

NUFFIELD PROVINCIAL HOSPITALS TRUST  
OCCASIONAL PAPERS 4

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Data A STATEMENT  
OF NEEDS AND  
Information  
and OPPORTUNITIES  
OF RELEVANCE TO  
Intelligence

REPORT OF A  
NUFFIELD PROVINCIAL  
HOSPITALS TRUST  
WORKING PARTY

EDITED BY  
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THE NEW NHS  
MANAGEMENT  
PROCEDURES

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# INTRODUCTION

## PROFESSOR GORDON CUMMING

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The provision of a system of health care available to all, in a time of increasing elaboration of available technologies as well as of increasing expectation of having them provided, poses a serious problem both for society and for politicians who are required to match provision and desire.

One approach to the problem accepts that what is currently provided is appropriate, but that it could be delivered more effectively and from this approach arose the idea of a management system, which would naturally call for information on the way in which care was being delivered. Information begins its life as numerical data, and the deliberations of the Steering Group chaired by Mrs Körner centred around the acquisition of data in a form which made it interchangeable between all parts of the Health Service and full implementation of the report of her committee will result in the production of numerical data across the health service.

This data of itself will be valueless: it must first be converted to information and thence to intelligence and it is this three stage process which has occupied the energies of the Health Information Working Party of the Nuffield Provincial Hospitals Trust for the past few years. If we consider this transformation process in another sphere it might be illuminating. Let us look at an attempt by scientists to understand and finally to modify (hopefully for the better) the workings of a reciprocating widget. The normal procedure is to define its function—perhaps to remove the skin from rice puddings. Following definition numerical data is gathered in a defined way, following which the relationship between numbers and function can be discerned—we now have information. Supposing that this reveals that the cooking time of the rice pudding is an important determinant—then intelligence has been garnered and the loop can be completed, resulting in a clear definition of cooking time and a maximisation of the effectiveness of the widget. However, if the widget was in fact designed for extracting stones from horses hooves, the whole process becomes suspect.

The job of all the Management Groups from the NHS Management Board downwards may be regarded as the production of a somewhat complex widget, and the stages by which an effective widget will be produced are not affected by its complexity. Thus the numerical data will require to be transformed and this calls for the delivery of the most difficult part of science—that of creative thought. This is truly an artistic endeavour rather than a scientific one, and as such does not take kindly to organizational structures. However such structures there must be and the provision of a milieu in which creative thought can co-exist in a tight organisation is a challenge for the Management Groups (and their Directors of Information) but not one beyond their capacity.

When the Health Information group looked at information from this viewpoint many issues of tactics and strategy became clearer and the essay which follows attempts to set out these conclusions in an understandable way in the hope that the thoughts of the NHS Management Board will thereby be stimulated, and (on the margin) that events will as a result take a somewhat different course to that hitherto.

GORDON CUMMING

*11 May 1985*

## DIGEST AND COMMENT

### A. Key conclusions

1. Information needs *investment* both in skilled manpower and in facilities. Long-term efficiency requires present improvements in the relevance and scope of information systems.
2. (a). Data collection alone—as broadly characteristic of the NHS/DHSS (Körner) Steering Group approach—is *not enough*.  
(b). Ability to have access to data, to manipulate, *analyse* and therefore produce information is equally—indeed eventually more—important.  
(c). Additionally, subsequent use of information for intelligence is a third step even more neglected at present. Since information is dependent upon data, questions as to which is the more important are academic. All three aspects, collection, analysis and use, are part of a process which should be co-ordinated. The culmination of that process is intelligence, with the prospect of a more effective and efficient NHS.
3. All three processes, with only the slight exception of the first (data-collection), are *not* represented to any adequate degree in *co-ordinated managerial arrangements*, either at the centre of ‘apex’ of the NHS or ‘in the field’ at Regional or District level. Whilst management needs information, *information needs management*.
4. ‘Value for Money’ is a concept likely to dominate health services policy for the foreseeable future. It is important, *firstly*, that this concept is given concrete and yet imaginative shape in a number of central areas (a task for ‘intelligence’) *and secondly* that this task is seen as a much wider responsibility than that of Treasurers, without denying their contribution.

5. The points made in 3 and 4 above should help to make the case that, while the needs of operational management must be met, concentration on operational management requirements *alone* would be *disastrous*.
6. All the above needs require carefully formulated plans for education and training to promote personnel to carry out the above function effectively.

