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<td><strong>Authors(s)</strong></td>
<td>Buttimer, Anne</td>
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<tr>
<td><strong>Publication date</strong></td>
<td>1974-04</td>
</tr>
<tr>
<td><strong>Publication information</strong></td>
<td>Forbes, J. (ed.). Studies in Social Science and Planning</td>
</tr>
<tr>
<td><strong>Publisher</strong></td>
<td>Scottish Academic Press</td>
</tr>
<tr>
<td><strong>Link to online version</strong></td>
<td><a href="https://www.amazon.com/Studies-social-science-planning-Forbes/dp/0701119373/">https://www.amazon.com/Studies-social-science-planning-Forbes/dp/0701119373/</a></td>
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CHAPTER 12

Spatial organization of health and welfare services

INTRODUCTION

The organization and administration of health and welfare services raise issues of national economic policy and social planning; ideally, the physical planner's role is to design a spatial framework within which these services could be provided so as to optimize efficiency for supplier and accessibility to client. Theoretically, in any given context, the nature, quality and range of services are determined by central and regional health and welfare authorities, while the location, and size of physical facilities should involve primarily the town and regional planner. Historically, of course, such a division of labour has rarely existed; the present network of health and welfare facilities in many countries has arisen from a host of local social and administrative circumstances rather than from any deliberate joint research by physical and social planners.

Britain's much-acclaimed National Health Service Act (1946) and National Assistance Act (1948) were pioneering attempts to design a comprehensive system of social provision. The administrative complexity and functional segmentation which has developed around the management of health and welfare provision in Britain has been reflected in a rather bizarre array of health and welfare facilities. In many cases their design and distribution also reflect conditions of a century ago. However, the very obvious trend toward integration and rationalisation within all branches of these services to-day presents a unique challenge and opportunity for some creative physical planning as well.

This chapter examines the spatial organization of health and welfare facilities. 'Health' is taken to mean all services offered by National Health Services and Local Health Authorities which require physical accommodation (hospitals, practice premises, and others), and 'welfare' refers primarily to the 'personal social services' provided by Local Welfare authorities, Children's Authorities, Education Authorities, Housing Authorities and other statutory and voluntary bodies which are concerned with personal social welfare. The increasing demand for services coupled with the growing space requirements of medical specialisms means that every effort to rationalise the use of space should be made. It is presumed at the outset, that joint use of premises by health and welfare agencies will become an acceptable formula for the future.

Part One of this chapter will attempt to sketch the present spatial
organization of health and welfare facilities, see wherever possible to discover standards used in planning their distribution and functional design.

Part Two will describe briefly the social and demographic changes which are currently altering the demand for health and welfare services, and the technological advances in medicine, architecture and communications which could alter the supply of these services and the physical form in which they are provided.

Part Three will speculate on the future spatial organization of health and welfare plants. It articulates the case for joint research and planning by physical and social planners, suggesting certain avenues of research toward a regional plan for health and welfare.

PART I: ORGANIZATION OF PRESENT SERVICES

Health and welfare plants may be grouped into four major categories:
(A) Practice premises, sometimes located in or near hospitals, including various clinics, health centres, day hospitals and outpatient departments;
(B) Residential accommodation, including hostels; (C) Hospitals; and
(D) Other Welfare facilities, including social centres, lunch clubs and other community services. Welfare services, in general, are provided by a wide variety of authorities and there is no standardized approach to planning for their spatial distribution. Hence this discussion will focus solely on the three other categories, i.e. practice premises, residential accommodation and hospitals. It is instructive at this point to review briefly the evolution of the present physical plant.

A. PRACTICE PREMISES

1. Clinics and health centres

These include local authority health clinics, general practitioner practice clinics, and other diagnostic and treatment centres used at the local level.

Prior to 1948, general medicine was practised in various types of premises, often converted homes with minimally-sized waiting rooms and often a surgery at the back. Until the mid-sixties there was little purpose-building for general practitioners—with the exception of a few units for group practice—so the question of space standards scarcely arose (Ministry of Health, 1954). Executive Councils did have powers to inspect and raise the physical standards of general practitioner surgeries, but this was usually confined to questions of decor, heating and lighting, rarely touching the overall optimum size of the building. Changes came in 1966 with the new Charter for general practitioners. The question of space standards has now become a topic for research and discussion and certain design guidelines have been published (Ministry of Health, 1967; British Medical Association, 1966; Brewster, 1967; Ekengren, 1968; Lyon, 1968; College of General Practitioners, 1966).

Local authority health services have traditionally been provided in small clinics. For many years their work was done in church and village halls, or in the basements of administrative buildings. The National Health Service Act in 1948 gave some lip service to the idea of health centres to serve as bases for general practitioners, nurses and social workers. Mass Miniature Radiography for routine chest X-rays and possibly dental services, as well as providing the headquarters for local authority health services. The idea, first proposed in 1920, failed to get financial backing from the Ministry; there were other priorities for capital investment during the ’fifties. Hence space standards and functional design for health centres suggested in the Hospital Building Notes were, and still are, only experimental and suggestive.

Some innovative designs have been piloted in some areas, e.g. in the West Riding of Yorkshire, where three or four types of multi-purpose clinics for towns of various sizes have been established (Elliot, 1965). This experience has helped to crystallize certain ideas regarding the minimum size of a local authority health centre which would provide some welfare facilities. Other counties have experimented with mobile clinics, particularly in rural areas and in new housing estates, supplementing the X-ray and other laboratory facilities which can only be reasonably provided at hospitals. Mobile X-ray and blood transfusion services and other methods of decentralising health services have been tried in most other parts of the country.

2. Outpatient departments and day hospitals

Outpatient departments and day hospitals, usually attached to established hospitals, have lately assumed a very significant role in the general treatment of illness. New medical techniques and new forms of medication and recuperation have lessened the demand for in-patient beds, many minor treatments now being provided on a day basis. The division of labour between outpatient hospital departments and local health centres is still an unresolved question. The issue arises from the debate between scale economics (the 'threshold' population for an economically viable diagnostic centre with expensive equipment and trained personnel) and social accessibility. The former would argue for locating all heavy diagnostic equipment at district general hospitals, the other for providing a basic range of diagnostic and surgical services at each local centre. The outcome in any given area has usually been determined more in terms of financial and personnel considerations than in terms of any economic or social ideal. 'Day hospitals' include services for four types of client:

(i) social and medical services for old people;
(ii) group therapy, individual counselling and supervision for mental patients;
There is a slightly different locational logic for each of these types of situation. Minor surgical and diagnostic centres must usually be closely linked with hospitals. Service centres for old people and mental patients can be more widely dispersed. Space standards for outpatient departments have been laid down by the Ministry of Health in the Hospital Building Notes, and most of these design suggestions are also applicable to day hospitals and emergency medical treatment centres.

