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Health technology assessment

The rule should be "no evaluation—no technology"

The inappropriate use of technology in medicine has been heavily criticised for increasing the costs of health care and dehumanising the practice of medicine.[1,2] The fact that the diffusion of specific technologies differs widely among countries suggests a complex interplay of professional, commercial, and public pressures and the lack of any coherent policy for assessing the relative value of various technologies.[3-6]

Calls for such a policy have been largely ignored in Britain, although other countries have been more receptive. The United States led the way with its programme of formal, comprehensive health technology assessment, and several European countries have followed its example.

Why then the reluctance to promote this activity in Britain?[7] Firstly, it threatens clinical freedom: although doctors would not admit to wanting to be free to use ineffective technologies, they want to maintain the right to decide which are effective. Secondly, commerce is concerned that health technology assessment will limit its freedom to maximise sales of innovations. Finally, medical researchers are reluctant to divert funds away from more basic research. They also suspect that health technology assessment may threaten the sanctity of the randomised trial as it evaluates the economic, social, and ethical implications of a technology as well as its efficacy.[7] Inevitably, health technology assessment has acquired a negative image of being concerned to slow down the adoption of new technologies and of being overly concerned with cost containment. In fact, its aim is to promote the wider use of effective technologies, whether new or old, by discovering their real benefits and burdens and so defining the indications for their appropriate use.

Managers and doctors in the NHS should both embrace these aims, according to *Tidal Wave*, the report of a recent conference on the topic.[8] In his introduction to the report Michael Peckham, the director of research and development at the Department of Health, warns managers to expect a tidal wave of technological development that could threaten effective management. Ensuring that its impetus and momentum are harnessed to provide more effective care is a responsibility of managers, who should recognise that health technology assessment is a valuable managerial tool. Managers should make it clear that decisions about expenditure on clinical priorities will be based on data provided by health technology assessment: it is no use increasing the support for, and the efficiency of delivery of, care that is inappropriate.

The wide variations in the use of technologies between places and professionals indicate how much professional uncertainty exists about appropriate use.[9] Acquiring new and better data is complex and expensive, and decisions will have to be made about which technologies are important enough to evaluate. Those concerned with common conditions should head the queue.

As consumers now expect more and better information about alternative methods of treatment they are also likely to fuel the demand for more health technology assessment. Not only do they want to choose for themselves but they also want to influence the priorities of research and provision. The public's participation is also needed because narrowly defined medical outcomes are not enough on their own: factors such as quality of life both during and after treatment are important aspects of assessment. Public participation is recognised as an essential component of the consensus conference approach to technology assessment.[10]

Although much of *Tidal Wave* is in telegraphic form, consisting of definitions, pithy statements, and action plans, it lists some of the technologies likely to change practice substantially in the next decade. The organisation of care will also change as many technologies reduce the need for inpatient hospital care—minimally invasive surgery may replace all but surgery for major trauma, cancer, and transplantation. Of 11 techniques of minimally invasive surgery listed in the report, nine are regarded as probably cost effective and two have been shown to be so—yet not one has been subjected to a randomised controlled trial. Another list of 15 technologies likely to reduce the need for hospital services includes new diagnostic techniques, systems of drug delivery, and aids for disabled people.

The report recognises that the pace of evaluation will inevitably lag behind that of innovation and that there will be gaps in our knowledge. What should be done about this? Managers (both as providers and purchasers) should promote more open discussion of appropriateness both with their doctors and among doctors. Suggested methods include local consensus conferences and the development of protocols or guidelines, which both require doctors to discuss their differences.

Nationally, health technology assessment is promised as a major component of the new research and development programme (receiving 1·5% of the NHS budget by 1996). But good information alone is not enough to effect changes in clinical practice.[10,11] Such information needs disseminating in a form that is accessible not only to doctors and managers but

also to the public and the media. One suggestion is to produce a version of *Health Technology Trends*, an American journal that resembles a *Which?* review of competing technologies, which could act as a clearing house for data on health technology assessment.

Another national initiative should be to ensure that health technology assessment is given due prominence in the training of doctors and managers. Eventually, however, managers may have to introduce incentives to encourage doctors to take health technology assessment into account when making decisions about priorities and practice. Perhaps new technology should be provided only if the users promise to evaluate it. This requires the recognition that time spent on evaluation is important.

