

with no discomfort to the patient, and for the foreseeable future all visitors to tropical Africa and tropical America should be vaccinated.

¹ *W.H.O. Weekly Epidemiological Record*, 27 March and 9 May, 1975.

Rationing N.H.S. Resources

Rationing is simple enough when everyone can be given the same fixed amount, but rather more difficult within as complex an organization as the N.H.S. While the current economic crisis has forced everyone to recognize the need for economies, there is no consensus of opinion on the form they should take. Those parts of the Service that have been underfinanced in the past argue that a simple percentage cut would perpetuate injustices; yet the redistribution of resources presents many difficulties, as became clear last week at a symposium on the problem at the Centre for Studies in Social Policy in London.

The social scientists, N.H.S. administrators, and Department of Health experts present agreed that some reallocation was urgent. One effect of the reorganization of the N.H.S. has been that statisticians can see and the general public can notice inequalities between regions and within them. At the same time the economic recession has spelt the end of the policy of using the "new" money available each year from real growth in N.H.S. expenditure to correct the inequalities and satisfy pressing demands. Depressed areas have been told for years that all would be well when their new district hospital was built; now that these new hospitals have vanished over the horizon to become no more than castles in Spain, some more realistic approach is needed.

Yet while differences can be identified their interpretation is far from agreed. Variations in per capita expenditure on health, in the provision of beds, in their occupancy, in discharge rates, in perinatal mortality—all these can be extracted from the flood of statistics pouring into the D.H.S.S.—but what do they mean? To some extent they only reflect the truism first voiced by Mr. Enoch Powell,¹ that within a free N.H.S. demand will always rise to absorb all the resources made available. Are the people living in underfinanced regions such as Trent noticeably less healthy than those in the rest of the country? Should the aim be to level up or to trim the excess off the fat cats? The health indices in current use are of very little help in attempting to answer such questions.

Assessments of health care are still in their infancy. Patients as consumers have strong views on the length of waiting lists and the physical conditions of their hospitals, but the quality of medical care provided can be measured only by some form of audit—which can be carried out only by the medical profession.² Standards might then become apparent for investigation, treatment, and the outcome of treatment, to provide an objective measure of one part of the service given to patients.

Meanwhile, decisions have to be made on the basis of the data available. Rationing is acceptable only so long as it is seen to be fair, and much of the time at the C.S.S.P. symposium was spent in attempts to devise a fair solution. No one seemed very optimistic that radical measures would be possible: these doubts stemmed from a general disbelief in any political will to press unpopular decisions. Is there, for example, any prospect of cutting beds and making doctors redundant in the prestigious London teaching hospital groups? Their costs are

inflated by high metropolitan salaries; their patients may have to travel as much as 40 miles for an outpatient consultation; their concentration into a small, expensive part of Britain makes neither medical nor economic sense. Nor are they excusable as unavoidable relics of the past—several are brand new.

Perhaps the most promising scheme was that put forward by Drs. P. H. Gentle and J. M. Forsythe, who suggested that revenue should be allocated on the basis of population, with some weighting to take account of factors such as size, age, and sex of the population, teaching commitments, and movements of patients across administrative boundaries. Once such a "fair" system of allocation has been agreed the areas and districts could then be allowed to adopt their own policies on the spending of their resources, with the incentive—absent in the current system—that any savings made would benefit the community concerned rather than the region or the N.H.S. as a whole. These twin themes of fairness and incentives to encourage self-help are essential if any scheme of rationing is to be widely acceptable.

¹ Powell, J. E., *A New Look at Medicine and Politics*. London, Pitman Medical, 1966.

² *British Medical Journal*, 1974, 1, 255.

Diagnosis of Malignant Carcinoid Syndrome

Carcinoids are small yellow tumours, usually less than 2 cm in diameter, arising in cells in the crypts of Lieberkühn. The commonest site of the tumour is at the tip of the appendix, where it was formerly regarded as benign—hence the term carcinoid.¹ Pearson and Fitzgerald, however, in reviewing a large series² found metastases in 38% and emphasized that all carcinoids should be considered malignant. Some cause blood loss or obstruction due to intense fibrosis in surrounding tissues, and those in the rectum should be recognized on sigmoidoscopy, but in other areas the correct diagnosis may not be made before laparotomy. Morgan and his colleagues³ found that 26% of their patients had associated malignant neoplasms, judged to be responsible for more deaths than the carcinoids. Even then the prognosis is good; one-half of 106 patients submitted to surgery survived 10 years.