3. Workshops

Workshops for the mentally or physically disabled, for old people and other vulnerable sectors of the population, are still very much in the experimental stage. Standards have been suggested by the Ministry of Health, but there is as yet no comprehensive set of standards in operation.

While these 'practice premises' are purpose-built, by and large, for services supplied within the building, they also frequently function as headquarters for other welfare services to the local area. Functional interlinkages with hospitals (particularly in the outpatient department and sometimes through other supporting services), with schools (through child welfare, school health and training), with several other statutory bodies, tend to focus great interest to expanding such premises to serve as nodes around which comprehensive health and welfare planning at the local level could be organized.

B. RESIDENTIAL ACCOMMODATION

Local Health Authorities, Children’s Authorities, Housing and Welfare Authorities all provide residential accommodation for needy persons. A brief examination of the space standards used in planning such accommodation reveals a wide variety of attempts to tailor institutions to need. Homes and hostels of the elderly, homes and hostels for children, and homes and hostels for the mentally handicapped illustrate this type of spatial planning.

1. Old people's homes

A high proportion of places in the network of homes and hostels for the elderly at the inception of the National Health Service were inherited from the Poor Law and Public Assistance institutions of the nineteenth century. Many of them were large scale, institutional-style buildings separated from the community, with the emphasis on standards of shelter rather than comfort and little privacy. Since 1962,
Private hospitals were characterized in nodal points—usually in major cities—occupying prominent sites close to high class residential areas, whence came their staff, managerial personnel and revenues (Abel-Smith, 1964). To-day's teaching hospitals, direct heirs to some of these voluntary institutions, occupy these prominent central sites, although the processes of urban growth have rendered these central locations highly inflexible to-day, cramped for space and sometimes rather inaccessible. London's galaxy of teaching hospitals offers an illustrative example of this situation (Cowan, 1965).

Public hospitals constructed by local authorities during the nineteenth century were usually located close to population agglomerations or alternatively wherever cheap land was available for purchase by public authorities. Peter Cowan and his colleagues at the Joint Unit for Planning Research in London have discovered a strong spatial correlation between the location of public hospitals and the location of cemeteries, burial places, gasworks and other indices of low land values (Cowan and Nicholson, 1965-66).

In general these public hospitals, financed from public funds, were larger than private hospitals, which depended upon voluntary contributions. Public hospitals tended to avail of larger financial bases and thus tried to achieve economies of scale in larger institutions.

Mental hospitals, also administered by public authorities, were characterized located in open country beyond the urban fringe, spacious suburban sites often replacing inner-city asylums of an earlier period. Emphasis was placed on separating mental patients from the community, for security rather than social therapy. As land values increased around the urban fringe, and as space-demand of mental hospitals grew, they tended to move further away, or else to become inundated by the outward spread of urbanization (Poynter, 1964). The wars, and depressions of the twentieth century have occasioned a rapid rise in the overall volume of hospital construction, but since 1948 the major changes have occurred within the departments of a hospital. There has been a growing trend toward specialization and rationalization of the various hospital services, e.g. in the formation of 'hospital groups' in 1948 and an attempt to balance services among hospitals within a region (Ministry of Health, 1965b).

Planning standards for hospital construction during the 1948-68 period have usually been based on the need for beds, and the functional requirements of each particular specialty. An overall average of 3 acute beds per 1,000 population has been widely quoted, with specific ratios for different functions. The hospital plan for England and Wales (Ministry of Health, 1965b) set out the following standards:

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<th>Category</th>
<th>1962 England and Wales</th>
<th>1966 England and Wales</th>
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<tr>
<td>Acute beds</td>
<td>3.9</td>
<td>3.3</td>
</tr>
<tr>
<td>Maternity beds</td>
<td>0.58</td>
<td>0.58</td>
</tr>
<tr>
<td>Geriatric beds</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>Mental illness</td>
<td>3.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Mental abnormality</td>
<td>1.5</td>
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*Per thousand over 65 **Under review

A great deal of research and discussion on hospital planning occurred during the 'fifties and early 'sixties. For the first time questions of optimal size, functional design, and overall distribution of services were studied. The Nuffield Provincial Hospitals Trust (1955) devoted much time to research on the functions of major sections of a hospital, e.g. optimum size for wards, operating theatres, etc. By 1956, more capital became available for hospital development, and questions of space standards in building location and design researched by the Nuffield Foundation was later pursued by the Ministry of Health. The ten-year plans were based on a new conception of comprehensive health care to be provided by district general hospitals (600 to 800 beds) serving a population of 100 to 150,000 with most in-patient and out-patient services.

The latter idea was well articulated by Professor McKeeown (1965) who argued strongly in favour of maximum centralization of all medical services.

The hospital plan for England and Wales, and particularly the Hospital Plan for Scotland (Scottish Home and Health Dept., 1965) faced the issue of changing demographic conditions and changes in medical technology. They laid great emphasis on regional responsibility and the provision of one major teaching hospital in each region to cater for regional needs. The respective roles and responsibilities of central and regional authorities for design standards have not, however, been very clear. The Ministry of Health Building Notes were originally set forth as guidelines—not absolute maxima or minima—but difficulties arose sometimes if Regional Boards deviated from the 'suggested' standards. There seems to be a better modus vivendi now, and the Building Notes are revised periodically. They tend to concentrate on standards for general use, and extra space standards are worked out for specialized units.

Revision of the hospital plans (1965 for England and Wales, 1964 for Scotland) provided an opportunity to evaluate various attempts to rationalize and integrate health services. Population projections were revised but target dates for the closure of inefficient units had to be postponed because of steadily increasing demand. The concept of
district general hospitals was still basically retained, but the building of new hospitals would have to depend on availability of qualified staff, capacity of the construction industry and general economic priorities of the country. Psychiatric and geriatric services received some priority. Research into building design and optimal allocations of space within specific departments was strongly encouraged.

The issue facing many existing hospitals to-day is the choice between adaptation and specialization within the existing site (with an inevitable loss of certain functions), or transplantation to new sites. Changes in transport and communications have altered accessibility patterns; changes in medical technology and social attitude have altered the definitions and treatment of illness and thus altered our conceptions of optimal size for a hospital; changes in economic policy affect the overall proportion of capital investment; while legal and administrative issues arise regarding the respective roles of central and regional authorities in purchasing and developing land. It is thus impossible to define precisely the space standards which have been used in planning to-day’s hospital network; but there is some evidence of the way in which technical and social changes will affect such standards in future. We will attempt to discuss some of these processes below.

