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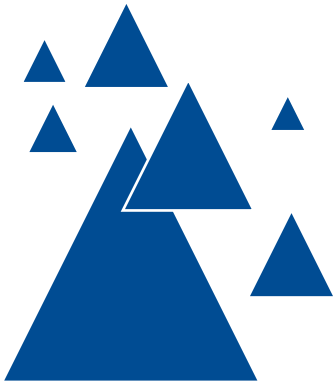

NHS Resource Accounting in Wales: Problems of Implementation

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FOREWORD

The NHS is a capital intensive organisation, and the quality and maintenance of its assets are important to the delivery of a quality service. In recent years the public sector has adopted accounting practices previously only used in the private sector, such as accruals accounting. This report assesses how the NHS managed the process of accounting innovation relating to accounting and budgeting of capital assets in the NHS Wales. The research gathers views from staff in Welsh NHS Trusts, the Welsh Assembly Government and the Audit Commission in Wales by way of interviews and a questionnaire survey to investigate whether the perceived benefits and potential concerns of reform have come to fruition.

The authors argue that whilst accounting reform can be introduced from above, its successful implementation depends upon how it is accepted within the culture of the organisation at the grass roots level and the extent to which any new accounting reports are used by management to deliver the strategy of those higher up in the organisation.

The report firstly reviews the existing literature and then outlines the background against which the NHS operates in Wales, including: how control is exercised; the development of the NHS Wales strategy relating to capital assets; and the resultant resource flows, arising from book entries versus actual cash receipts. Developments in required accounting practices gave visibility to the costs associated with owning fixed assets, namely depreciation and interest, and the amount invested in such assets. But two separate systems of recording assets were used by different parts of the organisation and were not reconciled.

Two issues which the authors identify as crucial to the successful process of accounting change are diffusion and organisational coupling. Diffusion is the process by which new ideas are spread and the extent to which new ideas are assimilated into the organisation. Organisational coupling refers to how various components of an organisation work together to deliver the intended objectives.

The report found that "diffusion" of the accounting requirements has been restricted to the top layer of management, and has not penetrated below that level in the majority of NHS Trusts, and only a minority think that budgetary control has improved as a result. The reforms have been negatively perceived and have not been assimilated into the culture of the organisation. Evidence that the organisation's "coupling" was somewhat loose, with numerous information sources being used to make asset acquisition and disposal decisions. Capital charges are seen as another hindrance in the approval process where there is no incentive to dispose of inefficient or underutilised assets as replacements cannot be funded, and even if they were, the capital charge implications would impact on other revenue expenditure.

The report develops recommendations for the introduction of a single integrated management system, dealing with both physical and financial facets to locate responsibility for asset management at the point of use. The authors also identify the need for further research in other parts of the UK to help identify best practice. This report also provides evidence of the consequences of accounting change and the impact of behavioural considerations on the successful implementation of change.

This project was funded by the Scottish Accountancy Trust for Education and Research (SATER). The Research Committee of ICAS has also been happy to support this project. The Committee recognises that the views expressed do not necessarily represent those of ICAS itself, but hopes that the report will increase the knowledge on the impact of accounting reform in the public sector and how systems can be implemented successfully.

David Spence
Convener of Research Committee
September 2007

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Executive Summary

This study focuses on the operational consequences of the introduction of an aspect of Resource Accounting and Budgeting (RAB), namely accounting and budgeting for capital assets. The study examines the National Health Service (NHS) in Wales that started to apply accruals accounting in 1991 and has since modified its accounting to encompass not only accruals accounting but also RAB. The intention of the NHS is that there will be a number of benefits from this centrally imposed new approach. The degree to which these revised accounting practices can be deemed a success will be determined by the extent to which the potential benefits are realised in practice.

The research investigates the various claims that have been made for RAB together with some of the potential problems. Perceived benefits include: the allocation of fixed assets to a functional management unit; the identification, proper recording and maintenance of asset records; improved purchasing and disposal decisions; better planning and management of assets; improved awareness of maintenance costs; and recognition of the opportunity cost of fixed asset acquisition or construction. Potential concerns may be: the difficulties of applying RAB in practice; potential misunderstandings and misuse of information by different people affected by the changes; and the impact of capital charging and depreciation on managerial behaviour and decision taking.

To date there has been no similar study in the NHS which examines the impact of the implementation of this accounting change. Therefore this study provides valuable evidence of the consequences when a change in accounting practice is undertaken.

Research approach

The introduction of capital accounting in the public sector is a relatively recent phenomenon that runs counter to many previously stated objections (Mellett, 1992). The introduction into the NHS of capital charges has two elements, one is depreciation and the other notional interest. The process of accounting innovation is examined in this study, whereby a new technique, in this case full accruals accounting, is introduced to an environment where it did not previously exist. Two themes that are relevant to this study are diffusion, or the spreading of new ideas or processes, and organisational coupling, which reflects the intermediation of management between those whose activities are subject to the new measurement system and those imposing the system.

Other factors that are considered are those of depreciation, as an element of public sector capital charging, and the underlying measurement of the related capital stock. These are examined from the viewpoint of there being a division between depreciation when included as an expense in a Trust's external financial reporting package and when it is present in the accounts used by the management control system.

The public sector in general, and the NHS in particular, has become an area about which an increasing amount of research has been published. This study has identified those strands of research which are relevant to this project. An initial review concentrated on the process of accounting, but the iterative nature of the project, developing an interview schedule and using the outcome of this to inform the questionnaire, identified additional areas of relevance.

Initially the approach was to concentrate on the procedural aspects of capital accounting but, as the project progressed, it became apparent that behavioural considerations were also relevant. While accounting reform in the NHS can be introduced through direction from a superior authority, its successful implementation depends on the extent to which its outputs are assimilated into the culture as an acceptable steering

mechanism. Management, both financial and non-financial, has to instigate and use the accounting reports produced and the procedures have to be capable of achieving the desired actions that, in turn, will deliver the strategy of the organisation. The themes outlined above, covering both theoretical and practical aspects of implementation and operation, identify potentially fruitful lines of enquiry pursued by this research project.