### **B. The challenge facing the NHS Management Board**

7. The Board should appoint a Director of Information Services and establish an information and intelligence service.
8. The Board should be prepared to invest money in data systems and personnel.
9. The Board should develop *central requirements* quickly and ensure that the necessary data will be available or speedily obtainable from analysis.
10. Local initiatives should be encouraged, but screened to ensure data compatibility across the board.
11. Long-term initiatives should be set in motion where necessary, involving data and information obtainable from (for example) registration of deaths, births, and other sources. If possible such initiatives should help to improve current focusses (for example, by beginning to measure outputs and outcomes better). This type of activity—that is, attempting to extend current measures of value and effectiveness—should be seen as complementary to basic activity.
12. Given that the minimum data set has now largely been agreed, data for management will become available when the appropriate systems have been implemented throughout the service.

13. In the meantime it is necessary that the use of management information should be pursued in those areas where systems are already installed. This will permit the identification of problems which, whilst present, are not perceived. Adjustments of data to meet needs other than those directly perceived at the District office may be necessary.
14. None of the data which will be available following implementation is likely to be of value in determining the long-term objectives of the service. For this purpose there is a need to deploy an *intellectual resource to study the aims of the Health Service*, and to derive measures by which the success of these aims may be assessed.
15. Amongst many other tasks, any such unit should study the *different needs for different types of information at different levels* of the service (from 'the centre' down to the unit). Recommendations for data and management of systems to achieve these needs should reflect *parsimony and efficiency* as well as *coordination and effectiveness*: to allow comprehensiveness without duplication, as much as possible.

## ROUND-UP

### **The Paper discusses:**

- I. the search for management efficiency in the NHS and in particular the failure of the constantly haphazard policies with regard to information and above all to 'intelligence';
- II. recent moves to improve the consistency of data collection particularly through the work of the NHS/DHSS Steering Group on Health Services Information;

### **centrally**

- III. the information needs and problems of the NHS;

### **and especially**

- IV. the potential opportunities for the NHS Management Board set up following the Griffiths Inquiry.

### **and**

- V. concludes with the main points to be made.



## Main theme: Information and management

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### **The search for management efficiency**

The recommendations of the Griffiths Inquiry come at the end of a period of search for improved managerial efficiency and effectiveness in the NHS. Throughout the search and especially in the last decade, a constant theme has been—‘better management needs better information.’ Apart from the Trust’s own descant (1), most recently promulgated in *A Time for Decision?* (2) several variations have been orchestrated through different official media, e.g. in the *Grey Book* (1972), the *Planning System* (1975) and the Royal Commission (1979). But the theme has survived without much amendment.

Strangely, Griffiths is almost silent on the issue of information. Perhaps the members of the Inquiry took it for granted that sophisticated and comprehensive information systems are available to the NHS Authorities from the DHSS downwards to support the positive management process and managerial accountability that the report advocates. If so, this expectation is sadly misconceived. Even the most humble hopes will remain unfulfilled for some time unless the exponents of the new ‘management style’, especially those at the NHS Management Board level, become speedily aware of current shortcomings in information available to decision-makers. It will be necessary to take a cold look at what is extant and in process of development, and to proceed to forge special tools to shape the NHS into a more effective force and help it to fulfil better its goals at times of economic stringency.

There is indeed plenty of evidence about the sorry state of policies regarding information for the NHS, now well into its fourth decade. The development of planning between 1974 and 1979, and of more coherent resource allocation post-1976, showed up the defects in the scope of

existing data systems, their time horizons (long and late), the difficulties of analysis and the limitations upon the ways in which information and intelligence can first be won and then communicated.

Later, as economic pressure continued to squeeze NHS resources, emphasis on 'better value for money' served to highlight those defects and expose other weaknesses. In this climate it is not surprising that the major overhaul of data and information systems, presaged by the setting up of the 'NHS/DHSS Steering Group on Health Services Information' late in 1980, was enthusiastically welcomed; and any review of information has to start with the results of the work of that Group. In the event, however, the orientation of the Group has not led to recommendations as to how to *manage* the National Health Service effectively or to help lay sound plans to make it more efficacious in the future. Furthermore, the very economic pressure demanding 'better value for money' has not led to a commensurate consideration of what information this requires and—there's the rub—its costs. *Investment is required for saving; saving money costs money.* Guidelines on implementation of Körner (3) recommendations during the gestation process did not suggest much attachment to this principle.

## The NHS/DHSS Steering Group: The unanswered questions

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The NHS/DHSS Steering Group clearly saw management requirements at District level as its most pressing priority and left for later consideration the development of strategic information upon a well established operational information base. This approach is at least understandable—given the centralist and strategic characteristics of most existing data systems. But it leaves some fundamental questions unanswered.