PART 2: CURRENTS OF CHANGE

Among factors likely to change the shape of health and welfare services one can observe influences on demand, e.g. demographic and social changes, and influences on supply, e.g. technological developments in medicine, building design and communications systems, and administrative changes within health and welfare authorities. The interplay of these two sets of influences will undoubtedly have profound implications for spatial planning. An effort will be made to describe them briefly under three major headings; (i) Demographic and other social changes affecting demand for health and welfare services; (ii) Technological development in medicine, architecture and communications which will demand changes in size and functions of health and welfare facilities; (iii) Administrative and spatial planning implications.

CHANGING DEMAND FOR HEALTH AND WELFARE SERVICES

The total population of England and Wales is expected to increase by just under 4 million (8 per cent) between 1968 and 1981. The child population (under 15 years of age) is expected to increase by 12 per cent, the population of working age to increase by 5 per cent, but that over retirement age by 13 per cent over the 15 years (Registrar-General, 1968).

Mortality rates show only minor overall fluctuations, but fertility rates have begun to decline since 1954. The 876,000 live births of 1964 fell to 821,000 in 1968, and there are substantial indications that this trend may continue.

These demographic trends suggest there will probably be an increased demand for services for the elderly, and clinics and nurseries and schools for children. As one official in the Department of Health and Social Security put it:

To-day the main problem is to care for the human being when he is most vulnerable—before and immediately after birth, in old age, or when mental illness supervenes. Between childhood and old age the need of the population is for hospital services which will provide for the early and rapid diagnosis, treatment and rehabilitation of individuals generally healthy but often suddenly afflicted by incapacity as often as not accidental rather than organic (Wilson, 1964).

Rising incomes, education levels and associated aspirations, coupled with increased mobility facilitated by modern transport and communications systems will also radically alter the demand for health and welfare services. There is, for example, some evidence that rising incomes and education levels are associated with a tendency to demand specialized kinds of medical service (Draper, 1968; Leach, 1970).

Population characteristics should be considered in any estimation of need for hospital services (Nuffield Foundation Research, 1955, and Feldstein, 1966). The analysis of socio-cultural influences on demand has been, of course, more obviously relevant in the American context, where universal access to health and welfare services is not possible. Attributes such as income, sex, age, race, housing and education for instance, have been seen to influence demand for medical care (Rosenthal, 1964). While variations in income per se may not assume quite as much significance in a society where health and welfare services are provided free, variations in lifestyle, values and behaviour associated with income differences should be considered in any assessment of demand.

Physical accessibility to health and welfare facilities remains a universally important factor influencing demand (Shannon, 1969). Accessibility to hospitals has characteristically been considered in terms of aggregate regional demand (Forsythe and Logan, 1960; Januard and Lecheve, 1964; Godlund, 1961). But this perspective tends to ignore or minimize the importance of intra-regional variations in population density, and differences in potential accessibility to service points. Through certain secular trends of social change too, a distinction seems to be emerging between ordinary day-to-day medical and welfare needs of families and more specialized types of treatment. It would appear, then, that demand for a twofold set of health and welfare provision is emerging: a basic network of widely-dispersed service centres offering a standard range of universally-needed functions; and a more sparsely-dispersed network of specialized functions to serve
occasional needs. The division of labour between local and remote centres should obviously reflect changes in medical practice and technology; but again certain demographic and social changes will also affect the demand for both kinds of service.

Changes in the type of medical ‘case’ will affect the allocation of functions between hospitals (Nuffield Provincial Hospitals Trust, 1960; McKeeown, 1965). Changes in the definition and recommended treatment of mental subnormality and mental illness means a drastic reduction in the numbers of hospital beds needed for mental cases, but a corresponding increase in community provision for rehabilitation and therapy (Freeman and Farndale, 1963; Tiward, 1964). As income levels rise, some of the present health and welfare problems associated with poverty may tend to disappear. Others, however, may emerge or reappear, e.g. those associated with high standards of living like obesity, digestive disorders and cancer. Research into the causes of health and welfare ‘cases’ has, in fact, substantiated the connection between standards of living and medical problems especially in the case of old people (Townsend, 1962). It has long been public policy to keep old people out of hospitals wherever possible, and even the desirability of old people’s homes has long been questioned. In recent years, thus, there appears to be a growing awareness that integration into a community is equally as important for the elderly, especially the elderly infirm, as luxurious space standards for physical accommodation (Townsend and Wedderburn, 1965; Sumner and Smith, 1969).

The case of the elderly illustrates the close connection between social services and policies for housing and income maintenance. As housing shortages are gradually solved and a general increase in incomes becomes possible, the demands for welfare assistance which have been stimulated by bad accommodation or lack of accommodation may decrease (Paige and Jones, 1966).

To sum up briefly, then, changes in population structure, density and distribution, coupled with rising income, educational and aspiration level, have altered the demand for health and welfare services. Increased population mobility may tend to cause a standardization of demand at least with regard to accessibility, quality and range of basic services (Griffith, 1960). Changes in the definition and treatment of medical and welfare ‘cases’ suggest a redefinition and reallocation of functions between hospitals and non-hospital based branches of the services. Changes in social attitudes toward the elderly and mentally handicapped raise fundamental questions regarding current practices. Finally, increased mobility and changing life styles may bring about a demand for radical reordering of the present system, as well as the need for feasibility of greater consumer participation in the planning of health and welfare services.

B. TECHNOLOGICAL DEVELOPMENTS AFFECTING SUPPLY OF HEALTH AND WELFARE FACILITIES

1. Reorientations in welfare provision

Increasingly sophisticated research during the past 20 years has greatly affected the productivity of resources allocated to the social services. Changes in the definitions of illness, in its diagnosis and treatment, for example, have radically altered the space requirements of various hospital departments. Leaving aside for the moment the whole area of manpower shortages, land availability and financial constraints, the focus here will rest primarily on the technical, architectural and social forces affecting supply of health and welfare services.

The early 1960’s witnessed a considerable amount of public dissatisfaction with the rather inefficient and fragmented array of the welfare services. Consumer organizations such as the Patient’s Association, the National Association for Welfare of Children in Hospital and other articulated complaints about the inadequacies of provision for aged, disabled and young children. It became increasingly obvious how scattered and inadequate the efforts to implement the 1948 National Assistance Act had been. The revised Health and Welfare Plan (Ministry of Health and Social Security, 1963) suggested that more co-ordination with hospitals and general practitioner services be sought. The Local Government Grants (Social Needs) and Mental Health Acts (1960) represented substantial progress in the direction of a more integrated system. Revisions of the 1963 proposals were comprehensive and exhaustive, but specific steps toward a national integration of welfare services were not taken until the appearance of the Seebohm Committee Report (Home Office 1968), whose central recommendations have become incorporated in the Local Authority Social Services Act (1970) for England and Wales, and the Social Work (Scotland) Act (1969). Greater emphasis is placed on prevention of social need, rather than on programming the response to need. Family stability and cohesion is regarded as one social ideal, and methods of welfare provision should respect this principle as far as possible. Coupled with this is the effort to integrate all welfare services, particularly children’s services, under one department to be named Social Service Departments which would unify and integrate the various welfare services now being provided by Housing, Children’s Welfare, Education and other statutory bodies. The crucial advantage here could be the ‘one door’ to which people could come seeking help.