The strategy for fixed asset investment has developed from the initial identification of the need for a strategy to that of its implementation. There has been a growing recognition that the state of assets had been allowed to deteriorate and that this was impeding the delivery of quality health care. The funding consequences of owning capital assets, as measured by accounting procedures, are not neutral if they result in shifts when resources are received and paid in different amounts. The outcome of the strategy is expressed in the annual report and accounts that are available both for internal review and to inform the various stakeholders of the NHS.

The methodology employed involved a two-stage process: interviews and a questionnaire survey. One of the intentions of the interviews and questionnaire survey was to ascertain whether accounting for income and expenditure and the related cash flows meshed in a mutually neutral or reinforcing way or whether they in fact impeded each other.

The initial interviews were open-ended and exploratory in nature and were then followed by a more formal process using a semi-structured format. The interviews were conducted with key individuals from two Welsh NHS Trusts and supplemented by external parties to the Wales capital accounting regime such as the Welsh Assembly Government and the Audit Commission in Wales. The second stage of the research involved the development of a questionnaire, informed by the findings of the interviews, which was distributed to all Welsh NHS Trusts.

Findings

The study revealed that the RAB reforms, as measured by capital charges, had not diffused into the management accounting practices of the two Trusts where senior officials were interviewed. Accounting information about fixed assets was used to compile reports for central government, but the utility of this aggregated data was questionable. Characteristically of a loose-coupled organisation, other databases about fixed assets were used to manage their acquisition, disposal and maintenance. The impact of the cash allocation and repayment system, the lack of cash in general and the political reluctance to endorse Private Finance Initiative (PFI) schemes had led to underinvestment in the NHS estate in Wales and the perpetuation of an inefficient asset base.

The quantitative study from the questionnaire survey supports the findings of the qualitative study. Diffusion had not taken place to any extent in the majority of Trusts and only a minority thought that budgetary control over assets had improved as a result. The reforms were negatively perceived and had not been assimilated into the culture of the organisation. Further, evidence of a loose-coupled organisation was found, with numerous information sources used to make asset acquisition and disposal decisions. Limited use was made of capital accounting information in external reports, where only factors such as new capital schemes were commented upon. The internal effects, however, were quite significant and negative. Capital charges were seen as just another hindrance in the approval process for new projects, and once again the lack of cash for capital investment and the dearth of PFI schemes added to the frustration of managers who were anxious to enhance the delivery of their services.

Conclusions and recommendations

At the time that this research was completed there was no evidence that the perceived benefits from the introduction of the accruals accounting aspect of RAB-based techniques linked to capital assets were being realised in the NHS in Wales. Furthermore it is difficult to see when or where these benefits will be realised with the loose-coupled organisational context and the current level of enforced diffusion. However, the potential problems of implementation foreseen at the outset had largely transpired and it is apparent that RAB is inconsistent with a cash-managed environment. Evidence was found that the current accounting system is in fact impeding the implementation of the NHS strategy. Managers have no incentive to dispose of inefficient or underutilised assets since the funding of replacements is not guaranteed and even if it was, the revenue implications of the capital charge would have a negative influence.

In order for the claimed benefits of RAB to materialise, the loose-coupled system needs to be revised. There is a need for the development of a single integrated asset management system to encompass both their financial and physical facets. A system revised in this way would enable the integration of the management of assets over all those functional units that are responsible for different aspects of using these assets. Further diffusion could then take place within each Trust to correctly locate responsibility for asset management. Responsibility should accompany any devolution of information so as to avoid information redundancy. Further diffusion of this kind may create tensions because central control is required to deliver overall strategy, while devolved responsibility is necessary for strategy implementation.

This work has focussed on the position in Wales, a devolved administration within the UK. Further work in other such administrations would provide a basis for comparison and the potential to identify best practice.

1 Introduction

This chapter begins with a background to the study, identifying the organisational context of Resource Accounting and Budgeting (RAB) in the NHS in Wales. The research objectives and approach are then described and the report structure is outlined.

Background

The study examines the National Health Service (NHS) that has applied accruals accounting since 1991; more specifically, its research location is the NHS in Wales. The NHS has recently had to modify its accounting to encompass not only accruals accounting but also RAB which requires the translation of government policy priorities into strategies and budgets against which actual results can be judged. NHS Trusts do not formally report in RAB format; this is restricted to their superior authorities. However, it has introduced a tightening of the overall financial regime that has implications for trusts (CIMA, 2005). The intention is that a number of benefits will flow from this new approach, including, according to the White Paper that introduced it (HM Treasury, 2001):

- Identification of fixed assets and their allocation to a functional unit responsible for managing them;
- Identification, proper recording and maintenance of asset records;
- Improved purchasing, including decisions on whether to rent or buy and whether to retain or dispose of assets;

- Better planning and management of assets;
- Improved awareness of maintenance costs; and
- Recognition of the opportunity cost of fixed asset acquisition or construction.

However, it is possible that the success of a new system is not guaranteed and Likierman (2000) noted some potential concerns:

- The practical application of RAB;
- Potential misunderstandings and misuse of information, including providing inappropriate signals and incentives; and
- The impact of capital charging and depreciation on managerial behaviour and decision taking.

The degree to which these revised accounting practices can be deemed a success will be determined by the extent to which the potential benefits, or concerns, are realised in practice. The outcome is unlikely to be binary, that is either a complete success or outright failure, and this project throws light on the current successes and failures at Trust level of the capital asset aspects of RAB implementation.

Research objectives

Delivering healthcare involves knowledge of the health status of the population, from which a strategy is developed to meet its requirements. The strategy can evolve over time as the population health demographics change and advances are made in treatment techniques and protocols. Over the years, in order to deliver this strategy, infrastructure assets are accumulated that, by their nature, have long lives and can have the effect of locking delivery into set patterns. A revised strategy may require a different set of assets, but their acquisition involves substantial outlay

for which immediate funding is unlikely to be available. The time taken to align the stock of capital assets with NHS requirements can impede delivery of the strategy; indeed it is unlikely that the match will ever be absolute. An additional feature of fixed assets is that their possession brings with it revenue consequences as they have to be maintained. A backlog of expenditure may build up to the extent that insufficient maintenance is carried out; this can also degrade the efficiency and effectiveness of the assets.

