temporary stellate block to show the patient the likely outcome in the limb and the effect of Horner's syndrome (which should be a minimal risk). Dorsal sympathectomy may be performed by various "open" operations. The complications of open operations include Horner's syndrome, incomplete denervation of T3 and T4 segments, contusion of the brachial plexus, vascular injury, recurrent laryngeal nerve paralysis, and cosmetic problems. These complications outweigh the potential benefits, and many doctors consider open operation to be out of date.

The recent development of minimally invasive techniques, which have included percutaneous phenol injection⁶ and percutaneous radiofrequency ablation⁷ guided by computed tomography, have provided safer alternatives, but long term effects are unknown. Currently, the most commonly used minimally invasive technique is endoscopic transthoracic sympathectomy,⁸ which, for the first time, offers a simple and effective treatment for those disabled by severe localised upper limb hyperhidrosis.⁹⁻¹¹ The original technique was described well before laparoscopic cholecystectomy but has gained in popularity after the advances in all types of laparoscopic surgery. The first international conference devoted entirely to this operation takes place later this year.

The cosmetic result is very good. There is little post-operative pain, and patients need to stay in hospital for less than 48 hours. Bilateral sympathectomies can be carried out at the same operation.

Long term complications are similar to those of conventional dorsal sympathectomy, and patients should be warned of these risks. The commonest is compensatory sweating, which may occur in 37-75% of patients.¹⁰ We do not know how to treat this unfortunate consequence, and selecting only severely disabled patients for surgery is essential. If the upper limbs are only mildly affected severe postoperative hyperhidrosis of the trunk, though uncommon, may be even worse. Gustatory sweating is also possible but is only a minor

nuisance. Intercostobrachial neuralgia may occur, but Horner's syndrome should be rare. Long term studies of recurrence rates are awaited; for conventional sympathectomy they range from zero to 5%.

Endoscopic sympathectomy is an appreciable advance in the treatment of severe upper limb hyperhidrosis and is the surgical treatment of choice. It may have a role in other conditions, but there is a danger that the operation will be recommended even when sympathectomy is of uncertain benefit—as in critical ischaemia and sympathetic dystrophy—or when it is known to have only a transient effect—as in vasospastic disease. Careful selection of patients (bearing in mind the lessons learnt from open sympathectomy) and endoscopic technique offer immediate benefit with minimum risk.

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- 1 Adar R, Zurchin A, Zweig A, Mozes M. Palmar hyperhidrosis and its surgical treatment: a report of 100 cases. *Ann Surg* 1977;186:34-41.
- 2 Simpson N. Treating hyperhidrosis. *BMJ* 1988;296:1345.
- 3 Hozle E, Alberti N. Long-term efficacy and side effects of tap water iontophoresis of palmo-plantar hyperhidrosis—the usefulness of home therapy. *Dermatologica* 1987;175:126-35.
- 4 James WD, Schoemaker EB, Rodman OG. Emotional eccrine sweating. *Arch Dermatol* 1987;123:925-9.
- 5 Keaveny T, Fitzgerald P, Donnelly C, Shanik G. Surgical management of hyperhidrosis. *Br J Surg* 1977;64:570-1.
- 6 Dondelinger RF, Kurdziel JC. Percutaneous phenol block of the upper thoracic sympathetic chain with computed tomography guidance. A new technique. *Acta Radiol* 1987;28:511-5.
- 7 Wilkinson H. Radiofrequency percutaneous upper thoracic sympathectomy. *N Engl J Med* 1984;311:34-6.
- 8 Weale FE. Upper thoracic sympathectomy by transthoracic electrocoagulation. *Br J Surg* 1980;67:71-2.
- 9 Byrne J, Walsh TN, Hederman WP. Endoscopic transthoracic electrocautery of the sympathetic chain for palmar and axillary hyperhidrosis. *Br J Surg* 1990;77:1046-9.
- 10 Edmondson RA, Banerjee AK, Rennie JA. Endoscopic transthoracic sympathectomy in the treatment of hyperhidrosis. *Ann Surg* 1992;215:289-93.
- 11 Adams DCR, Wood SJ, Tulloh BR, Baird RN, Poskitt KR. Endoscopic transthoracic sympathectomy: experience in the south west of England. *Eur J Vasc Surg* 1992;6:558-62.

