down-draught extractor fans are installed and protective clothing is worn. It is almost impossible to sterilize bone products and it would be a costly, indeed uneconomic, process. At a symposium at the Veterinary Public Health Association meeting in 1964 it was concluded that "considering the widespread distribution of anthrax spores in imported animal products, coupled with the small number of cases in man, then man's resistance must be considerable. Extensive disinfection processes seem hardly justified since effective immunization is available to those at risk and effective chemotherapy for established cases." Few cases of anthrax among bone meal workers in this area have been seen since anthrax inoculation became routine. The odd case has occurred in those whose inoculation schedules had not been completed. I believe that professional gardeners should also be vaccinated against anthrax and that bone meal fertilizers should be packed in sacks carrying a prominent warning that gloves should be worn.

In spite of the falling incidence of anthrax in man, practitioners must always bear it in mind and endeavour to make an early diagnosis.

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Contemporary Themes

Management for Health

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"Mention management . . . to the average doctor and he tends to bristle," remarked a leading article in the *British Medical Journal* six months ago.¹ British doctors have had frequent reason to bristle of late. In the space of six or eight months British medical journals have probably published more commentary on "management," pro and con, than in the whole of the previous decade, and this trend will continue for several more months while the white paper on N.H.S. reorganization and the "grey book" on management arrangements are debated. Yet for all the discussion, there is a danger that the profession will still be inclined to dismiss this concern with management as a passing fad, a whim of the Secretary of State, with no relevance to the lifeblood of the service. If so, the interests of patients, doctors, and the health service as a whole will have suffered a severe setback.

My purpose in this article is to expose (and demolish, if I can) some of the prevailing misconceptions about management, to point out some of the situations in health systems that cry out for better management, and to illustrate from my own experience in this and other countries the nature of the contribution management can make. I shall not attempt a defence of the report on management arrangements (which is concerned with means), but shall try to clarify the objective we should aim for and some ways this objective can be reached.

Much of the present discussion seems to suggest that management is something new and alien in health care. This is not the case. Ever since doctors first treated patients the doctor has had to manage the resources available to him. When resources became more varied, more potent, and more complex, the management task became that much more difficult. Sometimes it is done well, and sometimes badly, but it cannot be escaped. Some forms of management would of course be alien in the health services. Hostile reactions to the search for better management have assumed, with genuine or wilful misunderstanding, that such alien characteristics are essential components of management. They are not. Good management in health services must be appropriate to the health services environment. What we should all be seeking to do is to make it appropriate, not to deny its need.

What is Good Management?

My shorthand definition of good management is: a rational way of considering what you are going to try to do, and then getting things done without waste. That sounds so desirable an end as to be unassailable, but recent articles and correspondence have expressed a different view, painting management as necessarily insensitive, hierarchical, and narrow. For example²:

The white paper seeks to sacrifice both health workers and patients on the altar of "managerial efficiency." Health care is to become the province of cost-benefit analysis and management consultants who will base their assessment of priorities on the question "How much can be made out of it by putting a fixed amount in?" On this criterion, the non-productive sections of the population (the old, chronic sick, and mentally ill, etc.) can expect little help. No mention is made of increased financing, and Britain will continue to spend less on health care than the U.S.A., Canada, Sweden, or France.

Will it be said by the patients and health workers of the future that the present members of the medical profession were content to sell their Hippocratic birthright for a mess of managerial portage?

From this viewpoint, management is a ruthless search for cold efficiency, associated in the writers' minds with the workings of business (what business, I wonder?). But this is total distortion. To be sure, there are aspects of the health service where efficiency pure and simple is a proper goal—for example, a hospital's telephone services should be efficient technically and they often are not. However, good management, as I have defined it above, goes far beyond the quest for systems efficiency. It requires us to seek, with humility and sensitivity, answers to the very questions about ends and resources required, with which these authors are concerned.