Assigning values to capital assets gives them a financial visibility and enables their annual consumption to be proxied in the Income and Expenditure Account. NHS Trusts derive income from providing their services and, after offsetting their costs, including depreciation and interest, generate a surplus or deficit each year. Management is required to meet certain objectives that are set and measured in financial terms using accounting procedures. These objectives are: to break even; to make a return of 3.5% on net assets, as measured in the balance sheet; and to keep the cash balance within the agreed limit. These measures reflect the outcomes of activity focused on delivering healthcare and so action affecting this activity is needed to direct the organisation towards meeting the targets.

The research objective, in general terms, is to examine the impact of the introduction of a novel accounting technique (RAB) in the NHS. More specifically, the investigation is targeted at a detailed consideration of whether any of the foreseen benefits or concerns identified by commentators and detailed above have been realised in practice.

In the course of the research consideration is given to other factors not initially identified, such as the extent to which the operation of RAB promotes or impedes the ability of the NHS to operate in accordance with its strategy.

Research approach

The research is based on an empirical investigation of the NHS Trusts in Wales and was facilitated by the Research Committee of the Welsh Health Financial Managers Association (WHfMA). It was possible, through discussions in committee and with individual members, to review the research approach on an ongoing basis and so refine the investigation as it developed. Using the committee as a conduit enabled access to senior NHS staff and provided ongoing comment on the results as they emerged. The committee also participated by encouraging completion of the questionnaire.

A literature review was first carried out to identify the likely themes; this was an iterative process and the literature associated with new, unanticipated themes was accessed when these emerged. The first step in collecting data was to interview key staff at two Trusts. The results of these interviews, together with the literature, were used to prepare a questionnaire that was circulated to all the Trusts in Wales. Different types of data resulted from this approach; the interviews gave qualitative information while the questionnaire elicited numerical data together with narrative responses to open-ended questions. Analysis of the results, both numerical and qualitative, was carried out using computer-based techniques.

Report structure

The rest of the report is presented in seven chapters. These are as follows:

Chapter two contains the literature review. The first theme is diffusion which is the process by which new ideas are spread. In the case of the NHS the new idea was accruals accounting. One aspect of diffusion relates to the imposition of a new idea and how the new idea is assimilated into the organisation. This leads on to coupling which is

used to consider whether the NHS is loosely coupled in the context of depreciation accounting, that is, the Trusts use two information sets, one to satisfy external entities and the other for internal control. The importance of coupling is that it helps to identify whether the operation of depreciation accounting is done simply to satisfy externally imposed requirements or whether it has operational relevance. There follows a consideration of depreciation, from a theoretical viewpoint, and its impact on both external reporting and internal management.

Chapter three provides the background against which the NHS operates in Wales. It provides some summary statistics and outlines the structure through which control is exercised from the Welsh Assembly Government (WAG) at the top through to the Trusts at the point of healthcare delivery. The development of the strategy of NHS Wales is traced, concentrating on those aspects relating to capital assets. Part of this process provides details of the physical condition of the capital stock and the extent to which, irrespective of its state, it is appropriate for the delivery of the strategy. Trusts generate resources by providing healthcare; these resources cover both revenue and capital costs and include flows that are generated by 'book entries' rather than cash. The nature and flows of these resources are detailed and the theoretical 'ideal' system described against which the actual picture that emerges from the data can later be compared. Each Trust issues its own annual report and accounts; these are then combined and the flows and balances between Trusts are eliminated to show the aggregate results. A brief review of Trusts' annual reports, both individual and aggregate, is provided to show the typical contents as it relates to capital assets and provide an idea of scale. Capital developments are driven by business cases and the chapter finishes by examining the means by which capital costs are incorporated in them.

Chapter four deals with the methodology adopted to undertake the research. This involves a description of how the data was collected and analysed. Data collection was carried out using two approaches,

interviews and questionnaires. However, these were not totally separate. Initial interviews were used to identify prospective additional interviewees and the results of the interviews and the literature review were used to underpin the contents of the questionnaire. At the same time, previously unidentified areas of interest found during the interviews were incorporated into the literature and background information presented in chapters two and three. Having explained how the separate sections of the questionnaire were developed, the chapter goes on to describe how the analysis was carried out. In the case of the interviews this was done by transcribing them and using the NVIVO computer package to identify and cross reference themes. The questionnaire contained both closed and open-ended questions. The closed ones were analysed using a statistical computer package and the qualitative responses were analysed using the same package as for the interviews.

Chapter five presents, in two sections, the results of the interview survey and questionnaire to investigate the diffusion of the new mode of accounting into and throughout the NHS Hospital Trusts in Wales. Data collected from both the interviews and the questionnaire reveal a lack of diffusion and consequently it has had a limited impact on the management of the fixed asset base. There has been minimum delegation to managers responsible for the day-to-day use of the assets, although there are some moves in this direction. Capital charges were seen in a negative light as being a hindrance to the delivery of a capital programme consistent with the strategy intended to develop a capital base appropriate for the objectives of the Trust.

Chapter six analyses the data as it relates to the aspect of organisational coupling in two sections, one presenting the results of the interviews and the other those from the questionnaire. Features of loose coupling are found, such as where the asset register required for financial purposes is maintained in the finance department but there are additional registers kept on an ad hoc basis by other departments, such as estates, where they are used in respect of the operational management of the actual assets including maintenance and replacement. These registers are not

integrated and are only reviewed for accuracy and physical verification on a cyclical basis.

