

The costs of health care: implications for anti-emetic therapy

Nick Bosanquet

Professor of Health Policy, St Mary's Hospital Medical School/Imperial College, Department of General Practice, Lisson Grove Health Centre, Gateforth Street, London NW8 8EG, UK. Fax: (+44) 71 724 0995.

Health economists assess new drug innovations to improve choice. Decision-making techniques for cost analysis should include not only direct costs but costs in terms of increased health benefit, reduced mortality and improved quality of life. The use of anti-emetic drugs results in a significant improvement in the quality of life of patients and decision making on the use of anti-emetic drugs should fully evaluate this patient benefit.

Key words: Anti-emetic drugs, cost analysis, cost–benefit, cost–effectiveness.

Introduction

The aim of this paper is to present some options for ensuring that decision making on the use of anti-emetic drugs takes into account fully the patient benefits and possible long-term gains. Anti-emetic drugs must attain their own level of use in a health care environment that is changing rapidly. Many different approaches to assess the value of innovation have been adopted by economists; most of them concentrate on the cost issue and on setting new incentives and budgeting systems for containing costs, such as cash limits. The second generation of management and economic incentives is likely to be much more concerned with effectiveness and with encouraging increased patient benefit. To date, health economics have been concerned with long-term major studies of treatment and health programmes.

The central priority of health economics is to improve choice in a world where resources are scarce and in which competition for these resources is high. This improvement in choice can be achieved using four general themes with associated concepts.¹

Demand for health

Economists distinguish between the demand for health and the demand for health services. Individ-

uals seek to improve their health by various kinds of investments. Decisions are made about lifestyle and varying amounts of time and energy may be allocated to improve health, which may involve decisions about smoking, alcohol consumption, exercise and road safety. Social programmes and incentives can also affect these decisions; for example, setting lower speed limits on roads in the UK has resulted in fewer deaths and injuries from accidents than in Germany, where speed limits are higher. The productivity of health services has to be assessed against other alternative ways of bringing about improvements in health.

Effectiveness and health benefits

Economists have a range of possible analyses, such as an economic analysis involving assessment of lost output from early mortality. This kind of calculation was used to support 19th century public health programmes for clean water and sanitation, and is still used to support the case for public health programmes in developing countries. The most common assessment is also in terms of reduced mortality, but there is presumably an increasing emphasis on utility-based measures such as improvements in quality of life. Economists are unusual in their interest in 'psychometrics' which has allowed them to develop different indications of output and benefit.

An effective treatment increases health benefit and an efficient program delivers effective treatment at the lowest cost. This may involve the early detection of disease, a change of location for treatment or change from inpatient to outpatient treatment.

Economists have been critical of health care agencies on the grounds that they have concentrated on administrative routines and 'blank check' financing, rather than seek to promote more effective and efficient treatments. Initially, economists were most active in designing incentives for greater efficiency

in terms of cost containment. More recently incentives for greater effectiveness, such as the setting of health targets and the measurement of health needs have been adapted.

These general concepts have been translated into decision-making techniques using different measures of cost and benefit.

Cost, cost-benefit, cost-effectiveness, cost-utility

Cost analysis covers direct budgetary costs to health agencies, which would include financial costs as well as psychic costs to patients. No attempt is made to collect evidence on benefits. Cost-benefit analysis measures costs and benefits in money terms, and is based on benefits in terms of reduced costs of medical treatment and production gains from a patient's earlier return to work. This is the ideal form of economic evaluation but one which is very difficult to use.

Cost-benefit analysis presents information on the social costs, using a fairly wide basis of health programmes and is most suitable for the evaluation of investment programmes. It aims to balance the costs of therapy with the monetary benefits that accrue in other parts of the health care system. A cost-benefit study was carried out in Switzerland,² in which granisetron was compared with the combination of metoclopramide and dexamethasone. The increased costs of the anti-emetic drugs were offset by the reduced costs of nurses' time and treatment materials. Granisetron was also found to be more convenient and free from limiting side effects.

Cost-effectiveness analysis measures output in terms of health gain, including measures such as 'cases successfully treated', reductions in mortality and years of life gained. This is the most common form used by medical scientists and researchers, and is being used increasingly by health policy makers. It seeks to show the cost of achieving a particular outcome, such as 'no emetic episodes', and to compare the costs for different treatments. In principle, this approach is the most attractive but depends upon the choice of measures of effectiveness as the primary endpoint. With this method, there is the potential for therapeutic success to be restricted to the assessment of aspects that can readily be measured, without taking into account less obvious benefits.

