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# **Self Governing Trusts : An Agenda for Evaluation**

by Alan Shiell

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**SELF GOVERNING TRUSTS: AN AGENDA FOR EVALUATION**

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### **The Author**

Alan Shiell is a Research Fellow in the Centre for Health Economics, University of York.

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### Abstract

The proposals contained in the White Paper 'Working for Patients' have been described as an attempt to introduce competition into a non-competitive situation. Together with the introduction of practice budgets for family practitioners, the granting of self-governing status to NHS hospitals is the principle mechanism by which this aim will be achieved.

Very little is known about the effects of competition on the delivery of health care. Evidence from the United Kingdom is non-existent and from the United States of America is inadequate and contradictory. Yet, despite the inconclusive nature of this evidence, the Government is implementing the most radical reforms of the NHS since its inception without any systematic attempt to monitor the extent to which the reforms achieve the desired ends.

In this paper, a call is made to evaluate the effectiveness of self-governing trusts and the impact the introduction of self-governing status has on health services more generally. A variety of methods are described which would enable the reforms to be evaluated without holding back their implementation. No radical reform of the NHS can be expected to have an unambiguously beneficial impact on the delivery of health care. If the Government is genuine in its desire to improve health services in the UK, it should therefore be prepared to subject its proposals to the sort of independent evaluation described in this paper.

## 1. Introduction

The freedom given to hospitals to opt for self-governing status as NHS hospital trusts is one of seven key proposals contained in the NHS White Paper 'Working for Patients' (DoH 1989). Together with the introduction of practice budgets for large General Practices, self-governing status is the principle mechanism whereby the split in responsibility between the purchaser of health care and the provider of health services is to be achieved. Operating in Self-Governing Trusts (SGTs), hospital managers will be given greater responsibility to run their own affairs. This will include powers to:-

- provide health services through contracts with a wide range of providers
- set local terms and conditions for staff
- acquire and dispose of land and property
- generate income
- borrow money subject to financing limits.

In return, they will have to raise revenue directly from the services they provide.

Proponents of the change argue that it will improve the provision of health care in two ways. First, the need to attract patients in order to raise revenue will allegedly provide SGTs with an incentive to respond to what their customers want and to provide appropriate services of acceptable quality at reasonable cost. Secondly, the resultant competition for patients; with other SGTs, with district-managed units (DMUs) and with private hospitals will supposedly encourage these other facilities to improve the delivery of

services in a similar manner.

The introduction of self-governing status is not universally welcomed. Concerns have been expressed that SGTs will concentrate on those services which provide the greatest financial return rather than those which best meet local health needs. The fixed financial payment from purchaser to provider, which is supposed to act as the incentive to attract patients, may just as equally encourage SGTs to admit patients selectively and to offload costs where ever possible onto other parts of the service. In areas where a number of SGTs operate, health authorities will find it more difficult to plan and co-ordinate the local provision of health care. Whilst in areas currently served by a single hospital, the forces of competition will be weak or non-existent, and so the incentives to improve services will be correspondingly lower.

Such opposing views of the consequences of SGTs demonstrate the need to evaluate the changes being implemented. It is unlikely that any major reform of the NHS will have unambiguously beneficial effects. Substantial changes are more likely to improve some aspects of performance at the expense of others both within and outside the operation of the SGT. In addition, the changes themselves are not costless. Therefore, it is important to assess whether the reforms have the desired effects on service delivery or result in a higher cost service and, if so, whether any improvements so obtained warrant the extra cost. Likewise, if any deterioration in the quality of services in SGTs or elsewhere occurs, it is important to assess whether this is justified by cost savings or possible improvements in quality or outcome elsewhere.

Calls for stringent evaluation of the proposals in the White Paper have been rejected by both the Department of Health and the NHS Management Executive on the grounds that pilot studies will do nothing but delay implementation and will be used only to obstruct the changes. It is also argued that evaluation of SGTs is not necessary because the operation of each trust will be monitored both by the trust's managers and by its biggest customer, the local District Health Authority (so called 'management evaluation').

This line of reasoning is unsatisfactory on at least two grounds. First, it neglects the possibility that the introduction of SGTs will have system-wide effects beyond the level of the individual trust. It is quite feasible that self governing status may improve the delivery of health care in a particular hospital at the expense of services elsewhere. Secondly, no consideration has been given to the criteria by which the performance of SGTs will be assessed. How is the success of the introduction of self-governing status to be gauged? What weight is to be given to the different dimensions by which success might be measured so that improvements in one area can be compared with deteriorations in others? How successful must the policy of self-governing status be in order to justify the financial and economic costs of implementation? There can be no easy answers to such questions for they each require complex value judgements. However, the process of addressing such issues in the context of SGTs can be made much easier if it is first preceded by consideration of the trade offs which must be faced and is then informed by appropriate data on the performance of competing health care providers.

Well designed experimentation and scientific testing of the proposals may not be feasible in the current political climate, but there is still much that can be done to assess the changes in organisation which are taking place. The purpose of this paper is to discuss the evaluation of Self-Governing Trusts. The breadth of the changes which are envisaged complicates the process of evaluation. The proposals may serve any of a number of sometimes conflicting objectives. They may be evaluated at different levels. Different methods of evaluation may be adopted, each of which will require different information and skills. Each of these aspects are considered in turn before the discussion is focused on a research agenda.