What (first in general, then in specific terms) should Britain be doing to improve the care of the old, the chronic sick, and the mentally ill? In view of other important demands on resources (such as improving accident services, replacing outdated general hospital building and equipment, attacking problems of high infant mortality in the North-west and North,³ and so on), what rate of progress can we maintain towards our objectives for the old, the chronic sick, and the mentally ill? How much shall we spend on health and personal social services, having considered other demands (including housing and education) on the nation's resources and the amounts needed to achieve a decent level of health and social care? These questions illustrate two of the most important elements of any sensible management analysis: deciding what you are trying to do and planning how you are going to do it.

A second example of misconceptions about management is exemplified by this passage from a recent article⁴:

Conventional thinking about organizations has been that there is essentially just one approach to organizational design and to managerial practice, modelled on the 19th century industrial enterprise. Burns and Stalker have illustrated this approach well, in their description of the "mechanistic system" of management practice.

"In mechanistic systems the problems and tasks facing the concern as a whole are broken down into specialisms. Each individual pursues his task as something distinct from the real tasks of the concern as a whole, as if it were the subject of a sub-contract. 'Somebody at the top' is responsible for seeing to its relevance. The technical methods, duties and powers attached to each functional role are precisely defined. Interaction within management tends to be vertical—i.e., between superior and subordinate. Operations and working behaviour are governed by instructions and decisions issued by superiors. This command hierarchy is maintained by the implicit assumption that all knowledge about the situation of the firm and its tasks is, or should be, available only to the head of the firm. Management, often visualized as the complex hierarchy familiar in organization charts, operates a simple control system, with information flowing up through a succession of filters, and decisions and instructions flowing downwards through a succession of amplifiers."⁵

The traditional approach works tolerably well under certain conditions: when an organization's output is a repetitive, standardized product, so that much of the work is routine and tasks can be specialized; when the environment is stable or when the organization is not much affected by environmental change; and when there are minimal demands for creativity, adaptability and commitment from the members of the organization. Indeed, these conditions are assumed to exist whenever the traditional bureaucratic form of organization is adopted. Other assumptions are made in the conventional approach in relation to staff motivation. McGregor notes⁶, for example, that one of the assumptions underlying the emphasis on monitoring performance and upon supervisory responsibility is that work is inherently distasteful and that people will invariably attempt to avoid it; therefore, much attention must be devoted to checking performance and to enforcing compliance.

Increasingly, such assumptions do not match the circumstances in which organizations operate.

The writers are absolutely correct in their last assertion. Indeed, hardly any organization today is engaged in producing repetitive, standardized products in an unchanging environment with minimal demands for staff creativity, adaptability, and

commitment. And no one striving with any sympathy and knowledge for better health service management could possibly believe it is to be found by means of rigid organization hierarchies and the issuing and enforcing of commands. The assumptions described are grotesquely inappropriate in the context of a caring, inexact social service with high professional content and substantial political sensitivity. Good management in the health service means using all the resources of the service as effectively as possible in the care of people. Rigid hierarchies and controls are not the answer, but neither, assuredly, is slovenliness. We cannot escape the need to organize ourselves in a health service, to co-ordinate our work and to communicate what we are trying to do. There are better and worse ways of doing so. By definition, good management is the quest for the better way.

My third example of recent misgivings about the pursuit of better management in health services is less overtly hostile, but still assumes that a dangerous attempt will be made to introduce unsuitable methods.⁷

How Scientific is Scientific Management?

The claim that problems of health care, which are not only enormously complex from a technical standpoint but are highly subjective and ethical in nature, can be handled neatly by purportedly scientific methods is on close analysis untenable. While useful for adding to the amount of information going into decisions and inculcating a more logical and precise approach to problem definition and systematic weighing of alternatives, scientific management can never be a substitute for human judgement in dealing with the value and qualitative factors constituting the core of essentially personal services such as health. More important than a possible neo-Luddite backlash leading to a complete repudiation of all improvement in management are the insidious social and political effects on health policy which could occur from over-exaggerated claims of efficiency.

Many concepts—such as health itself—are non-operational and non-quantifiable.

And

The presentation of modern management as a value-free science is a myth. Decision-making techniques can, if unchecked, systematically distort priority setting in favour of programmes which are quantifiable at the expense of equally, if not more important, non-quantifiable programmes.

