision of spectacles for all who require them. This complete service is impracticable in the early stages in most areas because of lack of trained staff, and provision is made in Part IV of the Act for an interim service, the "Supplementary Ophthalmic Service", which is organised separately from the hospital service. The hospitals now provide facilities of varying degrees of completeness for ophthalmic surgery but only a part of the requirements for refraction and the prescription of spectacles. The problem therefore is twofold: to expand the facilities within the hospitals as may be necessary for a complete ophthalmic surgical service, and to develop the refraction service at hospitals and eye clinics as rapidly as may be to replace the interim service under Part IV. Ophthalmologists, ophthalmic opticians and dispensing opticians all have a share in this service.

139. Hospital beds are required for the ophthalmic surgical service in numbers varying with conditions, particularly with the type of local industry. The number of beds required may be about 20 in a hospital centre serving 100,000-120,000 people. In normal circumstances these beds should be provided in a general hospital. In one or two of the largest Regional Centres it may be appropriate to provide special ophthalmological institutes for post-graduate teaching and research, but the usual arrangement will be a unit of appropriate size in the Teaching Hospital, with the rest of the beds required for the centre in one or possibly more hospitals of the Regional Board. The few very small Hospital Centres with populations of the order of 50,000 will require an out-patient service, but it is undesirable that operative work should be undertaken there, because there is insufficient work to permit the specialised training of nursing and resident medical staff.

140. Far more patients will need refraction and prescription of spectacles than other forms of ophthalmological attention. It is anticipated that this service will be provided through eye clinics supervised by ophthalmic surgeons who will be assisted by ophthalmic opticians, and by dispensing optician and orthoptists.

141. The number of ophthalmologists required depends to some extent on the type of local industry, because of the varying incidence of injuries. It is estimated that for 100 ophthalmic beds the equivalent of four whole-time consultants and one registrar would be needed. A Hospital Centre

having 20 ophthalmic beds and serving a population of 100,000 would therefore provide almost enough work for one man. It is likely that such a centre would be served by two men part-time.

142. It is probable that there will be some concentration at larger centres especially those with particular kinds of industry. Such centralisation would provide for matters such as the use of apparatus like the giant magnet for treatment by special operative techniques and the prescription and fitting of contact lenses. At the Regional Centre there will also be the special demands of teaching, which will necessitate more generous staffing.

XIX. PHYSICAL MEDICINE

143. Physical medicine has been developed fully as a specialty in few hospitals. There are separate departments under the supervision of consultants who confine their practice to this branch of medicine in some of the Teaching Hospitals, but elsewhere the work tends to be supervised by practitioners who give only a part of their time to it or to be run as part of an orthopaedic department. The development of rehabilitation in all branches of medicine and surgery during recent years and the increasing use of active remedial exercises, rather than passive physiotherapy (massage), has emphasised the importance of establishing departments for physical medicine and rehabilitation. The small overcrowded departments, lacking consultant supervision, to be found in so many hospitals are inadequate for modern requirements.

144. Physical medicine is not synonymous with physiotherapy, which is only one of its major technical sub-sections. Physical medicine comprises within its field the work of medical practitioners specialising in the achievement and maintenance of health through physical education; the restoration to health and efficiency, after sickness or injury, through medical rehabilitation the conservation and maintenance of function in degenerative and disabling conditions; the development, co-ordination and clinical supervision of physiotherapy, remedial gymnastics, occupational therapy and associated social services.

145. Physical medicine and rehabilitation must be treated as a specialty and can only succeed if they can be made a genuine interest of the clinicians. The advantages which can accrue to their patients from use of the facilities of this department are not always known to the workers in other specialties. Medical rehabilitation merges into industrial rehabilitation and retraining and it is essential that close co-operation should be maintained with industry. The main purpose of this specialty is to restore the sick or injured person to an active useful life and the restoration of physical fitness must be linked with the provision of an opportunity to use the abilities restored, especially where an injury has led to limitation of the capacity of the individual to perform the work he has previously undertaken. The social service is therefore an extremely important part of any department of physical medicine and rehabilitation.