Applications for self governing status were submitted by a variety of health service units including acute hospitals, ambulance services and community mental health services. The performance of such widely different units must be assessed by criteria appropriate to each one but this would make for a long and unwieldy document. Though applications from other types of facility were accepted, the White Paper 'Working for Patients' indicated that large acute hospitals (those with more than 250 beds) would be most suitable for self-governing status. It is these hospitals upon which this paper is focused.

In Section 2 the criteria by which the performance of SGTs and the effects their introduction may have on the health care system are outlined and discussed. Self-governing status is intended to increase competition amongst the providers of health services and so section 3 reviews the evidence from the US on the effects of competition. In Section 4, the implications of this evidence for practice in the UK are discussed. Section 5 outlines various methods by which the performance of SGTs may be assessed. In section 6, the

information requirements are discussed and in section 7 a research agenda is presented. Section 8 concludes the paper by calling for a programme to evaluate the operation of SGTs to begin as soon as possible.

## 2. Criteria for Evaluating SGTs

The standards by which the performance of SGTs should be assessed depend on the objectives both of the National Health Service in general and the reforms in particular. The objectives of the NHS have never been clearly spelt out and remain diffuse and ambiguous. However, from the text of the White Paper and associated technical documents, four basic related aims can be identified:-

### (a) Equal Access

The principle that services should be freely available to all regardless of income was first stated in the 1944 White Paper. It is firmly restated in the foreword of 'Working for Patients'. Implicit in these statements and explicit in policies such as RAWP is the desirability of equal access based on the perceived need for services rather than patients' willingness to pay for treatment.

### (b) Extended Patient Choice

This is identified as one of the key objectives of the proposed reforms though it is not clear how self governing status per se is meant to achieve this aim. The need to attract patients and so raise revenue may encourage SGTs to offer patients more scope to choose times of admission, etc. and to

make available a wider range of amenities at additional cost for those willing and able to pay for them. However, the main customers for the services of each SGT are likely to be the local District Health Authority and the budget holding General Practitioners. The placing of contracts by these bodies will limit rather than enhance the patients' choice of hospital.

(c) Better Patient Care

Improved patient care is also indicated as one of the key objectives of the reforms. However it is clear from the text of the White Paper and associated documents that this relates only to structural and procedural changes designed to make the experience of hospitalisation less distressing. Suggested changes include appointments systems to reduce waiting times, better information about treatment plans and test results, and improvements to the physical environment in both clinical and public areas. These changes may increase process utility but their validity as indicators of quality of care depends ultimately on the effect they have on health status. Unfortunately, the need to define improved quality of care in terms of better patient outcomes is not mentioned in the White Paper. The procedural changes will also have opportunity costs which must be considered when assessing the merits of their introduction.

(d) Improved Efficiency

The need for the NHS to use its scarce resources more efficiently is re-emphasised in the text of the White Paper. In general, the term efficiency relates to how well inputs are used to produce outputs. This may be regarded at a technical level, to identify the costs of particular interventions and

their effects on final health status (technical efficiency) or at a social level, where decisions must be made about how much more or less to spend on particular treatments or client groups relative to other treatments or client groups (allocative efficiency). The apparent technical nature of the term efficiency belies its ideological basis. Williams (1989) draws a distinction between two ideological positions; the libertarian and the egalitarian, and argues that one's own ideology determines how one defines the final output and therefore the efficiency of health services. To libertarians, health care is no different from other goods and services. The consumer is sovereign and therefore, as with other goods, the value of health care is determined by consumer (i.e. patient) willingness and ability to pay. To egalitarians, health care should be allocated according to need and so efficiency is defined in terms of meeting those needs at least cost. The former Prime Minister's assertion in the foreword to the White Paper, that 'the patient's needs will always be paramount' suggests that whatever the political ideology of the government in other areas of social policy, the egalitarian foundations of the NHS remain sound. In the context of this paper, therefore, efficiency is used to describe how well health care inputs meet health needs i.e. how health service and other costs relate to changes in health status both in the technical and in the allocative sense.

### 3. Effects of Competition

#### (a) Competition and Health Care

As part of the total package of proposed reforms of the NHS, the introduction of self-governing status represents '... an attempt to introduce competition into a non competitive system' (Smith 1989). The supposed

advantages of competition and its relevance to the production of health care are discussed below. The section ends with a brief and selective review of the US evidence on the effects of competition on the quality and efficiency of health care and on access to services.

The advantages of competition are easy to demonstrate in theory. Providing that certain highly restrictive conditions hold, then competitive markets will allocate resources in a way which is both equitable and efficient. These conditions include competitive markets for all goods and services (including labour so that income is distributed fairly), fully informed consumers who seek to maximise their own utility, numerous providers who seek to maximise profits and freedom of entry and exit to the market. Competition amongst existing providers and potential entrants to the market ensures that goods and services are produced in a technically efficient manner at minimum cost. The market interactions of self interested consumers and providers then ensures that the mix of goods and services produced is socially efficient.

