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28 July 1988

Rt. Hon. Mrs. Margaret Thatcher M.P.
10 Downing Street
Whitehall
London SW1A 2AS

Dear Prime Minister,

We have today made a short submission to the new Secretary of State for Health outlining ways of improving the cost effectiveness of the National Health Service.

Among the most vital issues are:

1. The need for investment in the right information systems

2. Establishing a comprehensive training programme to ensure proper use is made of the information

3. Establishing measurements of quality

Knowing your personal interest in the subject, I believe you may find our suggestions very much in line with your thinking. I am therefore enclosing a copy of our submission, which has a useful summary at the front. I believe you will find it of value.

Yours sincerely,

James P. Sweeney
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ARTHUR ANDERSEN &CO

Information for the NHS Marketplace

A Submission to
The Secretary of State for Health

ARTHUR ANDERSEN
MANAGEMENT CONSULTANTS

July 1988

1983 ".... if Florence Nightingale were carrying her lamp through the corridors of the NHS today she would almost certainly be searching for the people in charge".

Sir Roy Griffiths

1988 .... if Florence Nightingale were to return to the corridors of the NHS she would find people in charge, but would be appalled that they had so little information about what was going on.

Management Summary

1. This paper addresses the need for improved information in the NHS. Our goal is to harness the power of information to help increase and improve patient care.

2. The central proposition in our paper is that without information, resources cannot be managed effectively, and a market for health services cannot operate efficiently. The managers, providers and consumers of healthcare should all have the information they require; have been trained to analyse and understand that information; and be able to act upon it.

3. While much has already been done to increase the availability of information, it has often been piecemeal. Better value for money could have been achieved and there is still a great deal left to do. The paper makes a number of recommendations about what should now be done. The key recommendations concern the development of information systems, management training and further work to improve understanding of information requirements, particularly with regard to quality.

4. Our recommendations can be summarised as follows.

Information systems

5. The government should support further initiatives to implement comprehensive, integrated information systems in districts. Currently, there are no districts in which a complete set of information systems are in use. Innovation should be encouraged by supporting several initiatives, and encouraging competition between them. Districts should be given incentives to market the results of their initiatives to other districts, regardless of regional boundaries (Paras 38-41).

6. The operation of a market place requires some information to be available nationally. Such information might include waiting lists, morbidity rates and differences in clinical practice. A central strategy is required for the systems needed to distribute this information to the providers and consumers of healthcare. This could build on the existing FPS strategy (Para 42).

7. The private sector can play a vital role in accelerating the implementation of improved informations systems. It has skills and experience that are not readily available in the NHS; it can also provide the capital required, possibly on a risk bearing basis. Alternatively, information systems initiatives could be funded by the government, in the form of a loan that could be repaid through system benefits and the sale of successful systems to other districts (Paras 43-45).

Training

8. Improving information in the NHS will be of no value unless information users are trained in the analysis and use of information. Such training should be mandatory for every NHS manager, and should be included in the training programmes for doctors, nurses and other health professionals (Paras 46-49).

Quality measurement

9. The behaviour of managers and professionals will always be heavily influenced by the way they are measured. If quality is to be given the priority it deserves in the NHS, improved ways of measuring quality must be found. Further research should be sponsored to develop measures of quality and outcome that command general support (Paras 50-54).

Introduction

10. The NHS is not an efficient user of resources. Beds are empty in some hospitals whilst other hospitals are turning away patients. Nurses in some wards devote the majority of their time to patient care whilst others find that clerical duties overwhelm them. Patients who could be cared for in the community occupy hospital beds, whilst sick people in the community badly need hospital care.

11. If managers had the authority, incentives and information to act on resource imbalances, the NHS would be a much better user of resources.

12. One approach is to introduce a health services marketplace that provides the incentives for improved efficiency. Reliable information is critical to a business which operates in a marketplace. Most candidates for privatisation in recent years have undergone massive investments in information systems both before and after privatisation as they adapt to the greater information needs of their marketplace.

13. While all businesses need information, the needs of a health care business are particularly demanding. Health care is information intensive. For example, the very process of caring for a patient depends on a number of different professionals having access to common information on the progress of treatment to date, the drugs prescribed and administered, and the results of diagnostic tests. Our experience of the private health care sector in the UK and overseas provides many examples of the enormous business risks faced by organisations who try to operate without adequate information.