146. Physical medicine is primarily a hospital service. It will be many years before a full service can be developed for all hospitals because of shortage of fully trained medical and ancillary staff. It is undesirable therefore that the limited resources now available should be expended on the provision of hospitals of a domiciliary service. Perhaps at some future time such a service may be possible, and even now in rural areas facilities are required for treatment at out-lying clinics, especially in association with

orthopaedic follow-up clinics and clinics for chronic rheumatism. All these facilities should be under the direction of the consultant in charge of the hospital department. Provision of transport to bring patients to hospital departments may overcome some of the difficulties of those who might otherwise require treatment at home. Some hospital sessions should be arranged in the evening so that treatment can be given to patients who would otherwise have to lose working time.

147. In-patient accommodation for patients requiring rehabilitation will probably be provided in association with all large Hospital Centres but will probably not be required for the smallest Hospital Centres. They should be under the supervision of the consultant in physical medicine. For the most part facilities for treatment should be provided as an out-patient service and this too should be under the supervision of a consultant. Separate special units for the rehabilitation of the tuberculous, for patients with chronic arthritis, and for psychiatric patients are required, but these will probably not be numerous.

148. The number of consultants available now is small, largely because in the past medical students have had insufficient training in the methods and possibilities of this form of treatment. The first objective should be to establish full departments in all Regional Centres, including Teaching Hospitals, so that the training of consultants can be rapidly developed. At the same time the training of ancillary workers, especially physiotherapists, remedial gymnasts and occupational therapists, should be developed and in some respects remodelled.

149. It is impossible to estimate with any accuracy the number of consultants needed in physical medicine. It is unlikely that there will be full-time work for the consultant in physical medicine in the Hospital Centre serving 100,000-120,000 population but two such centres might employ one whole-time consultant. A population of 500,000 might provide work for three consultants (one of whom would be in charge), and one or two registrars, all working whole-time. Until we come much nearer a full service in this specialty, no closer estimate of the requirements can be made. It is undesirable that senior appointments should be made before fully qualified men are available.

XX. PLASTIC SURGERY

150. Before the war the number of surgeons engaged solely in this specialty was very small. Facilities were expanded to meet the needs of the war and this expansion led to a greatly increased demand on behalf of civilian patients, which is likely to grow.

151. Plastic surgery includes the treatment of a number of congenital defects, such as cleft palate and congenital abnormalities of the face; deformity due to diseases such as lupus, syphilis or cancer; traumatic cases, especially those involving injury to the face, and burns.

152. Provision should be made for plastic surgery at each Regional Centre, but it will not usually be necessary to provide a fully developed service in other large towns. There is, of course, a considerable amount of work which must be undertaken in all Hospital Centres; this is particularly true of the initial treatment of burns and extensive superficial injuries. Consultation with the staff of the plastic surgical unit on the treatment of such cases should be encouraged.

153. It is suggested that an average region with a population of about three millions would require a regional unit with about 100 beds, plus a detached unit of 50 beds for the rehabilitation of long-stay cases. The staff required by such a centre would be:—

- | | | |
|-------------------------------|---|--|
| 1. Surgeon-in-Charge | } | One at least should be whole time. |
| 1 Assistant Surgeon | | |
| 2 Registrars (whole-time) | } | With special experience in this type of surgical work. |
| 2 Anaesthetists (part-time) | | |
| 2 Dental Surgeons (part-time) | | |

A smaller region would, of course, require a smaller number of beds, but it would be uneconomical to provide a unit of less than 50 beds.

154. Where an additional centre is necessary in a very large region, it should be of at least 50 beds, with a plastic surgeon, a registrar and a dental surgeon in training for this special work. Such a unit would lean heavily on the main unit, particularly for the less urgent work. The surgeon-in-charge, or assistant surgeon from the Regional Centre, should visit this subsidiary unit and other Hospital Centres at regular intervals for consultation.

XXI. DIAGNOSTIC RADIOLOGY

155. Radiology is a separate specialty which should be the sole interest of the practitioner undertaking it. A department of radiodiagnosis is necessary in every Hospital Centre and where there is more than one hospital in a centre X-ray apparatus will be required in most or all of them. All X-ray plant should be under the supervision of radiologists and should be operated by trained radiographers. It may be expedient to have separate X-ray plant in a fracture clinic, a tuberculosis out-patient department or other special clinic or in a mass miniature radiography unit, but this should be regarded as part of the plant of the radiological department, housed elsewhere to facilitate the work of a special department.