Chapter seven combines results from the interviews and questionnaire to examine three other aspects of RAB. These are: the consequences of capital charges; the internal effects on managers; and external reporting and accountability. Capital charges were seen either as an irrelevance owing to their central control or a hindrance when trying to develop new facilities owing to their impact on plans and possible under-funding. Accounting information about fixed assets was used to compile reports for central government where even the utility of aggregated data was questionable and its enhancement of accountability limited. Restricted use was made of capital accounting information in external reports, where only highlights such as new capital schemes were commented upon.

Chapter eight contains a general discussion merging the results from Chapters five, six and seven. The material is considered under the potential ramifications of introducing RAB. The possible benefits from the new system were: the identification of fixed assets and their allocation to a functional unit responsible for managing them; identification, proper recording and maintenance of asset records; improved purchasing including decisions on whether to rent or buy and whether to retain or dispose of assets; better planning and management of assets; improved awareness of maintenance costs; and recognition of the opportunity cost of fixed asset acquisition or construction. However, there were potential concerns about the practical application of RAB, including the potential misunderstanding and misuse of information, that provide inappropriate signals and incentives, and the impact of capital charging and depreciation on managerial behaviour and decision taking. The conclusions are that it is difficult to identify any positive benefits that could not have been derived from the operation of asset registers, for which RAB is not a necessary condition. However, developments are under way that will make capital charges 'real' and, when these are complete, RAB may have a greater impact although it is not yet possible to be certain whether this will be beneficial.

2 Literature Review

Introduction

This chapter reviews the relevant academic literature. A number of themes can be pursued when considering the introduction of capital charges in the NHS, including depreciation and notional interest. The adoption of capital accounting in the public sector is a relatively recent phenomenon that runs counter to many previously stated objections (Mellett, 1992) and was an accounting innovation whereby a new technique, in this case full accruals accounting, was introduced to an environment where it did not previously occur. Of relevance to innovation is diffusion, which is the spreading of new ideas or processes. Another area of relevance is that of organisational coupling, or the intermediation of management between those whose activities are subject to the new measurement system and those imposing the system. These two themes are followed by a consideration of depreciation as an element of public sector capital charges together with the underlying measurement of the related capital stock. The literature covers both the theoretical and practical aspects as, although the revised accounting process has been implemented, it is still relevant to consider what depreciation is, the extent to which it can be measured and its application in the public sector. Accruals accounting is then examined from the viewpoint of its effect on external reporting. A division is noted between depreciation as part of a financial reporting package to those external to the reporting entity and its role within the organisation as part of the management control system; this is covered by the final discursive section. Finally, a summary of the chapter is provided.

Diffusion

In general, diffusion is

> *...the process by which an innovation is communicated through certain channels over time among the members of a social system* (Rogers, 1995).

In the context of this investigation, diffusion is the spreading of new accounting procedures to, and within, organisations where they had not previously been present. For a long period of time two approaches to accounting existed simultaneously in the UK, one using full accruals in the private sector and another based on cash, with accruals adjustments for revenue items, in the public sector. The idea of the self-contained, self-governing accounting entity was a feature of the private sector that was not universally established in the public sector. Prior to the publication of the White Paper 'Working for Patients' (Department of Health (DoH), 1989) there was resistance to the idea of replicating private sector accounting techniques, such as depreciation, in the NHS (Mellett, 1992). These objections were overcome with the advent of NHS Hospital Trusts that mimicked many of the aspects of corporate activity with such features as a Board of Directors, a clearly defined entity boundary and the requirement to produce annual accounts on the full accruals basis.

This is consistent with Rogers (1995) who notes that there are certain requirements for diffusion to take place. First, there must be something to be diffused; in this case a different accounting practice. Then, there must be a set of potential adopters throughout which diffusion can take place; in this case the NHS within the wider setting of the public sector. To complete the process, there must be communication so that the idea can be transferred from the location where it exists to where it is absent;

the government, through the Treasury and the Department of Health (DoH) provided this channel of communication.

In the NHS the adoption of accruals accounting came about through a process different from that found in the private sector, where most diffusion research has taken place. Abrahamson (1991) outlines the idea of an efficient choice perspective whereby the model of choice assumes that there is a pro-innovation bias where potential adopters make rational choices to select technology that provides technical efficiency and reject that which will not. This requires organisations to have a free choice of which technology to use, are certain of their goals and can accurately assess the extent to which a new technology will assist in goal achievement. These features were not present in the UK public sector adopting accruals accounting, as found by Lapsley and Wright (2004) who conducted a questionnaire survey of professional accountants working in the public sector in Scotland and concluded:

> *…that [management] accounting innovations have mainly originated in the private sector and adoption of these innovations by public sector organisations is largely attributable to government influence.*

A strand of analysis followed by Abrahamson (1991), in the absence of adoption decisions being made by internal choice, is that found when an outside agency influences or imposes a particular new technology. In these circumstances the rational choice of the adopter is not paramount and so an inefficient technology may be imposed or an efficient one rejected, but it is equally possible that the same outcome as that based on rational choice may also occur. External influence is divided between two scenarios based on the extent to which imitation is a driver of adoption. Where imitation is a weak influence, then the perspective is one of forced adoption; where it is strong, then following fashion is a potential explanation for adoption. The former is the case

from the standpoint of the NHS as there was no choice. However, in terms of hierarchy, the superior tier, the government, may have been influenced by aspects of fashion to take up accruals accounting as part of the world wide trend towards 'New Public Management' (NPM) (Guthrie *et al.* 1999).

Bjørnenak (1997) isolates the circumstances where, as is the case with the NHS, diffusion involves an increase in the number of users and sub-divides this into two major forms, contagious and hierarchical. The contagious category mimics that found in the spread of diseases or rumours and requires the close proximity of users and potential adopters. A trickle down effect is found with the hierarchical category where four stages are identified. In the primary stage an innovation appears at source; such as the private sector where accruals accounting had developed over many years. The next three stages are: diffusion, when it spreads rapidly; condensing, when the remaining areas are penetrated; and saturation, which marks the slow-down and ending of the diffusion process. These can be identified at the macro level where NPM spread internationally, but, in the context of the NHS and accruals accounting, a somewhat different path was followed where the imposition of the new procedures marked a hiatus; and where the implementation occurred simultaneously in all Trusts. However, the impact of the change on the internal culture was slower in terms of being adopted within the Trusts, and was viewed as just an exercise to be undertaken to satisfy imposed requirements.

