

are being altered by creeping commercialisation,¹⁸ and public good has been equated with private gain. The Scott report casts light on a particularly sordid episode in public policy. At present, no one can assume that public health policies are immune from similar danger where they seek to reconcile the interests of government, industry, and the public away from the public gaze.

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The nature of general practice

Yes to traditional values must mean no to fundholding and managerial ambitions

Patients and doctors are actors in a play written by history, directed by culture, and produced by politics. Over recent years, the producer has become increasingly autocratic, ignoring the experience of the writer, the sensitivity of the director, and the expertise of the actors. This has happened in many countries¹ but perhaps most obviously in the setting of British general practice.² The almost simultaneous introduction of a market ideology into the NHS and the imposition in 1990 of the new contract for general practice have been experienced as threats to the very nature of the discipline.^{3,4} General practitioners have felt bewildered and undervalued and there has been a worrying fall in applications for both vocational training schemes and practice vacancies. Government, policy makers, and managers are perceived as valuing the internationally recognised cost effectiveness of British general practice without understanding the nature of the subtle transactions between doctor and patient which make that cost effectiveness possible. General practitioners are asked to take on more and more and they sense that the real substance of their work is being marginalised.⁵

Such upheaval is profoundly threatening, but it has also forced general practitioners to reflect on their predicament and to seek to define the essential content of their discipline in the context of modern primary care. The Royal College of General Practitioners has made a major contribution to this process with the recent publication of its report on the nature of general practice.⁶ Traditionally, general practice has been committed to the needs of the individual person, public health to the needs of populations, and primary care to the needs of both.² The college's report dissects the processes by which, when general practitioners abandon their commitment to the individual patient and move into the wider arenas of primary care and public health, a number of practical incompatibilities, ethical conflicts, and professional tensions ensue.

The report describes the way in which the multidisciplinary team has become the unit of modern primary care, extending the range of general practice to include disease prevention and health promotion; but teamwork, skill mix, and delegation

erode personal doctoring and continuity of care, both of which are valued by patients. Gatekeeping has always been an essential task of general practice; general practitioners deal with 90% of the health problems presented to them⁷ and act as an advocate for those patients who require specialist services. In the new market driven health service the rationale of gatekeeping has shifted from the best interest of the individual patient to a utilitarian population perspective. The role of financial gatekeeper, with its emphasis on cost containment, endangers the basic trust patients need to have in their doctors. A more managerial role gives the general practitioner administrative power but dilutes the doctor-patient relationship. Paperwork grows; patient work shrinks. Lack of time leads to fragmented care and limits clinical standards. The report concludes that tighter contractual and bureaucratic control undermines the capacity of general practice to respond flexibly and sensitively to the different needs of each patient.

Courageous choices must be made

Confronting these conflicts, the college restates two enduring strengths of general practice. The first is the continuous longitudinal relationship with patients which produces the personal knowledge and the mutual confidence that enable the general practitioner to match appropriate services to the particular needs of the individual patient. The second is the particular expertise of the general practitioner, whose clinical skills are adapted to the undifferentiated nature of the problems presented in primary care, the clinical probabilities and dangers that arise, the low technology setting, and the potential for using time as a diagnostic tool.

The college's diagnosis of the current trouble and its description of the eternal nature of general practice are both well done. However, although the report asks the right questions, it seems to lack the courage to find the answers and define the way forward. The last chapter describes the results of a laudably wide consultation exercise driven by an awareness that many of the questions must be debated well beyond the confines of general practice if enduring answers

are to be found. This leaves a troubling sense of trying to please everyone. Choices must be made. Affirmation of the traditional model of general practice demands the rejection of those changes which threaten it. Yes to availability, continuity, and advocacy for the individual must mean no to fund holding and managerial ambitions.