Some fear that the emphasis on work related clinical contracts and maximising cost efficient delivery may reduce the time that doctors are willing to spend on research, which may come to be associated with other paymasters such as the Medical Research Council or the universities. It is therefore reassuring to have such a clear acknowledgement by the NHS of the importance of health technology assessment and the recognition of its need for substantial funding. Also that the NHS and MRC have once again declared the importance of joint efforts in health service research and clinical trials.[12]

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Giant cell arteritis

Probably underdiagnosed and overtreated

Giant cell arteritis has a bad image because it carries the risk of sudden blindness and stroke. The presentation of a patient with temporal headache, scalp tenderness, and a raised erythrocyte sedimentation rate is a medical emergency and sufficient clinical indication for prescribing corticosteroids. Many doctors would try to confirm the clinical diagnosis by biopsy of the temporal artery, though treatment should not be delayed while this is organised; sensitivity of temporal artery biopsy is at best 60-70%. Beyond these basic observations on the clinical assessment of temporal arteritis almost all else is a combination of mystery and mystique, and difficult questions about diagnosis and management arise. Doctors' fears that patients may go blind inspire them to prescribe high doses of corticosteroids, though the optimum dose is undefined and prolonged steroid treatment at high doses may cause a greater burden of disability in many patients than the disease itself.

Data from epidemiological studies show that giant cell arteritis is more common than previously thought. The corollary of this is that in many cases the course is different from or more benign than the classical course of the disease. A prospective study of 74 cases of the condition proved by biopsy found the presenting complaint to be atypical in 40%, with fever of unknown origin and anaemia accompanied by an acute phase response accounting for up to another quarter of cases.[1] Bengtsson and Malmvall found an annual incidence of giant cell arteritis of 9·3 cases per 100 000 people in Göteborg, Sweden (equivalent to 28·6 per 100 000 people over 50).[2] A separate study of biopsy proved giant cell arteritis in Göteborg found an incidence of 18·3 per 100 000 in those over 50.[3] Similar results were reported from Olmsted County, Minnesota, where the incidence, adjusted for age and sex, in those over 50 was 17·0 per 100 000.[4] Necropsy studies have also suggested that giant cell arteritis may be underdiagnosed or clinically inapparent during life. A prospective study of 889 necropsies and a retrospective study of 20 591 necropsies identified arteritis changes in 1·7% and 0·4% respectively.[5]

Giant cell arteritis is not easy to treat, and the consequences to the patient of both undertreatment and overtreatment are potentially serious. The optimum initial dose of corticosteroid, the rate of withdrawal, and the duration of treatment are undecided.[6] Concern regarding the development of permanent visual loss in particular has resulted in high initial doses of corticosteroids—such as 60-80 mg or more of prednisolone a day. Too rapidly reducing high initial doses predisposes to complications; a lower starting dose with slower reduction is preferable.

Polymyalgia rheumatica and giant cell arteritis are closely related, and polymyalgia rheumatica typically responds to an initial dose of 10-20 mg of prednisolone a day.[7 10] In patients with polymyalgia 15-20% have giant cell arteritis on temporal artery biopsy.[8 11 12] Despite this the clinical expression of temporal arteritis in patients with polymyalgia rheumatica treated with 10-20 mg of prednisolone a day is very low.[13-15] This evidence implies that lower initial doses of prednisolone, such as 20 mg a day, may be satisfactory in giant cell arteritis, except in those patients presenting with acute visual disturbance, in whom 60-80 mg of prednisolone is still indicated. Several studies have confirmed this,[15 16] and a recent prospective study suggested that 20 mg of prednisolone was an adequate starting dose.[17] In contrast, Kyle and Hazleman found that an initial dose of 40 mg was required to achieve control.[10] The difference between these findings seems to be the rate at which symptoms were controlled by the different doses rather than a different risk of ocular complications.

Side effects of corticosteroids are related to the initial dose, the total cumulative dose, and maintenance doses above 5 mg prednisolone a day.[18] Most patients with giant cell arteritis are still taking corticosteroids after two years and up to a half of them at four years.[6 14 16] Ayoub and coworkers found side effects of steroids in nearly a quarter of patients; these were related to the duration of treatment and not the initial dose or