Cost-utility analysis is the newest form of evaluation and can be applied to a wider range of programmes by measuring changes in quality of life. It can

be used to assess benefits from programs that are in part palliative, such as chemotherapy for advanced cancer, or for treatment of chronic illness which causes loss of quality of life but which does not reduce mortality. It also allows the patients' own views and preferences to be taken into account.

Cost-utility analysis reduces all benefits to a single measure, such as the quality-adjusted life year (QALY). Such a utility measure is intended to encompass all possible outcomes of treatment but it does have weaknesses and is not appropriate for widespread use.

Management concepts

These concepts have also been translated into decision-making techniques, incentives and guidelines to managers.³ Among the most influential of these concepts are:

The diagnosis-related group (DRG). This divides all hospital treatment into 467 different diagnoses, and standard costs are attached to each. Hospitals are then reimbursed according to these standard costs and the aim is to increase efficiency and to lower cost.

The cash limit. This sets an annual budget which the health provider cannot exceed, with the aim of ensuring budgetary control. This has been a key element in UK policies and has also been included in the French hospital system.

Increased co-payment. This shifts more of the burden of payment directly on the patient. Controlled experiments carried out by the Rand Corporation in the US suggested that almost any element of payment would lead to a fall in demand of about 20%.⁴ This system has been used to reduce costs of Medicare by increasing amounts paid by elderly Americans for hospital treatment. It has also been applied to prescription charges in Denmark, Germany and the UK where patients have been asked to pay more in direct charges.

General management. The UK has pioneered the use of business management approaches in health services, stressing the setting of aims and the achievement of targets together with rewards for performance. This implies a stronger role for managers relative to professionals.

Provider competition. This is designed to increase effectiveness and efficiency. The health care systems are seen as providers of a product, and the patients as the purchasers. Providers are expected to offer more attractive programs with higher health benefits. They are also expected to offer lower costs. From 1980 onwards, provider competition was a strong theme in the US health system. Provider competition is now being increased in the UK and the Netherlands. The UK internal market system is trying to harness provider competition to local health needs. Purchasers will have freedom to buy services to meet local health needs from a range of providers, public and private.

Application of the guidelines

Health systems are moving from short-term cost containment to longer-term measures designed to increase effectiveness. The first generation systems involving the use of DRGs and cash-limited budgets have generally succeeded in containing costs in Germany and the UK, and for hospitals generally, although not ambulatory care in France. The most rapid movement in second generation systems involving provider competition has come from the UK, Sweden and the Netherlands. In the past countries may have been content to contain spending, but now they may even be prepared to reduce it unless it can be related clearly to health aims, as in Sweden.

These kinds of evaluation techniques may not correspond with the particular policy problems raised by anti-emetic therapy. The natural reaction of policy makers faced with the question of benefits from anti-emetic therapy may be to conclude that such therapy is mainly cosmetic and of minor importance. More incisive decisions could be made if treatment with anti-emetic drugs was assessed in terms of patient benefit, although long-term clinical outcomes would always remain the major priority. Apart from improving the quality of life of patients during treatment, provision of information to patients must be made which will raise patients' confidence and morale and improve compliance with treatment. It is particularly important to deal with the aspects at a time when many health care providers across Europe are facing greater questions in terms of audit standards and provider competition. Oncology centers will have to face a more demanding environment with greater pressures on standards and on costs.

The likely patterns of change in secondary care can be summarized as follows for the UK.⁵

- There will be an increased demand for hospital treatment from the elderly. District Health Authorities are likely to insist on an integrated approach to treatment, covering support after discharge as well as treatment in hospital.
- There will be more information available to purchasers on quality as well as on cost and more sensitivity to differences in quality. There are likely to be more accurate adjustments to outcome or mortality indicators.
- There is likely to be more interest in prevention and in programs for positive health. The climate will be one in which the benefits of high-technology medicine will come increasingly under question. The demand will be for quality and preventive care. This may raise opportunities for new kinds of programs in pathology and diagnostic services, but may well mean patient resistance to increases in inpatient care.
- A new funding system will switch resources to areas of growing population and away from large cities. Areas with highest costs will also face the greatest funding constraints.
- There will be intense competition for marginal patients. Purchasing agencies in areas of expanding population will have the funds and the flexibility to contract for new services.

