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HOSPITAL ADMINISTRATION

Report of a WHO Expert Committee

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Geneva, 3-9 October 1967

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HOSPITAL ADMINISTRATION

Report of a WHO Expert Committee

A WHO Expert Committee on Hospital Administration met in Geneva on 3-9 October 1967. Dr J. Karefa-Smart, Assistant Director-General, opened the meeting on behalf of the Director-General and welcomed members of the Committee. Professor N. Pesonen was elected Chairman, Dr R. L. Mehra Vice-Chairman, and Professor F. B. Roth Rapporteur.

INTRODUCTION

In his opening remarks, Dr Karefa-Smart pointed out that pharmaceutical and technological advances in the past decade have resulted in many new diagnostic and therapeutic possibilities; at the same time, however, many new developing countries, with extremely limited facilities for medical care, have emerged. In the more developed countries the introduction of highly specialized services such as open heart surgery, electronic patient monitoring, peritoneal and renal dialysis, organ transplantation, and supervoltage radiotherapy has been progressing at a startling pace. Similarly, laboratory equipment has been automated, electronic computers have been applied to the processing of records and to the diagnosis of illness, and systems analysis has been introduced as an aid to planning, all at enormous cost in money and manpower. However, developing countries still face the problem of providing the most basic medical care for urgent cases, and the expenditure that would be necessary for the establishment of preventive services must be evaluated against this background under conditions of dire penury in money, physical facilities, and manpower.

Such different backgrounds, Dr Karefa-Smart noted, should be taken into account in the deliberations of the Committee. The methods used in different countries might be similar, although even in this respect there might sometimes be technical difficulties. However, the planning of hospital services and of individual hospitals, patterns of hospital administration and management, and the training of hospital administrators — the themes for discussion by the Committee — were likely to differ widely from one area to another.

MAIN PATTERNS OF HOSPITAL ADMINISTRATION AND RELATIONSHIP TO PUBLIC ADMINISTRATION

Definition of a hospital

In the first report of the WHO Expert Committee on Organization of Medical Care, the hospital was defined as "an integral part of a social and medical organization, the function of which is to provide for the population complete health care, both curative and preventive, and whose out-patient services reach out to the family in its home environment; the hospital is also a centre for the training of health workers and for bio-social research."¹

The present Committee found it necessary to define the hospital in more practical terms. To be applicable to the extremely varied types of hospital necessary in both developing and highly industrialized countries, any definition should be as simple and as broad as possible. The Committee therefore defined the hospital as an institution that provides in-patient accommodation for medical and nursing care.² Such a definition can be elaborated so as to cover hospitals that assume additional functions. For example, the hospital may become a centre for the skilled diagnosis, treatment, and rehabilitation of in-patients and out-patients, providing ambulatory and domiciliary care and personal preventive services either directly or in a consultative capacity. It may also participate in the education and training of health personnel and carry out medical, epidemiological, social, and organizational research.

Ownership patterns

The evolution of the hospital from a shelter for the sick, the aged, and the destitute to a highly complex social institution has resulted in multiple ownership and a wide diversity of organizational frameworks. In any country, patterns of ownership vary with the size, degree of organization, and socio-political system of the country. Hospitals may be owned by private bodies (e.g., religious groups, philanthropic institutions, or industries) or by public bodies (e.g., local authorities or the central government). In many countries a mixture of all or many of these different ownership patterns is found.

In most countries the situation is complicated by the existence of different hospital functional patterns, that have evolved as a result of

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1957, **122**, p. 4.

² According to the *World health statistics annual, 1963*, (Geneva, WHO, 1966) such an institution should, if it is to be considered a hospital, have at least one physician on its permanent staff.

advances in medical knowledge and technology and of public demand for their application to the care of patients — a process that is continuing at a rapidly increasing rate. Improved communications have brought such advances to the attention of the developing countries, creating additional problems in the elaboration of their hospital services. These factors, and the increasing costs of hospital services they cause, have created a world-wide trend towards the increased control of hospital operation by higher authorities. Similarly, in many highly industrialized countries there has been a growing tendency towards increased government sponsorship, technical guidance, and financial support.

Legislation

One of the principal aims of the control of hospitals by higher authorities has been to safeguard the public by the establishment of minimum standards for licensing and accreditation and by other efforts to improve the quality of care provided in hospitals. In some countries, voluntary action by the hospitals has often been adequate, but in many others it has been necessary to introduce legislation for this purpose. It is noticeable that such legislation tends to produce a more even distribution of responsibility between central and local authorities.

The Committee agreed that hospital legislation is desirable, whether it be separate or within the framework of public health or local legislation. It recommended that the meeting of minimum basic requirements should be compulsory, whereas the meeting of additional requirements should be voluntary. In general, legislation can be expected to cover (1) the creation of hospital services, (2) organizational frameworks and methods of co-ordination and planning, (3) minimum standards for different types of hospitals, (4) cost control, (5) staff requirements, in terms of both quantity and quality, and (6) the rights and obligations of the staff. In countries with highly centralized administrations or hospital systems, administrative decree may replace legislation or may determine the extent to which compliance with legislation is compulsory rather than voluntary.

Relationship to public administration

It is most important that there be close co-operation and co-ordination between hospitals, public health organizations, and public administrations at all levels.

However, the fact that the hospital is a highly specialized and extremely complex organization has major implications for the co-ordination of the hospital service with the other components of the health and social services. Many other components of public health services have also become highly specialized in recent years, making total integration of the

hospital and other health services more difficult. Furthermore, there are differing concepts of the hospital as an integral part of the health system, and integrated health care provided by hospitals varies widely, depending upon their size and scope. The Committee agreed that integrated service based on the hospital at local level is more important than such service at other levels.