Such conditions rarely hold in practice though it has been argued that the approximation of a competitive market involving price taking behaviour by consumers and suppliers and contestability usually results in a more efficient allocation of resources than purely non-competitive alternatives. This argument has been challenged with respect to health care on at least two grounds. First, it is argued that the nature of health care is fundamentally different in character from most other goods and services. In particular, uncertainty about the incidence of disease and its physical and financial effects means that most health care 'markets' are characterised by some form of insurance or state provision. This third-party involvement breaks the

cash-nexus between consumer and provider and weakens the price mechanism. Furthermore, patients are rarely fully informed about the likely consequences of their illness or about the costs, quality and effectiveness of the treatment options. Instead, they must rely on the physician for information and guidance. This means the physician must act on both the demand and supply sides of the market, formulating the patient's demand for health care by acting as his or her agent and then responding 'independently' by providing or otherwise procuring the appropriate service. As a result of this agency relationship, the consumer and producer are no longer independent of one another and the supplying doctor has scope to influence the demand for health care.

Secondly, hospital managers may pursue objectives other than profit maximisation which may conflict with government objectives and lead to the production of hospital care which is less than technically efficient. Rather than maximise profits, hospital managers may seek to maximise growth, total revenue (budgets) or any of a number of other factors which may enter their personal utility function (McGuire 1985). Any controls on the rate of return which SGTs will be allowed to earn will certainly mean that trust managers do not seek to maximise profit though it is not certain which other maximand will replace this motivating force (Williams 1990).

The characteristics of health care and the varied objectives of health care providers mean that the outcome of a competitive market need not be as predicted by simple economic theory. Instead it becomes an empirical matter whether quasi-competitive systems of health care delivery, such as those proposed in the White Paper, perform better in terms of the criteria outlined above than other non-competitive forms (Culyer et al 1982). Not surprisingly

there is little experience of competition amongst the providers of health care in the UK (Culyer and Posnett 1990, Brazier et al 1990). Much of the evidence which is available on competition in health care originates in the United States and relates to the introduction of prospective reimbursement based on diagnostic related groups or DRGs (Thomson et al 1975). The mechanisms by which prices will be negotiated in the reformed NHS and the basis upon which contacts with SGTs will be negotiated and enforced have yet to be determined and so, cultural and institutional differences apart, the evidence from the USA must be interpreted with caution. However, at the very least, the American experience will provide some indication of the sort of effects which should be expected here following an increase in competition amongst the providers of health care.

(b) The Quality of Care

Competition amongst (profit maximising) health care providers supposedly ensures that services of appropriate quality are provided at least cost. Experience in the USA suggests that hospitals are just as likely to compete on a non-price basis because of the price insensitivity of patients and referring doctors (White and Chirikos 1988). For US hospitals, investment in high technology equipment may be a more profitable tactic than competing on price, even though such behaviour often increases costs, because it may be more successful in attracting doctors who have admission rights. This is euphemistically known as "quality" competition though it is accepted that not all aspects of non-price competition need have positive value (Noether 1988). Attempts to model the competitive behaviour of hospitals have yielded inconclusive results. Some studies show that hospitals located in highly competitive markets are characterised by higher costs than those in more

concentrated (i.e. less competitive) markets (Robinson and Luft 1985, Chirikos 1990), others that costs fall following the introduction of pro-competition regulations (Zwanziger and Melnick 1988) and still others show that costs but not prices rise in more competitive markets and therefore hospitals appear to engage in both price and quality competition simultaneously (Noether 1988).

One shortcoming with each of these studies is their failure to model the quality of care explicitly. It is assumed that competition should lead to efficient production and therefore the positive association between more competitive health care markets and higher hospital costs is explained by investments in quality-enhancing technology. Inefficiencies relating to the duplication and underuse of capacity or the failure to exploit economies of scale are not considered (Luft et al 1986). Neither is the outcome of care, which is arguably the real measure of quality, incorporated into the analysis. Shortell and Hughes (1988) examined the influence of hospital regulation and competition on mortality rates and found that hospitals in highly competitive areas (as measured by enrolment in HMOs) and those subject to more stringent regulation of their rates and capital investments had substantially higher mortality rates than hospitals in less regulated, less competitive areas.

Many studies conclude that competition cannot be relied upon solely to ensure more efficient health care and that systems of medical audit are also needed to ensure that quality of care was determined. However, this too is an assumption, the costs and effectiveness of which need testing.

(c) Prospective Payment

The second major strand of work coming from the United States relates to the introduction of prospective payment systems based on DRGs for Medicare patients. Such systems attempt to control the price of hospital admissions but, by focusing only on price, hospitals are able to respond by changing the quality and/or the quantity of health care. Thus, there may be compensating increases in patient throughput, cost-shifting and patient-shifting as hospital managers attempt to maintain target levels of income (Donaldson and Gerard, forthcoming).

Prospective payment systems based on diagnostic groupings may encourage hospital managers to attempt to reclassify patients into more severe diagnostic groupings in order to increase the rate at which treatment will be reimbursed. This practice is known as DRG-creep (Simboung 1981) and such is the vagueness of most usable systems of diagnostic coding that managers need not systematically recode diagnoses. Incentives to do so are built into the system such that Weiner and colleagues (1987) found that physicians soon became more precise in their recording of complications and more adept at ensuring that patients would be coded to the diagnosis which maximised hospital revenues.