The scenario includes relative increases in personnel and capital costs, changes in patterns of health care towards new links between secondary and primary care, and a shift in culture towards prevention. The 'Health Enterprise' of the 1990s will have greater integration between hospital and community services, earlier discharge and more day treatment, and with greater emphasis on health promotion. It will also be a world of decentralized public enterprise with clearer quality standards policed by an independent agency. Thus, physicians and managers in oncology will face new challenges in innovation.

Outlook for the 1990s: a summary

The 1990s will see new challenges to health care providers in the public and the private sectors, as sweeping changes in incentives begin to take effect. The new arm's length relationship between purchasers and providers will be critical to the new system. Purchasers will be seeking to buy more clearly specified services to higher quality standards. The new

contracting systems will affect services for all groups, but for elderly patients the effect will be greater because of the greater role of local government in preparing plans for social care. The role of the family doctor will be increased through new assessments for people aged over 75 years.⁶

The new climate will stimulate innovation for new kinds of consumer-orientated services to improve health, mobility and quality of life. For the private sector this is likely to mean increasing scope for joint ventures with public sector agencies in Britain.

From the process point of view, it is important to assess that the level of expenditure involved in an anti-emetic drug regimen, typically US\$50–100, can produce significant and measured improvements in both quality of life and reduction in distress. Health economists and survey researchers now have good techniques for measuring short-term benefits, in terms of reduced anxiety and depression, and gains, in terms of symptom-rating scales, improved social functioning and loss of work time. These benefits could be very significant to patients, particularly if they are linked to better long-term compliance to treatment. There is scope for applying these techniques to immediate process issues.

Conclusions

The development of anti-emetic drugs can be presented to policy makers not as a cosmetic and fairly minor improvement in the process of care, but as a significant improvement in the process from the patients' point of view. This may make it possible to target treatment more effectively on high-risk groups and also to gain greater benefit from palliative care in a more demanding and competitive health care environment. In the longer term, anti-emetic therapy may provoke new questions and new issues in terms of redesigning services for process quality and moving to shorter, more intensive treatment on a day-patient basis. Anti-emetic therapy, therefore, can also have new and positive results in stimulating a more constructive dialog between oncologists and those who fund health policies. While the demands of oncologists will never be popular with health care funders, there could at least be constructive dialog on the kinds of investment in new and improved services that will be needed to deal with the increasing patient numbers across Europe which are forecast over the next decade.

References

1. McGuire A, Henderson J, Mooney M. *The economics of health care: an introductory text*. London: Routledge 1988.
2. Kirchner V, Aapro M, Alberto P, *et al*. The cost-effectiveness of granisetron compared with metoclopramide plus dexamethasone. *Proc Am Soc Clin Oncol* 1992; **11**: 379–84.
3. Enthoven A. *Some reflections on management in the NHS*. London: Nuffield Provincial Hospital Trust 1985.
4. Newhouse J, Manning WG, Morris CN, *et al*. Some interim results from a controlled trial of cost sharing in health insurance. *N Engl J Med* 1981; **305**: 1501–7.
5. Bosanquet N. *Investing in health care in the 1990s: a case study in planning for an NHS trust*. Health Policy Unit Discussion Paper 2. Chichester: Carden Publications Limited, 1990.
6. Bosanquet N, Gray A. *Will you still love me? New opportunities for health services for elderly people in the 1990s and beyond*. Birmingham: National Association of Health Authorities, 1989.

Appendix—Discussion

C Courtois (Belgium): What would be your best choice for an economical analysis?

N Bosanquet (UK): The first priority in this area is to encourage prevention in order to reduce incidences in the longer term. However, past changes in health behavior, such as the increase in smoking in many European countries, the increase in skin cancer and breast cancer in others, are leading to an increased demand for treatment, and as health economists, we need to be realistic about the need for treatment. We would want to see the design of cost-effective treatments which target the most expensive therapies on those groups who can benefit the most, and which also encourages the most normal social functioning in order to minimize the social and economic losses from cancer treatment. This is a programme which affects many thousands of people across Europe a year. The best choice will be fairly targeted cost-effectiveness studies with respect to anti-emetic therapy. On the available evidence, cancer treatment will not be considered a major investment program, but it can have major gains in terms of quality of life in the longer term.

MS Aapro (Switzerland): This is a very important topic with respect to the impact on the general economy. One of the messages from this presentation is that we should look beyond the immediate cost and try to integrate this with the reality of the patient's life in order that the patient's ultimate outcome can be positively influenced.