Administrative levels

In countries where there has traditionally been a large measure of central control, there is now a tendency to decentralize responsibility. On the other hand, in countries where hospitals have developed primarily as a result of local initiative, and where a large measure of local control remains, there is now a tendency towards greater central control. Whatever the situation, the Committee agreed that local initiative should be encouraged, even where central control is inevitable.

The pattern that develops in a given area depends to a great extent upon the development of a suitable social infrastructure at the local level, without which there can be no local hospital responsibility or initiative. The form and function of a central hospital administration are also determined in large part by the social organization of the country. The central administration, whether it be a separate body or a department within a ministry, may have powers of legislation, policy making, planning, financing, advising, and co-ordination, or it may have more direct operational control of the hospital service.

Regional hospital systems

The uneven distribution of populations, the concentration of medical services in urban areas, and medical specialization often necessitate the establishment of networks of hospitals in given areas. As a result, a regional approach to hospital services has developed. In some countries this has not progressed beyond a concept, whereas in others it has been found necessary to create a more formal regional administration.

The number of regions necessary in a given country depends upon the size and distribution of its population. The Committee agreed that a population of about 1-3 million is a reasonable size for a functional region. However, these figures are only a guide, since the size of a region depends upon many factors, such as the limit to the number of hospitals that can be controlled within a given area, and the sizes of areas that are economically efficient for highly specialized services.

Depending on the social organization of the country, the function of regional authorities may range from policy-making, supervision, and co-

ordination to direct operational management of hospitals. The regional system was adequately described in the first report of the WHO Expert Committee on Organization of Medical Care,¹ and the present Committee endorsed this description. Nevertheless, it pointed out that the full establishment of such a system must take into account many factors, such as geography, the extent of local power, the available number of physicians, the number of health centres and auxiliary institutions, methods of selecting patients, the unwillingness of the public to be referred from one hospital to another at different levels of the regional system, and the attitudes of medical personnel.

The services provided by regional hospitals may differ widely from one country to another. In developing countries such services may be only minimal, but it should be possible to add various specialties as the standards of medical care in these countries improve. The important principle is that specialized departments should have regional functions, whether or not they are all grouped together in one hospital.

Both the regional hospital containing all necessary services and the local hospital are easy to define. The intermediate hospital, however, is more difficult to define, since medical technology is continually changing; what was an area of research yesterday may be a special field today and a routine procedure tomorrow.

It is more important that specialized services be concentrated within a regional framework and that unnecessary duplication be avoided than that there be a single regional hospital for every region. In large towns, for example, rigid definition of local and intermediate hospitals may not be necessary, since both are part of the metropolitan hospital complex; however, in areas where the population is more dispersed a more formal regional system may be essential in bringing services to as many of the people as possible. Difficulties in staffing and equipping regional hospital centres for certain specialties may even necessitate the concentration of such specialties in central medical complexes serving groups of regions. However, even where the fully developed regional hospital cannot yet be contemplated (e.g., in developing countries) it is important to institute the regional concept from the first in order to ensure a balanced phased development of the hospital service.

In providing the full range of services required in a region, the various clinical services should be provided by general hospitals to the maximum extent possible. Such services should include rehabilitation, short-term in-patient care, ambulatory and domiciliary care of patients suffering from chronic disabilities, and certain types of short-term psychiatric care. Opinion in the Committee was divided as to the necessity of creating special hospitals, which some members felt to be entirely unnecessary.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1957, **122**, p. 17.

Other members, however, were of the opinion that in spite of difficult staffing problems, such hospitals might still be necessary for patients whose treatment requires conditions different from those prevailing in the highly technical general hospital — e.g., patients with chronic disabilities, tuberculosis patients (depending on the incidence of this disease in the country), psychiatric and mentally retarded patients, and the severely physically handicapped.

Availability of hospital services

In attempting to define the desired availability of hospital services for the public, the limit to the spread of resources should be determined by assessment of the medical and economic value of investment at each level, and by the value placed on health in the economic development of a country. No precise rules can be given, since each country must make the decision for itself according to the principles outlined in this report.

Financing the service

Most of the increase in health expenditure in many high-income countries is attributable to the hospital service. Although this service may be regarded as an investment that pays dividends in the form of lessened invalidity, reduced unemployment caused by sickness, and increased industrial production, it must nevertheless have an upper cost limit. This limit, which could be determined as a percentage of health expenditure, would tend to vary with the economic development of each country. The sources of funds available to the hospital service — which would also vary with the economic and social development of each country — include private payment, hospital prepayment schemes, voluntary and compulsory health and/or hospital insurance schemes, social insurance schemes, government subvention, philanthropy, lotteries, and taxation, both general and local.

PLANNING A HOSPITAL SERVICE

As previously noted, hospital services are being rendered increasingly complex by advances in medical care and by growing public and governmental interest in the promotion of health and the maximum availability of medical services. This factor, together with the increasing costs of hospital services, has created an awareness of the need for a planning approach to the development of a rational hospital service.

At the same time there has arisen an awareness of the need for overall socio-economic planning and for planning of all health services within the framework of the socio-economic plan.

The planning methods outlined in the following sections, while generally applicable, are highly complex. However, in many developing countries the extension of existing hospital services may not have to await completion of every stage of the planning process. In many countries the existing services are so inadequate that the addition of a moderate number of hospital beds would be unlikely to jeopardize the final plan.

