Cost-effective Patient Care

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Appreciation of the cost factors in medical care is not new. Sir William Petty (Professor of Anatomy, Oxford) in his plan of 7th October 1667 'of lessening ye plagues of London' estimated the cost effectiveness of transporting people outside London for three months to be £84 for every £1 expended.

We are in a dilemma because the compassionate physician and the citizen, when a patient, desire that everything be done and no expense spared to help the sick and the suffering. On the other hand, the public who pay the bills through taxation or insurance demand that costs be contained. The spiralling costs of medical care have occurred because of the rapid scientific advances that have been made, but also because the state or insurance companies are a buffer between the patient who demands and the doctor who provides the treatment.

It is not my purpose to evaluate treatments such as renal dialysis or for acute myelogenous leukaemia in adults in terms of costs for lives saved; rather to look at what may be done on a wider scale to make medical expenditure more effective. The medical profession in its more political mood tends to blame a lot of problems on administration, where indeed there has been a great expansion that is of doubtful value. For example, the number of non-medical employees at region, area and district level earning £5,000 per annum increased from 700 to 4,800 at the time of re-organisation in 1974.

We, as doctors, have, however, been responsible for an equally great waste of public money. The current cost of drugs and appliances in England and Wales is £596 million, which exceeds the total cost of medical practitioners' salaries. Ten per cent of this goes on slimming pills, tranquillisers and cough medicines, often prescribed because of pressure by the patient. Doctors are influenced by salesmanship, which may be an advertisement, a free dinner after watching a film, or a weekend in Malta: these inevitably raise the cost of drugs. Promotional activities abroad are much worse: in the USA the pharmaceutical industry spent $4,500 per doctor in 1972; 2,400 German companies are persuading their physicians to prescribe 30,000 different proprietary drugs.

There are several ways of countering this waste of public money on drugs. First, the consumer must be educated in self-reliance so that he does not believe there is a pill for every ill, but that most ailments are self-limiting and relief can be obtained by homely remedies. I have yet to find a better remedy for simple coughs and colds than hot lemon and honey with perhaps an aspirin at night. Marsh (1977) from Stockton-on-Tees has shown that such education in practice can effect considerable economies—estimated to be £10.6 million a month if adopted nationally.

Another way in which economies in the drug bill can be effected is by avoiding wasteful over-prescribing and ensuring proper storage and labelling of drugs, with more widespread blister packaging. Hart and Marshall (1976) from Ipswich estimated that savings in hospital alone would be £1 million a year: how much more could come from the bathroom cupboards of Britain!

Even more cost-effective prescribing can be achieved by encouraging randomised controlled trials. Already they have shown us that the routine use of potassium glucose and insulin infusions and anticoagulants have no place in the routine management of acute myocardial infarction; ergotamine has been shown to be no better than placebo for migraine, nandrolone for aplastic anaemia. When a preparation is found to be ineffective, its prompt abandonment is both an economy and a spur to discover more successful treatment.

New operations or techniques do not have to pass the Committee on Safety of Medicines or the FDA in the USA, otherwise we would not have witnessed the adoption 15 years ago of gastric freezing for duodenal ulcer (Wangensteen, 1962). It took seven years before proper controlled trials (Ruffin et al., 1969) showed that the procedure was ineffective, but by that time $2.5 million had been spent on apparatus alone in the USA.

Surgery

The placebo effect of tablets for angina has been appreciated by physicians since 1933 when Evans and Hoyle published their paper showing that 40 per cent of their subjects were helped by lactose. It has taken the profession longer to realise that surgery has a placebo effect of the same order. Numerous different forms of surgery have been tried, but the papers of Cobb et al. (1959) and Dimond et al. (1960) showed for the first time that skin incisions were as beneficial as internal mammary ligations. Five out of eight of Cobb's patients whose arteries were ligated showed definite improvement of angina, but so also did 5 of 9 sham operations; two of these had improved exercise tolerance and in one there was no longer T wave inversion on the treadmill. That operation has been abandoned, as has internal mammary implantation, which had a great vogue. The popular procedure now is aorto-coronary by-pass grafting, 80,000 of which were performed in the USA in 1977. Relief of angina occurs in a high proportion, but there is no hard
evidence that life is prolonged. In the Veterans Administration randomised control study reported in 1977 by Murphy and colleagues, there was no improvement in the three-year cumulative survival rates compared with medical treatment, apart from the 12 per cent with left main coronary artery disease. We await the results of other trials, but note that many patients are relieved despite non-patent grafts (Benchimol et al., 1976).

An example of how we need to examine the cost-effectiveness of established procedures is herniorrhaphy for those over 65 with minimal symptoms. Elective operation carries 5½ times the mortality of a truss, even allowing for the risks of strangulation, and costs twenty times more; there is a 10 per cent recurrence rate after operation. It has been suggested that the patient should be given the difference in cost in cash (Neuhauser, 1977).

Medical Practice

It behoves us to look at our own habits to see whether we are wasting our patients’ and our own time and the nation’s resources. Out-patient attendances cost an average of £12 in our area, so we should take a critical look at our own clinics to see if they could be pruned. Pearce and Horne (1974) questioned the need for prolonged follow-up of patients adequately treated for pulmonary tuberculosis. They showed that 91 per cent of relapses were due to inadequate treatment as a result of poor co-operation, and felt that most of the 200,000 people in England and Wales who were attending chest clinics regularly need not do so. Reducing the volume of attenders would free energy and time to concentrate on tracing and treating the non-compliers.