The full carcinoid syndrome of flushing, intestinal disturbances, and right-sided heart disease develops in about 5% of patients with an intestinal carcinoid tumour. With few exceptions,⁴ it occurs in patients who already have hepatic metastases. Substances secreted by the tumour are metabolized in the liver, and so long as they remain confined to the portal circulation systemic effects are curtailed. Lembeck⁵ isolated 5-hydroxytryptamine (serotonin) from a carcinoid, and for years it was accepted that 5-hydroxytryptamine (5HT) caused flushing, diarrhoea, and bronchoconstriction. However, serum 5HT levels correlate poorly with flushing attacks,⁶ suggesting the presence of some other vasoactive agent. Oates and others⁷ showed that the tumours contain a proteolytic enzyme, kallikrein, probably released by catecholamines to produce a vasoactive polypeptide, bradykinin, from the alpha₂ globulin fraction in blood. They also showed that infusion of bradykinin reproduced the characteristic flush. Probably 5HT is concerned in causing gastrointestinal symptoms, for the drug parachlorophenylalanine, an inhibitor of tryptophan hydroxy-

lase, limits 5HT synthesis and effectively controls the diarrhoea. Oates *et al.* noted the highest values for kinins in the hepatic venous blood of patients with tricuspid or pulmonary valvular diseases. The kinins and 5HT probably produce subendothelial fibrosis, and the left heart is less often affected because these agents are also inactivated in the lungs.

Carcinoids arising from endodermal tissue other than the intestine may be atypical in both morphology and secretory activity. These tumours may be found in the bronchus, pancreas, gall bladder, ovary, or testes and are more likely to be associated with the carcinoid syndrome because their secretions enter the systemic circulation directly. Bronchial⁸ and gastric⁹ carcinoids in particular tend to secrete 5-hydroxytryptophan (5HTP), a precursor of 5HT, and histamine, which causes a more vivid and patchy flush than that induced by bradykinin. Cellular granules containing 5HT are truly argentaffinic, whereas those rich in 5HTP are argyrophilic, taking up silver stain only when an external reducing agent is applied. Bronchial and occasionally intestinal carcinoids have been associated with single or multiple adenomas in other endocrine glands,¹⁰ and the carcinoid syndrome may be associated with Cushing's syndrome or hypoglycaemia when the carcinoid is presumably secreting corticotrophin or insulin.¹¹ Similar endocrinopathies have been recorded in relation to oat-cell carcinoma of the lung, medullary cancer of the thyroid, and malignant growths of the pancreas or ovary.¹²

Measurement of 5-hydroxyindoleacetic acid (5HIAA), the direct metabolite of 5HT, is still the mainstay of diagnosis. Urinary 5HIAA may be increased in patients with malignant carcinoid who do not have the carcinoid syndrome but values above 10 mg per day are mostly found when clinical features are present.⁹ Excretion fluctuates, so that repeated estimations are necessary. High values have been reported in non-tropical sprue and after eating certain fruits, notably bananas, or the ingestion of reserpine, mephensin carbamate, and the phenothiazines.¹³ Sjoerdsma *et al.*¹⁴ described a rapid screening test for carcinoid syndrome in which hydroxyindoles may be detected by a specific purple colour reaction with 1-nitroso-2-naphthol, but this is a relatively crude test which detects quantities of 5HIAA only in excess of 40 mg per day. Accurate determination of free 5HT in blood is difficult. Urinary 5HT may be raised above a normal limit of 100 µg per day in the carcinoid syndrome,⁹ but it does not usually exceed 2% of the urinary 5HIAA. However, in patients with a bronchial or gastric carcinoid it may represent up to 50%, because the tumour secretes 5HTP, which is partly metabolized to 5HT by the kidney. Urinary 5HTP and histamine are often increased, above the normal limits of 1.5 mg and 100 µg per day respectively, in such cases.⁹ Chromatography or isotopic studies may be required to detect unusual metabolites of 5HT; thus Williams and his colleagues¹⁵ found increased amounts of non-hydroxylated indolic acids but normal quantities of 5HIAA in the urine of three patients with the carcinoid syndrome. With the advent of new kinin radioimmunoassay techniques a further dimension will be added for identification of the malignant carcinoid syndrome.¹⁶

In a protracted illness resection of hepatic metastases should be considered for relief of symptoms, and removal of a necrotic intrahepatic mass may help in patients with fever, abdominal pain, and leucocytosis.

