



Previous publications in this series:
Progress Against Tuberculosis 2s. 0d.
The Lives of Our Children: a Study in Childhood Mortality . . . 2s. 0d.

This document is sent without charge to selected readers.

Additional copies 2s. 0d.

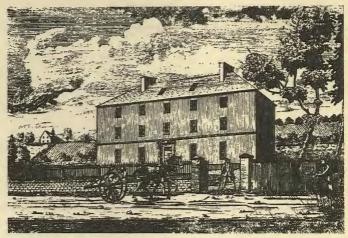
© 1963 Office of Health Economics

# Hospital Costs in Perspective

Third in a series of papers on current health problems published, in February 1963, by O.H.E.

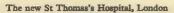


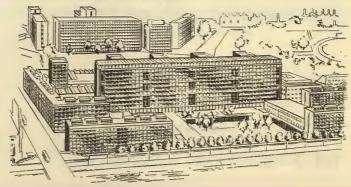
Office of Health Economics 195 Knightsbridge, London, S.W.7



Dumfries Infirmary, 1779

One hundred years ago the present St Thomas's Hospital cost approximately £650 per bed. Now the cost per bed is in the region of fifteen to twenty times that sum.





# Hospital Costs in Perspective

RISING hospital costs have caused concern to the public, Government, and Members of Parliament ever since the start of the National Health Service. They are at present taxing the minds of those responsible for administering the hospitals as they try to contain hospital expenditure within the limits of funds made available by the Government. Nevertheless the problems are not confined to Great Britain nor to the National Health Service because rapidly rising hospital costs have been general throughout the world since the end of the second World War.

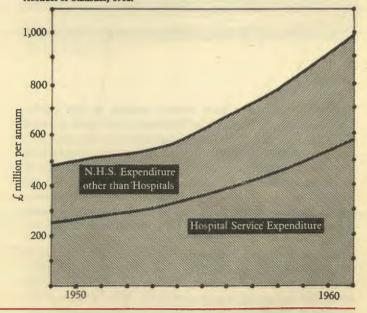
In spite of the widespread distribution of the problem there has been little sustained attempt to see rising costs in perspective, and understanding of the factors which have brought about the rise has not been conspicuous. The purpose of this paper is to present the facts, to put them into perspective and to give some understanding of the underlying causes. It makes no attempt to analyse in detail the elements of cost in individual hospitals as is done in the Hospital Costing Returns by the Ministry of Health, nor to examine critically the methods of estimating and defining expenditure on hospitals as has been done by the World Health Organisation<sup>1</sup>—rather it aims to present a picture in broad outline.

#### Hospital Expenditure

Current expenditure on hospitals in the National Health Service in the United Kingdom has risen annually.\* In the first full year of the service (1949-50) it was £250 m. and by 1961-62 it had reached £572 m. (Fig. 1). In the early years of the National Health Service the hospitals absorbed a rapidly increasing share of the total cost (Fig. 2) as was pointed out in the report of the Guillebaud Committee2 which studied the

Fig. 1 Expenditure on the National Health Service and Hospital Service, United Kingdom, 1949 to 1961. (Including Local Authorities' expenditure.)
Sources: Central Statistical Office. National Income and Expenditure, 1962. Annual

Abstract of Statistics, 1962.



<sup>\*</sup> Hospitals include the broad range of medical institutions from acute hospitals, to convalescent homes and long-stay institutions like mental hospitals and institutes for the mental subnormal. This definition is the general usage in the Ministry of Health reports. It should be noted that overseas the term 'hospitals' is usually more restricted in scope and often does not include mental hospitals or convalescent homes. These institutes are included in the welfare and not in the health services. Figures given are generally direct quotations from sources. Figures for hospital expenditure in England and Wales are taken directly from Ministry of Health Reports and include certain minor items not affecting the general picture, but not strictly within the definition of hospital care.

