The Economics of Bureaucracy and the British National Health Service

MICHAEL W. SPICER

University of Colorado

OVER THE PAST DECADE A NUMBER OF ECONOmists have analyzed the British National Health Service (NHS). Common to most of these studies are the findings that the NHS has failed to achieve efficiency in the use of resources and equality in access to health care. However, the studies differ with respect to what is the basic cause of these problems. Cooper (1975) and Culyer (1976) seem to argue that the problem is essentially one of poor information and excessive discretion on the part of physicians. According to Cooper (1975:107), "the clinical freedom to differ widely as to their [physicians'] conception of need has led to inconsistencies of treatment between patients and to the allocation, without challenge, of scarce resources to medical practices of no proven value." He also notes that "lack of research into indicators of need has enabled gross inequalities of provision to persist on the grounds that, in the absence of any evidence to the contrary, they might in fact, however accidentally, reflect needs" (Cooper, 1975:109).

In a similar vein, Culyer (1976:110) claims that "the efficient and fair operation of the health service requires the establishment of national norms and a substantial reduction in the discretion of individual hospital doctors." The latter would be accomplished by requiring

Milbank Memorial Fund Quarterly/*Health and Society*, Vol. 60, No. 4, 1982

0160/1997/82/6004/0657-16$01.00/0

doctors to make judgments within "the context of a nationally promulgated needs formula."

Both Cooper and Culyer feel that the defects of the NHS can be remedied without major alterations in its structure or financing. They lay great stress on the need for improved information and analysis. As Culyer notes (1976:111), "one cannot prove that less ignorance of the facts of ill health and medical efficacy and more explicit analysis of the basis of choice lead to better policy. But in view of the alternatives, one has to believe that they do." The need for a reduction in the discretion of doctors is also noted but little guidance is provided as to how this should be accomplished. Indeed, there is the hope that "often advice and information about the procedures adopted by others might be sufficient a corrective" (Culyer, 1976:149).

The foregoing view is in sharp contrast to that held by Goodman and Lindsay. These economists feel that the defects of the NHS are an inevitable consequence not of poor information, but of public sector provision of health care. According to Goodman (1980:3), "the defects of the NHS follow logically from fundamental principles governing human behavior . . . they are the natural and inevitable consequence of placing health care in the hands of the state." Lindsay (1980:1) sets a similar tone for his study of the NHS with the following statement concerning the British experience with the NHS:

> This study searches that experience for results which may be expected to generalize to any system of government intervention in the provision of health care. There are fundamental economic functions which must be performed in any industry—even the health care industry—and replacing a pricing system with government administrative machinery will introduce biases in resource allocation which transcend alteration or reform of the administrative structure.

While neither Goodman nor Lindsay propose how the performance of the British health care system might be improved, implicit in both their analyses is the proposition that such an improvement would require a substantial reduction in government involvement and a greater reliance on the private sector for health care provision. This proposition was argued more explicitly by Lees and Jewkes, earlier critics of the NHS. According to Lees (1964:16) the defects of the NHS "bring dangers for the quality of medical care that cannot be removed without far-reaching reform." "Public policy should seek to

build a free medical market in place of the NHS, with governmental control and tax finance playing a significant but discriminating and subordinate role" (Lees, 1962:111). A similar approach is argued for by Jewkes (1978:87) who asks:

> Why is it impossible to reorganize the medical service so that the government would restrict itself to providing preventive medicine, medical research, free medical services for those who demonstrably could not afford them and perhaps a large measure of support for capital expenditures, thus leaving the great mass of the people to pay for their own services to a profession largely operating independently of government? Why should private voluntary insurance not relieve the majority of the people of the stresses associated with the unpredictability of ill-health?

