Summing up

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Britain has a uniquely distinguished past reputation for developing and implementing social, legislative and technical measures for the promotion of health and the prevention of disease. Yet we are almost alone among industrialized countries in continuing to have a high and even rising mortality from heart disease. Why don't we prevent it?

The first important point to make is that we *have* achieved substantial prevention of heart diseases arising from infective causes. These are now rare partly because the responsible infections are vigorously treated but mainly because they much less commonly occur. Improvements in housing and other socio-economic conditions as well as specific immunization have been the direct result of social policies designed to improve health.

Coronary heart disease (CHD) has largely replaced other forms of heart disease and its rise in prevalence has largely offset the decline in infective forms. The causes of CHD are no more complex and no less well understood than those of rheumatic, syphilitic or diphtheritic heart disease and the knowledge required for its very substantial reduction has been developed by the concerted research activities of epidemiologists, biochemists, pathologists and clinicians in some of the most comprehensive and rigorous studies ever undertaken by medical science. True, we cannot document every link in the chain of pathogenesis—indeed the 'chain' is an over-simplified metaphor for a set of processes in which a constellation of different factors conspires to result in a generalized insufficiency or a sudden shut-off of the blood supply to the myocardium. But we do now have the necessary knowledge to bring about a substantial reduction in this very common condition—a reduction which would add materially to the length of useful and enjoyable life.

WHO recommends national strategies having three distinct components:

- (1) A population strategy designed to alter the life style and environment that represent the underlying cause of CHD.

- (2) A high-risk strategy for identifying and advising those ascertainable as being at especial risk.
- (3) A secondary prevention strategy for limiting the progression of CHD in those already affected and for averting recurrence in those who have already incurred an acute myocardial infarction.

For a national strategy of primary prevention the main factors needing to be changed are now clearly known. Few of them can be brought about except by a planned public policy. Evidence is overwhelming that blood cholesterol levels in a population determine the prevalence of CHD. Blood cholesterol levels reflect the composition of habitual diets.

Optimum blood cholesterol levels—based on national levels in countries with low CHD rates and a good life expectancy involve means of 160 mg/dl (4.14 mmol/l) to 200 mg/dl (5.17 mmol/l). The figures for this country generally run at means of 220 to 230 mg/dl (5.72–5.98 mmol/l) or higher.

The main dietary changes needed to lower population levels include:

- (1) A reduction in dietary fat towards a level representing about 30% of caloric intake.
- (2) An increase in complex carbohydrates.
- (3) An energy consumption equivalent to energy expenditure.

In Britain this means less meat and dairy produce, more vegetables and avoidance of obesity.

It is at least as valuable to lower the population mean blood pressure by a few mmHg as to detect and treat clinical hypertension. The two main means of lowering blood pressure are both essentially dietary: reduction of obesity and lower salt intake. An average of 5 g less salt per day can lower population mean pressure by 4 mmHg—a very significant change in relation to CHD.

All smoking is harmful: heavy cigarette smoking is very harmful. There seems no prospect of a 'safe' cigarette. A rational policy should:

- (1) Brand smoking as an unacceptable behaviour.
- (2) Prohibit advertising.
- (3) Help those who wish to give up.

Exercise consumes energy and helps prevent obesity and lowers blood cholesterol and blood pressure. It has become less practised both at work and in leisure. Its encouragement will require substantial education. Weight control affects blood cholesterol and blood pressure.

There is good evidence that prevention, early detection and control of diabetes is both possible and effective in reducing CHD. Prevention is essentially by the dietary measures already identified.

Excessive alcohol intake leads to raised blood cholesterol and pressure as well as obesity. Its discouragement is difficult but national pricing policies can affect consumption. Alcohol is much cheaper in Britain than in most countries and a good case exists for making it dearer.

Evidence of the causal role of soft water is not strong and the technical and political problems of controlling the composition of drinking water are formidable.

There is a raised risk of high blood pressure and cholesterol in oral contraceptive users. In older women who smoke the risk is worse. A more selective advice on contraceptive methods would be valuable but there is no doubt that it is time-consuming to give good contraceptive advice.

Although behavioural change is undergone by individuals it will not be widespread in the absence of

a national policy backed by legislation. This policy must embrace professional education, public education, and the mass media but will also require the national health to become an important objective of national economic and agricultural policy. Britain has not traditionally had a food policy in peace time and both agriculture and the food processing and distributive industries have paid little regard to any issues other than profitability. Since subsidies and price support are accepted features of the food industry it should be possible to structure these in the interests of health.

Essentially the problem turns on whether it is technically feasible and politically acceptable to seek to change people's behaviour in respect of diet, smoking and exercise. Governments tend to restrict their activity to the issue of pious pamphlets enjoining wise and sensible behaviour.

But the requirement is for a much more interventionist strategy. The problem is that to alter a nation's eating, smoking and activity patterns requires sustained policies towards those ends. The policies will have economic implications and, more importantly, electoral implications. Sadly, no political party believes there are votes to be gained by a policy directed towards health. Perhaps the concerted influence of the medical profession might have an effect.