The only major adjustment made to quoted sources is for the calculation of several contents. Hospitals include the broad range of medical institutions from acute hospitals,

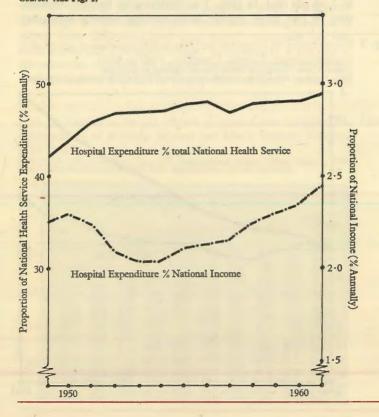
The only major adjustment made to quoted sources is for the calculation of total National Health Service costs. Local authority expenditure on health services has been added.

4

cost of the service during its first six years. Since 1953, however, the share of National Health Service expenditure absorbed by the hospitals has risen more slowly—from 57 per cent. in 1953 to 59 per cent. in 1961 (Fig. 2). The relatively low percentage of total health service cost absorbed by hospitals in 1949 and 1950 was largely due to unusually high expenditure on dental care and spectacles during the two years. The proportion of the cost of the health services absorbed by the local health authority services and the pharmaceutical

Hospital Expenditure as a proportion total National Health Fig. 2 Service Expenditure and as a proportion of National Income. United Kingdom, 1949 to 1961.

Source: vide Fig. 1.



service has remained almost constant, but the proportion absorbed by the general practitioner service has declined slightly in the last ten years.

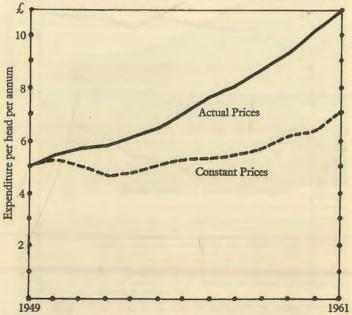
Fig. 1 shows that the rise in hospital expenditure has been fairly steady from year to year; it has varied but little from the average rise of 7 per cent. per annum which prevailed from 1949 to 1961. Most of the rise has been due to inflation, and at constant wages and prices the rate has been at 2 per cent. per annum according to data published by the Ministry of Health.<sup>3</sup>

The share of the nation's resources, as measured by the gross national product, absorbed by the hospitals is now rather higher than it was in 1950 (Fig. 2). It was  $2 \cdot 30$  per cent. in 1950, fell to  $2 \cdot 07$  per cent. in 1954 and has since risen steadily to  $2 \cdot 44$  per cent. in 1961. The tendency for hospital expenditure to rise more rapidly than national income and more

Fig. 3 Expenditure on Hospitals per Head of Population at actual and constant prices. United Kingdom, 1949 to 1961.

Source: Central Statistical Office, Annual Abstract of Statistics.

Note: Constant Prices derived from index of retail prices; L & C Economic Bulletin.



rapidly than total expenditure on all health services since the end of the second World War has been observed in many other countries including Canada, New Zealand and the United States.

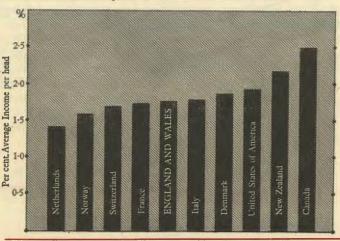
Annual expenditure on hospitals per head of population more than doubled from £5 in 1949 to £11 in 1961. However these were years in which the value of the pound declined fairly steadily. Revalued at constant 1949 prices the rise over the 12 years was from £5 in 1949 to £7 in 1961 (Fig. 3).

Hospital Costs Abroad

Meaningful comparisons of hospital costs in various countries are difficult to make because of differing definitions of the content of hospital care, differing methods of accountancy, and variable exchange rates of national monetary units. A comparative study of costs made by the World Health Organisation in which these difficulties have been largely overcome has just been published, but unfortunately Great Britain is not one of the countries included. At present the publication by the International Labour Office, *The Cost of Medical Care*, is the only

Cost of Hospital Care per person (Capital Costs excluded) as *Pig.* 4 a proportion of Average Income per Head. Various Nations. Mid-1950's.

NMC-1950 S.
Source: The Cost of Medical Care, p.59, International Labour Office, Geneva, 1959.
Note: Costs of Mental Hospitals have been included for all countries.