Another strand of research asks 'what are the processes organizations go through in implementing innovations?' (Malmi, 1999). This is usually described as 'Process Theory' and Rogers (1995) considers the time span of innovation, identifying five separate stages: knowledge; persuasion; decision; implementation; and confirmation. This describes the process by which potential adopters of an innovation have to learn about the innovation, be persuaded to adopt it, implement it and then reaffirm or reject the adoption decision. The latter stage is of particular interest in

this study owing to the imposed nature of the adoption. It is possible that, while complying with set requirements, the innovation may not be assimilated into the culture and only the minimum acceptable standard met. Perera *et al*. (2003) note that:

> *...innovations are often initially mandated at organizational level, but this does not ensure that the innovation will be effectively implemented or used by the target users in the organization.*

One possible response is that managers mediate between the imposers of innovation and satisfy their requirements while at the same time 'protecting' others elsewhere in the organisation both from involvement in the exercise and from its consequences. The extent of this depends on the nature of the organisational coupling that is present.

Organisational coupling

The provision of healthcare requires the coordination of a number of separate activities that can be broadly classified into three categories: healthcare professionals who directly deliver care to the patients; clinical support departments that provide intermediate care-related services for the first category; and system maintenance that services the other two through general administrative activity (Abernethy and Stoelwinder, 1990). These various components, and their identifiable constituent elements, have to be coupled together in pursuit of the mission of the organisation. This coupling can, at the extremes, be loose or rigid. A loose-coupled system has components that, while functioning together to deliver the intended outcomes, exhibit considerable independence from each other and have the ability to make and implement their own choices. A rigid system has tight central control with its associated monitoring and command structures.

Attempting to locate an organisation, such as an NHS Trust, on the axis of coupling requires consideration of its external and internal relationships. It is possible that external control is exerted on it in a loose-coupled manner while it operates internally with a more rigid system. It is also possible that different aspects within the organisation can be dealt with in a loose or rigid manner so that, for example, medical aspects are largely devolved to practitioners while administrative functions are subjected to more direct control. The dynamic nature of the organisation is also relevant and Hinings *et al.* (2003) note that:

> *...in healthcare there is an inherent loose coupling of government inspired structural and governance reform with ongoing health-profession based change while Modell (2003) identifies loose coupling where there 'is a lack of clear linkages between goals and expressions of control'.*

The role of accounting in a loose-coupled system is to accommodate the external legitimation of the organisation through measuring and reporting the dimensions specified by controlling entities while, at the same time, providing the information necessary for the internal functioning of the organisation (Collier, 2001). These two aspects are not necessarily satisfied by the same information set. The policy of adopting RAB has been specified by the government and its manner of implementation will reflect upon the extent to which the NHS in Wales is loosely coupled. Full integration of capital resource information into external financial reporting and internal control would indicate rigidity while separation of these aspects and the development of alternative approaches by different Trusts would identify loose coupling.

Depreciation

There is no doubt that an expense has been incurred when an entity acquires an asset and consumes it as part of the process of delivering its output. Short-lived assets, on the whole, do not present accounting difficulties as acquisition and consumption take place over a relatively short period of time; any problems are further diminished if acquisition and consumption occur in the same accounting period. Fixed assets, that are held for a number of accounting periods and are purchased without the intention of resale, are subject to the same principle but pose problems from an accounting viewpoint. Resources are committed on acquisition and if, at the end of the life of the asset, it realises a lower value than it cost, then resources have been consumed and an expense has arisen. The question is how to allocate this expense to the individual accounting periods that were spanned by ownership. Furthermore, the basis of allocation has to be specified in advance and in the absence of knowledge about the life and residual value the asset will eventually achieve.

At a fundamental level, the potential for depreciation to provide meaningful information has been questioned. Thomas (1974) wrote in the context of all allocations that:

> *They have been rejected as being unrelated to the purported topic of financial statements; a firm's economic state and activities. They have no more significance for these economic matters than do the calculations of astrologers.*

Similarly, but not quite so stringently, Baxter (1981) states:

> *Depreciation measures can have a great effect on a company's results, yet they are chosen from a wide range of possible figures by rules that are vague and little understood.*

These comments were made to reflect the position in the private sector but, as they apply to the concept of depreciation, they are equally applicable in the public sector. This raises the question of whether the adoption of depreciation in the public sector is in fact an instance of 'private sector problems posing as public sector solutions' (Hopper, 1986). The failure to offer an evaluation of the revised system was also raised by Mellett (1997), although Heald and Dowdall (1999) distinguish between critics of the implementation of systems of capital charging and those who do not support it in principle, arguing that imperfect instruments of charging for capital are better than capital invisibility. However, where the system is operated perverse outcomes can result (Shaoul, 1998).

Notwithstanding criticisms of the operationalisation of depreciation, its use is now an established fact, contained in both national and international accounting standards: 'The depreciable amount of a tangible fixed asset should be allocated on a systematic basis over its useful economic life' (ASB, 1999) and 'The depreciable amount of an asset shall be allocated on a systematic basis over its useful life' (IASB, 2003). The former of these is relevant for the public sector as the Resource Accounting Manual (RAM), produced by the Treasury to prescribe the accounting policies to be used when preparing governmental accounts, is based on UK generally accepted accounting standards (GAAP). Although the RAM notes that the term GAAP has no statutory or regulatory authority or definition, it considers that there is a general consensus that it is founded upon: the accounting and disclosure requirements of the Companies Acts; pronouncements by the Accounting Standards Board principally SSAPs, FRSs and UITF abstracts; and the body of accumulated knowledge built up over time (HM Treasury, 2004). As a consequence, the RAM states:

> *In accordance with FRS 15, depreciation should be provided for all fixed assets with a finite useful life by allocating the cost (or*

revalued amount) less estimated residual value of the assets as fairly as possible to the periods expected to benefit from their use.