In view of the complexity of the planning process, the Committee suggested that WHO increase its activities in advising member countries on the planning of their hospital services.

Preconditions for planning

In the technical discussions on health planning at the Eighteenth World Health Assembly, attention was drawn to the following preconditions for planning and prerequisite data.

1. An understanding of the government's interest, aims and assessment of objectives, in national socio-economic development, and of its policy in respect of health planning as one of its integral parts. The Fourth Report of the Expert Committee on Public Health Administration points out that "this fundamental step in planning public health services is the determination of government health policy".¹ Strategic decisions should be taken by the governments — especially where a new system is being introduced.
2. Enabling legislation for planning and subsequent implementation.
3. A planning organization for over-all socio-economic planning at policy- and decision-making level, and a health planning organization which is part of the former or equivalent to it.
4. Arrangements for co-ordination between all planning organizations and between these organizations and the government departments concerned.

Prerequisite data

1. Demographic data — national, regional or provincial and for local districts.
2. Vital and health statistics (crude and infant mortality rates, deaths by causes, morbidity data, hospital admissions, etc.).
3. An inventory of public and private health service institutions, including training institutions, and a complete statement by categories of health service manpower, whether employed officially or practising independently.
4. National economic background. Information regarding the present national economic background and general manpower position.
5. A statement of the financial allocations to the health services.

Some authorities, however, would regard [the above data] as too restricted in scope and would request the addition of the following :

- (i) hospital morbidity and mortality data;
- (ii) the results of mass screening investigations as to the prevalence of certain specified or asymptomatic diseases and the physical fitness of certain vulnerable groups, data as to the growth of urbanization, and information as to the extent of nomadism.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1961, **215**, p. 9.

The usefulness of surveys under certain conditions was stressed, and the undertaking of some research into suitable forms of methodology for the intended planning process was also advocated. A warning was given as to the doubtful reliability of hospital statistics particularly in developing countries because of their selective character. Finally, the need on occasions to undertake planning with only the minimum of data was reiterated and emphasized. However, these data should not be regarded as final. Upon simple and even primitive data it was possible by patience and persistence to build over the years reliable statistical systems for the periodic review and correction of operating plans, from which future plans would benefit.

In some areas, however — particularly in developing countries — it may be necessary to initiate hospital planning even in the absence of an over-all socio-economic and health planning organization.

The Committee drew attention to the report of a WHO Expert Committee on National Health Planning in Developing Countries.¹ Many of the methods described in this report are applicable to hospital planning and to countries that have attained a relatively high level of economic development.

Before initiating hospital planning on any large scale it is essential that there be (1) government interest in the development of the hospital services; (2) willingness to co-operate on the part of the existing hospital authorities; (3) some form of planning organization and an administrative capacity for planning; and (4) adequate time for collection of the data required and for consultation with all the bodies involved. It is also important to have some form of legislation to permit hospital planning and the implementation of the plan. Furthermore, planning should begin well in advance of the predicted time of implementation.

The goal of planning should be the construction of hospitals of reasonable size and function in appropriate locations. The plan should be sufficiently flexible to permit periodic modification in accordance with advances in medical care and with social and economic changes. In the planning process, responsibility should be divided among central, regional, and local authorities.

In planning a hospital service, the first essential is to establish an adequate administrative organization to prepare the plan within the framework of the over-all national health plan and to achieve its acceptance.

Administrative organization

The planning of a hospital network involves both general policy-making and careful attention to technical details. Thus, two functional bodies may be required — a planning committee for general policy-

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1967, 350.

making and a unit for the technical preparation and elaboration of the plan. The planning committee should preferably concern itself with the total health plan, but in some countries its scope may be limited to the hospital plan. In many countries final decisions may rest with the highest level of government authority.

The major role of the planning committee would be to review the over-all hospital plan and to interpret and defend it at fiscal and legislative levels within the context of the socio-economic plans of the country. In some countries a committee of this nature may be set up within the ministry of health. In others its functions may be included in those of a national socio-economic planning committee with wider terms of reference. Its composition would tend to vary with the social and political background of the country.

The planning unit would nearly always be created within the ministry of health. It would probably consist of (1) medical personnel with knowledge and experience of all aspects of public health and hospital services, (2) nonmedical administrators with knowledge and experience of organization, budgeting, and techniques of information storage and retrieval, (3) nursing consultants with experience in the administration of nursing services, (4) town planners, (5) architects and engineers with experience of hospital design, and (6) an economist with experience of cost analysis.

Without a planning organization of this type, the plan produced might be nothing more than a compilation of demands made by various agencies at different levels. There would also be a danger that the plan might not be technically feasible or financially possible. It is also important that close and continual co-operation be maintained between the planning bodies and the hospital administrative and clinical authorities.

The planning process

A hospital service should be planned in a logical sequence of steps, as follows : (1) assessment of needs, (2) estimation of resources, (3) determination of priorities, and (4) continual evaluation of progress.

Assessment of needs

Needs must be assessed both quantitatively and qualitatively. Quantitative factors include the number of beds for each type of hospital and for each specialized service, the scope of the out-patient services, and the scope of the central diagnostic and therapeutic services required for both in-patients and out-patients. Qualitative factors include the level of hospital care to be achieved, the desired level of specialization, and the extent to which specialized services are to be distributed throughout the country.

Despite the possibility of error, estimates and forecasts of future developments in medicine and medical technology are necessary. Statistical projections are useful, but are not satisfactory substitutes. In view of the predictive nature of the process, great latitude must be tolerated in the accuracy of the necessary data. Furthermore, public demand and changes in public appraisal of the service may tend to influence the objectivity of the assessment.