The determination of which of these two different views of the NHS is correct has important consequences for health care reform in the United States. Advocates of national health insurance tend nowadays to be rather sparing in their praise of the NHS, arguing that it is badly managed, and reserve such praise rather for Canadian and other systems. However, if the problems of the NHS are rooted in public sector provision of health care, then it would be clearly unwise to dismiss the NHS as simply a good idea gone wrong. In this paper, I shall attempt to develop a middle position between these two schools of thought. I shall argue that the bureaucratic structure of the NHS has an important impact on its performance in terms of efficiency and access, and that problems in efficiency and access cannot therefore be alleviated by better information and analysis alone. I shall also argue that movement towards a system of private insurance as exists in the United States is unlikely to alleviate these problems and that constructive reform of the NHS is possible provided that it involves modification of the incentives facing decision makers. The economic theories of bureaucracy as developed by Niskanen (1971), Downs (1967), and others will be used to provide insight into the problems of inefficiency and unequal access in the NHS and into possible reforms aimed at reducing these problems. It should be emphasized here that problems of efficiency and access exist to some degree with any health care system. My position is only that economic theories of bureaucracies help explain a significant part of it.

Characteristics of a Bureaucracy

In defining the term "bureaucracy," it is important to stress that the term is used here in a neutral sense, stripped of the negative connotations that often surround it in popular discourse. The term is used simply as a way of describing the economic characteristics of the organization. While definitions can differ, the bureaucracy is defined here as an organization that has the following three characteristics. First, the output of the organization is paid for not directly by the consumers of that output but by some third party or sponsor. The organization is divorced from its output market (Downs, 1967). Second, those working within the organization cannot easily appropriate for themselves any organizational cost savings generated by their own efforts. The rewards and costs which accrue to bureaucrats are either unrelated or only indirectly related to their contributions to the efficiency of the organization. Third, the organization is a monopoly with respect to the services that it provides. Competition is weak or nonexistent.

The above definition of "bureaucracy" clearly differs from that developed by Max Weber. Weber's definition focuses on characteristics common to all large modern organizations, such as the use of hierarchies and rules. The definition used here, however, distinguishes a bureaucracy from other organizations on the basis of third-party financing, the scheme of compensation for officials and its monopoly status.

To a large extent the NHS possesses these characteristics. While charges are imposed, primarily for prescriptions and dental and ophthalmic services, less than 4 percent of NHS spending is financed by user charges, 89 percent is financed by general taxation, and 7 percent is financed by social security payroll taxes. Doctors, while clinically responsible for their actions, are generally not held accountable for the resource implications of their decisions. Also, "budget holders within the NHS who manage to achieve economies frequently find their budgets cut and the savings used to cover expenditure elsewhere in the health service" (Royal Commission on the National Health Service, 1979:348). There is little opportunity, therefore, for NHS officials to either reap the benefits of cost-saving efforts or suffer the consequences of waste. Finally, while private practice exists in Britain and is growing, the NHS has a virtual monopoly with respect

to medical care. It is the normal source of care for about 95 percent of the population. Private insurance covers three million persons but offers coverage only for some services. There is some potential for competition between general practitioners within the NHS, since patients are free to switch doctors. However, most patients do not appear to aggressively exercise this option, and some doctors are reluctant to accept patients who wish to switch (Goodman, 1980).

If the NHS, then, is a bureaucracy in the sense that I have defined it, certain inferences can be drawn regarding efficiency in the delivery of health care and access to health care within the British health care system. Before drawing these inferences, however, it is important to stress that an assumption is made that NHS officials are no more or less public-spirited, honest, efficient, or hard-working than those outside the NHS. The inferences to be drawn follow from the characteristics of the NHS outlined above and not from any particular incompetence or malfeasance on the part of NHS officials.

Efficiency

Efficiency is defined here as ensuring that health care resources are used for the least-cost production of those health care services that are most highly valued by society (Maynard and Ludbrook, 1980a). As noted previously, the formation of the NHS was motivated in significant part by a desire for greater efficiency. A national health service was seen as a means to bring greater formal structure and planning to a fragmented and chaotic health care system (Lindsay, 1980). However, the characteristics of the bureaucracy outlined above do not lend much support to the idea that structure and efficiency are necessarily related.