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Few would deny the worthwhile progress made towards introducing much needed standards in data definition and in ensuring that different data sets were capable of being related to each other. Nor should the comprehensive and painstaking analysis of the kinds of data that can be reasonably collected at acceptable costs be undervalued—even though this all proceeded on the basis of subjective judgements as to the relevance and usefulness of the data as a source of information. The development of information systems has ever been an iterative process! But the approach loses much of its creditability—and perhaps also some of its credibility—when it is pursued without any simultaneous assessment of the likely technical resources and processes needed to convert data into useful information. And to do this at a time when the advances in information technology were so great that opportunities were available that could not have been dreamed of less than a decade earlier—is a serious shortcoming. What technology can offer can dramatically change both what data it is reasonable to collect and the costs of so doing. Fragmentary consideration of all the essential components of an information strategy is unlikely to produce either a coherent or a timely answer.

What is evident from the present position is that, after three years of study and seemingly endless consultation with working groups of

different complexion formed at different times and now at different stages and standards of analysis and conclusions, the NHS is still a long way away from having comprehensive information systems exploiting to the full the many advances made in information technology. Thus, the kind of systems on which more effective management—especially Griffiths style—must depend, are still missing.

One aspect of the problem which gets much publicity is the expected (and by implication frightening) costs of implementing the main recommendations made hitherto by the Group (4). Here reported attitudes of Ministers from time to time have an ambivalent ring. The 'ends' of greater management efficiency are made crystal clear. The 'means' and policies to establish them are far less certain. Indeed the impression is sometimes given that the dividends of greater efficiency are expected to come only from a lower level of investment in management. How else are the initiatives to reduce management costs and prune back 'the administrative tail' to be interpreted? No informed observer or manager would deny that there is ample scope for economy and efficiency in present management arrangements—even when the mandatory overheads occasioned by successive attempts at structural solutions are discounted. But the problems and the defects are as much related to the qualitative as to the quantitative aspects of management. Information which is adequate is *not* available even to allow management to decide where there is most managerial waste, let alone waste in general. Nowhere is this more visible than in the absence of effective information systems to support the management decision process. Indeed the proposition can be reasonably put that, until Ministers and their advisors are prepared to recognize the importance and necessity of *investing* in management efficiency, they are unlikely to reap the rewards that they expect in terms of cost performance and efficiency. Certainly if Griffiths is to be an effective leap forward it will need to manufacture a thoroughly sophisticated information springboard. There seems to be lacking a strategy to invest in information—as opposed to exhort, hope and leave Districts to make the financial trade-offs to allow information systems to be developed. Eschewal of centralism in data information and computing (5) systems should not mean eschewal of central coordination of progress.

## After 35 years of the NHS: Information needs and problems

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The areas most obviously in need of immediate consideration are:

**1. A comprehensive implementation policy:** finding the right approach to immediate needs. The NHS/DHSS Steering Group recommendations for data systems can certainly form the background, but one must be mindful of the need not only to preserve continuity of information when data systems change but also to exploit neglected opportunities for analysis of data, whether current or new.

**2. Operational needs and national strategies:** how to harness local operational data to the 'intelligence' requirement for national strategies.

and, most significant of all

**3. The practical needs for translation of information into intelligence:** creating a managerial structure to help define the major needs requiring information and intelligence (for different key managers at the various tiers within the service); to examine how needs can change; and therefore to reflect the need for flexible analysis in an appropriate data-base.

Hitherto, attempts to define information needs have often been associated with a static view of 'performance indicators'—leading to the design of indicators which not only are severely limited in what they measure but also are often not related to computer and technological systems for measurement or implementation: and therefore to examination of scope for quick change or amendment. Performance indicators have strictly limited implications for management, change or management of change. This is not to equate, for example, the work of the Steering Group with that of the Joint Working Group on Performance

Indicators. Indeed their separation has been all too apparent. Yet at the end of the day, they may share a limited scope.

### 1. An implementation policy?

There seems at present a great deal of uncertainty hanging over the implementation of the Group's recommendations. Data relating to *clinical services and activity in hospitals and the community* are a crucial part of the proposed data systems. For *hospital related data*, health authorities have been unanimous in the view that the data would be best captured on the back of patient administration systems (PAS). Both the cost of such systems and the preparatory work necessary are not inconsiderable. Some Regions have indicated that it may take up to 5 or 6 years (i.e. to the end of the 80s) to get PAS installed in all districts! Similarly the computerized systems proposed for *community health services* and *patient based community services* will take time and money to implement. Again, *Supplies Management Information Systems* (SMIS), sponsored by the Supply Council rather than the Steering Group, will also call for financial and staff resources. In all these instances the establishment of an appropriate management system is long overdue and offers by far the best way in the long run of generating the information required: Attempts to obtain the data *via* an interim clerical or computer-aided system would certainly be even more costly in the long run and probably provide unacceptably variable results in the shorter term.

