Original packs help maintain the stability and integrity of the medicine, and storage in the manufacturer's pack ensures that it reaches the patient in the container designed for the purpose. The package also carries the batch number and expiry date. Medicines repacked in a pharmacist's container can have no such guarantees. The batch number has important advantages for patient safety, and over the counter medicines must by law be labelled with a batch number; yet the usually more potent dispensed products are not required to bear such identification on the package received by the patient. Dispensing from bulk containers into identical bottles may also confuse patients because so many medicines look the same.

Now that the European Community directive on product liability has been adopted its requirements will have to be introduced into British laws. The directive introduces strict liability, which means that a patient damaged by a medicine will no longer have to show that its manufacturer or supplier has been negligent. An important provision in the directive is that if the claimant does not know the source of the product and his immediate supplier is unable or unwilling to tell him then the immediate supplier himself will be liable. This might be a dispensing doctor or a pharmacist, and both groups have been warned. Original pack dispensing would obviously mean that the manufacturer could be identified.

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Are pesticides carcinogenic?

The House of Commons Agriculture Committee is inquiring into the effects of pesticides on human health, reflecting widespread public concern about such chemicals. Cancer is among the more serious diseases that have been linked with pesticides. To date 49 insecticides, herbicides, fungicides, and related compounds have been reviewed by the International Agency for Research on Cancer in its series of monographs on chemical carcinogenicity.¹ It judged 11 to be carcinogenic in animals but did not find conclusive evidence that any were carcinogenic in man.

Epidemiological data on pesticides are few, and those that there are give a clouded picture. A good example is the continuing controversy over the alleged carcinogenicity of phenoxy herbicides (2,4,5-T, 2,4-D methylchlorophenoxyacetic acid, etc). Three Swedish case-control studies suggested that exposure to these compounds carried about a sixfold increase in risk for soft tissue sarcoma, Hodgkin's disease, and non-Hodgkin's lymphoma,^{2,4} but similar surveys in New Zealand found only weak associations with these tumours.^{5,6} Several investigators have followed up workers employed in the manufacture and use of phenoxy acids and found small excesses of soft tissue sarcoma but not of lymphoma.⁷⁻¹¹ Now a large case-control study in Kansas has failed to show an association with soft tissue sarcoma or Hodgkin's disease but does show an increased risk of non-Hodgkin's lymphoma with an impressive dose-response relation.¹²

How should regulatory bodies react to this conflicting evidence? Simply to dismiss the epidemiological data as untrustworthy would be wrong. Discrepant findings may arise by several mechanisms: chance variation; bias in the study methods; confounding exposures; and, importantly, differences in the quality, quantity, and timing of exposures. A proper evaluation must consider all of these possible explanations and arrive at a synthesis. Uncertainties will remain, but the range of uncertainty may not be large when viewed in terms of individual attributable risk (by how much might exposure to phenoxy acids increase a person's chances of developing cancer?) and population attributable risk (by how much might the use of phenoxy acids increase the incidence of cancer in the community as a whole?)

It is on these measures as opposed to relative increases in risk that regulatory decisions should be based.

Some would argue for erring on the side of safety—if a chemical is suspected of causing cancer it should be banned. This argument takes no account, however, of the benefits to health from use of pesticides—for example, through improved food production and the control of arthropod borne disease. No chemical can ever be proved totally safe, and, as in therapeutics, decisions on regulating pesticides must balance hazards against benefits.

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Coronary prevention in Britain: action at last?

The recent report of the British Cardiac Society working group on coronary prevention¹ could herald the start of a planned national attack on ischaemic heart disease, with serious commitment of time and staff rather than costless rhetoric. It ends a long period of bickering over such impractical issues as the choice between high risk and mass strategies and whether the national diet should contain 30% or 40% of energy derived from fat, leaving coronary prevention as everybody's business but no one's responsibility.