While streamlining the organizational efficiency of all welfare services, these proposals would also probably lend weight to the argument for community care centres, decentralized as far as is administratively feasible, so as to provide maximum accessibility to population. However, this unified social service department may lead to a sharper division between local authority health and welfare
Second Green Paper (1970) would emphasize this national separation, which runs somewhat counter to the movement toward integration and co-ordination. Further clarification on the nature of the relationship between health, welfare and other local authority functions is still needed. From the spatial point of view, however, it will probably make little difference in that physical provision for practice premises will probably remain the same, norms and design standards for residential accommodation will probably continue to benefit from administrative co-ordination, and headquarters for the other types of welfare service will tend to be located at or close to community centres.

2. Advances in medicine

The twentieth century has produced a wide range of preventive drugs, new tools for diagnosis and treatment of illness, and new procedures for recuperation and convalescence. Increased specialization has demanded more differentiation in the functional organization of space. Research into the functional sub-units of a hospital complex, for example, has demonstrated clearly the advantages of specialization, and in most cases, criteria to determine the optimum size of such sub-units have been calculated (Weston, 1963). Recent efforts have been directed to the designation of standard-size units, which could be fitted together in various combinations for any hospital complex.

These factors have suggested radical changes in the locational pattern of health and welfare services. Dramatic changes will also occur within the hospital. The functions of outpatient departments, for example, will depend on how much care or will be offered at local authority health centres. This in turn will depend on the location of large-scale diagnostic facilities. If X-ray and other expensive facilities are available only at hospitals, then outpatient departments will probably expand; if, however, they are provided at local community centres, then the functions of outpatient departments will have to be revised. This raises the question of cost and manpower availability. There is some evidence that availability of diagnostic facilities at community clinics does not lessen the demand for outpatient departments; it alters somewhat, in that patients are referred there at a later stage of treatment. Various arguments have been raised to justify the location of health centres at hospital sites, so general practitioners could avail themselves of the widest possible range of supporting expertise and technical equipment. A counter argument comes from the consumer’s side: centralisation of facilities would mean longer travel distances and inaccessibility.

The definition and functions of inpatient departments have also changed with technological advance. Modern methods permit more intensive use of beds through faster turnover rates especially in maternity and mental cases (Freeman and Farndale, 1969). Early ambulation of surgical cases increases the demand for circulation space, day room and toilet facilities for convalescents. Experience has also suggested that the traditional separation of geriatric cases and chronic sick from the acute sick may no longer be desirable. However, the combination of short-term and long-term facilities on the same site may occasion serious functional difficulties.

3. Architectural design and functional organization

A related series of technological developments have occurred in the design and functional organization of buildings. Advancement of research in medicine and communications have been paralleled—and often stimulated—by progress in building design techniques. This is particularly true in the hospital field—by far the largest land user among health and welfare plants. This is partly explainable in terms of the great emphasis placed on hospitals as the core of health services and the consequent volume of capital expenditure allocated to hospital construction in the 1960s (Ministry of Health, 1966). Other health service facilities have no doubt been rather neglected because of this policy, but at least certain fundamental design and operational standards have been discovered and some of these may even be applicable eventually in the planning of health and/or community centres.

The multi-disciplinary research effort sponsored by Nuffield Foundation in the mid-fifties, produced innovative designs like the famous ‘Nuffield’ wards, the diagnostic centre at Corby, and the geriatric hospital at Oxford, and also innovative operational ideas like early ambulation and team nursing. (Nuffield Provincial Hospital Trust, 1960; Scher, 1967). Attempts were made to discover the optimal size, physical lay-out and technical provision for each hospital department. Overall considerations of hospital size were based on scale economies, administrative complexity, and service area; but the internal functional organization of its various component departments was characteristically studied in terms of bed-population ratios for specific services. During the sixties and early ‘seventies a more dynamic approach was used as techniques and concepts of Operations Research were applied to the analysis of medical services (Flagle, 1964; Bailey, 1953; Souder, 1964).

Relationships between overall shape, size, use and cost of buildings is another important consideration. Shape affects the overall ratio of enclosing wall space to floor area, which provides a means of testing the alternative costs of various hospital designs, e.g. the relative ‘compactness’ of alternative shapes.

The Hospital Plan for England and Wales (Ministry of Health, 1966) placed hospitals again at the centre of a comprehensive health service—the acute comprehensive ‘district general hospital’ being proposed as the basic operational unit of the service. A national network of district general hospitals, located so as to serve populations of 150,000 to 200,000 and large enough to provide a basic range of diagnostic, treatment and rehabilitation facilities, including psychiatric and geriatric accommodation, was envisaged (Atkinson and
yield lower overheads and maximum accessibility to ‘consumer’ plants. Calculations have also been made regarding the scale economies appropriate for each of these activities (Wilson and Maclachlan, 1968). Eventually, it appears quite probable that other services like Blood Transfusion services, radiography and ambulance services could be operated from a system of supporting service centres. In Northeast Scotland, for example, a postal service has been established which provides routine laboratory services (blood testing and other diagnostic functions) for general practitioners in their various local clinics.

There are, of course, several counter arguments in favour of maintaining service activities on hospital sites. The need for year-round supply lines, for example, which may never become a serious problem in the large conurbations because of easy delivery, but may become a serious problem in rural areas. If located separately from the hospital plant, too, employees in service activities may lose their sense of identity with and loyalty to the hospital endeavour, and delivery may be disrupted by strikes and poor workmanship. The psychological consequences of being physically removed from the hospital site may be more serious than any cost advantages gained by centralization. Actually, the size thresholds for scale economies cited by Wilson and Maclachlan need empirical verification.

At any rate, Wilson and Maclachlan’s proposals could provide an interesting and at least partially feasible idea to alter the functional and space requirements of hospitals in the future.