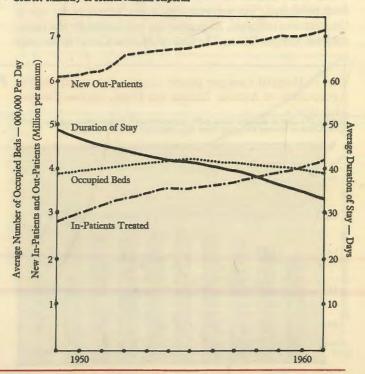
available comparative study on hospital costs in various countries which includes Britain. This shows that in the mid-1950's the total cost of hospital care per head of population expressed as a percentage of the average income occupied a middle position in England and Wales amongst ten prosperous nations of the Western World (Fig. 4).

Rising Volume of Hospital Work

Rising hospital costs since the start of the National Health Service have been associated with an increase both in the volume and in the complexity of work done by the hospitals. The

Fig. 5 In-Patients treated and Out-Patients examined in the Hospital Service, with Number of Occupied Beds and Duration of Stay. England and Wales, 1949 to 1961.

Source: Ministry of Health Annual Reports.



number of new out-patients examined annually rose from 6.2m. in 1949 to 7.2 m. in 1961, and there was an increase in the number of in-patients admitted to hospital every year-from 2.9 m. in 1949 to 4.3 m. in 1961, a rise of 48 per cent. (Fig. 5). The average number of occupied hospital beds rose until 1954, but has since been falling in spite of increasing numbers of patients admitted. This has been achieved by continually lowering the average length of stay of an in-patient from over 49 days in 1949 to 34 days in 1961 (Fig. 5). Falling duration of stay has characterised most departments-for example, in general surgery from 14.3 days in 1953 (the first year departmental analyses were published) to 11.8 days in 1961, and in paediatrics from 18.6 days in 1953 to 13.2 days in 1961. The declining length of stay in hospitals is partly due to improved methods of treatment such as the development of new drugs against tuberculosis; partly due to change in medical opinions such as earlier discharge after an appendicectomy or childbirth; partly due to change in policy, such as the domiciliary care for psychiatric patients which is now more often possible through chemotherapy and partly due to the rising numbers admitted briefly for diagnostic tests rather than for treatment. If the average length of stay in hospital had not been reduced, it would have been necessary to embark on a major expansion programme to enable the hospitals to provide the service now expected of them.

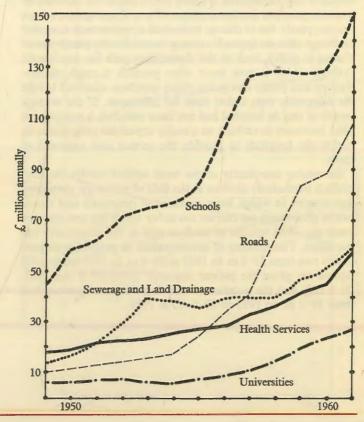
Increasing complexity of the work carried out by the hospitals is particularly obvious in the field of radiology, pathology and surgery in which large numbers of diagnostic and therapeutic procedures are carried out today which did not exist ten years ago. The volume of work as well as the complexity has increased. The number of investigations in pathology departments rose from 37.8 m. in 1953 to 56.6 m. in 1957 (since 1958 figures are given for patient requests: 1958, 15.9 m.; 1961, 20.6 m.), and the number of radiological investigations rose from 18.2 m. in 1953 to 22.5 m. in 1961.

# Capital Expenditure

THE Guillebaud Committee estimated that capital expenditure on hospitals in England and Wales in 1938 was equivalent to £32.0 m. at 1952 prices. Capital expenditure on the hospitals of England and Wales in actual prices rose from approximately

Fig. 6 Gross Fixed Capital Formation in Education, Health, Roads and Sewerage and Land Drainage, United Kingdom, 1949 to 1961.

Source: Central Statistical Office; National Income and Expenditure, 1962. Note: Expenditure on land is excluded; both private and public expenditures are included.