14. A free market solution for health services has been difficult to achieve and no country has an approach which is free from major disadvantages. At the root of the problem is the fact that the recipient of a health service, the buyer, is ignorant of the cost and quality of service being provided; in more market-related systems the services tend to be sold on the basis of convenience, comfort and quality of hotel services which the buyer can assess directly. The UK approach where the general practitioner might act as a knowledgeable buyer on behalf of the recipient of the health service has advantages, as long as the GP is motivated to seek the best care for his patient and to balance cost and quality. A GP who was both motivated and informed to put pressure on costs and quality would exercise significant market influence.

15. Whatever elements of the marketplace are introduced into the NHS, it is vital that incentives are introduced for management to provide high quality service. The Griffiths' implementation has had some success in creating more direct accountability within the NHS. However, the health service is difficult to manage because it is comprised of a series of professional interest groups, each with its own incentive structures and motivation.

16. Furthermore, the senior professionals in each discipline have important management roles. One of the problems that general management has not solved is how to provide a framework for senior professionals to seek cost-effective patient care. Resource management is one step in this direction; introducing some element of the marketplace, together with the right information, would represent a significant further step.

17. In this submission, we do not seek to suggest solutions to all three linked problems: information; a knowledgeable buyer; and incentives to provide cost-effective patient care. We have expertise on the information and training issues; our submission is focused on the requirements for information that help with decision-making, the information systems that are needed to support this, and the training which information users will require.

The Current Position

18. Nowhere in the NHS are all of the information requirements for effective decision-making being met. But progress has been made. There have been a number of initiatives both centrally and locally in the recent past, all of which have achieved results.

Körner

19. The implementation of Körner across the country in such a short time was a major achievement, though the price of this achievement has been high. Significant investment has been required and in most instances Körner has perpetuated the view of information as an overhead. The majority of districts are capturing Körner data through separate and additional activities, rather than as a by-product of operational systems. Furthermore, few regions and districts have provided management with good tools to analyse and present the information that has been collated; North East Thames and South West Thames are significant exceptions. Even in these regions, there are many examples where the information is not being used, understood or acted upon.

Performance indicators

20. The introduction of national performance indicators is also a step forward. However, it is clear that the current arrangements suffer from two deficiencies:

a. The long delays before the information becomes available reduce its relevance and credibility to local management. Information that is not timely is rarely effective.

b. No general manager can focus attention on several hundred indicators. More work is required to reduce the number of indicators and to better understand the relationship between indicators. The introduction of market incentives would rapidly highlight which indicators are important.

Resource management

21. The resource management initiative has great potential, and our whole-hearted support. Some of the pilot districts have taken resource management forward on the basis of what can be done quickly with information already available. This has heightened the awareness of both managers and clinicians, but the demands for more information and current systems limitations will soon cause concern.

22. Other districts, notably Winchester and Wirral, are taking a longer term view by ensuring that wide-ranging operational systems are in place to provide reliable, timely and comprehensive information. During our involvement at Winchester, we have observed professionals working together towards corporate benefits and objectives because the systems are clinically relevant. We believe that these districts point the way to the future, and must be adequately funded and supported in their initiatives.

Central standards

23. In recent years, the role of the centre in NHS information systems has been largely redefined. It is now primarily concerned with standards and enabling mechanisms that are intended to assist regions and districts in implementing systems efficiently and effectively. We support this view of the centre's role. We would, however, make two points:

a. The value of standards must be judged largely by their usefulness to regions and districts. If the centre has to adopt a policing role to enforce compliance, it suggests that the standards are not useful. The centre must balance their objective to guide and direct the information process, against the need for local ownership and responsibility.

b. The NHS increasingly relies on computer systems developed by the private sector. Indeed, this has allowed the NHS to make more progress at a lower cost than would otherwise have been possible. Full implementation of some of the standards that are being defined will involve substantial changes to software developed by the private sector. These changes will cost many millions of pounds. Care is required to ensure that standards do not discourage the private sector from supplying the NHS, or result in a small cartel of approved suppliers who have been able to afford the investment. This would only increase the cost of information systems.

Regional and district initiatives.

24. Most regions and districts now have some programme in place to improve their information systems. Some have been particularly far-sighted. The RISP programme at Wessex is an example of a comprehensive and long-term attempt to improve the quality of systems; equally comprehensive plans are being made at Wirral. We have, of course, been very closely involved with Wessex. We believe that the systems show what can be achieved, and reflect the scale of cost and management effort over many years that is involved in a substantial information systems programme.

The Vision

25. The objective of any discussion of information in the NHS should be to increase and improve patient care. This requires information. Our vision is a future where the managers, providers and consumers of health care have the information they require as a by-product of routine operational activities; where information users have been trained to analyse and understand that information; and are able to act upon it.