First, since a bureaucracy does not charge customers for its services, it is difficult for the bureaucracy or its sponsor to evaluate its outputs in relation to costs. For example, in the absence of price, it is difficult to value the differing degrees of relief of pain, discomfort, and distress provided by health care procedures. Certainly, given the problems which characterize health care markets, such as lack of consumer information, price cannot provide a fully accurate measure of value; but as Culyer (1976:5) notes, prices "do, at the minimum, indicate an element (if only part of the picture) in the social value of health

care." Often, one is forced to measure NHS output in terms of activities or inputs. This measurement problem is important for it reduces the ability of the sponsor, Parliament in this case, to monitor the efficiency of the bureaucracy's delivery of services. This in turn reduces the external pressure that the sponsor can bring to bear on the bureaucracy to improve efficiency. Second, the monopoly status of a bureaucracy further weakens external pressure for efficiency. The sponsor, Parliament, does not have sufficient information to assess what is the minimum cost of a given service level or how far the bureaucracy's costs are in excess of this minimum. It must rely largely on information provided by the bureaucracy itself and is therefore not in a strong position to gauge the cost-effectiveness of the bureaucracy's activities and bring to bear external pressure to improve efficiency. Third, since individuals working in a bureaucracy are generally not rewarded for cost-savings efforts and are not held financially responsible for the resource consequences of their decisions, internal incentives for efficiency are weak.

The absence of effective measures of performance, combined with weak external and internal pressures for efficiency, means that those working within the bureaucracy can enjoy greater discretion concerning the activities they perform, the rate at which they perform those activities, and the quality of their performance. This leads to an increase in what Liebenstein (1976) has termed x-inefficiency (an excess of actual cost over minimum cost). Particularly important in the NHS is the discretion enjoyed by the medical profession. In the absence of measures of performance and pressures for efficiency, the NHS has been prepared to rely heavily upon the subjective judgment of its experts, the doctors, in making resource-allocation decisions. Since medicine is not an exact science, this has meant that considerable variation has been permitted in medical practice. Hospital stays vary widely for the same medical condition and general practitioners vary considerably in their referrals of patients to specialists and hospitals. Most of the medical procedures now in use have not been rigorously tested or their value proven. Indeed, how much inefficiency exists as a result of the exercise of such discretion is almost impossible to assess because in the absence of internal incentives for efficiency, doctors themselves have been reluctant to evaluate the clinical effectiveness, less still the cost effectiveness, of alternative treatments.

The bureaucratic structure of the NHS also inhibits efficiency in another, more subtle, fashion. Since a bureaucracy is a monopoly and since it is not dependent directly on its consumers for financial support, one would expect it to be rather unresponsive to the preferences of its consumers. The monopoly status of the bureaucracy limits options available to customers dissatisfied with its services. Also, the absence of direct financial support from consumers reduces the cost to the bureaucracy resulting from a loss of disaffected consumers. It is not surprising, therefore, that the NHS often appears to be indifferent to the preferences of its patients. As Cooper (1975:93–94) so eloquently notes,

> Outpatient departments often seem to be run for the maximum convenience of consultants whilst patient time is valued at naught. Appointment systems which give everyone the same time still exist: the standard of comfort whilst waiting often compares unfavorably with British Rail waiting rooms. . . . Patients are too often treated as being uniformly stupid and afforded no privacy and little dignity.

Such bureaucratic indifference to patient preferences may often reduce the cost to the NHS of delivering services. However, it also imposes costs on patients by reducing the value of services received. Since the NHS does not bear the latter costs, some inefficiency seems likely.

It should be emphasized that these signs of inefficiency can also be found in many other health care systems in the world. The argument being made here is not that the NHS is uniquely inefficient but rather, contrary to the expectations of early supporters of the NHS, its bureaucratic structure, far from promoting greater efficiency, has allowed inefficiency to go relatively unchecked. Also, as will be indicated later, any system of health care based on extensive third-party coverage, including the U.S. health care system, shares to a significant degree the three bureaucratic characteristics which encourage inefficiency.

Interestingly enough, in one important respect, the bureaucratic structure of the NHS may have actually helped reduce inefficiency. In particular, the monopoly status of the NHS may help it keep its spending levels within budget limits set by Parliament. This is because budgetary controls at an administrative level rest in fewer hands.

