

involved the physicians in developing a treatment algorithm. Secondly, they performed and publicised periodic audits of each physician. Use of antibiotics dropped from 80% to 30% of all cases of diarrhoea seen in the clinic, and use of oral rehydration salts increased from 30% to 70%. Moreover, these changes were sustained 18 months after starting the programme. In Indonesia, Santosa was able to demonstrate a highly significant reduction in antibiotic use for diarrhoea after a programme of small face to face interventions with prescribers.³

Such methods might be effective for physicians working as employees in hospitals or health maintenance organisations, where standards of case management can be maintained. But what of self employed physicians or independent drug sellers? These groups experience no independent audit and little peer pressure. Unlike in the United States and some other countries, there may be no requirement for continuing education. In addition, incentives may be totally different; the profit margin from drug sales may be of prime importance. If interventions are to modify inappropriate prescribing they "must touch all groups in the medication cycle (consumer, service provider, supplier, and manufacturer), in order to reinforce behaviour change."⁴

A better informed consumer is an important element in reducing the use of inappropriate drugs. Practitioners and drug sellers focus on the individual, not the group. The opinion and behaviour of the consumer is important in both com-

pliance with treatment and selection of the most appropriate drug. At a minimum, the public should know what constitutes the best treatment and that more expensive drugs are not necessarily more effective. Treatment programmes should be demystified, and the public should be informed of the benefits and risks of different forms of treatment.

Though we are beginning to understand how economics and practice based incentives influence prescribing practices, we are quite ignorant about how beliefs affect patient compliance. An interdisciplinary approach involving physicians, economists, behavioural scientists, communication specialists, manufacturers, and others will need to address the problem of inappropriate use of antibiotics if we are to avoid the increasingly alarming reports of worldwide resistance.

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Preventing sports and leisure injuries

Britain can learn from Quebec

Despite the British government's avowed commitment to accident prevention,^{1,2} there seems to have been little progress towards developing effective programmes for preventing injuries sustained during leisure activities. This policy inertia may simply reflect a more general public indifference to leisure injuries, which many people (mistakenly) regard as unavoidable. But the media can generate interest in such injuries if the circumstances are sufficiently dramatic or if well known personalities are involved. Few in Scotland, for example, were left unaware of the recent deaths of the boxer James Murray, the climber Alison Hargreaves, and the skier Kirsteen McGibbon. Highly publicised incidents like these have drawn public attention to the serious casualties that can occur during sport and leisure activity.

How important are sports and leisure injuries as a public health problem? Few studies have been conducted,³⁻⁶ so assessing the scale of the problem in Britain is a matter of informed speculation. A recent review estimated that in Scotland in 1991 there were about 285 000 new attendances at accident and emergency departments for leisure injuries and 82 000 attendances for sporting injuries.⁷ Leisure injuries therefore result in about 5.7 new attendances per 100 population annually and account for 24% of all new accident and emergency attendances in Scotland. The direct costs associated with hospital inpatient and outpatient care for these injuries was estimated to lie between £305 000 and £550 000 per 100 000 population a year. Extrapolated to the whole of Britain, this amounts to an annual figure of between £168m and £303m, while the total costs (including lost productivity) may be over £0.5bn.⁸

Several agencies collect information on sports and leisure injuries. These include the NHS, the Department of Trade and Industry (which operates the Home and Leisure Accident

Surveillance System),⁵ the Royal Society for the Prevention of Accidents,⁹ and the Mountain Rescue Committee of Scotland.¹⁰ There are three major problems with this information. Firstly, it is not collated to produce an overall picture of the pattern of sports and leisure injuries. Secondly, it is relatively inaccessible both to health professionals (who have to deal with changing patterns of sports and leisure injuries as new activities become popular) and to sporting organisations and accident prevention agencies (who could use the data to review the effectiveness of sports safety regulations and to develop new strategies for preventing injury). Thirdly, the development of effective prevention is hampered by the lack of sufficient detail on the incidence, causes, severity, outcome, and cost of these injuries.