On the other hand data about *finance and manpower* are already available in accounting and payroll systems and with a deliberate policy it might be possible to relate them to activity data of the type currently collected for annual returns e.g. SH3. The DHSS commissioned Price, Waterhouse Associates to establish the feasibility of an interim management information system in these fields that could be introduced speedily across the country. A pilot scheme started in the Bromsgrove and Redditch District on 1st April 1984. A report has recently been made available. Again there are a number of other *costing and budgeting experiments currently in being* but not much evidence of a central monitoring of these. What is more, these tend to use or advocate limited data-sets, dealing with specific and limited correlations at specified times rather than a more flexible data-base which is more susceptible to

definition of desired information or correlations by the user—whether an administrative trainee, clinician or nurse, at whatever tier in the NHS.

A policy for the Steering Group's recommendations has therefore to address the distinct possibility that implementation may have to be spread over about five years, with 1988 the current target. The timespan might be shortened if a revised view of priorities led to earlier and substantial investment in PAS and other systems. The scale of the operation is such, however, that it would always have been imprudent to count upon full implementation in less than two years (i.e. by 1986). Even this forecast assumed that solutions can be developed quickly to some of the other problems which the DHSS and NHS have hardly begun to address. In the event, a varying timetable of up to at least five years (in some of the areas tackled by Körner) has been established.

There is also the potential problem of *discontinuity*. For all their shortcomings, existing data systems have provided an impressive body of information and intelligence about the way in which health care systems were operating at the macro or national level. The ability to observe past and forecast future trends is important. With major changes on the horizon—however distant—some discontinuity is inescapable. The impact can be mitigated if ways of presenting new data in the old format can be devised. The reverse process is impossible. Again solutions to these problems can have a bearing on how local *management* information systems should be developed.

What is more, if there is a need for priorities in implementing new data sets (rather than universal implementation—given the size of the task), it is worth identifying those components of *existing* data systems which are most useful—both in relative reliability and in suitability for analysis (e.g. financial data's suitability for links to activity data, to allow useful conclusions from correlation). Then investigation can proceed as to how 'new' data in some realms is or is not compatible with 'old' data in others. Such investigation requires clear *management* systems.

In an area where so much is yet undecided it is difficult and risky to speculate. A long period of gestation seems inescapable. During that period, whilst local management is progressively gaining experience of developing management information systems and their support for decision making, stability will need to be provided by some form of regional and/or national common denominator (minimum) data base. It seems unlikely that this will differ significantly from the data systems which have been familiar for a decade or so.

## 2. Operational needs and a national strategy

The Steering Group made local operational data, for the District, its priority, and it has generally been considered that its main focus was information for management. For this purpose, data aggregated on a ward, diagnosis, specialty, manpower, care group (and so forth) basis is probably more important than data produced to present the individual patient episode.

Retention of data presented on an individual basis is therefore unlikely to be extensively required locally. Yet data in that form is essential for some strategic purposes—and not just epidemiological, or clinical in the restricted sense of that term. For example, record linkage for individual patients can be used to compare (say) different approaches to hospitalization (in different units or Districts, or even Regions): as between a policy of 'long stay' as against 'short stay' for patients with identified conditions or diseases. Through record linkage, for example, the need for readmission of patients can be traced: conceivably modifying simple generalizations about length-of-stay. Alternatives to record linkage exist for certain types of research, as well as for management purposes (the main focus of the Steering Group). However it is an *exploration of the whole field and needs therein* that is lacking. Similarly, in the realm of financial data, assessment of the relative merits, and different purposes for different tiers of the NHS, of specialty costing, diagnosis costing, and patient costing is necessary.

In this connection, other important issues require further consideration: such as data validation and correction (which ought always to be carried out as closely as possible to the original source of the data), and also data confidentiality and protection.

Thus, local information processing cannot proceed on the assumption that 'what is not wanted locally is not necessary', nor that the format of data which suits local consumption will equally fit central strategic needs. Both are assumptions with which the Steering Group has perhaps become too closely identified. Long-term strategic needs must be given consideration alongside local management requirements. There was some recognition of this in the way that the NHS/DHSS Steering Group spawned various Working Groups, but this also added to the confusion. These groups developed in an extremely 'ad hoc' manner, and by no means addressed strategic questions of the sort outlined in this paper. Such questions require a clear recognition of the information function in



management arrangements, which should be reformed to accommodate this purpose.

### 3. Information and intelligence

#### (i). Data organization, presentation, and interpretation

As if the above were not difficult enough there are two other important areas in which the DHSS and the NHS have, as yet, done very little even by way of conceptualization, far less research. They are, as briefly introduced in chapter 2 above:

- data organization and manipulation.
- data presentation and interpretation, i.e. using data to produce information and intelligence.