C. ADMINISTRATIVE AND SPATIAL PLANNING IMPLICATIONS

The first and most obvious implication of all these influences is the drive toward efficiency. The direction which this takes depends, of course, on whether efficiency is defined in economic/technological terms, or in social/community terms. Stated very simplistically the former would seem to demand centralization of activities in very large functional complexes providing the widest possible range of services; the latter would argue for decentralization of health and welfare services to the community level—the classic dialectic of scale economies versus social accessibility. Most of the academic discussion this far has tended to focus on technological and economic considerations within the context of financial and manpower shortages, hence the minimum cost argument will tend to dominate planning decisions in the short term. Small hospitals may tend to disappear except in areas where strong traditional feelings, social accessibility (e.g. in small centres for chronic sick), and other local feelings would seem to justify the retention of the ‘cottage’ type hospital. A strong case can be made for maintaining small hospitals, and experience so often contradicts traditionally held views regarding the economic advantages of large-scale hospital
operations. The small hospital will remain for a time, if not for social reasons, then for economic ones—capital is simply not available at the moment to supply the country with a network of specialized district general hospitals. Substantial scale economies are obtainable in hospitals of small/medium size, e.g. 200-400 beds, and above 800, the added labour and administration costs outweigh the advantages (Morrill, 1970). Given the current trends, the main direction which space-standards for health and welfare plant assume, at least from the hospital point of view, could be summarized as follows:

(i) dimensional co-ordination and unit standardization within hospital buildings;
(ii) increased specialization which almost inevitably raises the space requirements of each functional unit within the hospital;
(iii) hospital sites will be chosen in suburban, yet accessible locations wherever possible, and the degree of functional centralization will depend on communications technology and the evolution of a rational management structure.

On the community level, more co-ordination and integration of health and welfare provision will tend to develop. There seems to be a growing consensus on the need for and feasibility of multi-purpose community centres, providing all the basic health and welfare services to populations of 10,000 to 15,000. The size and functional complexity of such community centres should of course be based on the population being served, and the pilot schemes pioneered in the West Riding of Yorkshire given some guidance on the range of facilities which could be provided at centres of different sizes. Administrative reorganization and the unification of currently diffuse welfare activities should lead to research into the spatial requirements of residential accommodation and training centres, hostels and social clubs, a field which has scarcely been explored, except in very spasmodic ways.

Perhaps the most important implication for planners is the need for research, preferably on a team basis, involving representatives from medicine, architecture, sociology, economics and communications on the one hand, and representatives from the various statutory bodies concerned on the other. This should be directed toward (i) designing multi-purpose facilities for community health and welfare, and (ii) monitoring the progress of such centres for a reasonable period of time.

Part 3: Exploring the Future Shape of Health and Welfare Services

A. Introduction

In the light of the various currents of change discussed above it is clear that no uniform or standard formula for the future spatial organization of health and welfare facilities can be defined. The future of each component activity will tend to seek its own optimal shape, but the variety of optimal operational scales seems to defy any attempt to define a unified general vision of the future spatial organisation. What does emerge, however, is a series of organizational modes, or styles of thinking on the future network of physical plants, and each of these modes dictates certain planning implications. In this section, an attempt will be made to describe some of these modes, specifying in each case what the related implications for spatial organization would be.

Regardless of organizational mode, however, there are certain general trends which will inevitably influence spatial planning. These could be summarized as follows:

(i) For a variety of social, economic and political reasons, one can expect a growing need for integration in the physical provision of health and welfare facilities, particularly in New Towns and redevelopment areas.
(ii) Technological developments in medicine, architecture and communication will alter the internal functional organization both of health and welfare services, and will also affect criteria determining consumer access.
(iii) There seems to be a need for design experimentation in the future. Since the Ministry does not have its own industrialized building system, efforts to arrive at standard dimensions of a basic 'module' have appeared particularly important. Recent medical advances have so changed the nature of space demands that the future design for hospitals will have to allow for flexibility and adaptability, both as to overall size and internal functional organization of its various sub-units.
(iv) While each component of the health and welfare service may tend to seek its own optimal spatial anatomy, only a well co-ordinated research and experimentation effort can yield a clearer idea of compatible (or potentially rotating) space uses. Thus the challenge of medical and welfare planning will inevitably converge with the traditional dilemmas of the town and regional planner.
(v) This raises the question of decision-making and the division of labour between central and regional authorities. Regardless of administrative changes implicit in the forthcoming reform of Local Government, there will be a growing need for collaboration between physical planning and medical and welfare planning. The planner could play a catalyst role in demanding a regional-scale management structure within which the various movements toward integration—between health and welfare, and among the various statutory and voluntary agencies involved in welfare—could be co-ordinated.
B. TOWARDS A REGIONAL PLAN FOR HEALTH AND WELFARE

Developments in the organization of medical and welfare services in several countries all point to the need for comprehensive area planning. In Britain the Nuffield Provincial Hospitals Trust research has provided methodological and operational guidelines for establishing such area planning.

It would appear that preliminary research for such comprehensive regional planning should explore factors comprising and influencing demand and supply of health and welfare services. Such factors might include:

On the demand side:
- Population:
  - numbers, distribution, densities
  - age/sex structure
  - birth and death rates, morbidity
  - mobility and migration patterns
- Social characteristics:
  - income
  - occupations
  - education (and aspiration)
  - family type (divorce rates, etc.)
  - ethnic composition
  - criminality patterns
- Technological characteristics etc.:
  - car ownership
  - adequacy of transportation and other communications facilities
  - adequacy of pharmaceutical and other minor health and welfare aids (e.g. voluntary organizations)
- Satisfactions:
  - evaluative studies on consumer reactions to existing facilities

On the supply side
- Economic:
  - overall capital budget, costings and investment distribution
- Administrative:
  - interplay of central and regional authorities in provision of services
- Space:
  - land availability
- Organization:
  - functional division of labour within health and welfare services
  - spatial organization of facilities

This check list cannot by any means be considered exhaustive; it merely points to relevant categories of research. Decisions on several supply considerations are not tall under the statutory domain either of physical or medical and welfare planners; they result from national economic priorities for investment and development policies. There are some considerations, however, which cannot conceivably be researched without collaborative effort between physical and social planners at the regional level. These are questions regarding:

(a) the physical division of labour among health and welfare facilities; and
(b) principles governing the location, siting, and functional design of such facilities.

An illustration of topics which could feasibly be explored by the combined expertise of physical planners and social scientists might be:

(i) Location of hospitals; (ii) Size of hospital plant; and (iii) On-site organization of space within the hospital plant.

(iv) Hospital location. Many of the central city sites are no longer optimal for hospital location. Whereas the administrative organization of all health services has been co-ordinated, the spatial distribution of hospitals still remains scattered, and the sale and purchase of land presents legal and economic complications. The alternatives reduce themselves to (i) re-location outside cities wherever land is available in suitable amounts; (ii) 'branches' developed and decentralization of certain functions; (iii) intensive redevelopment on site; (iv) extensive redevelopment on site.