Information requirements

26. Managers at every level of the Service need timely and accurate information about the areas for which they are responsible. We believe that every manager should be able to monitor costs against budget, activities against plan and service levels against target. Despite the investment in Körner, it is our experience that few managers have ready access to information which is reliable, timely or comprehensive. Most importantly, information must provide the basis for action. The consequences of decisions must be easy to understand through the use of a small group of key factors.

27. Health care professionals also need to understand the costs, activities and service levels associated with their workload. Professionals require regular information about quality if clinical audit and adherence to standards are to become realities on a routine basis. If the power of information can be effectively harnessed, it will have a significant impact on quality. This will require more research into quality measures.

28. Most importantly, health care consumers, and the GP as the buyer of services on their behalf, also require this information. It should be routine that GPs know where waiting lists are shortest; have access to morbidity rates and other outcome measures; and have information about differences in clinical practice between professionals.

How it should be delivered

29. The greatest risk to good information systems is that the provision of information is regarded by the staff concerned as an overhead; a separate and additional task which must be carried out in addition to their existing day to day activities. In such circumstances, information will not be reliable, timely or comprehensive. The solution which information technology now makes available and affordable is to ensure that information is not gathered separately, but flows naturally from operational computer systems which provide benefits and which people want to use. This requires a much greater investment in operational computer systems within the NHS than in the past.

How it should be used

30. If all this information was available today, it would not be used effectively. There are limited incentives to use it and the great majority of potential information users within the NHS have no training in how to analyse and use information. The introduction of more information must be complemented by a substantial programme of training in the use of information across the NHS.

31. Furthermore, once information has been made widely available people must be able to act on it. GPs and patients must be free to go where they perceive the best service; professionals must be free to act on the results of clinical audits; and managers must have the ability to manage. This can only be done by reducing central control and allowing greater local discretion. In this context it is important to note that the marketplace provides disciplines as well as incentives. Devolved authority without market discipline is a recipe for profligacy.

Information cost and value

32. A programme of activity sufficient to ensure that the requirement outlined above is met will cost many millions of pounds; these costs must be justified. This requires examination of the value of information and of information systems. A focus on operational systems as the source of information simplifies that cost-justification.

33. Good operational systems can profoundly affect the day to day operation of the NHS and realise enormous savings. Areas of great potential include:

a. Hospital activities, where significant amounts of nursing time are spent on administrative tasks which could be automated. Good systems can reduce the amount of nursing time spent on clerical activities by 20%; they can also significantly improve the quantity and quality of patient care. As the difficulties of recruiting sufficient nursing staff increase in the years ahead, the need to make effective use of their time becomes ever more vital. Nurses have no wish to be clerks.

b. Procurement, where there is still much to be done in harnessing the purchasing power of the NHS. The creation of national purchasing alliances in the United States has significantly reduced supply costs and gives an indication of what can be achieved. But any progress is dependent on good information.

c. Reductions in inventory, where the use of techniques such as 'Just-in-Time', combined with the use of information systems to bring the NHS and its suppliers together, could virtually eliminate the need to maintain large central stores in the NHS.

34. In each area, operational systems are required which can readily be cost-justified; management information can then be generated as a by-product of those systems.

Moving Forward

35. The current initiatives are all worthwhile. They are persuading information users of the value of accurate and comprehensive information on the cost, quality and mix of patients, and the role of information systems in improving patient care. These are important developments as the attitude of potential information users will be crucial to achieving a well-informed NHS.

36. In the following paragraphs we set out what is required to develop and deliver the vision outlined in this paper. Our recommendations are divided into three areas:

a. *Information systems:* we address what arrangements are needed to ensure the delivery of appropriate information systems, and what resources might be involved.

b. *Training:* we identify how training programmes should be established in the use and analysis of information for both managers and healthcare professionals.

c. *Quality measurement:* we recommend how meaningful measures of quality and patient mix should be developed to complete the information profile of the NHS.

Information systems

37. The key to moving forward is to support and accelerate the process of getting good operational computer systems into general use at the local level. We consider these systems in two parts; the integrated systems that should eventually be installed in every health district, and national systems that may be required to make healthcare information available to health consumers and their representatives.

38. The integrated systems required by every district are already well known; they have been identified in a series of information strategies over the last few years. It is also generally recognised that the systems which were introduced to the NHS during the 1960s and 70s no longer meet the requirements and need to be replaced. But even now, substantial sums of money are being spent piecemeal without any confidence that the resulting systems will be integrated or comprehensive. These systems will realise few benefits and will require early replacement.

