if not identical with the painless thyroiditis occurring apart from pregnancy, which makes up at least 10% of all cases of hyperthyroidism in North America.^{18 19} The histological appearances of the thyroid and serological changes favour an autoimmune origin, a view supported by the association of the syndrome with HLA-DR3 (as seen in Graves' disease and atrophic thyroiditis) and HLA-DR5 (as seen in Hashimoto's disease).²⁰ Plainly patients with postpartum thyroid dysfunction go unrecognised, though sporadic cases of transient hypothyroidism are now being seen in Britain. Their clinical implications are uncertain; the condition is often self limiting, but it may herald later, more overt manifestations of thyroid disease. Certainly psychiatric disorders such as postpartum psychoses have been reported in some affected patients.¹⁵

Systematic epidemiological studies of the prevalence of postpartum thyroid disease are now required in Britain and in Europe. If these show that postpartum thyroid disorders arise largely from the pool of asymptomatic women with thyroid antibodies then screening for such antibodies might be added to the routine tests performed in early pregnancy. Sensitive, robust, and automated assay systems for thyroid antibodies—for example, ELISA (enzyme linked immunosorbent assays)—are now readily available.²¹ Awareness of the risk to the fetus and neonate of transplacentally derived thyroid antibodies should now allow recognition and early treatment of the rare neonatal thyroid syndromes.

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Economic appraisal

Over a decade ago Cochrane adopted an arresting antithesis as the title for his Rock Carling lecture—*Effectiveness and Efficiency*. These words have now become commonplace in the language of health service management and politics but they are often misunderstood by clinicians. Efficiency at a technical level is a relatively simple concept and is to do with the use of facilities. The need for it can hardly be disputed, though clinicians vary widely in their enthusiasm for pursuing goals such as maximising patient flow through investigations, beds, and operating theatres. The recently introduced term "efficacy," promoted by the Office of Technology Assessment in Washington, describes safety and benefit in a pilot study—when committed clinicians promoting an innovation use it on selected patient populations. Effectiveness is now usually restricted to benefit accruing when the application is more widespread—but people differ about its meaning. For some effectiveness relates to benefit under average conditions of use—the drug, technology, or service is robust enough to survive without the commitment and ideal environment of the early evaluators. For others it means that benefit has been shown in the community as a whole, which is related also to the prevalence of patients likely to benefit and to the availability of the technology. By this latter definition effectiveness requires more than clinical evaluation even when this is done in a variety of circumstances.

Clinicians are also often confused about cost effectiveness and cost benefit. It does not help that cost effective analysis is to do with technical efficiency: the least costly means of achieving a specified beneficial end—for example, is dialysis or transplantation the better treatment for end stage renal disease? Cost benefit analysis is about allocative efficiency: whether it is better to use resources in one way than another—for example, to relieve renal disease or heart disease. It is therefore about ends not means. Clinicians readily accept the principle of cost effective analysis, but they are usually less happy about cost benefit analysis because this requires an explicit evaluation of benefits. Such a comparison calls for a monetary value to be ascribed not only to material benefits such as earning capacity but also to gains such as years of quality adjusted life, the relief of pain, or the resolution of anxiety and uncertainty. Ascribing values to such intangibles calls for judgment, and clinicians may disagree about the values. But the advantage of requiring such an attempt when comparing benefits is that it then becomes clear how much

weight is attached to such value judgments as distinct from more readily ascertainable gains.

Not only are clinicians uncertain about the meanings of these various terms but they often suspect that they are cloaks for cuts in services or savings in expenditure. Their shield against these threatening intruders is another much misunderstood word—ethics. They suppose that invoking ethics will ensure that clinical freedom remains sacrosanct, which in turn appears to empower clinicians to act as patients' advocates. Hence they seek to ensure that *their* patients have access to all possible services, regardless of need or expectation of benefit relative to the patients of other specialists.

In this competition for resources each bidder claims ethical justification, rather as soldiers on both sides in battle each assert that God is on their side. To deal more rationally with such difficult decision making economic appraisal is beginning to emerge. This seeks to improve the efficiency of decision making about allocating resources in the public sector by considering the rate of investment in various competing technologies that will best serve the interests of the community. A serious restraint on good decision making in the health services is the lack of good information. Economic appraisal provides techniques for systematically identifying, organising, and presenting the information required for a decision to be made. It seeks to ensure that all factors relevant to a given decision are taken into account, having been measured and valued. Given that it offers techniques not only for examining alternatives but also for generating options, economic appraisal can be creative, coming up with radical solutions that might not have occurred to the committed professionals. Such an approach acknowledges that it is not enough to show efficacy under trial conditions or even effectiveness in a wider context before diverting resources to a particular technology: it is also necessary to decide that society would best be served by not deploying a similar quantum of resources in other ways in the same or another specialty.