I share Battistella's and Chester's total rejection of the idea that modern management is a value-free science. Indeed it is not a science at all, though some of the techniques available to managers are scientific. Such techniques are useful in some situations and not in others. Almost never do they lead automatically to managerial decision or action, and they are no substitute for human judgement. At best they can, as Battistella and Chester concede, reduce gaps in the information on which decisions are based, and tighten the logic with which they are made. But on these two counts alone there is enormous scope for improvement in the health and social services, without the faintest risk of the "insidious political and social effects" that these two authors fear. Indeed, to argue the reverse is to contend that because one cannot quantify everything, one should quantify nothing. Surely there are ways of doing things more rationally without renouncing the exercise of judgement or compassion.

To summarize at this stage: people may think they are aiming their shots at management, but what they are actually aiming at is bad management. To pursue ruthless efficiency regardless of ends would be bad management, as would a hierarchical "follow your orders" approach to people and getting things done, or a doctrinaire use of so-called management techniques and systems. Suggestions that "management and medicine are in opposition,"⁸ fairly widespread at present, reflect misunderstanding of what good management is, particularly in the context of a health service. In the health and social services (and to an appreciable degree in all other human activities) getting things done rationally without waste requires hard thinking about

exactly what one is trying to achieve and what one is in fact achieving. It requires that the services be organized flexibly to draw the best from people working in them; and it urges the case for better informed decision-taking, while preserving sound judgement and the capacity to care.

How can Health Service Management be Improved?

I have suggested that good management, properly fitted to its environment, will always be concerned with three basic activities: (1) deciding what one is trying to do and how to do it; (2) organizing to get it done; and (3) finding out how well it is being done and exercising selected controls over performance. Under each of these headings I shall illustrate some health service problems and suggest how better management can contribute to their solution.

PLANNING AND DECIDING

At all levels, from the individual clinician through the specialty and the hospital to national level, a health service is faced at any given time with needs that are extensive, changing, and hard to measure; expressed demands that do not always accurately reflect the true pattern of needs; and more or less severe limitations on available resources. By the nature of the situation an inverse care law operates, in default of action to counteract it, whereby "the strong obtain the resources they believe they need and the weak go to the wall—those who shout loudest get most."⁹

The sort of problems that result can be seen in clear perspective in the developing countries, where too often there is Western medicine available for the few but no care at all for the many. The bulk of a country's physicians and of its total health expenditure may well be concentrated in the capital city (see table I), leaving largely unmet the needs of the countryside, where enormous strides in health standards could be made for comparatively small expenditure by improving water supplies, nutrition, and sanitation. Making these strides may not require highly trained personnel in rural areas, nor sophisticated services, but it does need a well-focused and sustained campaign of a kind that is now too often absent.

The situation has its parallel in the United States. There, vast resources have been used to introduce highly sophisticated services which in some instances (90% of the closed heart surgery facilities installed in American hospitals, for example) are dan-

TABLE I—Distribution of Physicians in some Developing Countries in 1964

Country	Capital		Rest of Country	
	Physicians (%)	Population (%)	Physicians (%)	Population (%)
Jamaica	70	26	30	74
Guatemala	82	15	18	85
Senegal	63	15	37	85
Thailand	60	8	40	92
Kenya	54	5	46	95

Source: Fendall.¹⁰

TABLE II—Planned Level of Certain Community Services for Children, and Planned Expenditure

Activity	Expenditure (£,000)					Outputs	1972/3	1973/4	1974/5	1975/6	1976/7
	1972/3	1973/4	1974/5	1975/6	1976/7						
Dental services ..	1,034	1,084	1,204	1,279	1,304	No. of children provided with dental care ..	100,000	110,000	150,000	160,000	200,000
						No. of treatments provided:					
						(a) Conservative treatment	170,000	200,000	300,000	375,000	400,000
						(b) Extractions	200,000	200,000	150,000	125,000	100,000
						Average waiting period for (a)	8 weeks	6 weeks	4 weeks	3 weeks	2 weeks
Ophthalmic services	150	156	167	169	175	No. of children referred for specialist examination ..	45,000	47,000	49,000	52,000	54,000
						No. of children supplied with spectacles ..	28,000	29,000	30,000	32,000	33,000
						Average No. on waiting list for spectacles ..	2,800	2,900	3,000	3,000	2,900
Aural services ..	35	38	40	42	44	No. of children referred for specialist examination ..	4,000	4,300	4,600	4,900	5,200
						No. of children supplied with hearing aids ..	300	320	340	360	380

gerously underutilized and in others (such as coronary care units) are of questionable effectiveness. Yet at the same time sections of the inner cities and of rural America are almost devoid of services, and standards of care for some of the chronically ill—for example, patients in State mental hospitals—are appallingly low.