Numerous studies have confirmed the existence of DRG-creep and shown that the introduction of DRGs has been associated with shorter lengths of stay and greater use of outpatient department and nursing home care (Culyer and Posnett 1990, Donaldson and Gerard forthcoming). Whether or not these changes are efficient or not depends on the effects they have on total costs and

patient outcomes. Unfortunately, although there are plenty of studies which purport to evaluate the effects of DRG payment systems, very few measure total costs or the outcomes of care over the whole patient episode. A notable and recent exception is reported in a series of papers by Kahn and colleagues (1990a). These report on changes in the quality of care for hospitalised Medicare patients with one of five tracer conditions before and after the introduction of prospective payment. Quality of care was measured in terms of clinical process and outcome. The former was assessed by explicit criteria and implicit peer review while the latter was assessed by mortality rates in hospital as well as 30 days and 180 days after admission (Kahn et al 1990b, Rubenstein 1990, Kahn et al 1990c). Overall mortality 180 days after admission was not affected by the introduction of prospective payment though more patients were discharged from hospital in an unstable state and more patients died at home or in nursing homes than before the changes (Rogers et al 1990). This finding strongly indicates the need to monitor the effects of reforms in hospital organisation and finance over the whole episode of patient care and to include measures of outcome, such as health related quality of life, which are more sophisticated than mortality.

(d) Access

One further aspect of the American literature is the effect policies to increase competition have had on access to health care. Financial incentives designed to encourage hospitals to compete for patients also encourage them to be selective in the type of patient admitted or the type of treatment offered in order to maximise the financial return on each case treated. Patient, or risk, selection is commonly referred to as cream-skimming, and is more often associated with the financing of health care through private

insurance rather than its provision. In the interests of retaining a surplus, insurance companies will seek to restrict coverage for people perceived to be poor risks whilst extending coverage for those perceived to be good risks. Eventual access to health care is therefore made more difficult, or at least more expensive, to those most in need.

The same incentives apply to Health Maintenance Organisations, which are more directly concerned with the provision of health services, and so it is not surprising that much of the apparent success of HMOs in lowering hospitalisation rates and reducing hospital expenditures allegedly derives in part from their ability to select better risks (Berki et al 1977, Buchanan and Cretin 1986). There is also evidence to suggest that people who are better risks are more likely to select HMO rather than conventional insurance plans. In the UK, comprehensive coverage removes the incentives on patients to seek out providers in the same way though it does nothing to stop the SGT from being selective. Property rights in the financial surpluses earned by for-profit hospitals in the USA also appear to influence the clinical decisions of physicians in a way which leads to the prescription of more profitable rather than more cost-effective therapies research patients' access to technologies such as kidney transplants (Schlesigner et al 1989).

(e) Conclusions

This review of the USA literature has not attempted to be comprehensive nor has it sought the definitive answers to questions about the effects of competition on the delivery of health care. Instead, it has been deliberately selective in order to show the wide ranging and often contradictory consequences ascribed to competition. Such are the institutional and cultural

differences between the health care systems in Great Britain and the USA that it is unlikely that the experience of the Americans could be applied directly to the changes which will take place here. However, there are at least four important lessons to be gleaned from this literature. First, it shows that retrospective evaluation of the relative performance of health care providers over a period of substantial change in policy can be done if basic information on costs, activity, quality of care and outcome is readily available in an appropriate form. Secondly, it demonstrates a range of methods which could be adopted if similar studies were to be repeated in Britain. Third, it highlights the deficiencies of retrospective evaluation but also indicates the advantages and the pitfalls to be avoided. Finally it shows very clearly the varied consequences of policy reforms suggesting that what might be predicted in theory need not work out in practice. In doing so, the US literature provides some indication of the effects which must be looked out for following the introduction of self-governing status and justifies the need for evaluation to ensure that the reforms do actually achieve the desired ends.

#### 4. Consequences for the Evaluation of SGTs

The performance of SGTs against the objectives specified in section 2 can be considered at either of two levels; at the level of the trust itself (i.e. how well the hospital performs as a productive unit following the change to self-governing status) and at the systems level (i.e. how well health services in a locality perform in total after the introduction of self-governing status). The level at which one considers the effects of self-governing status will determine how the particular criteria outlined above should be interpreted in practice. Based on the preceding discussion, figure 1 summarises the different effects that might be expected from the

introduction of self governing status at both hospital and system level. These effects are explained further below.

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Figure 1

Changes Expected as a Result of the  
Introduction of Self-Governing Status

Criteria	Individual Trust	System
Access	Cream skinning Restricted services Privileged access	Differential access to finance Travel costs
Choice	Increased choice of - consultant - admission date - amenities	Spin-off effects to non-SGTs
Quality of care	Improved - physical environment - admission procedures - information - outcomes	Spin-off effects to non-SGTs
Efficiency	Cost-effectiveness Cost-shifting Patient shifting DRG-creep	Social efficiency

In terms of access, the incentives which supposedly encourage SGTs to compete for patients may also encourage them to be selective in the type of patient admitted in order to maximise the financial return on each case (so called cream-skimming). This may occur directly through controls on admissions or indirectly through control on the type and range of services

provided. At the systems level, overall access to health care may be affected in two ways. Non-SGTs will find it relatively more difficult to raise capital and revenue monies and may be less able to respond to changing demands as a result. Secondly, the definition of core services which SGTs must provide will influence, for better or worse, the local availability of health services and therefore the distance some people will be required to travel for treatment.