38. The systems now required are: *hospital and community* systems to support the day-to-day activities of the professionals delivering healthcare; *estate, supplies, manpower* and *finance* systems to support the effective use and management of the districts' resources; and a *management information* system that collects information from all of these. While the broad scope of these systems are well known, the details of each system will vary according to circumstance. For example, no district's financial systems have been designed to assist with the operation of an internal market.

40. We recommend that the government should support a series of initiatives to implement comprehensive integrated systems in districts. To encourage innovation, each initiative should be different in approach, equipment and software.

41. Once these systems start to prove themselves at the initial sites, they need to be replicated quickly across all other districts. This could be done by central direction, but we suggest an alternative. We recommend that the districts in which initiatives take place are given incentives to 'market' the results of their initiatives in other districts, regardless of regional boundaries. Introducing this element of competition will further encourage innovation and cost-effectiveness.

42. The operation of an effective marketplace also requires more information to be available nationally. This requires information on such things as waiting lists, clinical practice and morbidity rates to GPs and others. This will be complex and expensive because of the need for accuracy and timeliness of information from all service providers, a national network to permit the appropriate access to information, and major organisational changes. We recommend that a central strategy is developed to identify the system facilities required to deliver this information. It may be appropriate to consider this as an extension to the FPS Strategy already being implemented.

43. The implementation of both integrated systems and national systems will require skilled people and considerable capital investment. Each district initiative alone could cost up to £5 million.

44. The private sector can play an important role in providing both the skills and the capital. There is already much evidence to show that the skills and experience available in the private sector can be used to supplement those available in the NHS. Private capital can also be used, possibly on a risk bearing basis. This might lead to some of the initiatives being joint ventures between a district and the private sector, with the private sector taking the lead in marketing the results.

45. Alternatively, if government funding is used, consideration should be given to making at least part of that funding available in the form of a loan. The loan would then be repaid through system benefits and the sale of successful systems to other districts.

Training

46. The promulgation of these comprehensive information systems will ultimately require a major training effort to ensure that users gain the full benefits both from the operational systems and the information derived from them. However, there are a number of important training issues to address before the comprehensive information systems become nationally available.

47. We recommend that a short term "remedial programme" of training be put in place to ensure that every person in a management position has received some training in the use and analysis of information. We suggest a timetable of two years.

48. For the longer term, we recommend that a core curriculum of management training be defined and a plan put in place to ensure that all managers receive this training at regular intervals during their career in the NHS.

49. The need for improved training in the use of information is not limited to managers, as increasing numbers of doctors and nurses take more active roles in the running of the Service. The training programmes for nurses, doctors and other health professionals should be reviewed with the aim of introducing some training on the analysis of management information. This should consider both pre- and post-qualification training.

Quality measurement

50. There are a number of vital components of the total information profile for the NHS which, although partially addressed by the resource management initiative and by Körner, are not yet resolved. These relate to the development of measures for clinical quality, the refinement of US based patient diagnosis classifications and costing.

51. Information from acute sites on clinical quality or outcome remains rudimentary. Indeed, it has not progressed since the data first collected at Florence Nightingale's initiative 120 years ago. Suitable measures of quality need to be defined which are meaningful, consistently applied and easily understood. Our experience with the US healthcare system is that detailed comparisons of clinical outcome and costs, at the patient level, is the most important motivation for clinicians to change their clinical practice. We recommend that further investigation be sponsored to develop measures of clinical quality that command a general support and can be implemented across the country.

52. A patient diagnosis classification is the healthcare equivalent of a manufacturer's product range. A meaningful classification is needed for the purposes of cost and quality comparison between service providers which takes account of the disease and operative procedure, the severity of illness and any appropriate demographic factors such as age and sex. The American-based diagnosis related group (DRG) which was developed at Yale University and used for Medicare reimbursement is a widely accepted method for acute care classification. Further work should be performed to develop a classification to cover all NHS activities outside the acute sector, notably community and long-term care.

53. Comparisons across DRGs can only work if the disease and operative procedure coding is of a sufficient quality. This will require additional investments by health authorities to train specialist staff in the accurate and timely coding of diseases and operative procedures. In the US, for example, there are specific professional qualifications for medical records administration.

54. The accurate costing of each patient's episode of care is the final component needed for accurate measures of cost-effective patient care. This requires information systems to capture details of all significant aspects of the treatment provided, such as drugs, diagnostic tests and a measure of patient dependency on nursing care. Each of these items can be matched against a standard table of costs to produce a final cost per episode. When combined with outcome and DRG, the resultant comprehensive and accurate measure represents a sound basis for decision making. Such detailed costing processes are not yet in place in the NHS.