But it is hardly necessary to look so far from home. Only now are we in the United Kingdom beginning to face up to the problems of relatively neglected areas like the North of England, and relatively neglected groups of people like the handicapped and the chronically ill. At the level of the hospital group, decisions on the allocation of new posts, equipment, and money are made chiefly in response to bids, and are strongly influenced by the astuteness and pertinacity of the bidder.

How can good management counteract this tendency for resources to flow toward those who shout loudest, at times with little regard to a balanced consideration of need or of the areas where increased effort can make most impact? A useful parallel is to be found, I think, in the way individual clinicians must allocate limited resources, particularly time. Every hospital consultant has to decide, in broad terms, how he should divide his time among such activities as ward rounds, operating sessions, research, teaching, and outpatient clinics. Faced with demands from individual patients, he must seek to understand how those relate to needs, what treatment alternatives are open, how effective and roughly how costly each is likely to be, and then decide the course of treatment to follow. Everyone tries, to a greater or less extent, to manage resources in this way, and nobody does it perfectly.

At the level of the hospital group, the region, and the country as a whole, the basic challenge remains the same, but the management tasks become more difficult. Few people, certainly, are entirely content with the way things are now being done. Most, I think, would agree that improvements are badly needed in the ability to define goals and decide how to reach them. More specifically, I would propose three lines of action.

Firstly, better information is needed about existing and planned services, their cost, and (whenever possible) indications of how they compare with the standards desired. The attempt to do this is now being made at various levels in a number of countries. I have participated in some of these attempts, at hospital level, and at city and regional levels.

It is a delusion to think that an initial information framework cannot be put together. Even though many facts are lacking, and many things one would like to measure are hard to measure, one can make a start. The vital points are not to be too ambitious initially, to keep the framework as simple as possible, and to be flexible in choosing how to compare existing and planned services with desirable levels. An example of measures developed in one country for some of the community care services for children is given in table II. This forms part of a comprehensive set of statistics, which will gradually be improved, covering all services.

Secondly, a closer dialogue must be developed between those proposing major service and resource use changes at each level and those responsible for approving such changes. To provide a fairly comprehensive review of priorities, the dialogue must follow a disciplined pattern. To focus adequate attention on the most important issues, it should concentrate on major changes and their

justification, while allowing maximum flexibility on other matters. The implications of the resulting decisions must be understood by those making the proposals. Moreover, the decisions made should be firmly linked to resource allocations, so that budgets for current and capital expenditure and manpower plans will reflect a logical order of priorities. One teaching hospital with which I am familiar now screens, as they arise, proposals for extensions of service, additional posts, etc. If a proposal appears to offer significant benefits it is taken up, along with other bids, in the context of a thorough review of priorities. The resulting decisions—both approvals and rejections—are explained to all senior members of the staff, and approved proposals are incorporated in the revenue and capital budgets, and in manpower plans.

Thirdly, better analysis of problems and opportunities is required so as to provide a better base for decision-making on particular issues. Professor Cochrane has stated forcefully and lucidly the need for better evaluation of the effectiveness of particular courses of treatment, stressing the usefulness of the randomized controlled trial.¹¹ Quite apart from basic medical research, where standards are already high, there are other analytical approaches, as yet little exploited, that promise genuine improvement in health service management. These include assessment of health service needs based on sample surveys, analysis for particular decisions—for example, how best to implement a major policy change affecting a particular service—and analysis of how to improve the effectiveness or efficiency of particular activities—for instance, major supporting activities in a hospital group.