For both the choice and quality of care criteria, competition amongst hospitals for patients would lead one to expect that changes envisaged at the level of the SGT would be quickly diffused into other hospitals. Therefore, changes at the hospital level would have similar system-wide effects. This assumes either that any improvements in practice introduced by SGTs have no opportunity cost (in which case it can be questioned why have they not been introduced before) or that priorities are common to both SGTs and DMUs so that improvements are made across the board in preference to other uses of resources.

The question of efficiency can also be interpreted at two levels. At the level of the trust, it relates to the cost-effectiveness with which services are provided, i.e. is the Trust more likely to alter working practices and adopt health care techniques which ensure that services have the maximum impact on health status per unit of resource used? The answer to this question depends in part on the incentives faced by clinical and general managers. Competition will encourage the use of cost-effective techniques only if senior staff have some stake in the changes which take place. However, the US literature suggests that the retention of any property rights in the surpluses earned by SGTs by senior staff is as likely to encourage

the practice of 'profitable' medicine as it is cost-effective medicine. Furthermore, prospective payment will encourage SGTs to shift costs onto the budgets of other agencies and individuals by early discharge policies and referral to General Practitioners for post-discharge medication. Though this may reduce the costs of the Trust, its effect on total costs and therefore efficiency is uncertain. Prospective payment based on any manageable system of diagnostic coding will also encourage trust managers to engage in the UK equivalent of 'DRG-creep', thus increasing the price which purchasing agents must pay for care.

At the system level, efficiency relates to the correct mix of health care activities (so called social, global or allocative efficiency). Of all the cost-effective treatments available for different conditions, does the combination of SGTs and other providers in a locality produce the most appropriate balance of services? That is, one which best meets the needs of the local population. In this context, social efficiency relates to the ability of the District Health Authority to plan and co-ordinate the local provision of services. With the exception of the limited range of core services which every SGT must provide as a condition of its status, each trust will be free to seek contracts from a variety of purchasing agents. The extent to which each individual trust will respond to the priorities set by the local DHA will therefore depend in part on the objectives of its management. As a result, the DHA's ability to provide what it regards as a desirable range of services locally may be constrained.

While it may be assumed that trust managers will seek to maximise something, exactly what is uncertain. Without knowing what is in the objective functions of trust managers, it is difficult to predict how the

incentives generated by self-governing status will work out in practice. The position will be complicated still further by any attempt to regulate the activities of the SGTs. For example, restrictions on the surpluses which the SGTs will be allowed to earn through controls on the rates of return on capital will have two effects. First, it will reduce the incentive for managers to invest in cost-saving technology which would increase surpluses. Secondly, it will encourage the 'allowable' expenditure on 'utility-maximising' items such as office refurbishment or cost-enhancing technology.

##### 5. Methods of Evaluation

As with past reforms of the NHS, the White Paper proposals are being introduced wholesale across England. The opportunity to pilot changes in selected localities with suitably matched controls so that differential effects may be fully recorded and evaluated is not being taken. In the absence of well-designed experimentation, more opportunistic forms of evaluation must be used instead. There are a number of possible approaches or methods which may be adopted though none is ideal. Furthermore, the range of possible effects of self-governing status outlined in the foregoing discussion suggests that different methods of evaluation may be more appropriate to some aspects of change than to others.

###### (a) Case Studies

A case-study approach might be used to describe the actual operation of one or two Self-Governing Trusts following in-depth and continuing observation of their management. This would have two broad objectives; to assess whether or not the managers of SGTs actually exploit the freedoms given to them and

to assess whether these freedoms are essential in explaining any subsequent changes in management or clinical practice. For example, if national bargaining arrangements have hindered the flexible and efficient deployment of staff in the past, one would expect the managers of SGTs to exploit their new freedoms and negotiate terms and conditions markedly different from those agreed by existing mechanisms. The first stage of the case study should therefore seek to assess whether new terms and conditions actually are negotiated. The second stage would involve assessing whether or not tangible changes in practice occur as a result, e.g. is there more rapid diffusion of cost-effective technologies or significant shifts in staff:capital ratios in SGTs when compared with DMUs (see Stocking 1987).

One substantial drawback with case studies is the absence of a control group from which to draw comparisons. The method is therefore essentially descriptive rather than evaluative though it could still be useful in confirming whether or not changes in management or clinical activity actually took place.

(b) Matched control methods

A comparative and therefore more evaluative approach is to match a selection of SGTs with suitable control hospitals which do not opt for self-governing status. The assumption underlying this approach is that observed differences in performance between the two sorts of hospital are due to self governing status per se rather than unmatched differences between the two groups or to other coincident or contemporaneous changes in practice.

Criteria for matching might include size of hospital, range of core specialities provided on-site, teaching status and geographical location. It will be impossible to match hospitals exactly because of the wide-ranging differences which already exist and so some residual doubt about the causation of any change in practice will undoubtedly remain. The process of applying for self-governing status has been self-selective and hospitals which have been successful in applying are likely to be different in nature from those which applied unsuccessfully and those which did not apply at all. For example, to be eligible to apply for self-governing status, hospital managers must have demonstrated their capacity for "effective self management". Therefore, any manager with experience of management budgets or the Resource Management Initiative was at an advantage. Furthermore, the existence of SGIs will, in itself, eventually change the practice of hospitals which remain under district management and so the baseline against which the proposals are evaluated will shift over time.

