The science of hypertension has been one of the success stories of modern medicine. The risks of high blood pressure have been defined, and through rigorous trials, effective treatments have been developed and shown to work. Pathophysiological mechanisms have been identified at least in part, and the future seems brighter as the full potential of molecular genetics is realized. A glance through previous issues of Hypertension testifies to all this: the increasing pressure on the pages of this and other prestigious journals indicates the growth both in volume and quality of relevant science. Yet, there is a paradox that is apparent to those of us who treat individuals or advise on population health. Progress in the real world has been much less impressive; indeed, it has faltered at times.1 The problems of applying knowledge to the prevention and management of hypertension seem orders of magnitude more complex than the scientific work that provided us with the understanding in the first place. We are forced to practice and advise in a social environment that seems far from perfect and that presents us each day with formidable obstacles that seem to defy rational analysis. Basic science seems somehow easier and less messy. This would not be obvious from cursory reading of specialist journals. Only occasionally do published papers demonstrate how far from the ideal, for instance, the management of hypertension is, even in a society that spends more per capita on health than any other society.2 There is a clear-cut need to improve the delivery of care whether this is part of a state-funded or insurance-based system. At the same time, I believe that clinicians and scientists who are concerned with the avoidable morbidity and mortality from hypertension should recognize that the issues extend far beyond the implementation of expert guidelines. This was brought home to me when for 3 years I was seconded from my university to become Director of Research and Development for the National Health Service (NHS), a post that involved membership to the NHS Executive Board, which manages the NHS. Although my experience was confined to the United Kingdom healthcare system, it has a much wider application both to developed and developing countries. I would like to illustrate this with 2 examples: social inequalities in health and the role of economics. These issues are of particular relevance to hypertension, because of its major importance as a treatable health hazard.

**Inequalities**

Individuals of lower socioeconomic status have higher blood pressure and are more prone to cardiovascular disease.3 This in part reflects the higher prevalence of risk factors and the lower access to health care. Thus, the proportion of subjects who have not had their blood pressure checked in the previous year, in a study performed in the United States, was directly correlated to socioeconomic status.4 However, access to care does not explain the 3-fold variation in the standardized mortality ratio for hypertension and cerebrovascular disease in men <65 years, which was observed in England.5 Likewise, conventional risk factors are insufficient. The Whitehall Civil Servants Study, which observed a 3-fold difference in coronary mortality between the lowest and the highest grades of employment, reported that conventional risk factors accounted for only a modest proportion of the difference. Indeed, the gradient was also observed in other noncardiovascular causes of mortality, suggesting that unknown, general risk factors related to lifestyle and working environment were involved.6 Job strain, low levels of social support, and low levels of control have all been postulated.7 The roots of cardiovascular disease extend even further. Mortality is associated with levels of education, income, occupation and unemployment, poverty status, and standard of living.8 All these factors are, of course, correlated, and the degree in which they act independently or whether they are surrogates for other more relevant risk factors is unknown. Despite these uncertainties, the fact that the socioeconomic gradient in mortality has increased with increasing income disparity both in the United States and the United Kingdom suggests causality, even if the mechanisms are unknown.7,8

The need for action that deals not simply with improved health care but also with the extremes of social inequality has been recognized in both countries. In a special report on socioeconomic inequalities in cardiovascular disease, Kaplan and Keil3 point to the need to address not only specific risk factors but also “societal conditions.” They conclude with a warning of the magnitude of the task: “Some of the recommendations will be extremely difficult requiring large scale solutions, unspecified in nature and subject to great debate. When the evidence of a problem is so enormous, it is not surprising that the solutions would be complex.”9