156. The ideal procedure would be that every patient should be seen by a radiologist on arrival in the department, and screened by him if necessary. Thereafter the radiologist should give precise instructions to the radiographer, and should view the radiographs before the departure of the patient. Lack of radiological personnel may make this impossible in the immediate future in many institutions. Until this is possible all screen examinations, other than those undertaken by expert clinicians trained in this work (e.g., chest physicians and cardiologists) should be carried out by a radiologist, who should report on all radiographs, even although in some cases, e.g., from the fracture or chest clinics, the films must be interpreted in the first instance by the clinical consultants in those departments. It may be necessary to provide a limited radiological service in a small town with only a cottage hospital, but this should always be supervised by a radiologist, operated by a radiographer and its use limited to minor investigations.

157. The radiological department is one of the pivotal units of a hospital and affects the treatment of a large proportion of the patients, whether in the wards or attending as out-patients. Past experience has shown that radiological departments have been planned on much too small a scale; buildings have been inadequate and this has impeded the provision of sufficient up-to-date plant. There are not enough consultants in this field available at the present time and, even if there were, there is neither sufficient plant nor accommodation for them. A great expansion of radiological services will be necessary during the next few years.

158. When adequate accommodation and equipment are available and allowing for the greatly extended use of radiological facilities which is anticipated, it is estimated that a Hospital Centre serving a population of 100,000-120,000 may need a whole-time staff of one radiologist, and one assistant radiologist or their part-time equivalent and one registrar, whole-time. In the Teaching Hospitals where undergraduate and post-graduate teaching and research are undertaken, experience has shown that this rate of staffing will be doubled. Additional arrangements will be needed for the staffing of special departments at the Regional Centre and elsewhere. The neuro-surgical and thoracic surgical units may well require additional radiological help at a rate of roughly one additional whole-time radiologist for each 100 beds in the units at the Regional Centre. The radiological techniques in these branches of surgery are highly specialised and require great experience for their application and for the interpretation of results. Nevertheless, it would be mistaken policy to detach radiologists specialising in these branches from the main radiological service.

XXII. RADIOTHERAPY

159. A service of radiotherapy must be organised on a regional basis and each Regional Centre should provide a service for treatment by radium and by deep X-rays. It is probable that the development of super-voltage X-ray treatment will proceed gradually, so that plant will only be available in a few Regional Centres initially, but the great bulk of treatment at present is by high voltage apparatus and radium, which should be available in all Regional Centres.

160. Treatment by radiotherapy should be under the control of consultants engaged solely in this work. Radiotherapy and radiodiagnosis are distinct specialties and it is no longer possible for one man to serve as a consultant in both subjects. The relatively recent emergence of radiotherapy as a specialty distinct from radiodiagnosis and the rapidly increasing demand for radiotherapeutic services have made it difficult to provide enough fully trained consultants. It is of prime importance that consultants in this branch should have had adequate experience in general medicine and surgery before proceeding to specialise in radiotherapy. It is also of importance that they should have had a sound training and a wide experience in their specialty before being appointed to posts of responsibility. As in other specialties the mere possession of a special diploma is not necessarily a criterion of efficiency.

161. The principal use of radiotherapy is in the treatment of cancer and it is suitable for at least one half of the treatable cases. It is essential that the treatment of each case of cancer should be the subject of consultation between the radiotherapist and the appropriate clinical consultant, except that a general policy may be temporarily agreed in the treatment of certain defined types of cancer. It is only by regular consultation that consultants will become and remain fully aware of the possibilities of alternative forms of treatment. The majority of cases of cancer will be seen first by the appropriate clinical consultants in out-patient departments.

162. The implantation of radium or radon may be undertaken by the surgeon or radiotherapist. This should always be done in accordance with a plan of irradiation worked out jointly with the members of the department of radiotherapy including the physicist. The application and injection of radioactive substances will similarly be undertaken in conjunction with the department of radiotherapy.

163. Consultative clinics should be held at Hospital Centres where facilities for radiotherapy are not provided, but most patients attending them will be referred from other departments. It is, however, undesirable that a rigid direction should debar the general practitioner from referring a patient to the consultative radiotherapy clinics held in out-lying hospitals, although the rule of consultation between the consultants on cases directly referred should be followed.

164. About 60 beds per million population is the appropriate allocation for patients who need treatment by radiotherapy, but some of these may be provided in hostels. The beds required for a region with a population of four millions would therefore constitute a large hospital unit, which should form part of a general hospital. The arguments in favour of a general hospital for the treatment of cancer cases are that specialised techniques can be more effectively developed both in surgery and in radiotherapy and that the radiotherapists gain adequate experience of the less common forms of cancer. Difficulties, however, arise in the transfer of patients considerable distances from their homes, particularly when a good surgical service is available closer at hand in one of the larger Hospital Centres in the region.