(c) Before and After Studies

In this method, hospitals which become SGIs would act as their own controls by comparing their performance before and after the change of status. The main drawback with this approach is the shortage of time available to constitute a sufficient 'before' period. Indeed, the behaviour of trust applicants may already have changed in preparation for their submission for self-governing status. This indicates that for the purpose of evaluation, existing data-sets must be used or the collection of new data must be commenced as soon as possible. The introduction of self-governing status is not envisaged to have any effect on referral patterns and clinical practice

in the first year of its operation and so this period of time need not be precluded from the baseline.

(d) Statistical Controls

If sufficient data from a large enough number of hospitals becomes available, multivariate statistical techniques may be used to compare the performance of SGIs with DMUs. Such methods use the natural variation which exists amongst hospitals to isolate the influence of key variables. In theory, therefore, the effect of self-governing status on hospital efficiency may be distinguished from the confounding effects of case-mix and local market circumstances.

Here, as with each of the evaluative methods outlined above, there will be problems measuring hospital output and case-mix. Traditional measures of output using inpatient days or cases ignore differences in the process quality of care and the effect hospitalisation has on final health status. Studies which attempt to address this issue often rely on survival (or mortality) as the indicator of outcome and incorporate both structural and process indicators of the quality of care (such as proportion of trained staff and incidence of cross infection) as independent variables (Park et al, 1990).

Differences in case-mix (diagnosis and severity) will also affect the apparent performance of hospitals. Tatchell (1983) outlines two broad approaches for controlling for differences in patients, one based on the characteristics of clients the other on the mix of services. In an observational study, it will be impossible to be entirely confident that case-mix measures adequately control for differences in patients. The inherent

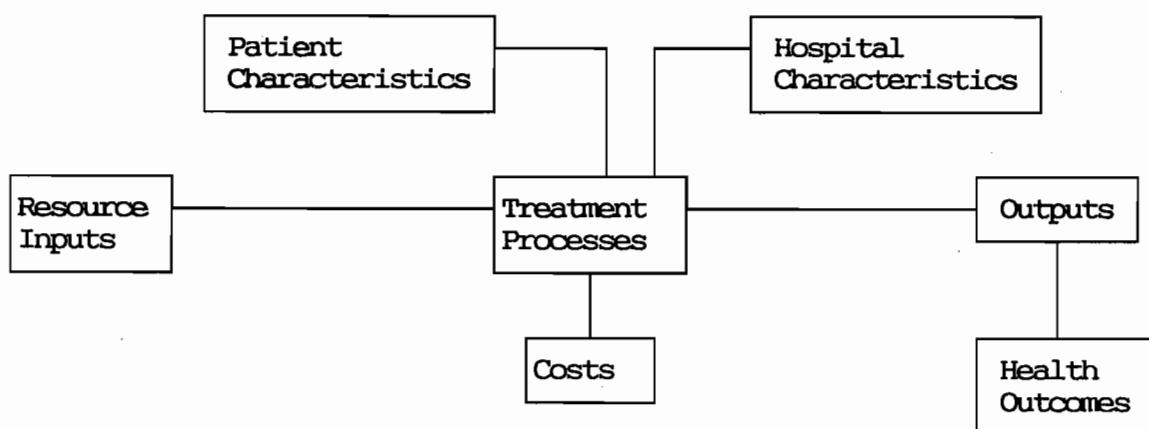
variability in patient-mix may be reduced slightly by focusing on particular diagnoses or a selected number of diagnostic related groups or DRGs (Freeland et al 1987). However, differences in severity within DRGs still remain leaving some residual doubt about the extent to which multivariate methods can standardise for case-mix.

## 6. Information Requirements and Sources

### (a) Information Needs

The information requirements indicated by the different methods of evaluation outlined above can be brought together in the simple model of hospital production shown in figure 2.

**Figure 2** A Simple Model of Hospital Production



The model shows that both health outcomes and cost depend upon the clinical decisions made as part of the treatment process and that the ability to transform resource inputs into outputs (patient days, outpatient attendances, etc) is constrained by the hospital context (teaching status, support departments, etc) and by the characteristics of patients (case-mix).

Relating this model to the objectives of the reforms proposed in the White Paper, access relates to the type of patient admitted to the hospital and, by extension, also to those refused admission. This will depend on clinical and managerial decisions made in the hospital and, at the systems level, on each hospital's ability to secure the use of resource inputs. As defined in the White Paper, the choice and quality of care objectives apply only to the process of hospitalisation. The changes in process which are envisaged to take place are unlikely to impact on health outcomes. However, the cost implications of these process changes (especially the opportunity costs, i.e. the forgone opportunity to improve health outcomes by other means) must be assessed. Finally, the efficiency objective relates health outcomes to costs but, as the model shows, in interpreting this relationship and in comparing performance across hospitals, it is important to control or otherwise take account of differences in case-mix and hospital context.

This model also serves to highlight some of the deficiencies in existing data sets. The general lack of outcome data makes it impossible to assess whether observed changes in treatment (e.g. shorter lengths of stay) which have led to increased activity (more cases treated) actually have the desired effect on health outcome. Costs are too highly aggregated to allow estimation of patient treatment costs and case-mix measures (age, sex and diagnosis) are too crude to be used with any confidence.

