

hormone dependent target tissues. In the embryonal tumours, where treatment is having most success, most of the population is maintained in the proliferative cycle and the bulk of cell production is wasted by cell death; Bagshawe⁵ has indicated that these may be cardinal features of cancers that respond to chemotherapy. Now the problem is to think of ways of forcing natural wastage to even higher levels—a strategy that would exploit the innate behaviour of the cancer cells. Conversely, these findings reinforce fears that the large proportion of quiescent cells in many adenocarcinomas puts them beyond the reach of current treatment, though their progress may be impeded by attacking the vulnerable parts of their population.

Given an initial tumour mass of 10 g and 99% of cells killed by treatment, 100m cancer cells will still be left behind. Only when the effect is expressed in logarithmic terms is one sharply reminded that a reduction from 10¹⁰ to 10⁸ cells still leaves a long way to go before the tumour is eradicated.

¹ Malaise, E P, Chavandra, N, and Tubiana, N, *European Journal of Cancer*, 1973, 9, 305.

² Tubiana, M, and Malaise, E P, in *Scientific Foundations of Oncology*, ed T S Symington. London, Heinemann, 1976.

³ Steel, G G, in *Cancer Medicine*, eds J F Holland and E Frei, p 125. Philadelphia, Lea and Febiger, 1973.

⁴ Cooper, E H, et al, *Advances in Cancer Research*, 1975, 21, 59.

⁵ Bagshawe, K D, *British Journal of Cancer*, 1968, 22, 698.

Social trends

In the early 1960s a new intellectual fashion was launched in the United States: the social indicators movement. The idea was to complement economic statistics, which record only those changes which are measurable in money terms, with social statistics, which would record changes in the quality of life. Furthermore, these social indicators were seen as serving policy makers in much the same way as economic indicators—as signals for action. In the event, social indicators have turned out to be rather a social scientist's Concorde: prestigious rather than generally useful. However, the movement did generate in Britain one byproduct which has earned its keep—*Social Trends*, the Central Statistical Office's annual compendium of figures about the state of the nation's health, housing, education, and general welfare (as indicated by such a variety of measures as, for example, crime rates, the breakdown of marriages, and amount of leisure time). Now in its sixth year,¹ *Social Trends* has developed into the best available guide to British official statistics, extracting the key figures from the specialist volumes and making them available in a way which allows those interested in, say, health to look at developments in other, possibly relevant, fields.

Apart from its value as a reference book *Social Trends* should therefore help to discourage people from thinking about health and other social policy issues in compartmental, and that is departmental, terms. Instead, it should stimulate ways of thinking about problems which cross administrative boundaries—for example, discussion of the health needs of the elderly as they relate to housing conditions or the provision of other forms of social support. That sort of approach was indeed recommended by the Government's own "Think Tank"—the Central Policy Review Staff—in a recent report²; let us hope its proposals for looking at policy issues within a common framework will not be treated in the same dismissive way as its study of the car industry.

While no one can quarrel with this general approach, it is more difficult to identify the most useful, specific units of analysis. Should it be specific groups such as the elderly? Should it be geographical groups? Or should it be social groups? Helpfully, the latest issue of *Social Trends* illustrates some of the practical difficulties by looking at social statistics both by area and by class. In particular it shows that in terms of the distribution of social well-being Britain has a long way to go yet before achieving a classless society, and, as it points out, "The original reason for developing the Registrar General's concept of social class was to examine variations in mortality." Thus semiskilled manual workers tend to suffer more than the other social classes from both chronic and acute sickness, while their children tend to be shorter, with poorer eyesight and more tooth decay, than the rest. Similarly, as social class falls, there is more overcrowding, more unemployment, and less education.

While such statistics may confirm the continuation of inequality on a number of measures, they do not provide any ready answers—and indeed may encourage simplistic, ideologically based policy recipes. For instance, the health of unskilled workers may be poorer than that of the rest of the population for a variety of reasons: because of inherited characteristics, because of working conditions, because of their living environment, or because people in poor health tend to drift down the employment hierarchy into the poorest jobs. It would be dangerous to use the association of poor health (and high use of NHS facilities) with low social class as an argument against the recent recommendations by a DHSS working party³ for cutting down the allocation of resources to inner city areas, like London and Liverpool, where at present there is an excess of provision relative to the rest of the country. True, these inner city areas have, as another article in *Social Trends* shows, a high proportion of unskilled working class families with their associated problems. But it does not follow that these deprived areas require more in the way of medical care as distinct from better housing or other services. So while *Social Trends* is invaluable as a source of statistics and information it also offers a warning about the amount of work that remains to be done before social statistics become a reliable guide to social action.

¹ Central Statistical Office, *Social Trends No 6*. London, HMSO, 1975.

² Cabinet Office, Central Policy Review Staff, *A Joint Framework for Social Policies*. London, HMSO, 1975.

³ *British Medical Journal*, 1975, 4, 66.

Computers and privacy

As more and more agencies and institutions become "computerised" people naturally begin to worry that the data provided will find their way into some amorphous information bank over which they have no control and whose purposes are far removed from those for which the data were originally intended. Most democratic countries and organisations are well aware of the problem. In West Germany and Sweden data protection laws have already been enforced. Draft legislation is under consideration in Norway, Austria, New Zealand, and Canada. The Council of Europe has issued detailed recommendations about the establishment, operation, and development of data banks in both the public and the private sector; comparable views have been expressed in the United States by the Committee on Scientific and Technical

Information and the Department of Health Education and Welfare.