In 1976, the British Secretary of State for Health appointed a research working group under Sir Douglas Black to examine inequalities in health and make appropriate recommendations. In an exhaustive review of the scientific evidence, the Black Report identified the material conditions of society as the cause: education, housing, the environment, and transport.10 If these were the causes of inequalities, they con-
cluded, it was irrational to look only to changes in health services to remedy them. Wide ranging recommendations were made for improvement in social conditions and in social security support. In the meantime a fundamental change had occurred. The Labour Government had been replaced by a Conservative Government to which the recommendations were politically highly uncongenial. The report was rejected on the grounds of unrealistic cost and uncertain scientific evidence of efficacy. A concerted attempt was made to minimize the impact of the Black Report. Only 260 copies of a duplicated version were distributed on the Friday before a bank holiday, with no press conference. Indeed, the measures to suppress the report were so crude and extreme that they proved counterproductive because the medical press took up the challenge of distributing it. As a result, the report was published as an extremely popular paperback.10 The sequel is even more illuminating. When the Conservative Government published its strategy, documented inequalities in health had, without comment, been translated into the more emollient “variations,” observed in England “as in other countries” and associated with “different ethnic, social and occupational groups and different geographical regions.” Inequality had suddenly become endowed with the richness of diversity.11

When the Labour Party assumed office in 1997, it commissioned a report that summarized the scientific evidence of inequalities of health and that reviewed priority areas for “future policy development likely to offer opportunities for Government to develop beneficial, cost effective and affordable interventions to reduce health inequalities.” The 39 proposals for policy development that this commission made were as wide ranging as those contained in the Black Report. Housing, environment, social support, education, and transport all figured in recommendations for “policy development.”12

Even if the mechanisms are unclear, it is evident from both primary research and these official reviews that if healthcare professionals wish to address the problem of potentially avoidable morbidity and mortality from cardiovascular disease, they need to cast their net well beyond traditional clinical science. They then enter a politically sensitive arena far removed from health care. How far is it reasonable to ask these professionals to go? Epidemiologists, in particular, have suffered bad press in some quarters for abandoning their social responsibilities in favor of the reductionist science of “production” and thereby had “only added to the inequalities in health between the poor and rich within wealthy countries, and between poor and wealthy countries.”14 Their work had, in other words, ignored the real villain: the tobacco industry. In response to all of this, a distinguished Boston group of epidemiologists issued a cri de coeur. Health they pointed out only occupies 1 small part of the arena of social action. “However well motivated, epidemiologists cannot rid the world of poverty. Even if we claimed that poverty is the root cause of all disease, which it surely is not, we would hardly be closer to solving the problem just as we were no closer to eliminating the threat of nuclear war after pointing out that Armageddon would interfere with physician’s treatment of their patients.”15 Cardiovascular disease, as the major cause of death and illness in the developed world, stands at the center of such a debate. It is irresponsible to ignore the role of socioeconomic factors, and consequently it is necessary to have a view on what should be done in regard to these factors. However, effective scientifically justified social action clearly involves many other parties, not just the politician.

The Role of Economics

The success of science has created painful dilemmas for health care across the world, whether funded through taxation or private insurance. A gap is opening up between aspiration and affordability. The treatment of hypertension provides an illuminating example of the problems this creates for clinical practice. These lead inevitably to social and political issues.

The continuous gradient of risk associated with blood pressure implies that the benefits of reversing that risk will also be continuous. The lower the blood pressure level at which treatment is recommended, the smaller the probability of the individual benefiting and the greater the number of patients eligible for treatment. There is a continuous, inverse relationship between individual benefit and the total cost to health care. At some point a decision has to be made that the cost of treating a low level of risk is not justified. There are, of course, other considerations such as patient preference and inconvenience, but cost cannot be ignored. Guidelines for treating hypertension adopt different approaches to this issue: One specifically excludes economic considerations.16 Another emphasizes the doctor’s responsibility to take account of cost, although the guidelines do not define the role of economic considerations in the specific advice they give.1,17 The British guidelines are unique in relating the risk level at which treatment is recommended to the availability of resources.18 Whatever approach is adopted, the final decision concerning treatment clearly cannot be independent of the resources made available for treatment either by governments or private healthcare funders. It cannot therefore be dissociated from the social and political agenda. This places clinicians in just as uncomfortable a position as the epidemiologists confronting an agenda of social change. Recognizing social cost at the possible expense of the individual patient’s needs conflicts with the clinicians Hippocratic Oath. Hipocrates, it could be argued, did not have to deal with a spectrum of risk. In his time, there was a simple dichotomy between illness and health, and the opportunity for effective remedy was extremely limited. Medical science has placed
doctors in a situation in which they must decide the reasonable level of risk at which to intervene. When the budget is finite, recommendations for treating hypertension inevitably have an impact in different fields of health care; for example, screening for cancer perhaps or hip replacement, in which decisions have to be made that relate to the levels of benefit. The needs of social justice and equity have to be recognized. There are not surprisingly concerns when questions of cost are not dealt with explicitly. Scientific experts who construct recommendations without recognizing this lay themselves open to manipulation by politicians and healthcare managers. Chalmers has pointed out the dangers of economic considerations masquerading as scientific judgments and the use to which they can be put. Other guidelines have been criticized on the grounds that they can be used to serve a governmental agenda. Treatment of a hypertensive patient has to take place in the real world of constrained healthcare systems. If it is felt that these impose unacceptable obstacles on a satisfactory level of care, then this can only be changed by those who manage health care or by those who are responsible for policy. If the role of social and political influences is ignored, this can only make change more difficult. Excluding the social dimension can lead to serious errors and can weaken the case for more resources to be put into treating disorders such as hypertension. The cost of treating a large proportion of the population may be high, but the cost of not treating hypertension in terms of both hospital and social care is also high. The combined hospital and social care costs of treating stroke in England is 4 times the cost of managing hypertension, and there is actually a net return to society as a result of treating elderly hypertensives in terms of reduced indirect healthcare costs.