The introduction of capital charges, including depreciation, to the NHS pre-dated the move to RAB by Central Government. Proposals were contained in the 1989 White Paper (DoH) to introduce a system of charges from April 1991. These were to be cash neutral in terms of the funding provided to the NHS, but were intended to impact on the reported costs of those entities within the NHS that held stocks of capital assets. As a consequence of the accounting that underpinned this change, it became possible to produce full balance sheets showing fixed assets at their written down value. At the same time, NHS Trusts were obliged to present a set of accounts to an annual general meeting. In this way, the accounts prepared by Trusts bore a great similarity to those of private sector companies.

It appears that the impact of this accounting change was intended to encourage managers to 'make the most efficient use of their physical resources' (DoH, 1989). This required that the charges became part of the internal operation of the entity and so the consequent change in the accounts published for external stakeholders was purely incidental. It was considered that the exercise would not be worth undertaking if managers did not respond to the newly created accounting numbers in the way envisaged.

Internal control and decision-making

Depreciation and notional interest both give visibility to costs associated with owning fixed assets. Once identified, the question arises as to whether they should be converted into real resource flows. A feature of depreciation is that it is a 'non-cash' expense; the cash outflow takes place when the asset is acquired. As a result the effect of charging depreciation, if it is a cost recovered through inclusion in

prices, is, *ceteris paribus*, to create a cash fund over the life of the asset equal to the accumulated depreciation charged over its life. However, the government does not wish Trusts to build up cash reserves and this is counteracted by controlling the cash balance of each Trust, maintaining it at the desired level through loan and dividend transactions.

Research into the successful implementation of accounting change in the public sector, and the NHS in particular, has indicated that it is dependent on the ability and willingness of participants to focus on strategies for achieving change (Lapsley and Pettigrew, 1994) In earlier work, Pettigrew (1985) argues that in large organisations continuity is often more apparent than change as dominant frameworks of thought, with associated structures and power relations, are used to interpret changes in the external and internal contexts. Heald and Scott (1995) believe:

> *...that the workload induced by organisational and financial changes becomes so overwhelming that the attention of NHS policy makers is diverted from strategic questions of system design to the desperately urgent requirements of ensuring that there is an operational system.*

Heald (2003) calls for research on the implementation of accrual accounting and budgeting and on the extent to which these changes will make a difference to organisational performance. Hepworth (2003) notes:

> *To make use of an accrual accounting system, managers not only need to understand the differences, but also need to appreciate how they can use the accrual-based information to manage more efficiently and effectively.*

He concludes (ibid) that:

> *To pay too much attention to the technicalities of accrual accounting standards without having regard to the operational environment into which accrual accounting is to be introduced would be a serious policy mistake.*

This provides confirmation of the findings of previous research carried out by Marriott and Mellett (1995) into the financial awareness of managers. Also, in New Zealand, where RAB has been in operation since 1992, a number of concerns have been identified. Pallot (2001) states:

> *...with respect to the capital charge there is a need for greater awareness of the capital charge outside the head offices if it is to have an incentive effect on the managers who actually use many of the assets.*

Connelly and Hyndman (2006) in their study of the impact of RAB in Northern Ireland indicate that there are problems associated with incomplete reporting to managers where asset registers are 'non-existent at the beginning of the first live year'. They quote one operational accountant who felt that managers would not understand capital charges even if they were included in budget reports and that further training of managers was required.

External reporting

The role of external reporting is problematic as there is no simple answer to the question of to whom financial reports are addressed. Corporate entities in the private sector have a duty to report to their owners by means of an annual report, which includes a set of accounts,

and the owners can then use the report as an input to their decision on how to vote at meetings. This contrasts with the position in the NHS where there is an indeterminate set of stakeholders who do not participate in votes that have influence on how the entity is managed (Clatworthy *et al*. 2000). If the test of dominant economic influence is applied to the Welsh NHS structure, it is found that the path leads from 15 Trusts that deliver front-line services, through 22 Local Health Boards and three Regional Offices to the Welsh Assembly Government (Parry 2003). The information needs of these different constituents are met by separate internal reports that contain much more detail than the published accounts and, as a result, control is exercised in a managerial style rather than through ownership dominance like that found in the private sector.

As far as infrastructure assets are concerned, Australian studies of decision-makers have found that reports on the actual condition of assets and the costs of upgrading are of much more use than accruals-based accounting reports (Walker *et al*. 2004). In a UK empirical study, Heald and Scott (1996) surveyed 46 Scottish mainland health providers targeting key players in the provision and use of capital charging data. Their results yielded an endorsement of the capital charging system with respondents broadly agreeing that the system was worthwhile, had led to increased efficiency and was fair. However, the survey also indicated that there had been serious implementation difficulties and that some respondents thought that capital charging had not affected the timing of investment or disposal decisions and was not relevant to maintenance decisions. From a qualitative element of their work, they conclude:

> *The interviews revealed that capital charging was generally viewed as a finance-driven rather than a management-driven exercise… In relatively few cases was capital charging yet recognised as integral to decision-making; the estates function, now often part of an Operations command, had been noticeably marginalised in many providers.*

Summary

The public sector in general, and the NHS in particular, has become an area in which an increasing amount of research has been published. This chapter has identified those strands of research which are relevant to this project. An initial review concentrated on the process of accounting, but the iterative nature of the project, developing from interviews to the questionnaire, identified additional areas of relevance.

Initially, the approach was to concentrate on the procedural aspects of capital accounting but, as the project progressed, it became apparent that behavioural considerations were also relevant. While accounting reform in the NHS can be implemented through direction from superior authority, its successful adoption depends on the extent to which its outputs are assimilated into the culture as an acceptable steering mechanism. Management, both financial and non-financial, has to instigate and use the accounting reports produced. The question is whether these new procedures are capable of delivering the desired actions that, in turn, will deliver the strategy of the organisation. The themes outlined above, covering both theoretical and practical aspects of implementation and operation, identify potentially fruitful lines of enquiry to be pursued by this research project.