In general there are two methods of assessment — prospective and retrospective. The prospective method involves the correlation of demographic factors, population distribution, economic factors, socio-cultural factors (including acceptance of the hospital or its services), morbidity in the population, the effects of new diagnostic and therapeutic techniques, and other factors involved in the health and social services. Retrospective assessment consists essentially of an analysis of the utilization of existing services, and for this reason should be used with caution in countries whose hospital services are severely limited. An assessment is made both of the extent to which services are used and of whether or not they are used properly. The extent of utilization is assessed by analysis of such factors as admission or discharge rates, patient days per unit of population, the length of waiting lists, the use of diagnostic and therapeutic services, and the number of first and return visits to out-patient departments. Factors such as bed occupancy rates and the average length of hospital stays require careful analysis, since a gross average is often an untrustworthy guide that obscures the range of deviations from the mean. Assessment of the proper use of services may be made by examining whether patients have been placed in the appropriate hospital, department, or ward; by studying the possibility of transferring in-patients to the out-patient services; and possibly by medical audit. A more complete assessment of needs may be made by combining the prospective and retrospective methods, making use also of morbidity and mortality statistics, surveys of morbidity trends, and pilot studies of selected population groups or of a selected area. For research in the assessment of needs in the hospital services it might be profitable to use some of the newer methods of applied mathematics; however, the judgement of a skilled medical planner would always be necessary in addition to predictions obtained by such methods.

Estimation of resources

In estimating the resources that are required and the extent to which they are available, consideration must be given to economic, manpower, and technical resources.

Estimation of expenditure must take into account not only capital investment and first-year operational costs but also future increases in

recurrent expenditure, including amortization. In the final determination of the plan, the economic ability of the state or the community to implement it and to maintain the proposed hospital system must be taken into account. Unfortunately, in developing countries there is often an inverse ratio between the most urgent needs and the economic ability to meet them.

The manpower resources that must be assessed include the availability of the medical and technical personnel (and the possibility of training and recruiting them) required both for detailed planning and for implementation of the plan.

It is important that manpower requirements be planned by teams composed of representatives of each discipline involved. Manpower and training requirements must be estimated early in the planning phase. Where necessary, assistance may be requested from WHO, either for training individuals abroad or for the creation of programmes of training within the country concerned.

The technical factors that must be assessed include the availability of building materials, the adequacy of the building industry, and the possibility of obtaining the necessary equipment and installations.

Determination of priorities

After the needs are determined and the resources estimated, a logical sequence of short-term and long-term objectives must be drawn up. This necessitates the determination of priorities — perhaps the most difficult process of all, because it involves many socio-economic and political considerations in addition to medical factors. Since local authorities often submit a multitude of requests and proposals, the plan may have to be determined by a process of elimination.

Evaluation of progress

Hospital needs are continually changing and no hospital plan can be definitive. Thus, planning must be a continuous process, subject to revision in the light of experience. For this reason, evaluation of progress is essential during all stages of planning and implementation. The use of operational research methods may be necessary for this purpose.

Provision of a timetable

In large-scale planning, a timetable is necessary for both the detailed planning process and the implementation of the plan. Establishment of such a timetable may necessitate the use of methods such as systems analysis and critical path analysis.

Allocation of responsibilities

As previously noted, it is important that, in planning a hospital service, responsibility be allocated to central, regional, and local levels.

Central level

The principal responsibility at the central level is that of policy making — e.g., the determination of the over-all hospital plan. However, the central authorities have a wide range of other responsibilities, including (1) co-ordination of the implementation of plans at all levels; (2) co-ordination with national planning authorities, other social and health services, universities, and public works departments; (3) cost analysis and budget planning; (4) acquisition of adequate funds from fiscal and legislative authorities; (5) establishment of standards for services, personnel, architecture, and equipment; (6) conduct of research in hospital planning and design; and (7) continual evaluation of progress.

A further responsibility of the central authorities is that of advising regional and local authorities. The relationship between the central, regional, and local levels must be clearly defined, and it is advisable that the central authorities be involved in the selection of leadership personnel for regional and local levels.

The central authorities should support the training of personnel required at all levels of the hospital service. Their principal concern would be the establishment of programmes for the training of specialists in the different medical, paramedical, nursing, and other disciplines. They might also request international aid for such training programmes.

Regional level

Although the duties of regional authorities are mainly technical, such authorities are usually involved in policy making. One of their principal responsibilities is the translation of centrally established standards into detailed regional requirements, taking into account the regional situation — e.g., forecasts of population size, location, and characteristics; the location of roads, schools, etc.; existing health-care institutions; and experience. The regional authorities are responsible for detailed regional planning within the national framework and in co-ordination with the regional town and country planning authorities. They should also divide their regions into appropriate hospital catchment areas and ensure suitable plans for each area, taking into account priorities such as areas where the hospitals are most inadequate and new towns where there are no health-care services. It is important that suitable sites for hospitals be reserved well in advance. The regional authorities will also be

involved in some or all of the following : (1) detailed budgeting; (2) assessment of local-level initiative; (3) co-ordination of hospital design at local level (they may also be required to authorize designs submitted by local authorities and exercise surveillance over practices of bidding and contracting for hospital buildings); (4) estimation of the supplies and equipment required in the region for implementation of the plan, and co-ordination of the purchase of such supplies; (5) determination of staff requirements for the regional hospital service; (6) training of personnel and provision of adequate numbers of nursing and other essential personnel; (7) selection of senior personnel in the regional hospital service; and (8) training of local personnel in hospital management and in the correct use of any new methods called for by the plan. In addition, local authorities should be involved in operational research; hospitals at this level could well be used as "laboratories" for evaluation studies.