#### (b) Sources of Information

In spite of these limitations, there is much information which is collected routinely in the NHS but which is rarely used and never fully

exploited (Yates 1987, Kind 1990). The White Paper reforms are also expected to generate much more information. In addition to ad hoc information or limited data sets collected by survey to address specific questions, three types of routine data set will be available for use in the future.

1. Existing data sets, the collection of which will continue.
2. Data sets expected to become available directly as a result of the implementation of the White Paper.
3. Data sets which could be collected if sufficient case can be made out.

Paramount among the first group are the performance indicator packages currently promulgated by the Health Services Management Centre at the University of Birmingham and the Department of Health. These packages are readily available and their use will facilitate comparison of performance between SGIs and DMUs both before and after the implementation of self-governing status. The main drawbacks with these indicators, apart from concerns over their accuracy and timeliness, are the impossibility of linking together the indicators of manpower, finance and activity, the focus on activity indicators such as patient throughput rather than outcome and the limitation on consultant episodes rather than total patient episodes. This makes it difficult to interpret the signals which each set of indicators provide and encourages comparison with the mean performance rather than the identification of good performance.

One measure of outcome which is collected on a routine basis is hospital mortality. The Hospital In Patient Enquiry (HIPE), a ten per cent sample of Hospital Activity Analysis (HAA), records mode of disposal distinguishing patients discharged home or sent for convalescence, patients transferred to

other hospitals, and patients who died in hospital. At present, the information is aggregated to District Health Authority level but with suitable information technology it should be possible to produce local reports which disaggregate mortality to hospitals and/or specialties (Kind 1988). As with the performance indicators there will be concerns over accuracy and timing. There will also be difficulties in interpretation, particularly in view of the small numbers involved for some diagnoses. Experience with the use of hospital mortality rates in the United States (HCFA, 1988) demonstrates the need to control for chance fluctuations in small numbers of cases and in severity of illness and risk before using inpatient deaths as a measure of the effectiveness of hospital care (Green et al 1990). These arguments indicate a need to refine the information being collected on mortality rather than suppress its use entirely. Janssen and colleagues (1990) demonstrate the feasibility of adding severity and more sophisticated outcome measures to existing on-line information systems.

In addition to existing data sets, implementation of the White Paper's proposals will itself generate new information; through the contractual process, through the introduction of improved management information and accounting systems and through the introduction of medical audit. Contracts will contain details of the unit costs of treatments and expected standards of performance though precisely how the quality of care will be defined in practice is not clear. Contracts will be public documents and so post-contractual monitoring should yield information on the actual performance of health providers (in terms of both costs and quality) against these standards. The National Association of Health Authorities and Trusts (NAHAT) are setting up a data-base to collate information on contracts from each of the health authorities. This information will be publicly available and will therefore

provide a useful resource with which to assess the success of self-governing status if it is held in a uniform and therefore comparable state. However, health authorities are not obliged to release the information to NAHAT and, under the new arrangements, information on costs and outcomes will be commercially sensitive. Therefore, there must be doubts about how much of the contract information will be released to the data base irrespective of the confidence in which it is held. The future funding of a public information service is also uncertain.

The second source of information which will become available directly as a result of the White Paper proposals stems from the requirement that all clinicians engage in medical audit. This will generate information on particular clinical processes and patient outcome. The range of activities which might be subject to audit is large and priorities and choice of method will be set locally. Most of the information so generated will therefore be specific to a hospital or specialty setting and will be of little comparative use. Guidelines have been suggested which encourage the use of pre-defined standards of practice, screening criteria for adverse events and the quantification of results so that they may be compared with other centres and over time (Shaw and Costain 1989). The development of audit is rudimentary but the adoption of principles such as these will facilitate the comparison of clinical performance in the future.

Finally, the third source of information will be new data-sets established for the purposes of monitoring and review. The technical papers which followed the White Paper make it clear that SGTs will be expected to provide statistical and financial information as well as data on manpower and patient activity. The latter items are to be 'included in any redesigned set

of Health Service Indicators which allow national comparison in the provision of service' (our emphasis). This suggests that current performance indicator packages might be amended or supplemented to include more meaningful measures of health service performance providing the cost of collecting the additional information is not excessive. If this is the case, then there is scope to introduce measures of outcome and case mix, to link these with existing measures of resource input and activity and to extend the indicators beyond the performance of hospitals over the whole episode of patient care.

In summary, the NHS reforms should generate the production of information which will aid the evaluation of the changes which take place (see Figure 3). However, current information sources are inadequate for the purposes of evaluation and unless adequate guidance is issued on the type and form in which new information should be gathered, there is a danger that this will be of little use. It is essential that the research questions are formulated now so that such guidance can be provided. The current lack of political commitment to evaluate the changes arising from the introduction of self-governing status should not be allowed to prevent the full exploitation of the opportunity the new information systems should present.