- ⁴ Sjoerdsma, A., Weissbach, H., and Udenfriend, S., *American Journal of Medicine*, 1956, 20, 520.
- ⁵ Lembeck, F., *Nature*, 1953, 172, 910.
- ⁶ Robertson, J. I. S., Peart, W. S., and Andrews, T. M., *Quarterly Journal of Medicine*, 1962, 31, 103.
- ⁷ Oates, J. A., *et al.*, *Lancet*, 1964, 1, 514.
- ⁸ Sandler, M., Scheuer, P. J., and Watt, P. J., *Lancet*, 1961, 2, 1067.
- ⁹ Oates, J. A., and Sjoerdsma, A., *American Journal of Medicine*, 1962, 32, 333.
- ¹⁰ Williams, E. D., and Celestin, L. R., *Thorax*, 1962, 17, 120.
- ¹¹ Grahame-Smith, D. G., *The Carcinoid Syndrome*, pp. 83 and 85. London, Heinemann, 1972.
- ¹² Moertel, C. G., *et al.*, *New England Journal of Medicine*, 1965, 273, 244.
- ¹³ Ureles, A. L., *Journal of the American Medical Association*, 1974, 229, 1346.
- ¹⁴ Sjoerdsma, A., Weissbach, H., and Udenfriend, S., *Journal of the American Medical Association*, 1955, 159, 397.
- ¹⁵ Williams, H. E., *et al.*, *Clinical Research*, 1971, 19, 406.
- ¹⁶ Kellermeyer, R. W., and Graham, R. D., *New England Journal of Medicine*, 1968, 279, 859.

New R.B. at Leeds

The start of the week in Leeds saw Mr. Walpole Lewin telling the Annual Representative Meeting of the B.M.A.'s role in persuading Mrs. Barbara Castle to add £600m. extra to the N.H.S. in 1974-5. As the meeting ended Mrs. Castle was announcing to N.H.S. administrators in London: "I do not pretend to you that the proposals for the financing of the Service for the next few years are anything but bleak." Though doctors will not find her comments palatable, they may at least see their political realism as a welcome alternative to political rhetoric.

The A.R.M.—the first with the newly constituted Representative Body—took place against a crescendo of forecasts and leaks about the Government's urgent preparations for controlling inflation. The national uncertainty probably accounted for the somewhat subdued atmosphere at the meeting. Even the Chairman of Council's brief summary in the final session of the Government's economic measures—which will hit both doctors' incomes and their professional activities—provoked little immediate reaction. Indeed, an attempt on Tuesday to suspend standing orders for a debate on an emergency motion concerning any national incomes policy was firmly quashed by the Representatives. This suggested that the decision on the opening day (12 July, p. 113) that the Association should steer a professional rather than a trade union course in caring for its members' interests was a real gut decision and not merely a historical reflex.

This refusal to turn the B.M.A. into a "terms and conditions of service" organization with a "closed shop" membership did not, however, inhibit the representatives from wholeheartedly approving a militant motion in support of the Hospital Junior Staffs Group Council's battle for a new contract (p. 186). This decision aptly demonstrates that what matters in negotiation is the support the profession gives to its leaders, support that is especially potent when provided by a voluntary membership.

The H.J.S. Group Council meeting in emergency session during the week (p. 186) acknowledged the boost that the R.B.'s decision would give to the juniors' negotiations. But the status of these is one aspect of the new pay curbs that will have to be clarified, along with the position of the armed Forces doctors and medical teachers, when Mr. Walpole Lewin and his colleagues meet the Secretary of State shortly. The B.M.A. will expect the claims of these groups to be treated as part of the 1974-5 negotiating cycle, during which many N.H.S. doctors had rises of 30% or more, though Mrs. Castle's letter to the Chairman of the Group Council (p. 167) does not sound too promising. In the past decade of spasmodic Government

¹ Obendorfer, S., *Frankfurter Zeitschrift für Pathologie*, 1907, 1, 426.

² Pearson, C. M., and Fitzgerald, P. J., *Cancer*, 1949, 2, 1005.

³ Morgan, J. G., Marks, C., and Hearn, D., *Annals of Surgery*, 1974, 180, 720.