Local level

Initiative for hospital planning often starts at local level, close to those who provide and those who use the hospital service and to local bodies whose co-operation is essential. It is, therefore, the duty of local authorities to inform regional authorities of local problems that should be taken into account in detailed planning. This is particularly important where the extension of existing services is involved. It is important, both for the architect and for the future administrator of a hospital, that the functions of the hospital be defined in detail before architectural design is undertaken; this is particularly necessary in developing countries.

The co-operation of local bodies, such as town planning authorities, can often best be secured by hospital planning authorities at the local level, as can co-ordination with the basic health services, health centres, and general practitioners.

Authorities at the local level may be involved in any or all of the following : (1) design of individual hospitals; (2) preparation of specifications for contractors making bids; (3) on-site supervision of hospital construction; (4) preparation of detailed lists of necessary supplies and equipment; (5) listing of staff requirements and selection and training of intermediate and junior staff; (6) preparation of adequate job descriptions and standard work procedures; (7) "running-in" of the hospital before the admission of patients; and (8) programmes of operational research.

At the local planning level, new ideas can often be effectively tested before general adoption. If they are thoroughly studied, such innovations are an important contribution to planning. However, if they are not adequately assessed, they may have an adverse effect on the over-all plan, creating problems of supervision and co-ordination at higher levels. It is often difficult for local staff, if they are inexperienced in planning or

if they must undertake it in addition to their normal duties, to make an effective contribution to planning when both the objectives and the methods have been determined at higher levels. The definition of the functions of a hospital, and the architectural and engineering design of the hospital to make it suitable for its assigned functions, are so complex that in many countries it is necessary to establish special technical units for the purpose, often at levels higher than the local level. In developing countries, where crash programmes are often necessary, there may be no alternative but to restrict the number of planning levels and to concentrate programming and design in a central unit, for which international aid may have to be requested.

Co-ordination between hospitals owned by different agencies

It is of the utmost importance that there be full co-ordination between hospitals owned by different agencies at all levels, each level having certain responsibilities in this respect. This applies to both the planning and operation of the hospital service. Proper co-ordination of planning will help to avoid deficiencies in, and unnecessary duplication of, hospital services, while co-ordination of the operation of the services will help to ensure achievement of the objectives of the plan.

Legislation is not always sufficient to avoid unnecessary duplication, and a more personal co-ordinating approach may often achieve greater success. Co-ordination does not necessarily require absorption within a single framework; it can be achieved by the joint utilization of certain services, the joint training of personnel, the exchange of information, the use of standardized statistical methods, the exchange of data about individual patients, and the creation of joint technical services.

The Committee suggested that the central authorities should assume responsibility for the creation of a standardized hospital records system. The use of such a system permits central analysis of records, which is essential for planning and for many other phases of hospital activity in all countries, whether highly developed or not. The introduction, in high-income countries, of an economically feasible central computer service with data links would be extremely difficult in the absence of a standardized system; it requires good communications, a common definition of terms, and standardized methods for the collection of hospital data.

Central authorities could also encourage the different hospital agencies to develop services by providing building grants, or long-term loans and maintenance subsidies, for proposals that fit into the framework of the national plan — and by withholding such funds if the proposals do not fit into the plan. At regional level, expensive equipment and services could be shared by different agencies, as could the services of specialists.

At local level, central agencies for the assignment of patients to hospitals may be of value, particularly in emergencies; it is often advantageous to involve the local health officer in such agencies. Although many of the above suggestions may not be applicable to countries with centralized authority, voluntary co-ordination of hospital services, promoted by the local health officer, is often valuable, particularly at local level.

PLANNING A HOSPITAL

The Committee did not consider it appropriate to make detailed recommendations concerning the planning and construction of individual hospitals.¹ It did, however, give general consideration to some of the essential principles involved.

The planning process

The planning of a hospital takes place in two successive steps. The first of these, referred to as programming, involves decisions on, and descriptions of, the functions of the hospital and its component services, and the relationships between such services. It also includes determination of the patient accommodation necessary for the various services. The second step is the architectural and engineering design of the hospital.

The planning process should follow a logical sequence. A planning team should be created for each hospital project, its duty being to define the hospital's functions. A master plan and block designs are then prepared and a preliminary approximate cost estimate is made. At this stage, the preliminary plans are submitted to the appropriate authorities for approval. After approval, sketch designs (and subsequently more detailed designs) are produced, leading eventually to working drawings and to specifications for the tender for the building contractor. It is important that the planning team be involved at all stages of the planning process. It is also important that adequate time be allotted to the planning process, which may take even longer than the actual period of construction.

The site

As previously noted, long-term town and country planning necessitates the reservation of suitable hospital sites well before planning of the

¹ There is a great deal of literature on the planning and construction of hospitals. The Committee considered that one of the most useful guides is Llewellyn-Davies, R. & Macaulay, H.M.C. (1966) *Hospital planning and administration*, Geneva (*World Health Organization : Monograph Series*, No. 54).

hospitals is begun. In relation to site location, the Committee endorsed the views expressed by the WHO Expert Committee on Environmental Health Aspects of Metropolitan Planning and Development.¹ The location of a hospital should be determined largely by its functions in relation to the community it serves. It is essential that local hospitals (and particularly out-patient and personal preventive services) be located within the population area they serve. Specialized hospitals should be located so as to ensure easy access both from urban areas and from surrounding suburban and rural areas. It is particularly important to take into account not only present-day population concentrations but also those predicted for the future. The amount of land available and urban zoning naturally affect the final decision. In any event, the site must be adequate for the size of the hospital contemplated for the distant future.