£8.7 m. in 1949 to £10.6 m. in 1955 to £20.5 m. in 1959 and to £23.7 m. in 1960.6 Capital investment in the personal health services (primarily hospitals) of the United Kingdom as a proportion of total capital investment by the nation (including public and private sectors of the economy) fell from 1.25 per cent. in 1949 to 0.9 per cent. in 1956 and rose again to the 1949 level of 1.25 per cent. by 1961.7 The trend in capital investment in four sectors of the economy—education, roads, health

services and sewerage—are shown in Fig. 6.

It has been generally recognised that capital expenditure on the hospitals during the first 14 years of the National Health Service was unusually low. This was partly caused by Government policy aimed at reducing total hospital expenditure. In the short run a low level of capital expenditure on hospitals does not interfere with their function, but it should be remembered that hospital buildings and the equipment which they contain are the tools used by those in the hospital service which enable them to carry out their function of the care of the sick. As in industry the efficiency and effectiveness of those who work in hospitals depends in part upon the volume and excellence of the capital tools which support them in their tasks. In view of the high degree of obsolescence of the hospitals recently referred to by the Minister of Health,6 combined with the exceptionally low rate of capital investment in the last 20 years, the present value of capital investment per hospital employee must be very low.

The ratio of capital to current expenditure in hospitals is a rough indication of the adequacy of the capital support provided for hospital employees, although there is no particular ratio which could be said to be the 'correct' one and a low ratio can reflect either restricted capital expenditure or high current expenditure. Since the N.H.S. started, the ratio of capital to current expenditure in hospitals has varied between 5 per cent. and 8 per cent. (Fig. 7). Although exact comparisons cannot be made with the pre-war ratio in British hospitals, in 1938 it

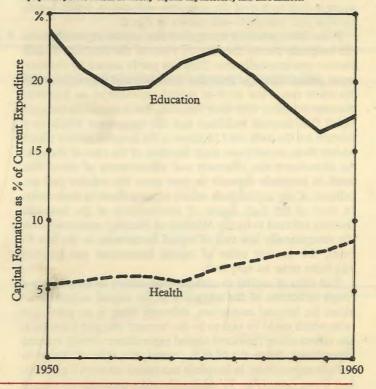
was approximately 20 per cent.5

It is of interest to compare the ratio of capital to current expenditure on educational services in the United Kingdom with the ratio in the hospital service. Current expenditure on educational services was similar to that on hospitals in 1950, but it has since risen rather more rapidly. Current education expenditure rose from an estimated £244 m. in 1950 to £757 m.

Fig. 7 Capital Formation in Education and the Health Service as a percentage Current Expenditure, United Kingdom, 1950 to 1961 (Public Sector).

Source: Central Statistical Office, National Income and Expenditure Annual Abstract of Statistics.

Note: Current expenditure includes public funds only, whereas capital expenditure includes both private and public funds. Capital expenditure on 'hospitals' is taken to include all capital expenditure on health services, that is hospital building, plant and equipment, local health authority capital expenditure, and ambulances.



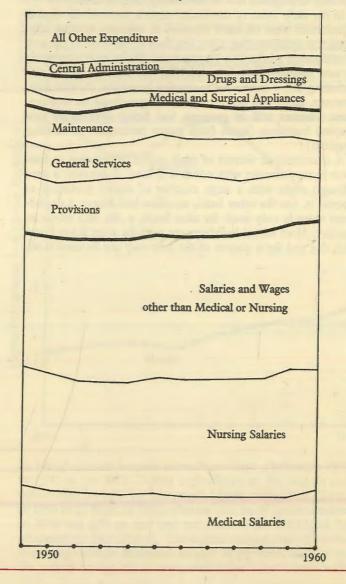
in 1961, current hospital expenditure from £265 m. in 1950 to £572 m. in 1961. Capital expenditure on the schools and universities has however been much higher, rising from £58 m. in 1950 to £176 m. in 1961, whereas that on all health services in 1950 was £20 m. and had not risen to the 1950 level for education by 1960 (Fig. 6). The capital/current ratio of educational expenditure fluctuated around 20 per cent. throughout the period during which many new schools have been built.