(ii) Hospital size. In 1965 over half the non-mental hospitals in Britain had less than 300 beds. By 1975, if the Hospital Plan (Ministry of Health, 1965b) is achieved, the average number of beds will be 205.

The lower limit for hospital size could be defined in terms of the minimal range of essential services, i.e. the lowest point should coincide with the size economies of its lowest ranking-service, e.g. paeidiatrics or obstetrics, which in McKean's view would demand at least 100-200 beds. This threshold would be higher in a comprehensive district general hospital than it would be in a specialized hospital.

Upper limits cannot be defined in terms of operational efficiency alone, however. Problems of spiralling costs, administrative complexity and even physical appearance occur; and from the social-psychological side, questions of depersonalized institutionalism also enter. In each case, size should be established in relation to the particular kind of medical care, distance from consumer population, and other social considerations. The American experience suggests that 1,500 beds should be a maximum upper limit, the diseconomies of scale tending to increase thereafter (Morrill and de Visé, 1970).

(iii) Site planning. The problem of allocating space to various functions within a hospital site has been approached by considering either (a) the optimal functional organization for one class of patient; or (b) functional linkages between different parts of a hospital complex (Weston, 1963).

Some of the relevant avenues of joint research might be how best to distribute population over the site so that proper densities could be reached in each section; how to establish communications networks so
that related patterns of medical care could be linked to growth change and obsolescence of buildings; what is the relationship between size, shape and functions of hospital buildings.

C. PROPOSED MODES OF ORGANIZATION

Recent styles of thought by research workers in medicine and architecture regarding the future anatomy of health and welfare plants provide a good basis for joint deliberation. The three general styles discussed briefly here offer an eclectic sample rather than an exhaustive picture of current thinking. They will be presented here as three organizational modes, each of which has its own particular spatial anatomy.

1. Mode A: Toward maximum centralization

The ever-growing demand for medical and welfare services and the constant shortage of manpower and capital all point to the need for efficiency and cost-reducing techniques. There is substantial evidence from urban geography, economics and transportation studies that efficiency can be increased and costs reduced if complementary activities can be co-ordinated (and if possible integrated) spatially. Advantages of external economies are gained by each activity, and cumulative advantages of easy feedback and interaction accrue to the whole complex. Advantages of agglomeration continue up to the point where diseconomies arising from congestion and overloading of communications channels occur. Hence maxima and minima thresholds for each specific activity as well as for complexes of activities could be determined so optimal operational levels could be achieved. These principles worked out previously and applied to the planning of industrial estates and shopping centres were applied to medical planning by Professor McKeown (1965), and the Ministry of Health's Hospital Plan in the early 'sixties (Ministry of Health, 1966b). Basically, an effort was made to devise a system of spatial and functional organization for health services which would correct the inefficiencies of the traditional fragmented pattern. Analogous thinking was applied to welfare facilities in the Seebohm Committee report (Home Office, 1968). With few exceptions, however, there has been little attempt to translate such functional reorganizations of welfare facilities into spatial terms. In the interest of brevity, thus, the discussion of this 'mode' will focus on the McKeown proposals for hospital location, and the overall nexus of health plant in the future. McKeown claimed that the splintered evolution of health services in Britain had yielded (i) separation of the major classes of hospitals; (ii) separate organization of general practice; and (iii) divorce of preventive from curative medicine. There is much evidence to-day that various kinds of hospital treatment are both medically and clinically interdependent and functional separations often cause inefficiency. The evolution of general medical practice has shown also the need for closer links between hospital outpatient departments and general medical clinics, between general and specialized medical services. Services offered by local health authorities which at the beginning of the century were closely linked with environmental and preventive medicine and thus somewhat separated from treatment services, have now changed both as to quality and range of services. Socially and medically, it would appear most feasible to link preventive and treatment services at the local authority level, preferably in conjunction with hospital and general practitioner services.

It would thus appear that from the supply side at least great benefit could be gained from maximum centralization of physical facilities. McKeown proposed the creation of giant District General Hospitals of around 1,500-2,000 beds, offering the full range of general medical and surgical facilities for psychiatry, geriatrics, pediatrics and obstetrics. Certain hospitals could provide in addition some specialized services for chronic sick; others could have highly specialized radiotherapy and other facilities to serve several other hospitals. Each District General Hospital should serve a population of from 100,000 to 200,000—a city of 1,000,000 might have five such general hospitals, with specialties distributed among them.

Arguments for retaining the small hospitals are rejected in these schemes, and 300 beds are set as the lowest limit tolerable given the present levels of medical technology. Upper limits cannot be determined in terms of costs, or efficiency considerations, he claimed. On the grounds of growing administrative complexity, however, he suggests a maximum threshold of 1,500 to 2,000 beds. American and Russian experience, however, shows that scaling down these thresholds may ultimately yield a more efficient size. A hospital with 200-250 beds can operate quite economically, and hospitals with more than 1,000 beds may become excessively costly and functionally inefficient. The crucial point is neither (a) construction costs nor (b) 'through-put' of particular functions but rather running (inc. labour) costs, and complexities or administration. Thus on purely economic/efficiency grounds the McKeown size thresholds appear open to question. On social/psychological grounds, furthermore, the possibility of capturing the 'human scale' for patients and staff in a very large hospital is surely less likely than it would be in a smaller one.

The most valuable, and most carefully articulated component of the 'centralization mode' was McKeown's suggestion for the Balanced Teaching Hospital. The narrow range of medical specialties available at our present teaching hospitals or rather the orientation toward exceptional rather than common cases, tended, in McKeown's view, to give students a biased idea of medicine by denying them access to representative populations. The Balanced Teaching Hospital should be made responsible for providing all institutional services within a given region large enough to include as many different kinds of medical 'cases' as possible.
McKown (1965) sees the problem with reg to local health authority services as a threefold challenge: (i) the need for a new basis for administration and (ii) the need for greater attention to environmental and preventive measures like pollution control and food hygiene, and (iii) the need to co-ordinate treatment and preventive measures. The personal approach should be maintained, but since the demand for treatment seems infinite, more emphasis should be placed upon prevention.

To sum up, then, the 'maximum centralization' mode of thinking current during the early 'sixties and permeating health planning literature up to the Green Papers would argue for large-scale-widely spaced general hospitals which would also provide foci for community services of local authorities and general practitioners. Whether and where sites might be available for complexes of this scale remains an open and difficult question. Even if sites were available, the formula is perhaps best suited to high-density locations like Birmingham, Manchester or London where physical accessibility would not be a problem. It would probably not suit regions with low population densities or cities which have a considerable number of inherited plants. The current trend toward medical care for the community would appear to run counter to the argument for centralization.