The planning team

In view of the highly specialized nature of hospital planning it is important that the planning team include experienced medical and hospital administrators, clinicians, nurses, and architects and engineers experienced in hospital design and urban planning. It is important that a full-time co-ordinator be appointed as soon as possible. The Committee stressed the importance of training hospital planners and designers, and suggested that this could be achieved by the use of existing national planning bureaux, and that assistance might be given by WHO and by non-governmental international organizations.

Some principles of planning

The fact that requirements change continually makes it essential to design hospitals for flexibility of use. This can be achieved by both architectural design and by the use of suitable materials for construction, a technical problem on which further research is necessary. Furthermore, in the design of hospitals there are many special problems that require close attention (e.g., methods of minimizing cross-infection).

In view of the increasing complexity of the engineering services required in hospitals, and of their effect on the total design, it is most important that over-all planning of such services be undertaken as early as possible. Modern planning techniques, such as PERT,² can help to promote co-ordination of the complex processes involved in planning and construction,

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1965, 297, p. 48.

² PERT (programme evaluation review technique) is a method of analysing the different steps that must be taken to achieve a desired objective, and of the order in which they should be taken so as to minimize the time required for the entire process.

to ensure that the plan will be carried out according to a timetable prepared well in advance. It is also important that construction be carried out by a general contractor having comprehensive authority over, and responsibility for, all subcontractors.

It is essential that the time required for planning and designing be minimized. To this end, the use of standardized constructional units, if not standard hospital designs, is often of value. The time factor may be particularly important in developing countries, where it is often necessary to remodel existing hospitals rather than build new ones. In some countries hospitals are being built in areas of growing population as satellites of parent hospitals, which may eventually disappear or change their function.

Although limited on-site staff housing may be essential (e.g., for certain physicians, nurses, and other duty personnel), in general the trend is to allow as many staff members as possible to live within the community. Where it is necessary to provide accommodation for personnel, it can be designed in such a way as to be adaptable to other uses such as housing for convalescents and overnight patients. It is desirable that services for the training of nurses be provided within the hospital. However, their extent will depend upon the nursing educational system of the country concerned.

Since the hospital planning process is so complex, it would be of great value for developing countries to have regional hospital planning centres, shared by several countries, for giving advice and aid in planning.

HOSPITAL MANAGEMENT

Role of the individual hospital

In discussing the role of the individual hospital in relation to the basic health services, it must be emphasized that "basic" means fundamental rather than elementary or rudimentary. Three factors are involved: (1) the selection of patients to be referred to the hospital service, (2) the follow-up of patients discharged from hospital, and (3) the exchange of staff and technical services linking the basic health services with the hospitals. The problem of patient selection is often complicated by the fact that the hospital, which has ultimate responsibility for decisions on admission, may not have the same standards for admission as the basic health services. On other hand, it is not always easy for the hospital to defer patients who are referred by the health services or who come directly to the hospital. The out-patient department of the hospital can play an important role in the selection of patients, and can profitably be used

as a screening centre. In addition, local hospitals can accept for convalescent care patients coming from larger hospitals.

Integration of small local hospitals with the basic health services presents fewer problems, particularly in rural areas where all the health services may be provided by a single team. In such hospitals (and sometimes in larger hospitals) it has been found useful to unite the functions of public health officer and hospital director. Co-operation and co-ordination between large hospitals and the health services is possible and desirable, but full integration would create difficulties. Large hospitals rarely serve a well-defined community coinciding with that served by the basic health services. Furthermore, their functions are so complex that the economic wisdom of using them directly for the provision of basic health services is questionable. On the other hand, their high levels of skill should be used to the full for preventive health care. Prevention of disease and promotion of health should always be functions of a hospital, irrespective of its size. Large hospitals should of course be involved in the control of communicable diseases, but their functions can be extended to include the early diagnosis of noncommunicable diseases whose prevalence constitutes a problem (e.g., cancer and diabetes); participation in the control of occupational diseases; and all forms of rehabilitation. Co-operation and co-ordination between large hospitals and all other health services is of fundamental importance. However, such hospitals must have clearly defined functions, so that they can find their proper place within the framework of the services without necessarily being directly responsible for all of them. In addition to making use of the diagnostic and therapeutic resources of large hospitals, it has often been found profitable to locate public health departments or laboratories within them.

The promotion of health education in fields such as nutrition and the health of mother and child can well be undertaken in hospital wards and out-patient departments. However, medical personnel must be made aware of and interested in these possibilities. Nurses, in particular, require special training in health education, and must be freed from irrelevant duties if they are to undertake it.

The hospital board

Hospital boards exist in many countries, their functions and composition depending upon the social and political organization of each country. At one extreme, the board may own the hospital and have complete authority (subject either to no control or to control only within the terms of general law); at the other extreme it may have a merely advisory function. The functions of the board may include personnel selec-

tion; budgetary authorization; legal responsibilities; determination of procedures; creation of new departments; representation at higher levels, in the community, and in relation to the press; co-ordination with other social services; and resolution of the problems and conflicts of internal management. In order to promote a clear-cut division of authority and responsibility, it is important that the role of the hospital board be clearly defined in relation to that of the director of the hospital. The composition of the board will naturally depend upon its role and upon the function of the hospital. It may include representatives of (1) those who provide and those who use the hospital's services, (2) local authorities, (3) social security and social insurance agencies, (4) educators, (5) industrialists, and (6) universities. It may also include respected members of the community and the appropriate medical officer of health, who may serve in a purely advisory capacity.