Also, its monopoly status gives the NHS some degree of market power in negotiating the level of remuneration of doctors, dentists, pharmacists, and opticians and in the purchase of drugs and other medical supplies. Furthermore, the NHS, as a monopoly, can more easily restrict the access of patients to specialist doctors. Patient access to specialists in the NHS is granted customarily on the basis of referral by general practitioners. This control over access to the specialist "may well be a key variable in the cost of the whole health system" (Maxwell, 1981:88).

Of course, some would question whether cost containment in Britain promotes efficiency so much as underprovision. Indeed, there is a widespread perception that the NHS is underfinanced. In evidence to the Royal Commission on the National Health Service (1979:334), the British Medical Association states that "for some years now the money allocated by the Government for the service has been quite inadequate to meet the demands made upon it by the public." Whether the NHS is underfinanced in the sense that the benefits to society from extra health care services would exceed their cost is open to question since, as noted earlier, it is difficult to place a value on NHS services. Certainly, there is evidence that budget stringency has limited the ability of the NHS to make available new medical technology to its patients (Goodman, 1980). For example, the NHS in 1976 accepted only 15 patients per million population for renal dialysis, a considerably lower proportion than are accepted in the United States. As Maxwell notes (1981:96), "decisions to restrict health-care expenditures ultimately involve curtailing or withholding treatment for important human conditions." This becomes increasingly true as the rapid rate of technological innovation brings an increasing array of sophisticated but expensive medical procedures, drugs, and equipment.

Nonetheless, it can be argued that not all treatments offered are effective and humane. A recent study conducted at a university hospital in the United States found that 9 percent of patients on a general medical service suffered an iatrogenic illness that was considered major in that it threatened life or produced considerable disability (Steel et al., 1981). In addition, given the lack of incentives for efficiency in the NHS noted earlier, if the NHS were to enjoy substantially higher levels of funding, there is no guarantee that those extra funds would be spent on the most cost-effective forms of treatment in terms of preventing suffering and saving lives. Arguments for increased funding

are in any case weakened by the lack of association between indicators of health status and health care resources. This lack of association seems to hold even when fairly refined measures of health status are used, such as high blood pressure and high cholesterol levels (Newhouse and Friedlander, 1980). Therefore, while budget stringency undoubtedly contributes in some cases to inconvenience and suffering by patients, its overall impact on health levels may be quite small, at least for the present.

Access to Health Care

Equal access to health care without regard to ability to pay has traditionally been a major objective of the NHS. The bureaucratic structure of the NHS would seem to contribute to this objective in two ways. First, since consumers do not pay directly for most services, price is not a barrier to consumption. Second, the monopoly status of the NHS means that it is not simply a health service for the poor and medically indigent but the normal source of health care for all but a small fraction of the population. However, as will be noted below, this conclusion may not hold for all NHS services.

In discussing equality of access, it is important to note that rates of morbidity tend to be higher among the lower socioeconomic groups than among upper socioeconomic groups. For this reason, equality of access has frequently been defined in terms of each group having the rate of use that their rate of morbidity would indicate. Viewing equality in these terms, there is some dispute as to whether the NHS has in fact achieved equality of access. A number of studies have indicated that the lower social classes make less use of primary health care than their higher self-reported rates of morbidity would warrant (see, for example, LeGrand, 1978; Department of Health and Social Security, 1980). However, in a recent article, Collins and Klein (1980) have drawn attention to a methodological problem in these studies. Because of data limitations, researchers were forced to assume that, for each socioeconomic group, those making use of the NHS were also necessarily among those reporting morbidity. Following an analysis drawn from General Household Survey data on use of services related to morbidity, they conclude that:

> The NHS has achieved equity in terms of access to primary care: there is no consistent bias against the lower socioeconomic groups and in the case of some health care categories, these have proportionately higher rates of access than their rates of self-reported morbidity would indicate.