Screening: reasons to be cautious

Stringent criteria must be met before implementation

Papers advocating the adoption of new screening procedures appear from time to time in the medical press. These are usually followed by a vituperative exchange of opinions in the correspondence columns on the advantages, disadvantages, and ethical, psychological, and economic consequences of such procedures.¹⁻⁴

Screening for disease has become extremely popular. There seems to be an assumption in some quarters that if undiagnosed conditions exist it is the medical profession's responsibility to hunt them down. Many industrial firms provide free screening examinations, either in house or through private medical organisations, as part of an employment contract, and the new contract for general practitioners also encourages such checks. Such evangelism prevails despite the lack of evidence that some of the procedures are of benefit⁵ and positive evidence that they may lead to increased anxiety, illness behaviour, and use of scarce health service resources.⁶

One recent example of advocacy of screening has been the use of prostate specific antigen concentration or transrectal ultrasonography to detect prostatic cancer. Unfortunately, its advocates have not taken into account the problems of

sensitivity, specificity, and predictive power—which make these tests inadequate as screening procedures.⁷ As important as these criteria is the outcome of treatment. Some 95% of prostatic cancer occurs in people aged over 65, and 97% of deaths from the condition occur in this age group.^{8,9} The current average life expectancy in men in this age group in Britain is eight years. Yet it seems that patients with prostatic cancer detected before metastasis and treated have only an equal expectation of survival—eight years. Clearly, therefore, before any programme of screening for this condition is considered seriously, properly conducted randomised controlled trials of screening and treatment compared with a policy of "wait and see" are essential even with all the difficulties. A recent government report has commented on the need to introduce better scientific assessment of and advice on screening procedures.¹⁰

But for it to improve health there are certain basic requirements. Firstly, better population registers must be devised for use in any screening programme. The importance of an accurate database is fundamental and cannot be overemphasised. Secondly, accurate information is required on the availability and quality of local facilities for diagnosis,

treatment, and follow up for the condition in question, with one senior person locally responsible for coordinating all screening activities. Thirdly, an authoritative national body should be established to monitor and evaluate new proposals for screening and ensure that its recommendations are considered before current practices are changed substantially or new test procedures introduced.

The principles and criteria to be used by such a body are well established.¹¹ In brief, they are that when considering any new proposal account should be taken of all relevant scientific evidence, the availability of effective treatment, the importance of the condition, and the financial implications.

The resource consequences of screening are important. When resources in the health services are scarce and their use is under careful scrutiny, ineffective or inappropriate screening must be avoided. Screening is not necessarily benign and, with the proliferation of new technology and techniques, never has it been more important to maintain stringent criteria for any proposed programme. As Archie Cochrane and I wrote over 20 years ago, there is an ethical difference between everyday medical practice and screening. If patients ask doctors for help then doctors do the best they can. They are not responsible for defects in medical knowledge. "If, however, the practitioner initiates screening procedures he is in a very different situation. He should, in our view, have

conclusive evidence that screening can alter the natural history of the disease in a significant proportion of those screened."^{11 12} Only if screening is carried out efficiently and humanely, leads to an improved outcome in those concerned, and is properly monitored and evaluated should it be contemplated.