We are all in danger of ordering unnecessary tests on our patients; as Brod (1977) wrote in the College Journal, there has been an explosion in the number of tests done on patients without any evidence of benefit in their safe management. He estimated that biochemical screening of 200 consecutive medical out-patients had yielded no significant benefit, and had cost DM 12,400. D’Souza (1978) found no evidence that general health screening by industry was beneficial—rather it increased absenteeism and, in some cases, anxiety.

Golberg (1977) is rightly critical of wasteful X-rays of skull, spine and abdomen for inadequate clinical reasons, and for the geriatric ‘ante-mortem’ barium enema. An intravenous pyelogram is done routinely by most surgeons before prostatectomy. Wilcox and Mitchell (1977) showed, however, that the IVP done on 82 per cent of patients in acute retention neither influenced the decision to operate nor the type of operation. It was a disservice to patient and hospital in that the average delay before operation was 8 days compared with 3.5 days in those who did not have an IVP. By contrast the EMI Brain Scanner has been shown to be both accurate and cost-effective in neurological diagnosis (Thomson, 1977). Balancing the cost of the machine and extra staff have been the reduction in the number of invasive investigations such as arteriograms and air studies, and a reduction in waiting lists with increased turnover of patients. By offsetting the cost of invasive techniques not done and beds not used. Thomson showed a saving to the NHS in one unit of £36,000 in one year.

Computers have their place in many parts of the Health Service, but I think are unproven in value as a record system. A one million pound system has recently been installed in a small city in the South West; the running costs are half a million pounds a year. I have yet to hear of any reduction in the number of record clerks employed, or any benefit in health to the citizens. For the same cost 961 elderly people could have home help for 2 half-days a week, or 77 staff nurses and 90 district nurses could be employed.

Length of Hospital Stay

Pioneers have shown that many more operations and procedures can be done safely without the need for hospital admission at all. Examples are sclerotherapy for varicose veins by Fegan (1963), hernia repairs (Doran et al., 1972), 200 pregnancy terminations (McGarry, 1977), and 588 orthopaedic operations (Boardman and Giffiths, 1977). If patients do need to be admitted, shorter stay, provided that it is equally safe, makes for greater patient satisfaction as well as achieving economies. As an example, if it is necessary to admit patients following myocardial infarction, a stay of about 10 days carries a similar mortality and morbidity to the much longer periods of rest that used to be fashionable (Harpur et al., 1971; Hayes et al., 1974).

Conclusions

1. No country can afford to pay for all the medical care now technically possible. Hence, some form of resource allocation is necessary, and it is better for the profession to improve efficiency and effect economies, rather than have tight controls imposed by political pressures or the patient’s purse.

2. To that end we must encourage cost-risk:benefit analyses of new and established procedures, whether they be the way our clinics are run, the investigations we use, or the treatments and operations advised. The randomised controlled trial is a useful tool and could be used more widely for evaluating medical, nursing and physiotherapy procedures.

3. We should attempt to reduce demand, particularly in general practice, by encouraging the independence of our patients and their ability to cope with simple ailments. We need to emphasise how much improvement in health is in their own rather than the doctors’ hands.

4. We must become more cost conscious by educating ourselves, our students, and the public. Perhaps all drug promotions should include the cost, and I see no harm in the National Formulary mentioning prices, nor in editors asking for costs of investigations or treatments in articles that are published.

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References

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Factors affecting the Care of Patients with Malignant Hypertension

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Public expectations from medicine have changed radically as a result of the improvement in life expectancy over the past 50 years. People expect to live a happy and healthy life into the seventh or eighth decade. If they do not, a questioning eye is turned upon the factors responsible. One of the most important of these is the standard of the medical care offered in prevention or treatment of illness. A woman who is delivered of a defective child because she had rubella in the early months of pregnancy no longer considers this an act of God. She is more likely to blame her general practitioner or other aspects of community medical services for not ensuring that she was vaccinated before she became pregnant. The quality of medical care has become a lively issue.

Some doctors are both puzzled and hurt when the quality of medicine is questioned. They argue that medicine can do more today than it ever could in the past and the public should be grateful for its achievements. The public viewpoint is rather different. Triumphs of science and technology are celebrated for a short period and then assimilated into the general fabric of experience. If, as a result of failures by practitioners responsible, the full benefits of those past triumphs are not reaped, the public have a right to ask for remedial action. The quest for quality in medical care is a direct consequence of the greater efficacy of the treatment that can be offered.

It is difficult to measure the quality of medical care.

What to measure and how to measure it both present great problems. The medical care system is very complex. An adverse outcome may arise because of the failure of an individual practitioner or ancillary to do something that a normally competent person should have done. Alternatively, it may occur because of an organisational failure. The failure to vaccinate a young woman against rubella might occur because the doctor whom she consulted was unaware of the risks and benefits of the vaccine and failed to give appropriate advice. Or it might occur because there had been a mix-up by a clerk or computer operator who was preparing lists of women who had and had not been vaccinated in order to issue reminders. This is a comparatively simple example. The situation is much more complicated when considering the outcome of an illness that requires the intervention of several different specialties and literally dozens of individuals during an admission to hospital.

Morrell (1970) proposed five headings for assessing the quality of medical care. These are—

(a) outcome;
(b) process;
(c) facilities;
(d) accessibility;
(e) acceptability.

Obviously the most important of these is outcome, but it is one of the most difficult about which to gather evidence. Most studies on the quality of care come down...