Collins and Klein's results lend some support to the notion that the bureaucratic characteristics of the NHS help promote equal access to health care. However, they look only at primary care services and LeGrand (1982) argues that their results are therefore not valid for all NHS services. Certainly, the doctor is likely to play a larger role in the patient's demand for other services, and there is no guarantee that the doctor will use the discretion he enjoys in the bureaucracy to promote equality of access to such services. As Culyer et al. (1981: 144) note, the doctor "is in a position to ration access using non-pecuniary criteria such as clinical condition, age, sex, color, religion, socioeconomic class, actual or potential nuisance values and so on." While the NHS may therefore have obtained some success in encouraging equal access to primary care, the picture is less clear with respect to health care services as a whole.

Also, the bureaucratic structure of the NHS does not clearly promote regional equality of access. Indeed, a reasonable argument can be made that the opposite may well be true. Given the difficulties in measuring bureaucratic performance, there is an increased incentive for both the bureaucracy and its sponsor to rely upon incremental strategies in formulating budgets so that this year's budget is largely a function of last year's budget. As a result, inequalities in resources between departments and regions would be expected to persist over time. This appears to be what has happened to the NHS, at least up until the last decade. Since 1970, more vigorous efforts have been made to equalize budget resources between regions by introducing increasingly complex budget allocation formulae, and there are signs that these efforts are meeting with some success (Maynard and Ludbrook, 1980b). Even if equalization of budget resources were attained, variations in efficiency between regions would still lead to continuing inequalities in service levels (Maynard and Ludbrook, 1980a). The improvement of efficiency and access are thus related objectives.

A further problem with respect to access to health care is the waiting lists for hospital care. Most of those on the lists are waiting for

surgery. Although waiting lists have fallen in recent years and although "emergency" cases have top priority and are treated immediately, there is some concern over the possible risks to health that may result in some cases from waiting for treatment. While waiting lists are not unique to the British health care system, there is reason to believe that waiting time assumes a greater importance as a rationing device in a bureaucracy. As Downs (1967:188) notes, "organizations that cannot charge money for their services must develop nonmonetary costs to impose on their clients as a means of rationing their output." Waiting time, therefore, may be seen as a form of nonprice rationing for at least some services in the NHS bureaucracy. Lindsay (1980:2) argues that in the NHS: "Health care (with particular reference to hospital care) is rationed on the basis of people's willingness to suffer delay in its delivery . . . Access to hospital care no longer goes to those willing to pay the most for it. It goes to those willing to wait longest to receive it."

Lindsay develops a rather elegant but simple model of waiting time based on supply and demand analysis. His characterization of the rationing process is, however, somewhat misleading for it implies that some patients are deterred from joining the list as a result of the costs associated with waiting. Since the chief waiting costs such as anxiety, pain, and inconvenience must be endured whether or not the patient joins the list, it is difficult to see how such costs would deter patients from joining. While Lindsay's model, therefore, may be appropriate for explaining the demand for general practitioners' services where patients may incur time costs in waiting rooms, an alternative explanation of the rationing process for hospital services is required.

In order to properly understand how waiting time acts as a rationing mechanism, it is important to focus on the decision making of doctors. As Cooper (1975) notes, since medical need is often difficult to determine, NHS doctors tend to assess need in line with resource constraints. Also, former Minister of Health Enoch Powell (1976) has indicated that the assignment of such terms as "emergency" and "urgent" to patients on the waiting list is influenced by the availability of medical treatment. This appears to confirm Downs' (1967:188) hypothesis that in a bureaucracy "requests for free services always rise to meet the capacity of the producing agency." In the NHS, waiting time serves as an indicator of producing capacity. Hence, doctors will be more likely to place patients on hospital waiting lists when waiting

time is short than when it is long. It is perhaps also not surprising then that both Feldstein (1964) and Culyer and Cullis (1975) have found that waiting lists do not fall with increases in supply. Rather, supply increases "encourage [general practitioners] to refer more patients to hospitals, and hospital doctors to assign more people to the waiting list until a more or less 'conventional' waiting time is again reached" (Culyer, 1976:99).