Consider a single example of assessing need and ways to meet it. In a rural area of Ireland a sample survey, designed jointly with professional staff and carried out by community nurses in the homes of old people, showed what services were urgently required to enable them to remain at home, and indicated the ways in which their needs varied in line with their general physical condition. This information, given in table III, enables one to consider how best to deploy the limited resources immediately available and assess the desirability of expanding these services, both to serve those in most urgent need and to delay the deterioration of others.

In the course of recent consulting experience in seven very different countries, I have seen no health service that could fail to benefit from the application of these three approaches to better management.

ORGANIZING AND GETTING THINGS DONE

The N.H.S. is one of the largest organizations in the world, employing more people than General Motors and four times as many as I.C.I. It is also one of the most complex. Indeed it is scarcely a single organization at all, but rather a constellation, with tremendous variety in its parts. This heterogeneity is a strength, not a weakness. Schon's far-sighted work on organization in a changing world¹² rightly emphasizes the adaptability, singularly rare in government, of this type of organization. Yet the N.H.S., like health services in most other countries, offers much scope for organizational improvement. For example, far-reaching decisions on resource allocation are too often made without properly consulting those directly concerned. Again, it

has been documented¹³ that severe problems for individual patients have resulted from the lack of continuity in care directly traceable to lack of co-ordination between different parts of the N.H.S., and between the health and social services. The operations of the N.H.S. are further hampered by poor communication. The problem can be found at ward level—want of communication is felt by most patients, for a start—and tends to become worse with each increase in the number of people involved.

What sort of solution does better management have to offer here?

To begin with, it would match the elements of the organization more closely to the tasks to be done. In particular, multidisciplinary management, with an element of public participation, is needed to set the priorities already referred to, to resolve the many problems which cannot be dealt with by single disciplines on their own, and to highlight opportunities for increasing the effectiveness or economy of various activities.

This need for co-operation between the public and the professions, and among the main health service disciplines, exists at all levels. In my view, the United Oxford Hospitals executive committee¹⁴ presents an outstanding example of how it can be met in a large teaching hospital by bringing together a balanced and talented group of limited size.

Secondly, better management would imply building organization bridges among the three main arms of the health service, and between the health and social services. The first, of course, is the single most important feature of the planned reorganization of the N.H.S. In the Republic of Ireland, where changes made under the 1970 Health Act were designed to build bridges of both types, single health authorities are responsible for the health and social care of the population of defined geographic areas. It is their task to see that these needs are met by some combination of voluntary and public agencies. This organizational arrangement recognizes the vital interdependence of the community and hospital services.

Finally, better management means better communications. To provide better care to patients, improved communications are needed between most elements of the service and most disciplines, from the top to the bottom of the N.H.S. In working with others to achieve an urgent five-fold increase in a particular service for the poor in New York City, I found communication at least as important to success as sound analysis. By consulting those directly involved before a plan of action was made, explaining to them the decisions taken and mobilizing the resources they would need to implement these decisions, results were achieved that could not have been achieved in any other way.

In short, organization changes and better communication can contribute at least as much to improving the N.H.S. from the viewpoint of all parties involved, as better planning processes and more informed decision-making.

EVALUATING PERFORMANCE AND EXERCISING SELECTIVE CONTROLS

Providing and interpreting health service information are vexed subjects. Nobody is satisfied with current information standards. Here in Britain, however, the main problem is not lack of data per se. Most doctors in all branches of the service can obtain

TABLE III—Proportion of Medical-card Holders over 65, by Risk Category, Requiring Selected Services

Risk categories	Percentage of those at risk	Percentage of those in each risk category requiring these services						
		Aids and Appliances	Home nursing	Meals on wheels	Home help	Regular visiting	Simple Housing repairs	Others
All aged	100	12	5.2	8.7	8.5	9.3	4.1	
Very high risk—that is, will be admitted to chronic institutions within three months unless services are given	5	26	31	50	75	19	13	
Medium risk—that is, at present in fair physical condition	41	11	4	9	9	14	5	
Others								

masses of data—think of the reams of Hospital Activity Analysis for example, or the D.H.S.S. annual statistics on psychiatric hospitals. Yet much of this information goes unused, and some may be unusable, for want of adequate processing and interpretation. Also, some of it lies unused because people lack the will, or the desire, to use it.