2. Mode B: Toward maximum accessibility

While the first mode treated the hospital complex as a hub around which all health facilities should revolve, and indeed this arrangement corresponds quite accurately to official policy during the past decade, there is some doubt about the feasibility of such organization (Draper, 1969). It contradicts, for example, another emerging principle of medical service, viz. that services should as far as possible be community-based (Ministry of Health, 1966a). The concentration of diagnostic facilities at hospitals may not be at all necessary given the reality or possibility of computerized diagnostic and therapeutic facilities. There is little evidence also that facilities for in-patient and out-patient cases should be necessarily located at the same plant; there is also a serious questioning about whether hospital supporting services should be hospital-based (Forsyth and Logan, 1958).

One of the most articulate cases for an alternative organization of health facilities has been made by Peter Draper and Howard Goodman (1967). Basically a case is made for a threefold categorization of health services into (a) in-patient units for acute, chronic and other 'hospital' cases; (b) community care centres with a full range of basic ('primary') medical, nursing and related care; and (c) service units. In-patient units should cater for cases where hospitalization is really essential, e.g. for surgery and long-term treatment of physical and mental illness. Community Care Units would combine the services currently provided at health centres, local practice premises and out-patient departments, each serving a population of 25,000 to 50,000. Service units should provide laundry, food and sterile supplies to a large number of in-patient and Community Care Units. This threefold functional organization of health services has the added benefit of providing avenues for co-ordination with welfare services. They could for example, correspond ideally with the domain of responsibility of a 'Seebohm' type social service department.

Such an arrangement of services could be described as an 'interlocked complex of specialized units' arranged to optimize consumer access and maximize co-ordination within the service. In-patient units would accommodate all the essentially 'hospital' cases. But the 'hub' of this system would undoubtedly be the Community Care Units, which would incorporate the present functions of outpatient departments plus the personal social services of local authorities, and pioneer in new forms of relevant community-oriented services. Linkages within this 'interlocked complex' could take various modes, depending on communications technology. The Community Care Units should ideally maintain links with homes and hostels for the physically and mentally handicapped.

In terms of accessibility, Community Care Units might necessitate a longer trip to general practitioners than before. However, access to specialist opinion or to X-ray facilities should be easier. There is, thus, a strong case for locating a Community Care Unit close to transport termini, car parks, public libraries and other urban facilities. The Community Care Unit should then presumably take on a 'shopping centre' appearance, where people could find several services within easy access to one another. In fact, location at a Shopping Centre may be entirely feasible in New Towns and suburban estates.

Such multi-service centres should thus provide a powerful force toward co-ordination within health and welfare services. They could bridge the gulf between general practitioners and specialists, improve standards of prevention and care and also remove some of the load from expensive in-patient units. If staffed by health teams (comprising general practitioners, Public Health nurses, social workers and receptionists), visiting specialists, radiographers, physiotherapists and laboratory technicians, they could in one sense constitute a McKown (1965) type of 'primary care organization'. If they coincide spatially with the domain of a Seebohm style 'Social Services Area Office', then the social worker attachments could be dispensed with. The size threshold suggested—25,000 to 50,000—should not, of course be taken as a rigid formula. In rural areas, for example, perhaps the lower limit should be set at 15,000. In view of personnel shortages, however, this limit may have to be raised in order to justify a fully-manned social work department as recommended in Seebohm.

Mode B reorganization of health and welfare facilities may sound rather innovative but there are actual examples of schemes which approach its recommendations. Health centres at Witney and Hythe Heath exemplify Community Care Units of a kind. Livingstone New
Town has arranged combination of acute in-patient units with health centre which resembles in many ways a Community Care Unit as described by Draper.

3. Mode C: Toward a middle-range eclectic approach

Modes A and B have been discussed in rather polarized terms so that the distinctiveness of their separate approaches could be highlighted. While one has sought to optimize functional efficiency, the other has emphasized the merits of decentralization and consumer access. It is conceivable that some of the merits of both formulae could be extracted and applied in some middle-range organizational design for existing British needs. This is precisely the stated aim of the celebrated 'Best-Buy' hospital, currently being launched by the Ministry of Health and Social Security in twin projects at Bury St. Edmunds in Suffolk and at Frimley in Hampshire (Ministry of Health, 1968). These projects endeavour to secure maximum economy in planning and design, by adapting the District General Hospital ideas to fit different environments and to avail of the latest technological developments in medicine and building procedures.

A fundamental premise of the 'best-buy' scheme is that community-based medical care should play a maximum role in the total health care of a region. The number of patients admitted to hospital should be carefully screened, and the duration of stay reduced to a minimum by arranging with local community facilities for after-care treatment of patients. Under these circumstances, it is calculated that 2 beds per thousand should be sufficient instead of the traditional 5 per thousand. The hospital should provide acute medical, acute surgical and maternity facilities, plus a small number of assessment beds for geriatric and psychiatric cases, but none of the large regional specialities like neurosurgery equipment. It would thus be a District General Hospital of 'modest' proportions—with 550 beds—serving a population of 175 to 180,000. But it would demand a reorganization of community health services along the lines proposed in mode B. It would call for time—and cost-saving programming techniques in the admission and treatment of patients and a well-co-ordinated referral system to maximize the utility of community-based health services.

The 'best-buy' hospital would still occupy a nodal role in the overall pattern of health care. Supporting services would be located on the hospital site, even if in a separate building. Arrangements for the multi-use of space on the site would involve rotating ward uses, X-ray and lab facilities would be used more intensively, and related functions could use the same space at different times.

There is also an effort to reduce the overall space needed in various departments. The Ministry claims that a 'best-buy' hospital will cost only 60 per cent of the cost of a District General Hospital of similar size. Bury St. Edmunds is located in a sparsely-populated region and thus its catchment area is necessarily different (radius approximately 25 miles) from the catchment area of an urban District General Hospital, which might conceivably service a population of 250,000 with 800 beds. Overly at least, thus, an attempt is made to integrate some of the accessibility arguments of Mode B with the advantages of decentralization which are associated in the district General Hospital idea. It is essentially an experiment in adapting the District General Hospital idea to different demographic and social milieux.

'Best-Buy' could thus be considered as an attempt to incorporate some of the best aspects of Modes A and B, to avail of the latest developments in medical practice and building technology, while always remaining true to the official goals of cost-minimization and the quest for standardization. This Mode has already entered the experimental phase. It does not, however, provide solutions for some of the most critical problems facing the physical planner. Being hospital-based, it fails to offer guidelines regarding optimal patterns of communication among the various branches of the health service. It could occasion an overloading of these other branches, somewhat like acute hospitals did in the nineteenth century. More information and experimentation is needed on the non-hospital based sectors of health services.