The NHS/DHSS Steering Group was principally concerned with data definition and collection and to a lesser extent with the broad correlations of data to management decisions. Even if all goes well and the computerized management systems referred to earlier are established across the board, this will not result in a comprehensive, interactive data-base capable of providing 'touch-of-the-button' access to information. Although the NHS Computer Policy Committee (CPC) had this problem in its remit, progress seems slow. There is general agreement that the NHS should move towards a management data-base. A precise specification of the nature of that data-base (and because of the separation of the Steering Group and the CPC) the development of software systems to drive it are a very long way off. The recent merging at central level of the concerns of the CPC and of the ex-Körner Steering Group (under the 'shadow' Management Board and now the emerging Board itself) still does not hold out much prospect for a practical data-base. In this connection, the discussion of the Trust-sponsored Nuffield/Exeter Data-Base to follow, is important.

As the Trust's publication *A Time for Decision?* foresaw as a possibility, the Computer Policy Committee like its predecessors, found it difficult to make progress. Indeed it must be feared that the propensity of NHS authorities to move at vastly differing speeds and to take unilateral decisions that restrict future flexibility, probably means that by the time the CPC's successor is able to come up with some recommendations, many Districts will have already answered the questions in their own

ways. In the long run the DHSS may only be able to offer delayed rather than first round solutions. Recent moves to Regional 'consortia' to cover different types of data set are unclear as to likely result.

**(ii). A data-base system**

There have been other privately inspired initiatives with a bearing on the problem of information, the experience of which should not be ignored. The Nuffield/Exeter Decision Support System contains a data-base built up from the principle data-systems currently available within the NHS and some (like population data) from outside. The data covers hospital facilities, activities, manpower and costs and is accessible at specialty, hospital, District and Regional level as well as by diagnosis or operation code. Access to the system is via sub-systems. Those currently available are General Information, Planning and Speciality Costing: others are being added, including manpower.

The General Information sub-system allows access to assembled information either via menus or via a user-determined system known as 'Keyword' which allows almost any permutations of data assembly to be performed at will. The Planning System allows a progressive and systematic approach to service planning including the facility to vary and test different options and evaluate probable effects. Trends and forecasts can also be made and options costed. The Speciality Costing System is a sophisticated mathematical model which allows costs to be computed, compared, projected and analysed in a wide variety of situations. Performance comparisons can be readily made. A manpower model has recently been developed.

Operation of the system requires no previous training—a general familiarization with the system can be made by use of the General Information System.

Facilities are available within the system to allow additional data files to be inserted by users and for assisting files to be updated.

Using the Nuffield/Exeter system as the base it should be possible:

(a) from experience and example, to identify the practical problems of data organization and describe ways in which they can be solved;

(b) to define the basic functions, characteristics, scope and operations which any NHS management information system must be expected to include;

(c) to monitor, collate and evaluate field experience to identify and

define the directions which further developments should pursue. For example, a manpower component is presently being developed, which would effectively add to the specialty costing sub-system: analysing costs in terms of their largest component;

(d) to promote further technological research and development to establish ways of incorporating new operational data.

A central theme of the above tasks is flexible measurement through flexible indicators.

(e) to implement significant training schemes for a wide variety of NHS staff and users of data and information. A significant number of Regions and Districts have now either purchased the system or developed strong interest: so much so that a commercial company is to be formed partially under the aegis of a specially-created Trust—the Nuffield/Exeter Trust—to manage, develop and market the system.

The system now has a 'Hierarchical Data Access' sub-system under development, allowing quick access of new data and flexible analysis.

In addition, it can quickly absorb new types of data as these become available or desirable, to supplement existing indicators for policy in the NHS.

The system is especially relevant in that hardware based on Regional use, District use or both can be used.

### **(iii). The 'intelligence' application**

In the wider sphere of management philosophy, much more consideration ought to be given to how to glean intelligence. For example, information about specialty costs and other categories, and how it ought to be applied to planning and to resource allocation as well as to performance evaluation, is necessary but not sufficient for the design of objectives based on adequate intelligence. In short one must consider how evaluation of performance can lead to action: the design of incentives to allow management to achieve improvement.

Here there is a clear need to find something better than the rudimentary 'Performance Indicators' currently promulgated by the DHSS/NHS Joint Working Group. These fail to measure more than 'inputs' and have frequently been described as, 'telling us what we already know, at great cost and diversion of management from other tasks' by NHS managers and planners. For example, measurement of static phenomena, 'snapshots' rather than trends, can possibly do more

harm than good; and can cause much ill-feeling—or worse still, contempt—if hasty policy is produced in reaction to crude indicators. The challenge for the NHS again is to produce a data-base which is as open as possible to a wide variety of analytical manipulations—i.e. to reconcile data with flexible data organization, and to reconcile ‘software’ and ‘hardware’ as appropriate for this task.