"There is already a very large measure of agreement on what should be done," the report admits. "This needs to be emphasised, since inappropriate prominence is often given to areas of controversy. . . . Population and high risk approaches are complementary and should be implemented simultaneously. . . . We endorse the most recent recommendations from the Panel on Diet in Relation to Cardiovascular Disease (COMA). . . . Cardiologists should give the lead in establishing a really effective policy, particularly in their regions. . . . General practice is ideally placed to implement measures to reduce coronary heart disease. . . . Three quarters of the population consults a general practitioner at least once a year and virtually all once every five years. By contrast, the average patient attends hospital outpatients once every six years and is an inpatient once every ten years. . . . Those in lower socioeconomic groups (and at higher risk) consult general practitioners more frequently than others: this is the reverse of recruitment to screening clinics. . . . There are plentiful opportunities for health promotion and disease prevention in daily practice, and for seeking those with high risk of coronary heart disease. . . . But a big gap exists between potential and achievement."

About time, too. Nowhere has the Atlantic been wider than in professional attitudes to coronary prevention. Soon after early work in the United States by Ancel Keys and Paul Dudley White² Stamler³ led a sustained battle to mobilise the profession, state, and public in a crusade to prevent coronary disease by action on the known risk factors. Though hard work for its pioneers, this movement met little resistance. It assisted, and was therefore assisted by, two buoyant markets—fees for professionals and votes for politicians—in a country with more money than it knew what to do with. In a time so short as to be barely credible it seemed to work: age adjusted coronary death rates among American men aged 35-74 fell from 800 for every 100 000 in 1968 to 500 in 1979, and rates among women fell from 330 to 180.⁴

In Britain, on the other hand, evangelism got little professional support or enthusiasm; death rates began to fall slightly only in 1975, and then only in younger age groups. The fees market was almost abolished by our successful National Health Service, and our politicians were less easily convinced that they were on to a vote winner. Except in the private sector coronary or any other prevention looked more like a source of taxes than of income, and evangelism could depend only on that dwindling asset the national conscience. It was 1973 before Ball and Turner's "counterblast to present inactivity" appeared,⁵ and 1983 before a precarious consensus of the main professional bodies was achieved at the Canterbury conference.⁶ Implementation of the Canterbury report was entrusted to the National Coordinating Committee on Coronary Heart Disease Prevention, generously but sceptically hosted by the Royal College of Physicians, from which a lobby for the coronary prevention interest has slowly and painfully emerged. The apparent rate limiting factor has been the view of some leading British cardiologists that the diet hypothesis originally put forward by Ancel Keys, and somewhat uncritically embraced by the professional consensus in the United States,⁷ was still too doubtful to justify mass action—and that mass action was in any case no occupation for gentlemen.

There are now signs that these logs are becoming un-

jammed. Doctors lower in the hierarchy are fed up with waiting, nurses are beginning to do some of the simple things that experts have made so complicated, and even the government now seems to realise that voters do care about prevention. The new report was accepted by the council and all the members of the British Cardiac Society; an enthusiastic conference of nurse facilitators working in coronary prevention was held at the Royal College of General Practitioners in January; the Department of Health and Social Security has recently sponsored another conference on the implementation of coronary prevention at the Royal College of Physicians and will be launching a £2m campaign in the spring; and the ginger group of general practitioners and primary care nurses, Anticipatory Care Teams, is planning a big conference on the practical aspects of coronary and stroke prevention in York in the autumn.⁸

The new report expresses important and justified reservations on the American consensus and World Health Organisation policy,⁹ but these are likely to strengthen rather than weaken its influence on the profession and the public. We certainly do not know the full story either about why the modern epidemic of coronary disease began or how we may accelerate its decline; and British research is already showing exciting new possibilities for intervention in new ways, suggesting, for instance, that the biochemical disturbance leading to coronary heart disease might lie as much in the coagulation system as in the metabolism of cholesterol.¹⁰ Doubt bordering on nihilism has legitimised inertia, but less obstructive scepticism might be a useful guide to planned action through the free and comprehensive machinery of the NHS with its local populations registered with general practitioners. Such action might prove to be more effective than a marketed enthusiasm ignoring the most vulnerable social groups.

There are still serious weaknesses. The report mentions, but does not pursue, the huge and still widening social class differences in coronary mortality,¹¹ while the creation of a more unequal, more competitive society is deliberate government policy. Clinical planning on a local, regional, or national scale is scarcely even implied. But only reasonable optimism is required to detect the possibility, starting with cardiovascular prevention but not ending there, of a necessary reorientation of the NHS from crisis intervention to anticipatory care.

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