What seems to emerge, then, from current planning thoughts regarding the spatial organization of health and welfare facilities?

First, there obviously is need for an integrated national system of spatial provision. This does not imply or argue for a system of standardized components, however cost-saving and efficient such a scheme might appear. It demands, rather, a rational allocation of specialized functions to functionally viable spatial clusters at operational scales suitable for the client population. The administrative separation of functions currently defined for health and welfare should not necessarily cause or justify a continuation of their present physical separation in space. In fact, innovative pilot schemes designed jointly by physical and social planners could yield useful insights into the optimal administrative and functional organization of the services as a whole.

What size and what kind of distribution seems feasible for such spatial clusters of linked functions? From experience and from the literature in various cultural contexts, it appears that four general levels of provision should satisfy the requirements of any national system:

1. At the community level (5,000-25,000 population): Health centres and/or group practices of general practitioners providing the basic services of primary medical care as defined by McKee/McCrae. At this level also, most of the ordinary welfare functions administered under the unified social service departments should be available. Some may be combined in the same physical plant as health services; others may be separated functionally, but hold headquarters offices at community centres. The size and
functional complexity of such clusters of amenity services should depend on the needs of the community, the structure, distribution, density and mobility of the population.

(2) At the Sub-Regional level (30,000 to 60,000 population): General Hospitals (100 to 300 beds) catering for all the frequent kinds of hospital care including psychiatric and out-patient facilities. The actual division of labour between hospital outpatient departments and local health clinics (or 'day hospitals') will reflect local social and technological conditions. Such small-scale hospitals should be reasonably inexpensive to construct and to run, and would ensure maximum feasible accessibility to client populations.

(3) At the Regional Level (200,000 to 400,000 population) District General Hospitals (300 to 1,000 beds) offering all usual medical specialities and also including acute in-patient services.

(4) On a national scale, several strategically-located district general hospitals (700 to 1,200 beds) serving populations of over 1,000,000 with research and teaching functions and offering specialized regional services which need a very large population support.

These are some of the organizational modes which emerge from current writing and experimentation on health and welfare facilities. It is highly improbable that any single mode could provide a tailor-made solution for any particular region; rather elements from all of them might be selected and creatively combined to meet the resources and needs of specific areas.

**PART 4: CONCLUSION**

In this chapter an attempt has been made to describe the physical organization of health and welfare services in Britain and to explore certain forces which appear to be guiding future changes in this field. An effort has been made to sketch the spatial anatomy of these services and the rationale underlying their present distribution and spatial organization. Various forces—social economic and technological—which appear to be currently causing changes in both demand and supply of these services were then examined in some detail, and various efforts geared to accommodate these changes were briefly sketched.

To treat health and welfare facilities within the same conceptual framework may appear to be a questionable procedure. Viewed functionally, each component of the health service, and indeed each activity of the welfare services, could be seen to operate within a framework of unique forces; administratively, too, the distinctions between health and welfare services appear to become even more marked as specialization and technological sophistication in each activity progresses. Ideally, then, each function should be analysed in terms of the appropriate spatial organization which would facilitate its operational efficiency, i.e. in terms of the optimal scale economics and externalities proper to each function. Given a nationalized system of health and welfare provision, indeed primary emphasis on the efficiency of supply facilities would seem justifiable. Efficiency of provision, however, inevitably involves considerations of demand; regardless of how operationally-streamlined a function seems, it remains inefficient if it is inaccessible to the consumer.

Given certain enduring constraints of land supply, financial and manpower resources and others, it appears more feasible to explore the possibility of designing viable spatial clusters of complementary or linked services rather than the optimal spatial anatomy of particular functions.

An enduring theme which appears to permeate the discussion is the classic dialectic of scale economics versus social accessibility. Theoretical arguments are constantly being raised regarding the presumed advantages of increasing scale in the operation of various service functions. A countervailing set of arguments arise from the consumer’s side: to optimize accessibility to the client population one needs to establish size thresholds of these services. Various theoretical plans for resolving or containing this tension have been drafted; various empirical experiences have yielded qualifications on these plans. This is where knowledge of research and experimentation in other countries appears particularly enlightening. Evidence from the United States and Russia, for example, tends to contradict several theoretical propositions about scale economies, particularly in the case of hospitals. Planning thought on the physical organization of health and welfare facilities in Britain, continues to range all the way from maximum centralization to maximum decentralization. Efforts at achieving a compromise style of spatial organization leave several questions unanswered, particularly questions regarding the functional and spatial compatibility of health and welfare services.

From the physical planner’s viewpoint, one of the most satisfactory perspectives on the question might be to consider physical provision in terms of Central Place Theory. This would involve a national system of hierarchically-linked clusters of spatially-compatible activities. Levels of the hierarchy could presumably correspond with the currently proposed structure of the National Health Service, viz. a top-level corresponding to Ministerial (national) decision-making; then a level corresponding with Regional Health Committees, a third level corresponding with Area Health Authorities and finally a ‘community’ level corresponding with District Committees and Social Service Departments.

Such a co-ordinated approach should ensure a rational overall distribution of facilities, avoiding overlap and inconsistencies within the general network. Basically, then, an agreed national system of health
and welfare provision jointly prepared by physical and social planners, should contain within it:

1. A Regional-level system covering populations of 200,000 to 1,000,000, each of which should presumably have a major teaching hospital with the highest-ranking types of medical speciality and a network of District General Hospitals serving the domains of its component Area Health Authorities.

2. A Community-level system of provision to be prepared jointly with Welfare Authorities and District Health Committees.

Why should the town and the region be needed in such planning? What unique insights does he have to bring such a joint endeavour? Among the many potential advantages of combined perspectives of physical and social planners, two appear particularly important at the present time:

1. Insights and information on the optimal spatial distribution of service plants which would constitute a functionally and spatially-integrated system of provision. Such a system should form a ranked hierarchy of service clusters designed to meet specific needs of consumer populations and facilitate the operational efficiency of each function.

2. Methods for co-ordinating health and welfare facilities with other types of community service, e.g. recreational, educational, commercial and other kinds of provision. Such an approach appears highly important in the planning of residential areas, particularly within metropolitan regions where effort to rationalize the use of space is needed.

Finally, health and welfare provide yet another illustration of the emerging need characterizing planning at all levels, viz. the need to combine functional and spatial perspectives in the analysis and prediction of space use. In order to understand and treat the system as a whole, one cannot consider its anatomy without a clear understanding of its physiology.

REFERENCES


Thompson, J. B. et al. (1966). How queuing theory works for the hospital. Modern Hospital, 94: 72–75.