**Figure 3** Summary of Information Requirements and Availability

Routine data available now	Routine data available as a result of reforms	Data which should be available routinely	Survey data
Performance Indicators	Contractual details	Mortality rates	Admission criteria
<ul style="list-style-type: none"> <li>- length of stay</li> <li>- throughput</li> <li>- ward occupancy</li> <li>- theatre occupancy</li> <li>- patient activity rates</li> <li>- staffing ratios</li> <li>- speciality costs</li> </ul>	<ul style="list-style-type: none"> <li>- treatment costs</li> <li>- expected performance</li> <li>- actual performance</li> </ul>	<ul style="list-style-type: none"> <li>Avoidable deaths</li> </ul>	<ul style="list-style-type: none"> <li>- life expectancy</li> <li>- quality of life</li> </ul>
Waiting times	<ul style="list-style-type: none"> <li>- for appointments</li> <li>- in clinics</li> <li>- for admission</li> </ul>	<ul style="list-style-type: none"> <li>Medical audit</li> <li>- pre-operative work up</li> <li>- clinical protocols</li> <li>- surgical complications</li> <li>- readmission rates</li> <li>- cross-infection rates</li> <li>- post operative mortality</li> <li>- patient outcomes</li> <li>- treatment costs</li> </ul>	<ul style="list-style-type: none"> <li>Proportion of patients travelling outside district</li> <li>Case-mix</li> <li>- diagnostic groups</li> </ul>
Hospital Activity Analysis			Use and effect of management freedoms
Hospital In-patient Enquiry			Case-mix
			- severity

## 7. A Research Agenda

The evaluation of self-governing status is no easy task. The foregoing discussion makes it clear that a variety of methods are open to the researcher. These range from detailed but descriptive case-studies to secondary analysis of routine data from a large sample of hospitals. No single approach is ideal and each has its strengths and weaknesses. The choice of method depends on the question to be answered and the research skills and interests of the analyst. A number of questions are outlined below. The table also details the information required to answer each question and the most suitable method or combination of methods by which the information could be obtained.

### Access

(1) Question: Do admission criteria adopted by SGTs determine access on the basis of financial criteria or need?

Information: Admission criteria and their operation  
Patients refused admission.

Method: Case-study  
Survey of referral sources  
Survey of local health needs.

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(2) Question: Do clinical or management practices act to shift costs?

Information: Clinical protocols  
Activity statistics  
Comparative and comprehensive costings.

Method: Survey with matched controls.

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(3) Question: Does easier access to resources limit their availability to non SGIs?

Information: Total resource availability and allocation to hospitals.

Method: Survey with geographical controls.

---

(4) Question: What effect does the local definition of core services have on patients' travel times and distances?

Information: Core service provision in districts  
Proportion of patients travelling outside of district  
Travel times and distances.

Method: Before and after study.  
Matched controls.

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(5) Question: With the exception of core services, do SGIs give priority to patients whose contracts are placed by purchasers other than the DHA.

Information: Admissions by source of contract.

Method: Survey with matched controls.

---

(6) Question: With the exception of core services, do SGIs restrict the type of patient admitted.

Information: Patient throughput by diagnostic group and severity.

Method: Before and after study.  
Matched controls.  
Statistical controls.

Choice

(7) Question: In what ways do SGTs enhance patient choice?

Information: Admission procedures, ward policies.

Method: Case-study.

Patient-surveys.

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(8) Question: What effect does enhanced patient choice in SGTs have on the operation of competing hospitals?

Information: As for Question 7

Method: As for Question 7

Quality of Care

(9) Question: What improvements are made in the process of care following SGT? At what cost?

Information: Changes in environmental quality and admissions procedures. Clients perspective. Expenditure statements.

Method: Case study.  
Consumer surveys.

---

(10) Question: What effect do changes in process in SGTs have on competing hospitals?

Information: As for Question 9

Method: As for Question 9

## Efficiency

(11) Question: Does SG status speed up the introduction of cost-effective techniques?

Information: Diffusion of 'tracer' technologies such as day surgery.

Method: Survey with matched controls.

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(12) Question: What effect does SG status have on costs per case?

Information: Patient costs, throughput and case mix.

Method: Statistical controls.  
Before and after study.

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(13) Question: What effect does SG status have on outcomes?

Information: Mortality rates, health related quality of life, throughput and case-mix.

Method: Statistical controls.  
Before and after study.

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(14) Question: What effect does SG status have on the overall balance of services in a locality?

Information: Health care resources relative to identified needs.

Method: Case-study supported by survey data.

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## **8. Conclusions**

However they evolve in practice, the proposed reforms of the NHS are the most radical since its inception. The National Health Service has little

experience of contracting for clinical services and no experience of competing for patients. Even in more market-orientated health care systems, such as in the United States, there is little evidence on the ability of competitive systems to increase efficiency or improve the quality of care (Luft 1985). However, there is very clear evidence that clinical practices and hospital costs vary considerably amongst hospitals on both sides of the Atlantic (Wennberg et al 1987, McPherson et al 1982) and some evidence to suggest that hospital ownership influences local access to health care (Schlesinger et al 1989).

If the Government is genuine in its professed desire to improve the delivery of health services in the UK, it should be prepared to subject the reforms and the operation of SGTs to the sorts of evaluation described in this paper. Whatever the merits of their unwillingness to consider stringent and prospective evaluation of the introduction of self governing status, the agenda outlined here indicates that there is still much which can be done to assess the changes which will take place. This work will be difficult because it will not take place in ideal circumstances, however, it will still yield useful results. Most importantly, it must begin now in order to establish a baseline from which the effects of the reorganisation can be judged.

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