Implications for Reform

The foregoing analysis indicates that economic theories of bureaucracy do provide significant insight into both the good and bad aspects of NHS performance in terms of efficiency and access. If this analysis is correct, then improvements in information and analysis alone are unlikely to alleviate inefficiency and unequal access. At the same time, however, it would be wrong to imply that the problem is simply one of excessive government involvement in health care. The United States health care system, which is characterized by considerably less government involvement, also possesses to a significant degree the three characteristics of a bureaucracy. Extensive public and private third-party financing, particularly in the hospital sector, means that producers are divorced from their output markets. Also, insurance reimbursement policies, in large part based explicitly or implicitly on costs incurred, means that hospital cost-savings efforts yield limited benefits to hospital decision makers. Furthermore, extensive third-party coverage reduces the incentive of patients guided by their doctors to shop around for hospital care and alternatives to hospital care, and reduces already weak competitive forces.

Therefore, in spite of the considerably smaller role of government in health care, the American health care system already resembles a bureaucracy as defined in this paper. What distinguishes the American health care system from the British system in terms of the above analysis is the absence of budget limits. It is increasingly a bureaucracy without budget limits. The Reagan administration has sought budget limits, but since these would only apply to government and not private health care spending, their effect may be simply to shift a greater portion of health care costs to other third-party payers rather than to contain costs. Also, it is not surprising, then, that examples of inefficiency similar to those found in the NHS also exist in the

United States, for example, variations in hospital admissions rates and hospital stays.

The United States' experience does not then provide strong support for those who argue that the best way to improve efficiency is to simply reduce government involvement. Extensive third-party financing even in market systems of health care encourages substantial inefficiency. Furthermore, a reduction of government involvement would seem unlikely to bring the British health care system closer to the goal of equal access. Indeed, Maynard and Ludbrook (1980a: 39) argue that an "unrestricted market system would result in resources being attracted to high income areas."

Improvements in NHS performance, particularly in the area of efficiency, lie in some modification of one or more of the three bureaucratic characteristics of the NHS. In this vein, it is interesting to note that the Royal Commission on the National Health Service (1979:348) suggested that budget holders be "permitted to keep and spend a proportion of any savings they may achieve and possibly be allowed to carry over a greater proportion of funds from one budget period to the next." Also, the commission recommended that experiments with clinician budgeting be encouraged. Clinician budgeting would make doctors budget holders and, thus, accountable for the expenditure generated by their decisions. These budgetary innovations would modify the bureaucracy's basic characteristics in that they would allow NHS decision makers to appropriate a portion of cost savings earned at least indirectly in the form of extra discretionary budget funds. While less effective than a system of personal rewards and penalties, this type of reform would probably be more politically feasible. However, it should be noted here that such reforms do nothing to modify the two other characteristics of the NHS bureaucracy (the divorce of the NHS from its output market, and its monopoly status) so that external monitoring of NHS performance would remain weak. As a result, there is danger that budgetary incentives might induce budget holders to cut costs by reducing either the level or quality of services provided. Therefore, measures of service output would need to be developed and monitored.

William Niskanen's theory of the bureaucracy (1971) suggests more radical alternatives. For example, the NHS could be broken up into a number of self-contained units competing with each other for budgets on the basis of their performance. Competition between agencies for health care budget resources would place Parliament in a much

stronger position to assess evidence of performance provided by a single agency. Competition between agencies for patients would tend to reduce bureaucratic indifference to consumer preferences. In order to avoid wasteful duplication of present buildings and equipment, the transition from a monopolistic to a competitive NHS could be gradual. For example, competing agencies might initially share the present facilities of larger hospitals. Each agency would be responsible for recommending admission of its patients and would be charged by the hospitals for the full cost of treating its patients. Across time, however, except where economies of scale were evident, competing agencies could be permitted to acquire an increasing range of their own medical facilities.

Alternatively, the government could provide health care vouchers to consumers who could use them to procure services either from the NHS or from competing private health care plans. The latter type of reform would be similar to that advocated for the United States by Enthoven (1980). As Klein notes (1978:73), the approach "makes optimistic assumptions about the information available to consumers and about the willingness of providers to engage in competition." Nonetheless, the American experience with prepaid plans suggests that the approach is worth investigating. Such an investigation might take the form of a limited number of local experimental voucher programs in selected cities.