Here in Britain studies conducted by a committee chaired by Sir William Younger have led to a report¹ on *Computers: Safeguards for Privacy*; many of its conclusions have been incorporated in the Government's own White Paper,² *Computers and Privacy*, published just before Christmas. Some of the principles are little more than a welcome restatement of common sense—such as those which state that information should be regarded as being held for a specific purpose; should not be used without authorisation for other purposes; and access to it should be confined to those who are authorised to have the information for the purpose for which it was supplied. Others may prove more controversial in the eyes of doctors—such as that which recommends that an individual could insist on being told about the information concerning him. One or two of the principles may even cause a wry smile in medical data-processing circles, such as that “care should be taken in coding value judgments.” The Government's reaction to the report, as judged by the White Paper, is cautiously favourable, and the latter contains a promise to study the prospects for legislation. Most notable in this respect is the proposal to set up some form of statutory agency to oversee the usage of computers that handle personal information.

How does all this affect the practising clinician? Perhaps surprisingly, it affects him a good deal. Medical applications already form much of the usage of computers; and it is already quite clear that storage of data in computers for medical purposes may pose particular and difficult problems. For example, the Government itself realises that computer-held medical records will contain some data which relate to the patient's treatment, care, and prognosis: and a doctor may not always consider it in his patient's best interests for him to have access to this information. Whether the doctor is right in this supposition may be a matter for discussion; but what is beyond dispute is that many doctors would object strenuously to a system whereby a patient had—as of right—access to every detail of his treatment or care.

Clinicians must not be seen to stand aside from the debate about computers and individual privacy. Medical data are at times more sensitive than any other form of personal information, and all of us need to be well aware of the potential anxieties voiced in the recent spate of reports to governments and international agencies. It seems both logical and desirable to declare a simple aim for medical computing databanks—namely, that data held in such systems should be as secure and free from abuse as those already held in traditional medical records. If a lesser standard of security is envisaged in a particular instance then reasons should be given publicly, so that they can be discussed openly. Ideally, data provided for medical computing systems should be as secure as those provided to an individual doctor. This, nevertheless, raises a further point concerning computer people rather than the machinery they operate: and, disappointingly, the White Paper does not discuss it in much detail. For, while it is relatively easy to devise a foolproof computing system, it is almost impossible to devise one which is proof against malice.³

What action needs to be taken in the light of present circumstances? Firstly, there needs to be more awareness of the problem. The Younger Committee's report, the White Paper, and indeed the recent Medical Research Council pamphlet on similar lines⁴ should be required reading for all those responsible for handling medical information. Secondly, the profession should declare its willingness to

take part in whatever further discussions may be necessary to ensure the highest possible standards and safeguards on privacy of medical information, whether computer held or not. Finally, we need to look much more carefully at the impact of people on computers (rather than, as is more usual, the impact of computers on people). The time is not far away when, at the press of a few appropriate keys, a data clerk will be able to obtain sensitive information about literally millions of people. At the other end of the scale, we need to look at a new and growing problem—that of the doctor with his own personal mini-computer, whose usage he understands but whose implications he does not.

Perhaps the answer lies in a tiered system of security along Scandinavian lines, so that anyone may have access to non-sensitive information (name, registration number, and so on), but only the attending physician may have access to the more sensitive parts of the case-record. More likely the answer lies in much better education for doctors concerning all aspects of medical information and computing; and above all in the acceptance that, with respect to security of personal data, computer staff in medical systems are bound by the same code of conduct as the practising doctor. After all, there is a precedent for this concept—the role of the medical secretary—which has worked pretty well over the years.

¹ *Computers: Safeguards for Privacy*. London, HMSO, 1975.

² *Computers and Privacy*. (White Paper) London, HMSO, 1975.

³ Clarke, A C, *2001 A Space Odyssey*. London, Hutchinson, 1968.

⁴ *Responsibility in the Use of Medical Information for Research*. London, Medical Research Council, 1972.

Hyperthyroidism of hydatidiform mole

Hyperthyroidism is not a single clinical entity, but some 99% of cases are associated with Graves's disease or a nodular goitre.¹ Its association with hydatidiform mole was first described twenty years ago by Tisné and colleagues,² and reports of other cases have appeared from time to time since. The true frequency of this association is uncertain, since hydatidiform mole and other trophoblastic tumours are uncommon in developed countries, and clinical hyperthyroidism may well have been overlooked in some affected patients. Hyperthyroidism has also been reported in two men with choriocarcinoma of the testis.³ High levels of a thyroid stimulating hormone have been reported by using bioassay techniques⁴⁻⁶ in these cases, and the hyperthyroidism has been shown to remit after successful treatment of the trophoblastic tumour.⁶⁻⁸ This thyroid stimulator originates in the molar tissue and differs biologically and immunologically from pituitary thyroid stimulating hormone (TSH),⁹ the chorionic TSH of normal placentae, and thyroid stimulating immunoglobulins.^{4 6 10} Detailed studies by Hershman and Higgins and their colleagues^{9 11} have shown that highly purified human chorionic gonadotrophin (HCG) has thyroid stimulating activity and that there is a close correlation between the serum levels of HCG measured by radioimmunoassay, molar TSH measured by bioassay, and triiodothyronine (T₃). Both HCG and TSH are glycoprotein hormones which consist of two non-identical subunits, designated α and β . The α subunits of these (and the other glycoprotein hormones) are interchangeable without loss of biological activity, while the β subunits confer hormonal specificity. The chemical similarity of these