3 Background

Introduction

Accounting systems operate within an environment to provide information that can be used to steer activity in the desired direction. It enables the achievement of goals to be monitored and allows the comparison, in financial terms, of objectives with achievement. This chapter describes the environment within which capital accounting operates in the NHS in Wales. It provides some summary statistics and describes the structure through which the NHS in Wales is managed, from the Welsh Assembly Government (WAG) down to Trust level. The objectives of NHS Wales are expressed through a strategy that emphasises capital assets and how funds are distributed to achieve the strategy. The background against which accounting for capital assets is conducted is first explored, and then the reports in which related information appears are considered, with examples.

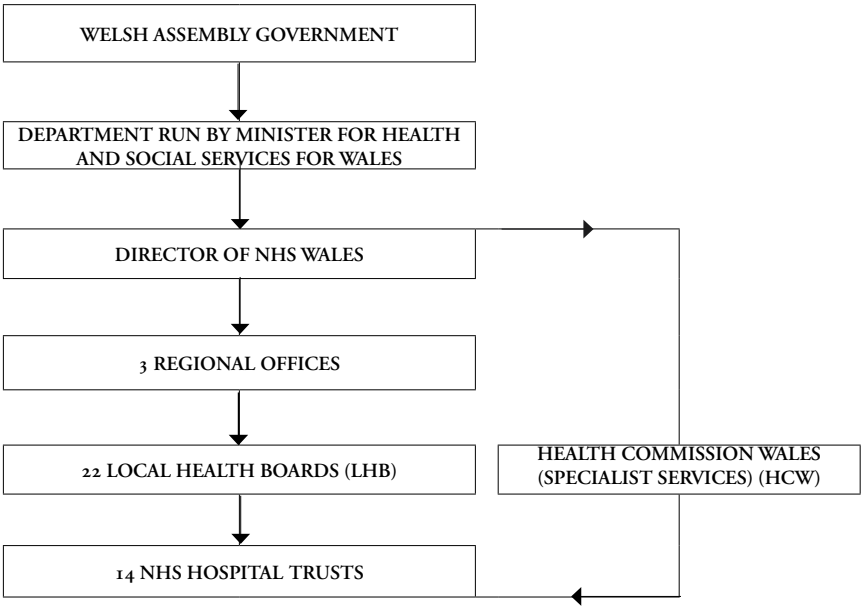
Structure

Wales has a population of 2.9 million; this compares with the total population of the UK, of which it is part, of 60.4 million. Responsibility for the NHS in Wales rests with the WAG that came into being in 1999 when it took over a number of the policy areas previously run by the Welsh Office, a Department of State of the Westminster Parliament. Each year the Welsh Assembly Government is provided with funds under the Barnett formula (House of Commons, 2001) which it then allocates over a number of functions, one of which is the NHS in Wales.

In 2005-2006 it was planned to provide the NHS in Wales with revenue funding of £4,044 million and capital funding of £146 million.

The structure of the NHS in Wales was revised in April 2003 and since then has been as shown in Figure 3.1. The Welsh Assembly Government contains a Department that manages NHS Wales and provides strategic leadership. Using a needs-based population formula, the bulk of the available funds are distributed to Local Health Boards which cover the same geographical areas as Local Authorities. The Boards then commission primary, community and intermediate health services for their local populations. Where an all-Wales dimension exists, such as health screening programmes, the funds flow through the Health Commission Wales. The Trusts are the main providers that manage hospitals and provide secondary and tertiary care.

Figure 3.1 The Structure of the NHS in Wales since April 2003



Strategy

Soon after its establishment in 1997, the Welsh Assembly Government received a report of an investigation undertaken by the Policy Unit of the National Assembly for Wales, assisted by the Audit Commission (WAG, 1999). This investigation was in response to the financial problems that were being faced by a number of Health Authorities and Trusts, despite the fact that the overall funding of the NHS in Wales was some 13% higher (per capita) than in England. One of the key issues identified in addressing the resulting financial pressures was how to 'free up capital resources to tackle the substantial maintenance backlog and invest in modern facilities'. This had resulted, in part, from the squeeze on capital funds in the 1980s that came from the need to offset revenue pressure.

The property estate held by the NHS Wales represented a significant proportion of its fixed assets by value and the delivery of high quality health services needed to be underpinned by high quality premises. At 31 March, 2005 the net book value of tangible fixed assets owned by NHS Trusts in Wales was £1,969 million. Land, buildings and dwellings represented £1,766 million of this. However much, or little, is invested in the infrastructure of an organisation, an effective and efficient system of managing the assets is required. An investigation was carried out by the National Audit Office Wales (NAOW, 2001) to review its estate management strategy and organisational arrangements at all levels of the NHS Wales, from the Assembly down to the Trusts, and assess estate management information and performance.

It found that the NHS in Wales needed a robust strategy to manage the estate and encouraged its development throughout the organisation. It also reported that the dissemination of information should be more timely. However, at the time the report was written, there was no all-Wales strategy in relation to managing the estate. It was also found that only a minority of Trusts had produced and had approved estate

strategies and the conclusion reached was that there was room for improvement. Part of the explanation for this may be that the findings related to organisation and staffing issues and that the Estates function was found to have a relatively low corporate profile. This was reflected in the fact that the number of professional and technical staff had been reduced in response to the need to find savings. Trusts had developed a variety of approaches for conducting estate management with designated responsibility being held either at board level or by a designated Estates Manager.

Fragmentation was also found in the area of information systems. One consequence was that the reporting function varied in range and quality across Trusts with little consistency in the approaches adopted. Instances were found where reporting to board level was not a matter of routine or afforded high priority. This militated against the ability of the WAG to uniformly monitor targets and the extent of strategy implementation.