Economic theories of bureaucracy, then, in addition to providing insights into the performance of the NHS, also suggest directions for constructive reform. These go beyond the improvements in information and analysis advocated by Cooper and Culyer in that they modify the incentives faced by health care providers. They need not, however, entail a substantial lessening of government involvement in health care or the abolition of the NHS. As such, they provide a basis for hoping that improvements in efficiency in the British health care system can be secured while maintaining and perhaps even improving the extent of equality in access to health care.

References

Collins, E., and Klein, R. 1980. Equity and the NHS: Self-Reported Morbidity, Access and Primary Care. *British Medical Journal* 281:1111–1115.

Cooper, M.H. 1975. *Rationing Health Care.* New York: John Wiley and Sons.

Culyer, A.J. 1976. *Need and the National Health Service.* London: Martin Robertson.

Culyer, A.J., and Cullis, J.G. 1975. Hospital Waiting Lists and the Supply and Demand of Inpatient Care. *Social and Economic Administration* 9:13–25.

Culyer, A.J., Maynard, A., and Williams, A. 1981. Alternative Systems of Health Care Provision: An Essay on Motes and Beams. In Olson, M., ed., *A New Approach to the Economics of Health Care,* 131–150. Washington, D.C.: American Enterprise Institute for Public Policy Research.

Department of Health and Social Security. 1980. *Inequalities in Health.* London.

Downs, A. 1967. *Inside Bureaucracy.* Boston: Little, Brown.

Enthoven, A.C. 1980. *Health Plan: The Only Practical Solution to the Soaring Cost of Medical Care.* Reading, Mass.: Addison-Wesley.

Feldstein, M.S. 1964. *Economic Analysis for Health Service Efficiency.* Chicago: Markham.

Goodman, J.C. 1980. *National Health Care in Great Britain: Lessons for the U.S.A.* Dallas: Fisher Institute.

Jewkes, J. 1978. *A Return to Free Market Economics: Critical Essays on Government Intervention.* London: Macmillan.

Klein, R. 1978. Who Decides? Patterns of Authority. *British Medical Journal* 2(July 1):73–74.

Lees, D.S. 1962. The Logic of the British National Health Service. *Journal of Law and Economics* 5:111–118.

———. 1964. *Health through Choice: Monopoly or Choice in Health Services: A Symposium,* 9–18. London: Institute for Economic Affairs.

LeGrand, J. 1978. The Distribution of Public Expenditure: The Case of Health Care. *Economica* 45:125–142.

———. 1982. *The Strategy for Equality.* chap. 3. London: George Allen and Unwin.

Liebenstein, H. 1976. *Beyond Economic Man.* Cambridge, Mass.: Harvard University Press.

Lindsay, C.M. 1980. *National Health Issues: The British Experience.* Tunbridge Wells: Roche Laboratories.

Maxwell, R.J. 1981. *Health and Wealth: An International Study of Health-Care Spending.* Lexington, Mass.: Lexington Books.

Maynard, A., and Ludbrook, A. 1980a. What's Wrong with the National Health Service? *Lloyds Bank Review* 138:27–41.

———. 1980b. Budget Allocation in the National Health Service. *Journal of Social Policy* 9:289–312.

Newhouse, J.P., and Friedlander, L.J. 1980. The Relationship Between Medical Resources and Measures of Health: Some Additional Evidence. *Journal of Human Resources* 15:200–218.

Niskanen, W.A. 1971. *Bureaucracy and Representative Government.* Chicago: Aldine.

Powell, E. 1976. *Medicine and Politics: 1975 and After.* New York: Pitman.

Royal Commission on the National Health Service. 1979. *Report.* Cmnd. 7615. London: Her Majesty's Stationery Office.

Steel, K., Gertman, P.M., Crescenzi, C., and Anderson, J. 1981. Iatrogenic Illness on a General Medical Service at a University Hospital. *New England Journal of Medicine* 304:638–642.

Address correspondence to: Michael W. Spicer, Associate Professor in Economics and Public Administration, University of Colorado, P.O. Box 7150, Colorado Springs, CO 80933.