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- 1 Clarke A, Parsons EP. Screening, ethics, and the law. *BMJ* 1993;306:209.
- 2 Leese GP, Ahmed S, Newton RW, Jung RT, Ellingford A, Baines P, et al. Use of mobile screening unit for diabetic retinopathy in rural and urban areas. *BMJ* 1993;306:187-9.
- 3 Parker L, Craft AW, Dale G, Bell S, Cole M, McGill AC, et al. Screening for neuroblastoma in the north of England. *BMJ* 1992;305:1260-3.
- 4 Wiggins S, Whyte P, Huggins M, Adam S, Theilmann J, Bloch M, et al. The psychological consequences of predictive testing for Huntington's disease. *N Engl J Med* 1992;327:1401-5.
- 5 Morrell DC. Role of research in development of organisation and structure of general practice. *BMJ* 1991;302:1313-6.
- 6 Stoate H. Can health screening damage your health? *J R Coll Gen Pract* 1989;39:193-5.
- 7 Babaian RJ, Miyashita H, Evans RB, Ramirez EI. The distribution of prostate specific antigen in men without clinical or pathological evidence of prostate cancer: relationship to gland volume and age. *J Urol* 1992;147:837-40.
- 8 Office of Population Censuses and Surveys. *Cancer statistics registrations 1986*. London: HMSO, 1991. (Series MBI No 19.)
- 9 Office of Population Censuses and Surveys. *DH No 17*.
- 10 Advisory Council on Science and Technology. *A report on medical research and health*. London: HMSO, 1993.
- 11 Wilson JMG, Jungner G. *Principles and practice of screening for disease*. Geneva: World Health Organisation, 1968.
- 12 Cochrane AL, Holland WW. Validation of screening procedures. *Br Med Bull* 1971;27(1):3-8.

Health care reform

The difficulties of controlling spending at the macro level while promoting efficiency at the micro level

Health care systems seem to come in all shapes and sizes, but at least in developed countries several common models can be identified. As a recent study from the Organisation for Economic Cooperation and Development (OECD) has shown, three models are particularly prevalent.¹

The public integrated model involves financing health services through taxation along the lines of Britain's NHS. This model is described as integrated because public financing is combined with public ownership of hospitals and salaried employment of doctors. Hospitals are funded through global budgets, and services are usually provided free at the point of use to patients.

The public contract model involves financing health services through compulsory insurance along the lines of the German health system.² Sickness funds act as health insurance organisations, which are responsible for ensuring that services are available to their subscribers. These services are delivered by independent providers under contract to the sickness funds.

The public reimbursement model also involves compulsory insurance financing of health services through sickness funds. In contrast to the public contract model, there is no connection between the sickness funds and providers. Providers deliver care to patients, who are reimbursed by the sickness funds for out of pocket, fee for service payments to independent providers. Both the French and Belgian health systems have traditionally been based on this model.

In reality, each country's health care system includes elements of more than one model. For example, in Britain the financing of primary care services, with its emphasis on independent contractor status for family practitioners, contains many of the features of the public contract model. It

is also the case that health care reforms are producing changes in the mixture of arrangements found in different countries. Britain again exemplifies this, with its shift from the public integrated model to the public contract model through the separation of purchaser and provider roles and the introduction of a managed market.

Whatever the preferred approach, policy makers in all countries have shared a concern to contain the growth of spending on health services. In this respect, they have been remarkably successful. Seven members of the OECD reduced sharply the rate of growth of their health expenditure in the 1980s compared with the 1970s. Cost containment was particularly effective in the integrated systems of Britain, the Republic of Ireland, and Spain. Those countries relying on the reimbursement model—Belgium and France—had the greatest difficulty in containing costs, while the contract based systems of Germany and the Netherlands fell in the middle.

In all seven countries, public financing remained the favoured method of paying for health care. Indeed, two countries—the Netherlands and Spain—took steps to extend the scope of public financing to ensure universal coverage for their populations. Despite calls for privatisation and the imposition of cost sharing arrangements, no country made a significant move in this direction. Instead, priority was given to supply side measures, like the imposition of global budgets for hospitals. And as the 1980s wore on, policy makers turned their attention to reforms involving the introduction of competitive principles. This was prompted by a belief that these reforms would offer stronger incentives for the efficient use of resources and would motivate providers to be more responsive to users.