165. A large part of the surgical treatment of cancer will ordinarily be undertaken in the individual Hospital Centres although special cases must be transferred to the Regional Centre. It may be necessary to provide facilities for radiation treatment in some of the larger Hospital Centres, but it is essential that one unified service of radiotherapy should be provided for the whole region, the associated centres being organised as dispersed branches. The radiotherapist in charge of the regional unit should integrate the whole, ensuring for the radiotherapist at an associated centre ready access to, and duties at the Regional Centre, while reciprocally the regional radiotherapists take a share in the work of the outlying centres. There is very great advantage in the closest association with the basic scientific departments of the university.

166. The staff required for a Regional Service can be calculated on the basis of the techniques employed at the present time, but requirements may be profoundly modified by developments in the near future, for example by the use of radioactive isotopes and super-voltage X-ray plant. There should be a minimum whole-time staff of one regional radiotherapist and four other consultant radiotherapists at the Regional Centre serving a population of 2½-3 millions. Associated centres will require staff additional to this and the holding of consultative clinics at peripheral Hospital Centres means a further demand for generous staffing. The centre of 2½-3 millions population would also require at least three physicists and two officers of registrar grade.

XXIII. TRAUMATIC AND ORTHOPAEDIC SURGERY

167. This combined specialty comprises the treatment of disease and injury of the bones, joints and associated structures. Orthopaedic surgery and more particularly traumatic surgery has not in the past been completely segregated from general surgery in all hospitals. In the last ten years, however, rapid development has been made in accident services (traumatic surgery) particularly in the treatment of fractures. There is clear evidence of the value of segregating cases in this branch of surgery and the practice should be adopted in all Hospital Centres as soon as possible. In some hospitals, particularly the larger special orthopaedic hospitals, the treatment of non-traumatic orthopaedic cases has developed apart from the treatment of

patients suffering from injuries. Separation of this kind is not considered desirable. Close association with the neurological department in the treatment of head injuries, the thoracic surgical unit in the treatment of chest injuries, and the plastic surgery department in the treatment of burns and cases with much destruction of tissue is clearly needed. Traumatic surgery provides a substantially greater number of cases than non-traumatic orthopaedic surgery, but the principles governing the treatment of both types of case are the same. The practice of admitting fracture cases under the care of a general surgeon should cease where an orthopaedic department has been established.

168. The Regional Centre will require an orthopaedic and traumatic surgical team which is organised to provide facilities for teaching and research. The team should serve the Teaching Hospital, the hospitals of the Regional Board at the centre and an associated country hospital for long-stay cases. Staffing of this unit will to some extent be influenced by teaching requirements.

169. The number of staff required in any Regional or Hospital Centre will vary somewhat with the type of industry in the area, because this will affect the volume of traumatic work. A population of 100,000-120,000 would require about 40 beds in the acute unit and at least an equal number in a long-stay unit, with a staff of one whole-time consultant or part-time equivalents and one registrar. A centre with 100 acute beds would require an orthopaedic surgeon-in-charge (part-time), two assistant orthopaedic surgeons (whole-time) and three registrars (whole-time). Registrars in the traumatic units would include men holding these appointments as part of their period of training for other branches of surgery. In a centre with a population of 100,000-120,000 there should be sufficient work for one man fully qualified as a consultant resident at the centre and working whole-time in this specialty. As in other specialties, such a man should not work in isolation but be associated for purposes of relief with a larger centre in which several consultants would be working in the same field. Where in a Hospital Centre the work is carried out by more than one orthopaedic surgeon the organisation and development of the orthopaedic and accident service should be the responsibility of the Senior Surgeon.

170. In the smallest Hospital Centres (those serving populations of about 50,000) it is unlikely that there will be whole-time work for a consultant. Such a Hospital Centre should be served by a consultant visiting frequently from the larger centre, and a senior orthopaedic registrar should live at the hospital to deal with emergencies in the absence of the consultant and to arrange as required for the transfer of emergency cases, including all cases requiring major reconstruction, to the parent centre or for the calling of the consultant. One of the locally resident general surgeons would be available in emergency, if the orthopaedic consultant cannot be reached in time.