Although this may sound a sensible approach its adoption has been slow and patchy. Nevertheless, the Department of Health now requires economic appraisal for all major capital schemes, and Mooney and Ludbrook (p 1817), from Aberdeen, hope that this will stimulate economic appraisal of many other decisions within the NHS. A small workshop organised by these workers considered why clinicians were so reluctant to accept economic appraisal, apart from the profession's traditional conservatism and isolationism.¹ Many were probably unaware of its existence; others misconstrued its nature and purpose or dubbed it as the management fashion of the year; and yet others held that it was no more than giving fancy labels to what was already being done. Hence managers and clinicians need education and instruction, for they will have to carry out most of the appraisal, given the dearth of health economists.

In 1982 an unusual international symposium in Switzerland sought to confront the intellectual issues associated with evaluation in medicine and to break down the communication barriers that are inevitable when clinicians, policy analysts, and economists try to discuss the same problem.² This was no rehearsal of theoretical positions, because the symposium dealt empirically and pragmatically with three specific technologies—end stage renal disease, cimetidine treatment for duodenal ulcer, and computed tomography of the head. These interesting and unusual papers discussed the concept of "worthwhileness" and how it can be measured, and the resulting book is a classic text on economic appraisal expressed in language entirely accessible to clinicians.

The main British contribution was from Professor Alan

Williams of York, who has dealt explicitly with the supposed conflict between the ethical and the economic approach to health care technologies.³ Like those concerned with clinical trials whose ethics are sometimes challenged he turns defence into attack: unless a technology has been shown to be effective by trials and to be justifiable by economic appraisal then it might be regarded as unethical to use it. By this standard the entrepreneurial spirit associated with the clinical freedom fighters ("I know what's best for my patients regardless of trials or economics") begins to sound distinctly old fashioned.

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¹ Ludbrook A, Mooney GH. *Economic appraisal in the NHS: problems and challenges*. Aberdeen: Northern Health Economics, 1984.

² Culyer AJ, Horisberger B, eds. *Economic and medical evaluation of health care technologies*. Berlin: Springer-Verlag, 1983.

³ Williams A. *Medical ethics, health service efficiency, and clinical freedom*. London: Nuffield Provincial Hospitals Trust, 1984. (Nuffield York Portfolios, No 2.)

Infection, immunity, and blood transfusion

"Or any taint of vice whose strong corruption
Inhabits our frail blood"—*Twelfth Night* III, iv, 390

The hazards of infection from blood transfusion were the subject of the annual scientific symposium of the American Red Cross in Washington this spring. The meeting was preceded by a memorial lecture dedicated to the life and work of Professor Wolf Szmuness, whose remarkable career, devoted to the study and prevention of hepatitis B infection, matched the dramatic story of his life, swinging from the depth of despair in a Siberian labour camp to the heights of scientific success and prestige in the United States.

The general trend towards unpaid voluntary blood donation and the introduction of screening tests for hepatitis B surface antigen have greatly reduced the incidence of post-transfusion hepatitis in the United States. At present its incidence ranges between 5% and 10%, and well over 90% of these infections are caused by the non-A, non-B hepatitis viruses. Although non-A, non-B infections are usually anicteric and seem to be mild, they are nevertheless characterised by a prolonged increase of transaminase activities. Most patients who are infected go on to suffer from chronic hepatitis, and some 10-20% develop cirrhosis. Despite much effort no satisfactory serological assay for non-A, non-B viruses has been developed, probably because the amount of circulating antigen is very low. Studies on chimpanzees have confirmed that this form of hepatitis is due to one or two transmissible agents; these cause characteristic proliferative changes in the cytoplasm of hepatocytes and produce reticular inclusion bodies. The pathogen seems likely to be either an RNA togavirus or a DNA hepatitis-B-like virus—or possibly an entirely new viral agent. Non-A, non-B hepatitis is not uncommon in the United States population independently of blood transfusion; the mode of transmission is not clear. Prevention depends on better knowledge of the epidemiological features of the infection—and on the development of an appropriate serological marker.

Although other infectious diseases such as syphilis, relapsing