In a fractured and distressed society,⁸ general practice has undeniable strengths.⁹ Accessible to all and free at the time of need, general practice promotes equity and solidarity. It offers value for money and inhibits the inappropriate and expensive use of specialists.¹⁰ General practice remains dependent on the human touch and counteracts the reliance on technology and fragmented specialist care which can sometimes result in a lack of compassion. The increasing availability of knowledge through information technology is challenging traditional medical paternalism. General practice is pioneering the shift from an authoritarian to a democratic model with doctor and patient as coproducers of health.⁷ Modern fragmented technomedicine induces unrealistic and dangerous expectations while at the same time promoting dependency. Biological variation and the stresses and misery of human life are converted into diagnoses with consequent demands for specialised investigation and treatment.¹¹ The general practitioner can counteract both the somatisation of unhappiness¹² and help increasingly sophisticated consumers to recognise that the achievements of medical science remain limited. Unfortunately the profession is also fractured and

distressed, and this may explain why, despite all this, the college stops short of making a final judgment. Times of turmoil are times of opportunity but not if tough decisions are indefinitely postponed.

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Declining sperm counts

Environmental chemicals may be to blame

The controversy over whether sperm counts have declined over the past 50 years is reopened by two papers in this issue of the *BMJ*. In a carefully analysed study of cohorts of unselected men in Britain born between 1951 and 1973, Irvine and colleagues demonstrate a progressive decline in sperm concentration and total sperm number per ejaculate of about 2% a year over 11 years.¹ A smaller study by Bujan *et al* finds no change in sperm counts of sperm donors in the Toulouse area of France over a 16 year period.²

The controversy over sperm counts began with a meta-analysis by Carlsen *et al* which showed a decline in a sperm concentrations from $113 \times 10^6/\text{ml}$ to $66 \times 10^6/\text{ml}$ between 1940 and 1990.³ These findings were supported by Auger *et al* in a study of 1351 fertile men in Paris.⁴ Commentators have criticised both the retrospective design and the mathematical analysis used by Carlsen *et al*.^{5,6} Irvine *et al* have used data from one laboratory and employed appropriate mathematical analysis to reach their conclusion that sperm counts have declined.¹ Bujan *et al* suggest that the difference between their findings and those of Auger *et al* may be related to the differing environmental conditions of rural and urban populations.²

The reported decrease in sperm concentration may seem difficult to reconcile with the absence of any detectable decrease in male fertility.⁵ But important impairment of fertility is often not evident until sperm concentrations decline below $5 \times 10^6/\text{ml}$.⁷ This is consistent with one hypothesis advanced to explain the decline in sperm count. Sharpe and Skakkebaek proposed that exposure of the fetal testis to oestrogens or oestrogenic compounds decreased the multiplication of Sertoli cells.⁸ These cells control the inner

environment of the seminiferous tubules in which spermatogenesis occurs,⁹ and there is strong evidence that each Sertoli cell can support only a limited number of germ cells.¹⁰ Hence a decrease in the number of Sertoli cells reduces the output of fertile spermatozoa. Our growing knowledge of how the number of Sertoli cells can be manipulated¹¹ may provide clues to how environmental factors affect sperm output.

Oestrogens and pesticides are implicated

The concept that exposure of the fetal testis to oestrogens can interfere with adult sperm production is supported by other data. The sons of women who were given diethylstilboestrol in pregnancy between 1945 and 1970 have been found to have decreased sperm counts and semen volume and an increased incidence of cryptorchidism and hypospadias.¹² The Danish Environmental Protection Agency has recently released a report raising concern over possible links between environmental chemicals that have oestrogenic effects and the increasing incidence of cryptorchidism, testicular cancer, and declining sperm counts.¹³

Another environmental pollutant with the potential to influence testicular function in utero is the main metabolite of DDT, p,p-DDE, which has been shown to act as an antiandrogen.¹⁴ Countries such as Brazil and Mexico used nearly 1000 tonnes of DDT in 1992.¹⁵ The metabolic products of DDT and related molecules seem to have the capacity to act through oestrogenic or antiandrogenic mechanisms on the developing male reproductive tract.¹⁵

The time delay between exposure to an agent and development of reproductive dysfunction can often pose problems of

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