171. The long-stay cases including possibly some of those suffering from rheumatic disorders such as arthritis will need special provision which may be made at hospitals in the country. Where one larger Hospital Centre and a group of smaller associated centres are working together, it should suffice to provide long-stay accommodation near the larger centre alone, but the consultants working at the smaller centres should be members of the staff of the long-stay hospital. Special orthopaedic hospitals are not always conveniently situated for this purpose. It will be many years before replanning is complete, and these staffing arrangements should be fitted to the existing hospitals as far as possible. Grouping of Hospital Centres to

provide accommodation for long-stay orthopaedic cases will be necessary in most areas. The usual plan will probably be to provide one institution for long-stay cases coming from a group of Hospital Centres serving, perhaps, half a million people. Follow-up clinics, with provision for after-treatment will be necessary in small towns or rural areas.

XXIV. VENEREAL DISEASES

172. The diagnosis and treatment of venereal diseases constitute a separate clinical specialty and should not be left to become a minor interest of consultants in other fields. Though the incidence of venereal diseases will no doubt continue to fall from the high post-war levels it is still necessary to improve the consultant service available. Consultants in this, as in other fields, should have an adequate experience of general medicine and surgery, as well as a sufficient training in their own particular field.

173. The work of the consultant in venereal diseases impinges on that of many other consultants. The dermatologist, cardiologist, neurologist, psychiatrist, paediatrician and gynaecologist, to name only those most commonly concerned, often have patients in their care who require treatment for syphilis, the original cause of their present disabilities. It is usual in such cases for the patient to remain under the care of the consultant (e.g., cardiologist) while receiving his antisyphilitic treatment from the consultant in venereal diseases. In such circumstances the closest collaboration between the two consultants is necessary. Similarly, the gynaecologist and consultant in venereal disease may collaborate in the treatment of complicated cases of gonorrhoea in the female. It is also essential to maintain close touch with practitioners engaged in ante-natal and infant welfare work, for in their clinics much can be done to prevent congenital syphilis or secure its early treatment and to bring pregnant women suffering from unrecognised gonorrhoea under treatment.

174. Medical consultants engaged in the treatment of venereal disease should work actively for its prevention and there should therefore be close co-operation between them and the Medical Officers of Health whose province is the field work. The social worker or health visitor who undertakes the tracing of contacts should work with both the clinician and the Medical Officer of Health. Much may be achieved by persuading the infected person at the clinic to try to secure the attendance of the person responsible for his or her infection, but there will always be a number who can only be approached by a medico-social worker. The clinic will generally undertake the follow-up of defaulters from treatment. The clinician also should play a part in health education directed toward reducing the incidence of venereal disease.

175. Diagnosis and treatment of venereal diseases should be part of the activity of each Hospital Centre, but it may also be necessary to hold clinics in some small towns which have no hospitals. Consultants in the treatment of venereal diseases should be responsible for the work at all these clinics.

176. Wherever possible the treatment centre should be at a general hospital and beds should be available for the consultant. It is unlikely that more than six beds will be needed anywhere for a population of 100,000 and it would be preferable to provide these at the larger centres only. Consultants from the larger centres will visit outlying clinics, possibly taking non-medical staff and equipment with them.

177. The number of whole-time consultants required may be of the order of four for a population of 500,000, but there will be considerable variations in different parts of the country, as the incidence of venereal disease is often heavier in the vicinity of the larger ports than in rural areas or inland towns.

178. Special arrangements are required for laboratory tests for venereal diseases though necessary microscopic examination of specimens collected at the clinic will ordinarily be undertaken by the consultant. Cultures must be made at the clinics and their incubation, in appropriate cases, might be begun there, but the aim should be to have all this work done by the clinical laboratory at the Hospital Centre. Special provision should be made for the serological tests. The results of the Wassermann and other serum tests for syphilis and gonorrhoea have often been inconsistent as between different laboratories in the past and these tests should be undertaken at specially selected laboratories. Similar arrangements should be made for the flocculation tests and for the gonococcus complement-fixation test.

