

show that patients approved of the length of stay they had experienced. Mean length of convalescence was 37 days for male short-stay patients without complications, and 35 for men who were long stay. If those patients suffering complications are included the two groups experience the same length of convalescence of 38 days. In terms of loss of income, among the 124 male patients in the study, 49 suffered some loss, 17 in the long-stay group and 32 in the short-stay.

Further analysis is being carried out.

**Cost Benefit Analysis in the Health Service—A Case Study of Elective Herniorrhaphy.** N. J. GLASS and I. T. RUSSELL (*Medical Care Research Unit, University of Newcastle upon Tyne*)

The paper complements recent review papers<sup>1,2</sup> of cost-benefit analysis in the Health Service by describing a case-study in which a recent proposal for a national policy of specialization in elective herniorrhaphy is evaluated using available data, but with emphasis on method rather than results.

Iles<sup>3,4</sup> has demonstrated how the establishment in Toronto, Canada, of a hospital specializing in elective herniorrhaphy has yielded substantial clinical benefits. More recently<sup>5,6</sup> he has proposed the addition of elective hernia wings to existing general hospitals as an answer to the hernia waiting list in Great Britain, stressing the clinical superiority of this solution and making a plea for economic considerations, such as working time lost, to be taken into account.

The benefits from the Iles' proposal are divided into two parts: first, those flowing from the reduction in the average length of stay from nine to three days and from the elimination of the waiting list; second, those arising from specialization, principally the reduction in recurrence.

An alternative, less radical, proposal to reduce length of stay and eliminate the hernia waiting list without recourse to specialist units is considered. This is shown to yield virtually the same substantial benefits. The advantages of specialization are almost entirely offset by the delay necessary to plan and build the special units.

It is concluded that while there are large benefits from a policy of reducing length of stay and eliminating the waiting list, a choice between policies for achieving this turns upon the value of beds released by building special units and upon the cost of building and running such units. The economic and clinical benefits flowing from specialization are not critical.

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**Regional Variations in the Allocation of Financial Resources to the Community Health Service.** A. J. TRICKEY, J. E. NOYCE, and A. H. SNAITH (*Derbyshire County Council Health Department*)

Differences in expenditure by the health service in the regions of England have been identified, together with factors with which low and high spending are associated. There is substantial variation in the amounts spent by executive councils, local health authorities, and regional hospital boards in the regions, with a standard deviation of 13%, 15%, and 19% of the mean expenditure in the three sectors respectively. Analysis showed that high spending in one sector of the health service was associated with high spending by the other two sectors, and conversely.

High levels of expenditure were associated with high socio-economic status of regional populations. Negative correlations with community health expenditure were obtained for low socio-economic status and birth rate. The same correlations were obtained for hospital revenue expenditure.

There are no regions of high spending which are not also high socio-economic status regions and it is concluded that the distribution of resources in the National Health Service has little relevance to need. It is suggested that a normative model for distribution of resources between regions is required. The local government formula for allocating the rate support grant is an example of a prescriptive model employed in the public sector. Resources are allocated to local authorities basically in accordance with population but with weightings for many factors, including the fraction of the population under 15 years and under 5 years and over 65 years of age, the density of population and whether the population is increasing or declining. These are just the sort of factors which the study showed had no effect on distribution of finance in the health service. Examination of local authority expenditure shows a small positive correlation between high expenditure and low socio-economic status of the population. Variation in expenditure between individual local authorities is also considerably less than in the NHS. A rational distribution of public funds is therefore possible but it is likely to be difficult to implement. In the hospital sector redistribution may have to be phased over a long period because of commitment to existing capital structures. In the community health services it should be possible over a much shorter period to redistribute resources in such a way that community health services compensate in some measure for the deficiencies in the hospital sector.

**Development of a Formula for allocating Regional Health Authority Revenue Funds.** J. H. RICKARD (*Department of the Regius Professor of Medicine, University of Oxford*)

Although there is now an official policy of distributing funds to Regional Hospital Boards on the basis of population, bed-stock, and case-flow, funds have been distributed *within* regions largely according to historical patterns with allowances for new developments. This has not necessarily resulted in an equitable distribution, though a comparison based simply on expenditure per head of the geographical population is inadequate since it ignores the problems of cross-boundary flows, differences in the morbidity of the populations, the costs