The new ten-year hospital building programme should raise total capital expenditure on hospital buildings only to £60 m. annually in England and Wales during 1965 to 1970.

In the early years of the health service, most of the capital expenditure went on small schemes to improve existing hospitals. Up to September, 1961, less than 10 per cent. of the cost of completed schemes in England and Wales had been spent on new hospitals (which up till 1958 had been defined as also including major extensions to existing hospitals). By that date, however, almost 40 per cent. of the expenditure on development schemes still in progress was being devoted to new hospital buildings (apart from major extensions to existing hospitals).

A characteristic feature of most capital investment in hospitals is the intensity with which it is used. A hospital is used day and night with a large number of skilled personnel to operate it. On the other hand, an office building or a department store is only used for nine hours a day and never on Sunday. Most school buildings are used for even fewer hours each day and for a quarter of the year may not be used at all.

Fig. 8 Shares in Total Hospital Expenditure, 1949 to 1960.



# Current Expenditure

CURRENT expenditure can be allocated to four main headings (Fig. 8). The proportions devoted to each for 1960 were:

Salaries, wages, etc. 61 per cent.

'Housekeeping' items (e.g. food and

maintenance) 22 per cent.

Therapeutic items (e.g. surgical supplies, dressings and drugs)

9 per cent.

Administration and other expenses

8 per cent.

#### Salaries and Wages

Well over half of current expenditure on hospitals in the National Health Service is absorbed by the wages and salaries of persons working in them. The proportion has risen from 58 per cent. in 1950 to 61 per cent. in 1960. About 10 per cent. of the cost is absorbed by medical salaries\* but the proportion tended to fall (in spite of a rapid increase in the number of doctors employed) until medical salaries were increased as a result of the recommendations of the Royal Commission on Doctors' and Dentists' Remuneration in 1960. Nursing salaries absorbed between 21 per cent. and 22 per cent. of hospital costs until 1958, but the percentage has since risen to over 23 per cent. Salaries and wages of all other hospital staff accounted for 25 per cent, of hospital expenditure in 1949, but for more than 27 per cent. in the late 1950's. By 1960 the total cost of medical salaries was £47.6 m., nursing salaries £107.7 m. and the salaries and wages of other staff £122.5 m. (Fig. 9).

Since 1949 there has been a steady expansion in most categories of staff working in hospitals. Between 1949 and 1961, the number of medical staff (defined as 'whole-time equivalents') and the number of whole- and part-time nursing staff have each risen by 43 per cent. The number of whole- and part-time works, maintenance and domestic staff has risen by 30 per cent.

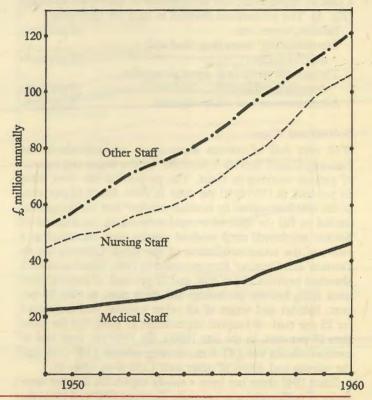
#### Goods and Services

Total expenditure on goods and services by the hospitals rose at about the same rate as total hospital expenditure throughout

<sup>\*</sup> Includes distinction awards paid to consultants and fees paid for domiciliary consultations.

Fig. 9 Expenditure on Salaries and Wages of Hospital Staff; England and Wales, 1949 to 1960.

Source: Ministry of Health Annual Reports.