XXV. BLOOD TRANSFUSION SERVICE

179. Transfusion is a therapeutic procedure which has become increasingly complex and widely used since the war. The provision of the blood, plasma, grouping serum and other blood products now used in hospitals, and the performance of certain of the serological tests require the provision of a closely integrated specialized service. The Regional Hospital Boards are responsible for the day to day local administration of the Regional Transfusion Centres. It is desirable that as regards certain treatment and other processes there should be a measure of central guidance and co-ordination. Each region should arrange to provide sufficient blood for its own needs and to supply the needs of the Blood Products Unit of the Medical Research Council and the Blood Group Reference Laboratory of the Ministry of Health. It is important that the medical staff engaged in this work should be closely associated with the local teaching centre. There should be the closest co-operation between the Regional Transfusion Centres on the one hand and the clinical departments and pathological laboratories of the hospitals on the other hand.

XXVI. PUBLIC HEALTH LABORATORY SERVICE

180. This service has already been mentioned in paragraph 61. It has grown from the emergency service of the war years and is still in process of development. It may ultimately assume a regional pattern but the whole service is administered centrally from the Medical Research Council headquarters in London. Its object is to provide a bacteriological service for preventive purposes and not to assume responsibility for the bacteriological work of hospital laboratories. The national service will often have a laboratory in hospital grounds, perhaps adjoining the hospital laboratory and both interchange of specimens for examination and consultation between staffs will no doubt be frequent. In the smaller Hospital Centres, Hospital laboratories may, by arrangement, undertake bacteriological work for the service. The Boards will be mainly concerned to ensure that duplication of services is avoided and that the hospitals are able to make full use of the valuable reference facilities on special bacteriological problems provided at certain of the main laboratories of the Public Health Laboratory Service.

REGIONAL HOSPITAL BOARDS

APPENDIX A

Region	Population (31.12.48)	Number of Hospitals ⁽¹⁾ (31.12.48)	Number of beds (31.12.48)			
			General and Special	Mental	Mental Deficiency	TOTAL
1. Newcastle-upon-Tyne	<i>millions</i> 2·862	191	17,407	7,382	2,123	26,912
2. Leeds	3·030	212	20,801	11,026	3,067	34,894
3. Sheffield	4·058	209	23,087	10,357	3,167	36,611
4. East Anglian (Cambridge)	1·391	109	8,867	4,494	1,028	14,389
5. North-West Metropolitan	3·821	147	21,763	9,875	4,741	36,379
37 6. North-East Metropolitan	2·955	123	23,554	8,705	2,926	35,185
7. South-East Metropolitan	3·107	179	27,732	9,132	4,467	41,331
8. South-West Metropolitan	4·402	261	29,675	28,337	7,331	65,343
9. Oxford	1·357	104	8,055	4,439	1,196	13,690
10. South-West (Bristol)	2·650	257	18,369	10,197	5,855	34,421
11. Welsh	2·552	208	14,960	8,093	1,700	24,753
12. Birmingham	4·335	224	25,629	11,331	5,748	42,708
13. Manchester	4·360	207	29,535	10,688	6,560	46,783
14. Liverpool	2·061	71	15,887	7,157	488	23,532
TOTALS	42·941	2,502	285,301	141,213	50,397	476,911

(¹) Number of Hospitals (including convalescent homes) making separate returns to the Department at 31st December, 1948.