The obstacles to progress in this field can be overcome when there is sufficient political will, as has been shown in Quebec.¹¹ In 1979 the National Assembly of the province passed the Act Respecting Safety in Sport, which led to the creation of the Quebec Sports Safety Board with the remit to supervise personal safety and integrity in the practice of sports. The board is empowered to gather, analyse, and disseminate information on sports safety; to conduct or commission research; and to develop safety standards with sports associations. In its first decade the board focused mainly on organised sports, but more recently it has extended its activities to include non-organised recreational pursuits such as skiing. Although a formal evaluation of the board's impact is difficult, two indicators of success are encouraging. Quebec had the lowest rate of sport and recreational injuries in Canada in 1990, and the rate of hospitalisation for such injuries declined by a quarter between 1986 and 1992.¹¹

Other countries can learn from Quebec's experience. Britain needs a statutory body encompassing all the agencies

concerned with sports and leisure safety. Its remit would be to promote safety in the pursuit of all sporting and leisure activity. Three tasks merit urgent attention. Firstly, all existing sources of data on sports and leisure injury need to be collated and disseminated. Secondly, formal linkages (healthy alliances) should be further developed between sports organisations (such as sports councils) and health agencies to improve communication, exchange information, pool expertise and experience, and promote joint preventive action. Thirdly, a programme of research designed to provide better understanding of the causes and possible prevention of these injuries should be constructed and implemented. The NHS has an

important role to play in all of these areas and is ideally placed to provide the leadership necessary to facilitate action.

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Health impact assessment

An idea whose time has come

The Health of the Nation, England's strategy for a healthy population, acknowledges explicitly that many government policies have an impact on health and that their consequences for health need to be assessed and, when appropriate, taken into account.¹ England is not alone: the idea of health impact assessment is almost universally popular, though its implementation is patchy. In the developing world, where the importance of healthy public policy is well understood, the prospective assessment of the health impact of resource allocation policies or of development projects is nothing new.^{2,3} In the developed world, however, acknowledgement of the need for health impact assessment is still in its early stages, and its meaning, methods, and application remain to be established. Only now is the scientific community coming to realise the crucial role of public and private policies and projects in influencing the public's health.

The Commission of the European Union has recently stated that article 129 of the European Union Treaty "requires the Commission to check that proposals for policies, and implementing measures and instruments, do not have an adverse impact on health, or create conditions which undermine the promotion of health."⁴ Such an acknowledgement is well overdue, given the European Union's current policies of funding the promotion of whole fat dairy produce and tobacco production.⁵

In the United Kingdom the need for health impact assessment as an integral feature of policy development and evaluation is no less pressing. There are many examples of adverse effects on health that a prospective assessment of the health impact of public policy could help avoid. These include the increased incidence of myocardial infarction that results from work environments which place high psychological demands on workers but allow them little scope for decision making and control of those demands⁶; the motor vehicle accidents associated with transport policies that put freedom of traffic flow above the safety needs of communities⁷; and the increased poverty and exposure to cold caused by the imposition of value added tax on fuel.⁸

In this context the recent publication of a British government booklet on policy appraisal and health⁹ is

welcome—as is its distribution to local authorities as well as to the health sector in England. But its exclusive focus on economic appraisal methods of health impact assessment puts at risk its otherwise laudable objectives.

Impact assessment for outcomes other than health has become established in the developed world in recent decades, most notably as a result of the United States' National Environmental Policy Act of 1969. This act was rapidly followed by the development and implementation of methods for environmental (and later for social) impact assessment,¹⁰ focusing chiefly on the identification, assessment, and management of risk.¹¹ Methods for assessing the impact of policy (as distinct from policy evaluation, which examines the extent to which a policy meets its stated objectives) are still in the formative stages.¹²⁻¹⁵

Emerging methods for health impact assessment are likely to draw heavily on the experience of practitioners in these closely related fields. The methods all emphasise the importance of focusing on equitable outcomes; explicitly targeting disadvantaged groups; enabling the full participation of those likely to be affected by the policy or project; and using qualitative as well as quantitative methods of inquiry. The economic contribution is but one important element within a multidisciplinary framework broad enough to encompass the wide range of impacts on health. The need for a broad framework, and not simply one that concentrates on economic methods and outcomes, was confirmed in the United Kingdom's sole example of a completed prospective health impact assessment, which assessed the potential health impact of an additional runway at Manchester Airport (K Ardern, personal communication). While the government's initiative represents a welcome foot in this particular door, much still remains to be done before evidence based policy making can become a reality.¹⁶

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