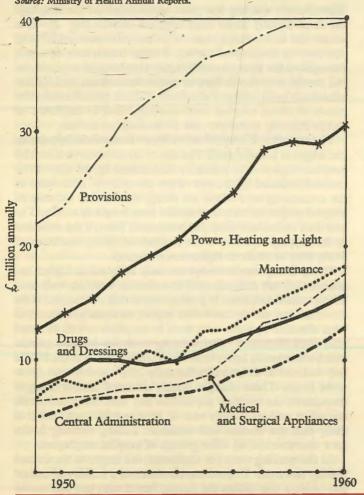


the period. Expenditure on drugs and dressings reached 4.1 per cent. of hospital current expenditure in 1951, fell to 3.3 per cent. in 1953 and thereafter remained virtually constant. Medical and surgical appliances absorbed 3.0 per cent. in 1949 and 3.8 per cent, in 1960. Expenditure on provisions reached 11.7 per cent. in 1954, but thereafter fell to 8.8 per cent. in 1960 partially reflecting the stabilisation in the price of food in the late 1950's.

Fig. 10 shows the trend in expenditure on six major items within the hospital service (excluding wages and salaries of staff) from 1949 to 1960.

Expenditure on Goods and Services in Hospitals; England and Fig. 10 Wales, 1949 to 1960.

Source: Ministry of Health Annual Reports.



# Factors causing Rising Costs

THROUGHOUT the last ten years expenditure on the hospitals has risen slightly faster than national income (Fig. 2). This means that an increasing share of the nation's resources is being absorbed by the hospital service. Similar trends have occurred throughout the world, and it is likely that hospital expenditure will continue to rise as fast, or rather faster than, national income both in Britain and elsewhere. Failure to understand the causes of rising hospital costs can only lead to confusion in public thinking about the cost of the hospital service.

The majority of hospital expenditure is absorbed by salaries and wages of hospital staff. The size of the incomes obtained by hospital employees is primarily determined by the size of the incomes obtained by the rest of the community. If incomes in the community as a whole are rising, then unless incomes of hospital employees rise at a similar rate, hospitals will tend to lose their skilled and unskilled personnel. Thus, if the standard of the hospital service is to be maintained, rising standards of

living tend to result in higher hospital costs.

Rising living standards are not only reflected in higher incomes, they are also reflected in a shorter working week and longer annual holidays. It is often stated that the present is an age of leisure, and as one would expect, increase in leisure has been obtained by those who work in hospitals as well as those who work elsewhere. The working week for hospital nurses which exceeded 70 hours before 1920 and 60 hours in the 1930's had declined to 48 hours by the early 1950's and is now down to 44 hours. These changes merely mirrored similar changes throughout the working population and with many industrial and office workers already on a 40 hour or a 38 hour week it is likely that the decline will continue. Falling working hours have characterised all other groups of hospital employees.

As the working week has shortened, the length of the annual holiday has risen. Trained nurses obtained a holiday of one or two weeks a year before the second world war; last year it was increased from four to five weeks. But if the working week and year are shortened then other things being equal, more nurses will be required to provide the same quantity of nursing services which will as a result be more expensive.

Traditionally labour in hospitals has been cheap, and in the

past many people gave their time and services voluntarily. Nearly one half of the total hospital wage and salary bill is absorbed by persons not in the medical or nursing professions. for whose services hospitals must now compete directly with industry. The rates of pay for such staff are frequently determined by industrial negotiations in which hospital authorities play little or no part. About 80 per cent, of all hospital employees are women, the majority of them in early adult life, and until the recent past economic demand for female labour has been low. During the last 25 years, however, the demand for female labour by industry, commerce and Government expanded relatively rapidly, with the result that the earnings of young women have risen particularly fast. The hospitals have thus been losing their privileged position of being able to draw on an abundant supply of labour against little competition and at small cost. Meeting the competition provided by other em-

ployers has entailed rapidly rising hospital costs.

The fact that the cost of labour in hospitals (such as nurses, orderlies, porters and junior medical staff) has been so low until recently is one of the reasons why the use of it has sometimes been inefficient in the past. The application of modern management techniques, work study methods and effective budgetary control would undoubtedly enable a smaller number of personnel to provide the same standard of service to the hospitals. Better management combined with improved technology have been the basis of the great increase of productivity per man which has characterised much of industry and agriculture during the 20th Century and has often enabled production to rise using a diminished labour force. Many have therefore thought that more efficient use of hospital labour would result in a decline in the numbers employed and, therefore, a lowering of hospital expenditure. Other things being equal this would be true, but other things are by no means equal. Although efficient use of the time of hospital personnel is highly desirable and must be encouraged if the standard of service in hospitals is to be improved, it is quite unrealistic to expect the result to be a fall in total hospital expenditure. It is doubtful if it would even counteract the upward trend in hospital expenditure caused by rising wages and shorter hours already discussed. But there are in addition other factors tending to raise the numbers employed in hospitals which would more than nullify the effect on expenditure of more efficient use of labour.