**(iv). Various questions for ‘intelligence’**

Here as elsewhere, coherent decisions are necessary as to *which* level of the service can best do *what*, e.g. when it comes to planning and allocating resources; as well as to how planning and resource allocation can be better reconciled at which levels, using which criteria and what information.

Then, information facilities for tasks such as the above (merely one) example need to be distributed to the requisite level in the NHS, and integrated with an appropriate management structure.

Another role of an intelligence function is to delineate much more clearly than hitherto the objectives which different organization and uses of information have. Thus ‘specialty costing’, for example, may have benefits (e.g. flexible inter-District comparison) yet may be limited in its ability to imply or monitor changes. As a form of aggregated average costing, it may be too general for some uses. Thus marginal costs of various sorts may also be necessary; as may costs by *diagnosis* in certain circumstances e.g. to allow more scope for explanations of waste or changes in clinical behaviour. This is not to imply that ‘DRG’-type costs (on the pattern of US Diagnostic Related Groups) have the uses attributed to them, in their present flourish as a buzz-word, but some consideration of such matters is necessary.

Overall an updated review of various types of costing, budgeting, clinical and management budgeting is necessary, as an adjunct to the information field. For example, the *Bromsgrove and Redditch* pilot scheme referred to above may not be compatible with the ‘*Griffiths’ Management Budgeting* models developed by Arthur Young, *et al.* Overall intelligence is acutely lacking. The analysis of budgeting issues beyond the technicalities of specialty costing *alone* is also necessary.

In the context of management of the NHS the Griffiths recommendations on cost, clinical and management budgeting, for example, should be linked more clearly to purpose. That is, the pilot Districts where

management budgeting is being aided by management consultants, may develop useful systems, but there is a need to determine *how* such systems can be used. At present, as with the appointment of the General Managers at Regional and District level, it seems that Ministerial attitudes are geared to 'implementing it, whatever it is' rather than analysing strategy with reference to health service goals. This approach is also reflected in the relative lack of attention to the Management Board at the centre, as opposed to lower level appointments, and the diminution of the Board's intended scope. Central setting of strategy was always the more promising area from the viewpoint of improved policies for information and intelligence.

## Information and intelligence: Needs and opportunities for the NHS Management Board

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### (i). The primary need

**On past experience.** The NHS Management Inquiry Report (Griffiths Report) is primarily geared to the ends of greater efficiency and effectiveness throughout the NHS. The proposed NHS Management Board certainly seemed at least potentially to provide an 'apex' for the NHS, a need stressed consistently by the Trust as will be evident from its list of publications. It seems that, although the Management Board is sited within the DHSS, it is the catalyst for producing a central 'head office' for the NHS. If the potential is fulfilled a beneficial result could be to make fruitful the hitherto sterile debates about 'centralism' versus 'devolution' in the NHS, by linking delegation of responsibility to accountability for the pursuit of objectives specifically designed for each level of authority. Recent signs exist that the structure, scope, and functions of the Board may be less significant than the Griffiths Report had originally suggested, and a strong and capable Board would be necessary to underpin the following suggested arrangements.

If this opportunity is to be seized, however, allowing new arrangements for the NHS to be seen 'in the field' as providing opportunities rather than restrictions, a substantial substructure will be required to underpin the new management process. A primary part of such a substructure must be significantly better information and intelligence. Only by a deliberate investment in this type of management back-up, can unnecessary 'administrative costs' and indeed waste in general be identified, let alone eradicated. Failure to recognize the necessary investment in securing adequate means as well as the ends of efficiency would be false economy indeed.

But information and intelligence mean much more than data-systems.

The position of the NHS/DHSS Steering Group recommendations, and the dilemmas raised therein has been briefly assessed above. It must be realized that the collection of data, however improved, means nothing if such collection is not related to management, planning and strategy. With good information derived from data, management tasks and planning can be devolved to the appropriate level in the NHS, reducing the paper-chase of circulars and guidelines which so often present atomized instructions on supposedly specific matters yet which fail, in the aggregate to provide overall strategic help. This is partly because guidelines, although intended to be specific, are both bland and uncertain, the latter being a symptom of the Department's apparent dual role as both 'political' and 'managerial' head of the NHS. One aim of the Griffiths recommendations is presumably intended to separate these two roles. With the Management Board in the key role the centre can concentrate more on the formulation of objectives and strategies for the NHS, and on use of information for broader purposes. That is, the roles of the different tiers can be more clearly and coherently defined.