Should the hospital director wish to expand the preventive medical services of the hospital, it is important that the board accord him their full co-operation. This may often present problems, since it is difficult to find board members who, while not being medically trained, fully understand all the aspects of a health service. To some extent, this difficulty could be overcome by avoiding a multiplicity of boards. This can be achieved if the administrative organization of a group of hospitals is comparable to the civil administration of the community in which the hospitals are situated. For example, in certain areas where large numbers of hospitals may be built, it may be advisable to have a single board for a certain group of hospitals. Such an organization would also help to promote co-ordination between the hospitals in the group. Even where a system of strong central control of hospitals prevails, boards of governors still have important roles within the range of functions described above.

The hospital director

Since the term "director" has different connotations in different countries, the Committee defined it, for the purposes of this report, as meaning the person having chief executive authority in a hospital.

The function of a general hospital as a highly technical medical centre within the framework of the public health service demands co-ordination between medical management and medical, scientific, and technical supporting services, to ensure that patients receive balanced care. For this reason, many members of the Committee considered it necessary that the director of a medium or large hospital be a qualified medical practitioner. (In large hospitals he should serve in a full-time capacity; however, in countries with insufficient medical practitioners, it may be necessary

for the director to combine clinical and administrative duties in hospitals of intermediate size. In small hospitals, as already noted, it may be advisable to combine the functions of public health officer and hospital director.) Other Committee members pointed out that lay administrators with the necessary qualifications and experience often make suitable directors. The Committee agreed that, if the director is a medical practitioner, there should be a lay administrator for the handling of financial matters, business management, and the running of the "hotel service".

Since the nursing service is involved in almost all hospital services, it is important to have a chief of nursing at high executive level. However, the essential task of the top executive is to create an environment in which all hospital personnel can work in harmony. It is, therefore, essential that there be a clear distinction between administrative and clinical authority. Committees composed of departmental heads, such as an advisory medical board, are important for consultation, but a clear-cut line of authority facilitates co-ordination of all activities by the top executive.

Miscellaneous areas of internal management

The Committee briefly discussed the following areas of internal management.

In-service training

In-service training is important if the levels of competence necessary for the highly diversified activities of modern hospitals are to be attained. It is particularly important for nurses, especially those who return to duty after years of absence.

Supply systems

It was generally agreed that supply systems should be modernized, supplies being delivered by the supplying services rather than picked up from them by the different departments. Disposable supplies are being used to an increasing extent, but the economics of their use must be assessed in the light of the economic situation of each country.

Laboratories

In certain countries, the introduction of automatic laboratory equipment, which is expensive and difficult to maintain, may create problems.

In such countries, it may be possible to establish group hospital laboratories, particularly since automatic equipment can perform tests much more rapidly than technicians using conventional methods.

Hospital hygiene

Hospital hygiene is of utmost importance, and procedures for its maintenance, for continual surveillance, and for the prevention of cross-infection must be established.

New methods

There are a number of new methods of organization and management whose primary aim is to make the most efficient use of hospital personnel at all levels, and such methods should be studied further.

Financial patterns

Increased financial support from governments, social security agencies, and other social sources has brought about greater government and social interest in the internal financial operation of hospitals and a greater demand for efficiency and economy. In some countries, the annual operating cost of hospitals is about one third of construction costs. Furthermore, operating costs are affected by the requirements of medical science, by fluctuations in national economies, and by general wage policies to a greater extent than are construction costs. For these reasons, it is increasingly important that hospital budgets be balanced, whether the hospitals are independently owned or part of a regional or national hospital organization. A balanced budget alone, however, is not necessarily indicative of effectiveness, efficiency, and economy. The preparation of a balanced budget may not be as simple in a hospital as in some other institutions, since hospital expenditures are subject to many variables, such as the number of occupied bed days, the number of out-patients, and the occurrence of unexpected emergency situations. The budget must, therefore, be sufficiently flexible to allow for variation in expenditure, although the extent of such variation must be limited.

The degree of such flexibility delegated to a hospital by higher authorities tends to vary from one country to another. In some countries where there is strong central authority, very little flexibility may be permitted. In other countries, however, a measure of flexibility of expenditure may be introduced at departmental level within hospitals. If flexibility is too great, it may lead to increased over-all costs, which may have to be provided for by the public. In areas where staff resources

are limited, their balanced distribution is essential; if one hospital is permitted too much flexibility for the employment of staff, severe staffing deficiencies may be created in other hospitals.

Accounting

The different systems of hospital accounting that are in use can be classified into two broad systems, one based on cost per patient day and the other on total annual cost. Each of these costs may be determined all-inclusively or may be broken down into different categories (e.g., services provided). Because of the lack of data, it is difficult to compare the advantages and disadvantages of these two broad systems. Further cost accounting studies are necessary for the development of more refined methods of budget estimation and for gaining a fuller understanding of actual costs. Although the cost per patient day is a useful economic yardstick, the cost per case is more useful for measuring the actual costs of patient care. The use of modern data processing equipment might permit further breakdown of hospital costs according to medical conditions and associated demographic and social factors. It would then be possible to consider alternatives to hospital care by a more reliable economic approach. For example, the costs of home and hospital care could be compared, and the economic value of rehabilitation could be analysed. Furthermore, attention would be drawn to any marked variations in hospital costs according to the disease or condition under treatment; in this way, healthy competition could be created among department chiefs. If it could be shown that economies could be effected by departments responsible for heavy expenditure, pressures might arise for the institution of such economies, so that the funds saved could be used to promote additional services. Finally, it should be noted that new methods of cost analysis would be of help in the preparation of more accurate budget estimates.