The practice of medicine is a highly dynamic field of activity. New and more precise methods of diagnosis and more effective methods of treatment are constantly being developed. Sometimes these changes result in a lowering of expense, such as when ophthalmia neonatorum is prevented or cured in a baby with a few pennyworth of antibiotic thus saving the expense (and the human tragedy) of a person blind from infancy. More often, however, the advances result in a requirement for more hospital personnel if they are to be translated into practice. The creation of hospital units for neurosurgery, cardiac surgery, or radiotherapy are obvious examples. The result is that the lives of persons are saved who would otherwise have died, but at the cost of additional personnel who must develop new skills. Even though new hospitals can be run more efficiently than old ones, the savings effected in their running expenses may be more than offset by the cost of the extra facilities they provide.

The success of modern medicine in curing and preventing many diseases has led to the hope that as there will be less disease in the population there will be less need for hospitals and a declining expenditure on them. The Utopian concept of the prevention and conquest of disease causing a withering away of hospitals and falling expenditure on health services is often assumed when the N.H.S. is described disparagingly as the 'National Ill-Health Service'. It is suggested that if more effort were made to prevent disease rather than to cure or treat it then the 'soaring' cost of the hospital service would be checked.

It is rather ironic that the practitioners of modern medicine should be accused of neglecting preventive medicine at a time when so many diseases are being prevented more effectively than ever before. Mortality and morbidity from diphtheria, whooping cough, pneumonia and many other infectious diseases has fallen dramatically either because they are wholly prevented or because they are cured in the very early stages. Maternal, infant and childhood mortality have been falling to ever diminishing levels. Early treatment of otitis media has rendered mastoiditis a rare complication, and early removal of inflamed appendices has reduced complications and brought down mortality steadily since the 1930's.

The effectiveness of preventive measures has been reflected in the pattern of hospital care and modern drug treatment has

much reduced demands formerly made on the hospitals. Many fever hospitals and tuberculosis sanatoria have been closed or converted to other uses. Nevertheless, the total number of patients admitted to hospitals has continued to rise. This is not particularly surprising because although medical advances have prevented and cured individual diseases the result has not been so much a diminution in the total volume of disease as an alteration in the pattern of diseases within the community. A price to be paid for the prevention of death in youth is that large numbers survive to become susceptible to diseases of the elderly. With an ageing population chronic and degenerative diseases increase. Others such as cancer of the lung and coronary artery disease have rapidly become more common for reasons which are inadequately understood. On the evidence which is currently available it is realistic to assume that new diseases will appear or old ones become more common as existing diseases are conquered. Furthermore, as health itself is a relative concept, when living standards rise the level of what is considered good health also rises. A parallel situation exists with education, where in a more affluent society higher standards of education are expected throughout the population.

An important factor in rising hospital costs is the expectation of the population. An impoverished nation, with many of the citizens living near starvation level, does not expect a very high standard in its hospitals the cost of which is consequently low. On the other hand the citizens of a prosperous nation, where ownership of a car and television and holidays abroad are common for industrial workers, would find the standards usually prevailing in the hospitals of a poor country quite intolerable. Their expectations of good food, warmth, privacy, and much personal attention from doctors and nurses tend to increase hospital costs. Furthermore they expect diagnosis to be accurate and treatment effective, whereas in some countries many regard hospitals primarily as places in which to die, and this used to be true not so very long ago in Britain also.