**A Griffiths presumption or omission?** It is noted that the Griffiths report, para 3, recommends that the membership of the NHS Management Board should include 'other functions such as personnel, finance, procurement, property, scientific and high technology management and service planning'.

This list—which may not be intended to be all-embracing—omits 'information services'. This is a most important omission, particularly in view of the potentially dangerous statement in para 6 of the General Observations (p. 12 of the Report) that 'local management must be allowed to determine its own needs for information, with higher management drawing on that information for its own purposes'.

As with much of the Griffiths report there is considerable scope for interpretation but it should by now be obvious to all that central management very often requires detailed data which may not have been relevant at local level. Health Information services have to serve local, regional and central management as well as a very important research function. These goals can only be achieved with a judicious mix of person-based (patients and staff) systems, relying on closely controlled minimum basic data sets (MBDS), summary data (again relying on MBDS) and a facility for *ad hoc* data collection and analyses which may be required at all levels.

The overall coordination of health information services requires authority which can be exerted at the highest (i.e. Management Board) level, but it is also important that the provision of information to underpin all the functions of management is seen to be part of management itself and not as a 'cinderella' service called upon from time to time to serve those functions commented on adversely in the Report of the DHSS Study Team for the *Review of Government Statistical Services*, e.g. as a substitute for action or on the basis that sheer volume shields arguments against serious analysis.

**A key appointment.** There is therefore a need for a *Director of Information Services* who should be a member of the Management Board. This function could be served either by a 'full-time' individual or by a member of the Board who had other roles as well. Given the need to link a concern with information to other related fields, it would presumably be advantageous if his/her responsibilities, if multiple, were for information, linked to strategic matters. Mr Mike Fairey's recent appointment at Deputy Secretary level within the DHSS to be responsible for information and management information in the NHS may be thought to point the way. However if his role as a member of the 'NHS management group' in the DHSS (the 'shadow' Management Board leading to the real Board, within the Department) is to be a springboard for improved policy, major innovations in both the substance and style of information policy will be necessary. This applies to the Department's current attitudes to the creation of a Data-base and to the hardware involved, as well as to other needs. Forthcoming essays from the Trust will seek to distil both the lessons learned and opportunities and needs for the future for the NHS as a whole.

The main responsibilities of a Director of Information would be:

- (a). To co-ordinate all health information services including that element of financial information required for management and to liaise with other bodies (e.g. OPCS) who provide information of importance to health services.
- (b). To keep under continuous review all aspects of health service information needed for management at all levels and for research.
- (c). To ensure with line management that information required for central purposes is timely and accurate.
- (d). To advise and assist the NHS Management Board by providing



information that may be required to inform their decisions, and in particular to monitor all aspects of health service performance.

(e). To propose such changes to or developments in the health information system as may be required and to assess, if appropriate, priorities for their development and implementation.

(f). To deploy intellectual resources to look at strategic problems which will not be informed by the data sets to be collected, e.g. outcome indicators.

Given the above functions it will be the responsibility of the NHS Management Board to use its full authority to ensure compliance both in general and in detail with the requirements for information centrally but also—and possibly more importantly—to monitor the use of information in health service management throughout the NHS.

It must again be emphasized that information costs money, and something approaching 1 per cent of the health service budget (£1b) should be devoted to information services in terms of data collection, processing and analysis. This figure is taken as a proportion of the total amount spent on the area of R&D and information in many industries. This latter total might be expected to amount to about 5 per cent.

There will be a need to define in more detail the boundaries of 'health information services'. Over the past decade or so it has tended to be used by many as meaning health statistics including measures of health status, resources, use and outcomes. It is extremely important that the relevant financial information is seen as central as in (a) above. The place of computing and other management services also needs consideration as part of a comprehensive approach. But more significantly it is important to see the definition of health information extended to embrace technological and scientific intelligence, health services research and even a reference service.

The 'Director of Information Services' would have the central role of gathering and using intelligence. Given current NHS priorities, this would include a significant role for cost-control and 'managing money'. But such a role would again fulfil a necessary and by no means sufficient function. For managerial efficiency, to develop and utilize adequate information, must be fostered simultaneously in three main zones.

These are, firstly, financial management, it is true; but *secondly*, the management of the institutions and personnel of the NHS; and *thirdly*, the management of effective operations, i.e. functionally-defined services

of the NHS (curative, caring and preventive) operating within the financial and institutional framework as laid out in the first two zones.

Any effective intelligence system must facilitate all three zones and collate their data. For this it is necessary to establish a management responsibility for the continuing development and adaptation of the intelligence function, and to allocate a budget and appropriate powers.