It should not be assumed that, where there is a central system of allocating funds to individual hospitals, such new methods are of no value. On the contrary, with the increasing allocation of funds by government and other organizations whose revenue is derived from public sources, it is more important than ever to develop efficient methods for financial control.

It is important that hospitals use the newer techniques of managerial accounting based on prospective evaluation of expenditures and funds, rather than the traditional system of retrospective accounting and auditing of expenses incurred. Essential to this improved system of financial management is the creation of budgets at departmental level, the departments being given freedom to allocate their funds to staff, equipment, and supplies.

TRAINING OF HOSPITAL ADMINISTRATORS

With the increasing complexity of the modern hospital, and with the broadening of its role in providing health services to the community, the functions of the hospital director are becoming more complex. Not only is he responsible for the internal management of the hospital, but it is his duty to create harmonious relationships between the hospital and the general public, the health professions, trade unions, universities, governments at all levels, and other health and social institutions and agencies.

Hospital administration is emerging as a profession in its own right, for which appropriate training is essential. As previously noted, hospital organization and administration vary widely in different countries and within each country. It seems natural, therefore, that training should be related to the level of administration that is likely to be required; this is particularly important in developing countries. For example, if hospital administrators from developing countries were to be trained in highly developed countries with different administrative patterns, their training might be the cause of their becoming frustrated after their return to their home countries. It is important that candidates for training in hospital administration be properly selected, and that after the completion of training they be assigned to duties for which they have been trained.

There is no universally accepted curriculum for a course in hospital administration. In view of the factors noted above, it is probably necessary to have two separate levels of training.

The simpler level would consist of a fairly short course whose principal objective would be practical training in the internal management of hospitals. A university education would not necessarily be required of candidates for such training. The training could be carried out on a part-time basis, while the students were employed in various capacities within the hospital service. Seminars and correspondence courses would be of great value for this level of training, and it was suggested that WHO might consider sponsoring such courses on a Regional or inter-Regional basis.

The objectives of training at a higher level would naturally be much broader, to enable graduates to carry out administrative duties in hospitals whose administrative organization and relationships with other agencies are complex. The prerequisite for such training should be a university degree, and the Committee recommended that it should preferably take place in an academic atmosphere with a strong public health orientation. At this level it is important to teach general principles rather than detailed techniques. Although there is no commonly accepted curriculum, it is suggested that it should include the study of social administration, includ-

ing public health administration; internal hospital management, including the newer methods; and background knowledge required for hospital administration, such as an introduction to the medical sciences, statistics, and financial methods.

The use of group educational programmes for students from medical, nursing, and other fields is recommended with the reservation that it would be most effective if it included both common topics studied by all students and special topics studied only by students from the disciplines involved. Common topics should be taught by means of seminars, which help to promote the interchange of ideas among students from various disciplines. Subjects taught in this way should include general administrative theory, the role of the hospital within the total health service, and specific subjects related to the operation of a hospital. Such courses should enable students whose principal interest is medicine to extend their knowledge of topics such as accounting and business practice, and should give students from the latter fields the opportunity of acquiring fuller knowledge of medical science and treatment.

Upon completion of a course in hospital administration, the trainee is not normally equipped to assume a top administrative position in a hospital. As in other professions, he usually starts at a lower level and is promoted after having gained experience. It should be possible for a suitably qualified and experienced administrator who has completed the simpler of the two courses outlined above to achieve promotion, and he should be encouraged to study further and obtain the higher qualification.

Although DPH and MPH courses may not, in themselves, constitute formal preparation for the duties of hospital administration, they convey background information that is of value in the preparation of otherwise qualified candidates for such duties. It is interesting to note that there is a trend towards permitting candidates for degrees in public health to take hospital administration as their principal subject and, at the same time, another trend towards the inclusion of more extensive material on public health in courses in hospital administration.

RECOMMENDATIONS

The Committee, considering the importance of hospital administration in health programmes, made the following general recommendations :

(1) A study should be made of the relationships between basic health services and referral hospitals.

(2) Comparative international studies of hospital legislation should be continued, and data on aspects such as the composition and functions of hospital boards should be collected from selected countries.

(3) Research on the utilization of hospitals and medical-care services should be pursued in order to define methods that are applicable to the planning of medical care institutions in both developed and developing countries. Depending on the types of problem to be considered, surveys should be conducted at local, regional, and central levels and should include surveys of morbidity trends and all other factors influencing needs and demands.

(4) Studies of the economics of medical care under different circumstances and in different countries should be continued in order to improve knowledge of the cost of health care. Cost-benefit studies of the treatment of particular diseases are an important aid to the planning of hospital and health services. In particular, one of the aims should be to study the costs of sickness and the influence of hospital and medical-care services on such costs. It is recommended that a study be made of the continuity of medical and nursing care from the inception of disease to the resumption of work or to the stabilization of disabling conditions.

(5) International agencies and governments should study the possibility of establishing interregional, regional or intercountry programmes for the training of hospital administrators for developing countries.

(6) Consideration should be given to the establishment of interregional, regional, or intercountry agencies for programming and designing hospitals and for advising countries on such matters. The participation of non-governmental organizations such as the International Hospital Federation and the International Union of Architects is desirable.

(7) Further research on the application to hospital services of newer techniques of organization and management should be encouraged.

(8) Efforts should be made to reach international agreement on the standardization of hospital statistical records so as to improve their comparability and render them suitable for analysis by electronic data-processing techniques.

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