LONDON TEACHING HOSPITALS

APPENDIX B

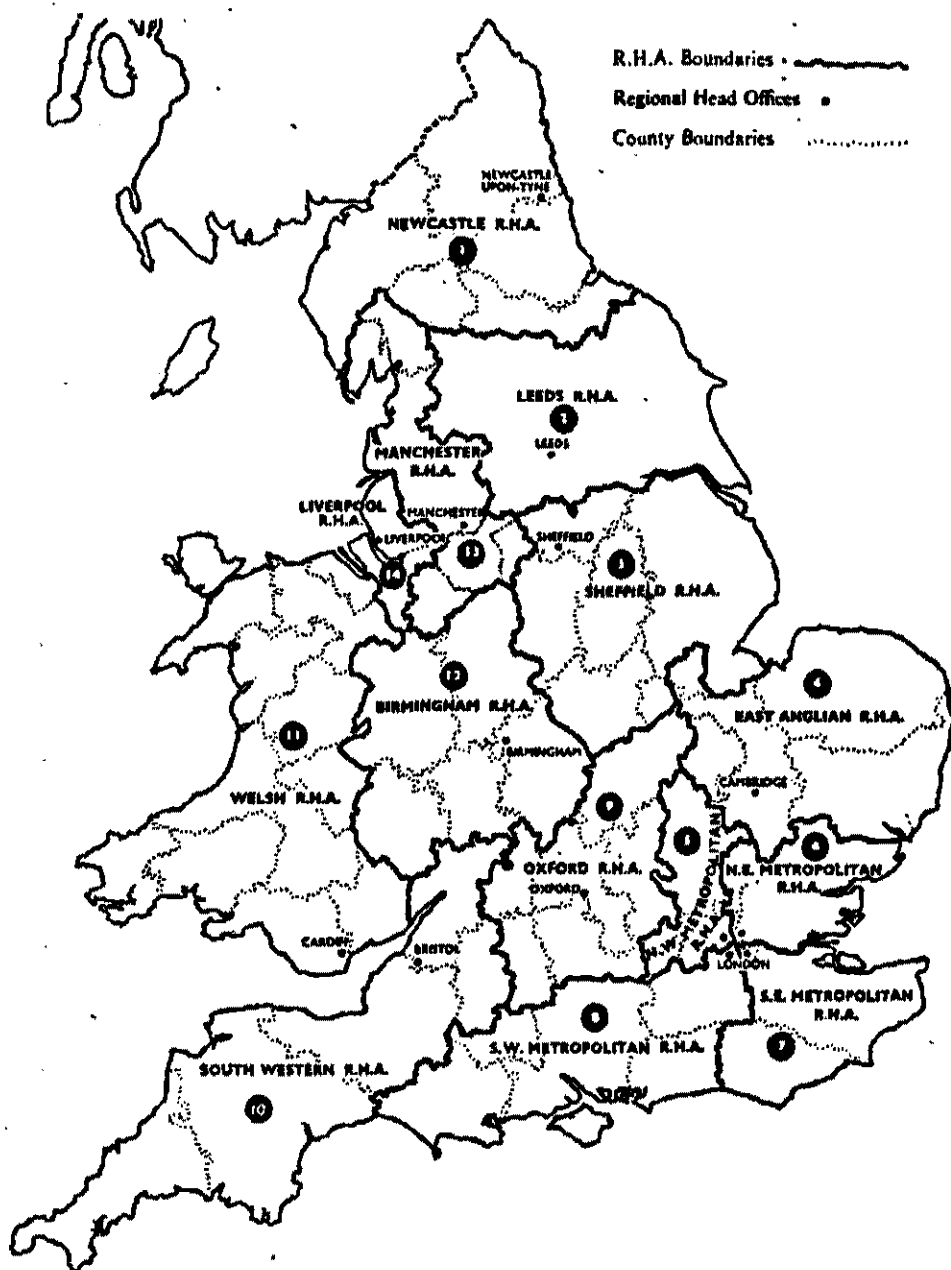
Title	No. of Beds (31.12.48)	Title	No. of Beds (31.12.48)
The Royal Hospital of St. Bartholomew	546	The National Hospitals for Nervous Diseases ...	266
The London Hospital	1,037	The Royal National Throat, Nose and Ear Hospital	225
The Royal Free Hospital	905	The Moorfields, Westminster and Central Eye Hospital	300
University College Hospital	1,128	The Bethlem and Maudsley Hospitals	442
The Middlesex Hospital	871	St. John's Hospital for Diseases of the Skin ...	—
Charing Cross Hospital	526	The Hospital for Diseases of the Chest	1,001
St. George's Hospital	772	The Royal National Orthopaedic Hospital	500
Westminster Hospital	899	The National Heart Hospital	82
St. Mary's Hospital	831	St. Peter's and St. Paul's Hospitals	80
Guy's Hospital	720	The Royal Cancer Hospital	156
King's College Hospital	680	Queen Charlotte's and Chelsea Hospitals	322
St. Thomas's Hospital	975	The Eastman Dental Clinic	—
The Hammersmith, West London and St. Mark's Hospitals	949		
The Hospital for Sick Children	428		
		Total	14,641

PROVINCIAL TEACHING HOSPITALS

APPENDIX C

Title	No. of Beds (31.12.48)	Title	No. of Beds (31.12.48)
United Newcastle-upon-Tyne Hospitals	916	United Bristol Hospitals	1012
United Leeds Hospitals	1,081	United Cardiff Hospitals	784
United Sheffield Hospitals	1,381	United Birmingham Hospitals	1,530
United Cambridge Hospitals	737	United Manchester Hospitals	1,330
United Oxford Hospitals	1,250	United Liverpool Hospitals	1,818
		Total	11,839

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