Control are an even more sensitive question. In this country and in Ireland some existing controls over personnel matters and minor capital are overdetailed, time-consuming, and irritating to people in the field. But inadequate controls can be disastrous as a glance at the American situation, where controls are almost non-existent, will confirm. The United States has no parallel to our combination of incentives and professionally administered controls to encourage G.P.s to practise in undoc-tored areas. Nor does it have effective regional controls over hospital building or development, so that it lacks any means of preventing regional duplication of facilities. And since the expenditures incurred by most services in any given period are not subject to any effective limits, the costs to patients, and thus to the nation, are virtually uncontrolled.

What, then, could better management contribute to the evaluation of performance, and the selective control of resource use? At this stage, I think, real progress is possible in two main directions.

Firstly, a more thorough and purposeful use of information is required, concentrating on the effect of particular services and on how things might be done better. To my mind one of the best examples of how to select and present information is the report on *Confidential Enquiries into Maternal Deaths*,¹⁵ which analyses trends in terms of selected indicators and states clearly how, in the view of those making the inquiry, further improvements in care can be achieved. To make the information available to those who can best act on it, moreover, the results of the inquiry into each individual death are communicated in confidence to the doctors primarily involved. Here is an example of an information process well designed for a specific use. More of the same sort of thing is needed in other care areas, modifying the approach to make the information as useful as possible to the service concerned. Moreover, decisions should be followed up more rigorously than they are now, to evaluate their outcome. This search for more useful information is also touched on in what I said earlier about the need for a broad information base for planning purposes.

Secondly, some trivial and irritating controls should be discarded, while a few really important controls are preserved and are linked to each authority's plan for the development of its services. One of the most important controls, well understood by the D.H.S.S., is the holding of each managing authority to a budget limit. One may well argue that in particular cases, and even in general, we have been inclined as a country to try to set these budget limits too low. But it is vital that some limits should be set in the context of the planning dialogue already referred to, so that each managing authority knows what resources it has at its disposal in seeking to provide a high level of care.

Personal experience here and abroad has convinced me that the public, the professions, and administrators are prepared to come to grips with the reality of limited resources of time, staff, facilities, and money, and that those concerned should be confronted with it at every main organizational level. Not only should this continue to be done within the reorganized N.H.S. wherever it is done already—for example, within sub-units (like medical specialties and support departments) and at the level of institutions—but the concept should be extended to the services of a district as a whole.

At regional and national levels some existing controls are too detailed, causing frustration and inefficiency (mainly in the staffing and minor capital areas already mentioned). Other controls need strengthening to counteract the tendency for resources to flow toward the most vocal claimants rather than the greatest need. In particular, important developments of services and switches in resource use should be agreed in advance, to minimize the need for later interference.

These improvements in performance evaluation and the use of controls, though admittedly far easier to prescribe than to implement, do offer real opportunities for better management of the health service.

Conclusion

Doctors are more critical than most of the way the N.H.S. is run, and many of their criticisms are fully justified. Superb as the N.H.S. is in concept, it is frequently disappointing in performance. In particular, we all need to face up to the fact that we cannot do everything with limited resources, that we must consider our priorities and deploy our resources to achieve them. It would astonish me if the profession took the line that these things are done well now, because most doctors know that they are not.

Professor Cochrane¹¹ views the N.H.S. as a favourite child showing pronounced delinquent tendencies. Better management can make an enormous contribution at this stage of the child's development. The N.H.S. has such strengths compared with other countries' children. For most patients it provides a "better buy" than most other health services could offer: acute care, chronic care, and primary care are available to most people most of the time, without fear of personal bankruptcy and at comparatively moderate national cost. At the same time, however, some patients in some parts of the country are still not receiving adequate care. Some staff are being exploited and are frustrated by lack of opportunity and lack of flexibility in the service. Too often the right resources are not in the right place at the right time. All these are unmistakable signs that management performance is poor. Surely we would all do well to think hard about how to do this job better, and then take some steps along the road, rather than wasting time and energy defending the indefensible. Better management in the health service is not an end in itself, but a means to the end of better care for patients. If the opportunity is taken better management has a real, and urgently needed, contribution to make.

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