In recent years increasing attention has been given to providing domiciliary care for the sick rather than hospital care and many expect that hospital costs will consequently fall. The result, however, may be a transfer of costs to other sectors of the health services rather than a reduction in total costs. Obviously there is a real saving if hospital treatment can be avoided by preventing or cutting short an illness, and home

nursing is frequently less expensive than hospital care. However, the cost calculations made of the savings which result from treatment in the home rather than in the hospital are sometimes of dubious validity as they tend to understate the full cost of home care.

Some of the reasons why many patients are in the hospital today who would not have been there 100 years ago are related to the changing structure of family life and to urbanisation. When families were large with three or even four generations of the same family living together, and the work of women was confined to the home, it was relatively simple to care for the sick at home. With two-generation families living in small houses or flats in which women often work away from the home and grandparents live alone, a sick relative confined to bed may cause a major disruption of the pattern of family life. The cost to the family of a woman giving up her work to look after a sick relative may be considerable although rarely included in the cost of domiciliary care. The cost of providing first class domiciliary care to an elderly patient recovering from a cerebral thrombosis and living alone may well be greater than providing hospital care when the time of district nurses, general practitioners, home help, 'meals-on-wheels' and helpful neighbours is fully costed. Domiciliary care may well be preferable for many reasons, and patients usually like to remain in their own homes, but it should not be assumed without question that the community, by pooling its facilities for the care of the sick in hospitals, is providing a more expensive service than would be available if a service of equal quality was provided for each patient separately in their own home. This aspect of the subject justifies further study.

# The Challenge of the Future

MUCH of the steady increase in hospital costs is due to the development of new techniques and services. Rising personal incomes and more expensive goods and services have aggravated the tendency for hospital treatment to become more expensive; yet if the increase is examined against spending in other fields and in other countries, Britain's hospital costs give no cause for alarm or dismay. It appears that the present trends will continue in the future because the public seek not only the best possible hospital care, but will want it in an environment appropriate to the standard of living of the 1970's.

Many new hospitals will soon be built and the next ten years will be a challenging and progressive time for those concerned with the practice and administration of hospital medicine. More modern and efficient methods will be used, and new ideas will be required if more and better medical care and personal services are to be provided. Up-to-date management techniques, such as the operational research and work study which have been developed in industry, are now being used. Long-term planning and forward thinking will need to be flexible to deal with rapid advances, such as there have been when drugs and improvements in public health have eliminated certain diseases.

The economic and medical trends bearing on hospital costs will result in greater demands on the national income. In these circumstances, two considerations should influence future hospital policy if the patients are to benefit to the utmost. First, the need for radical re-organisation must be recognised where it exists. Second, efficiency in established practices must be pursued, always with the realisation that there is a danger of doing unnecessary things in a more efficient way.

# References

- 1. Paying for Health Services. Abel-Smith, B., W.H.O. Public Health Paper No. 17 (1963).
- 2. Report of the Committee of Enquiry into the cost of the National Health Service: p.12 Cmd. 9663. H.M.S.O. 1956.
- 3. Report of the Ministry of Health for the year ended 31st December, 1960: p.45 Cmd. 1418. H.M.S.O. 1961.
- The Cost of Medical Care: p.123-4. International Labour Office, Geneva. 1959.
- 5. Report of the Committee of Enquiry into the cost of the National Health Service: p.33 Cmd. 9663. H.M.S.O. 1956.
- A hospital plan for England and Wales; p.1-2 Cmd. 1604. H.M.S.O. 1962.
- National Income and Expenditure—(various years). Central Statistical Office.
- 8. ibid, Table 44, 1961 and 1962.
- 9. Hospital building England and Wales, Progress Report No. 1, H.M.S.O. 1962.
- Report of the Ministry of Health for the year ended 31st December, 1961: p.144-6. Cmd. 1754. H.M.S.O. 1962.

### Office of Health Economics

The Office of Health Economics was founded in 1962 by the Association of the British Pharmaceutical Industry with the following terms of reference:

- To undertake research to evaluate the economic aspects of medical care.
- 2. To investigate, from time to time, other health and social problems.
- 3. To collect data on experience in other countries.
- 4. To publish results, data and conclusions relevant to the above.

The Office of Health Economics welcomes financial support and discussion of research problems with any persons or bodies interested in its work.