A useful aphorism might be, 'As regards even financial information, the Treasurer's role is only the beginning....' That is, financial information is integral; but not exclusive. At the very top of any new management arrangements for information and intelligence, the 'Director's' appointment could reflect this approach by stressing numeracy, accountancy and analytical skills, or ability to comprehend the analytical world, yet *so much more* as well. To put it another way, in his own field, any such Director must be 'Prime Minister' as well as 'First Lord of the Treasury'; strategic manager as well as treasurer!

Lower down the 'hierarchy', at Regional and District levels, there is scope for improvement in systems of both planning and decision-taking in order to integrate any information functions and personnel with the other key functions and actors in the process. This could help for example, to allay the isolation of the Treasurer; and therefore to moderate any tendency, at times when the Treasurer's role increases significantly in importance or clout, for the Treasurer alone to set the agenda for finance and the use of financial information. Just as NHS Audit is increasingly carving out a role of policy analysis, instead of mere 'ticking and timing', so ought the NHS Treasurer's work to be part of a strategy for creative use of information as well as balancing the books or trimming the figures here and there.

Information is to figures what art is to colours—it cannot do without them, but it is so much more than them. Information and intelligence concern objectives, their qualification, their quantification, their compatibility, their capability of realisation, their need for amendment—*given* the requisite data. That is, intelligence—the use of information for forward-working purposes—requires but supercedes information; just as information requires but supercedes data.

Fragmentation of definitions (i.e. finance is about money and balance sheets; strategy and intelligence are completely separate) leads to fragmentation of roles, and vice versa. If the NHS Management Board in its organization can overcome this fragmentation at the top, there is more

hope of fragmentation's worst effects being overcome lower down. This is neither to endorse every aspect of 'Griffiths' nor to dismiss every aspect of opposition to it. However, it is worth observing that most objections concern the Report's prescriptions at District, and to a lesser extent, Regional level. Its potential for encouraging co-ordination and intelligence *at the centre* is the most important, and most ignored, aspect of the Griffiths' Report.

### (ii). A framework for intelligence

It is not the aim or function of this paper to advocate *specific* forms which objectives might take, or even substantive objectives themselves, to which uses better information can be put. Still less is it the role of such a paper to *specify* technological systems (hardware, software) which ought to be used. However, such issues will be explored in part in a set of essays being prepared for subsequent publication by the Trust. Instead it is the purpose of this paper to outline the managerial and strategic *needs* for information, in aid of intelligence. Instead of playing the role which would more properly be played by the new management advocated in this paper—and therefore abstaining from advocacy of *actual decisions* which will confront such management, this paper can nevertheless legitimately lay out a framework for considering different types of intelligence. These might profitably be reflected in clearly defined functions both at central and lower levels of the NHS.

### Types of intelligence

(a). Intelligence of the macro policy' sort. This includes policy choice of the sort not susceptible to mere 'evaluation' or comparison of efficiency: instead, broad national priorities in health service planning are a prime example of this category. Whether resources are best devoted to better facilities for the elderly, more investment in renal medicine or more investment in pre and neo-natal care, for example, is not a question of comparison of costs for the same task in different areas or Districts. But it is a question more susceptible to intelligence than at present: intelligence based on both information (on outcomes, outputs and inputs) and research, as well as political and social values.

The question of using measures of 'morbidity' in addition to 'mortality' (e.g. in resource allocation) is an even broader, yet more basic question requiring better information. What is more, it is merely *one example*.

This first type of intelligence is of the sort required conceivably by the *Supervisory Board*.

(b). Intelligence of the sort to translate 'macro policy' into objectives (the remit of the *NHS Management Board*)

(c). Intelligence of the sort to translate national objectives into local objectives (at *Regional, District* and *Unit levels*, respectively)

and (d). Intelligence of the sort to monitor and evaluate performance (at various levels, tending to reside *mainly at the lower levels—especially if devolution is to go hand in hand with accountability*).

## NOTES AND REFERENCES

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1. See for example, *By Guess or By What? Information without design in the NHS*, Nuffield Provincial Hospitals Trust, 1978. See especially p. ix of the Foreword.

2. See *A Time for Decision?*, Nuffield Provincial Hospitals Trust, 1982, and the previous Trust publications on the subject listed.

3. KÖRNER: 'The Present Position' (an informal document).

4. See Steering Group on Health Services Information, *First Report*, HMSO 1982; and subsequently the succeeding Reports of 1984.

5. As evidenced by the recent development of 'computing consortia' and the lack of guidance to Districts (beyond cryptic statement) on practical implementation of Körner Steering Group recommendations. Priorities within the latter have not been indicated. Links to hardware (and even the software to make sense of recommendations) have been left up to Districts. This may be acceptable as a matter of 'local choice', but establishing the preconditions for informed choice is a legitimate task for 'the centre'.