The Political Dimension
Both of the above examples have brought me to the same point. The issues are perhaps more clear in the field of hypertension than most others both because of its importance and because the epidemiological and trial data are so strong. The social and political environment in which cardiovascular disease is managed is of crucial relevance to how successful we are in controlling it. Cardiovascular scientists and clinicians therefore have to be prepared to influence social change. The nature and extent of their involvement is clearly a personal matter. Although the contribution of robust evidence is essential, it is clearly not sufficient, and many of the skills for effecting social change belong properly to other domains. The political sphere is one of these.

This creates a dilemma for clinical scientists who work however briefly with governments. The qualities required of the politician are radically different from those needed by the successful researcher or clinician. The politician’s main concern is with public perception, because his or her future depends on it. This may at times conflict with reality; when it does, there is a danger of the former rather than the latter dominating policy. This has 2 important consequences for research. First, there is an ever-present danger that the critically important independence of research is lost. Governmental pressures are just as threatening as commercial pressures in this context. Even the initiation of research may imply vulnerability in a policy in which its promotion demands certainty. The second difficulty is one of timescale. The political process is essentially short term, being measured by the interval to the next election. Healthcare budgets are subject to continuous and immediate pressures. The deleterious effects of this on academic activity at the hospital level have been repeatedly demonstrated. The tension between research and the demands of health care is even more marked at the political level, even if the connection is less obvious to outsiders. The returns offered by medical research are long term and uncertain. This is not intrinsically attractive to politicians. Working with ministers is not for the nervous or ideologically rigid. At the same time, I have developed a certain sympathy with them, particularly in dealing with clinicians and academics who had no appreciation of the difficulties inherent in achieving even modest social change in the real world and who clearly felt that theirs was the only worthwhile agenda to be pursued, however remote in the short term this might be from obvious policy needs. The most effective academics are the ones who have preserved their independence but have a solid commitment to shared objectives and scientific excellence, accompanied by a deep understanding of the difficulties in effecting change in the real world. Those who work in the cardiovascular field need to appreciate that the roots of ill health extend into apparently distant fields of social activity such as welfare, employment, education, and personal income in which health is only a minor player. It is easy for its needs not to be recognized at all if it lacks skillful and knowledgeable advocates.

The problem of working with government has been well described by Dan Brock, an academic in a field far removed from hypertension research. Dan Brock acted as staff philosopher to the President’s Commission for the Study of Ethical Problems in Medicine. Basically, he observed that the governmental need required compromise, acceptance of inconsistencies, and advocacy of positions on which real doubts persisted as a result of the overriding requirement to consider the public consequences of what was being recommended. As a result, it was necessary to “package” a policy proposal in a form that would gain acceptance rather than a form that was the most logically correct. On the other hand, he describes his satisfaction in the feeling that his skills, “operating at influential points in the policy process produce real and significant benefits.” Brock concluded that a limited interaction may be beneficial for both sides but that it is probably unwise to extend it. It is a view to which I subscribe fully.

References

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