In the absence of centrally held information, details of the condition of the estate across Wales had to be found by the Policy Unit through a questionnaire survey. The findings were that much of the estate was not in prime condition. Only half the estate was deemed to meet full statutory requirements and less than half the estate met the WAG's target of being physically sound, operationally safe and exhibiting only minor deterioration; the target for 2002-3 was 90% compliance. The cost of bringing the estate up to this level, termed category B, was put at £365 million. Confirmation of the condition of the estate was also provided by the assessment that only half of the estate was fit for purpose and one fifth was below an acceptable standard in this regard. Added to this, almost one quarter of the surveyed estate was assessed as under-utilised or empty and an overall energy performance saving of only 8.7% had been achieved against a government target of 20%.

The report concluded that all of the deficiencies in the system should be addressed and supported the central development and implementation

of new estate performance management arrangements scheduled for April 2002. The relevance of this report to the current study is that it shows the importance of having an integrated and uniform information system to underpin estate management so that this can fully contribute to health care delivery. In particular, the lack of such systems may mean that unforeseen consequences may emerge during the study in the context of the extent that financial and estate information becomes integrated.

In 2001 the National Assembly for Wales produced an overall plan entitled 'Improving Health in Wales' (WAG, 2001) that contained a chapter on 'Investment in Infrastructure'. This noted the neglect that had taken place over the previous two decades in respect of buildings and equipment and the failure of information and communications technology to keep up with appropriate comparators. As well as the poor condition of the estate, a significant backlog of investment in replacement equipment was recognised. The solution to these deficiencies included the introduction of a more rigorous performance-management framework, together with adequate levels of investment in the estate and an estate management strategy. The first step for equipment was to carry out an inventory of major items and then have a programme of replacement to ensure that, by 2005, no equipment would remain in use that had reached or passed the end of its useful life. The role of producing an inventory of the estate and the need to operate measurement and control systems to deliver these objectives was central to this approach and is reflected in this study.

The next step to introducing a management strategy that would provide an infrastructure appropriate for the delivery of health care was the production of a 'National Estates Strategic Framework' in October 2002 (WAG, 2003a). This spelled out the fact that the commitment to update the asset base of the NHS in Wales would require expenditure, both capital and revenue, significantly greater than had been committed previously. The size of this can be judged from the estimate that capital schemes requiring £1 billion over ten years were included in existing

strategies and that an additional £500 million would be required on top of this to fund schemes not yet formally identified. It further estimated that an annual increase of 6% would be required in revenue expenditure to maintain the estate. Again, the need for an integrated information system was identified.

In June 2003 the Wanless report (WAG, 2003b) was published that examined how the performance of these resources could be improved, especially in the light of the additional funding being provided for health care. The health of the population of Wales was described as 'relatively poor' and this was coupled with significant shortcomings in its estate that would only be overcome with '(among other things) a sea-change in the quality and nature of its planning and capital and revenue investment'. To relieve pressure on the acute sector and focus on prevention and early intervention would 'entail changes to policy-making, financial, and accountability mechanisms'.

Once again the review of the estate noted its age and poor condition with over 75% of the built estate being over 20 years old, one in ten properties dating from before 1900 and a backlog maintenance figure estimated at over £400 million. The report saw the way to deliver its service strategy as a modernisation and reconfiguration of the estate, including a move away from the idea that predominant consideration should be based on buildings. Notwithstanding this, the recommendations 'imply significant capital expenditure' coupled with greater certainty over the volume of resources to be made available and an end to the practice of using money earmarked for capital for revenue purposes. A whole-system approach should be adopted to integrate the strategy for estate, and by implication that for all capital assets, with the overall service strategy. This would be coupled with a greater accountability by the managers of all NHS bodies.

The next stage of strategy development, aimed at integrating health-care delivery across all providers, was published in May 2005 as a framework document (WAG, 2005). A revised approach to planning

was specified with a vision to 2015 to be delivered under a series of three-year plans. During the first period, 2005 to 2008, it foresaw a significant investment in capital assets with a commitment of £550 million to modernise health facilities and a £795 million investment programme from 2004-5 to 2007-8 to modernise hospitals and equipment. This has so far been translated into a funded capital investment programme of £410 million and the identification of new capital programme elements totalling £1,600 million. A reconciliation of these two sets of figures is not provided. Both detailed lists are predominantly hospital based, although within this £1,054 million is identified as being related to 'Wanless configuration'.

Together with the investment in capital assets that was proposed under these strategies there was also a policy of rationalisation. The WAG in its general vision for public service delivery identified the figure of £600 million as the amount of money to be saved through efficiency gains which could be transferred to the front line (WAG, 2004). An element of these gains was to come from 'making the best use of the public estate' and this was mentioned by the National Audit Office Wales (2005) in its report on the finances of the NHS. They noted that the NHS in Wales was expected to contribute to the savings and one of the areas where this might be achieved was within the reconfigurations to put the Wanless proposals into action where 'rationalising estate' was identified.

Resource flows

Having outlined the background against which the long-term assets of the NHS Wales are managed, the resource flows and accounting implications are now considered in detail by means of simplified theoretical models.

Depreciation and notional interest are charged in the accounts of the Trusts to give visibility to elements of the cost associated with owning

fixed assets. Depreciation is a 'non-cash' expense; the cash outflow took place when the asset was acquired. Subsequently, the book entry for depreciation each year results in an expense charge in the Income and Expenditure Account and a matching reduction of the value of the asset in the Balance Sheet. No cash transfer is involved.

The effect of charging depreciation creates a cash fund because the cash value of depreciation is recovered in prices. However, this cash does not remain with the Trust as the Government controls the cash balance and maintains it at the desired level through loan and dividend transactions. Notional interest, expressed in the form of a dividend, is based on the value of assets and becomes a cash flow when it is paid. Taken together, depreciation and interest represent the capital charge payable by the Trust.

A consequence of the capital charge system is that artificial cash flows circulate within the NHS in Wales. For example, Figure 3.2, assumes that the WAG provides commissioners (LHBs or HCW) with £100 cash to purchase health care to which is added £20 from the capital charge made to the trust. This is all paid to a Trust it controls that charges £120 for its services, including the £20 of capital charges. The extra £20 can be recouped by the commissioners making a capital charge in cash on the Trust of £20.

Figure 3.2 The Circular flow of cash - single trust

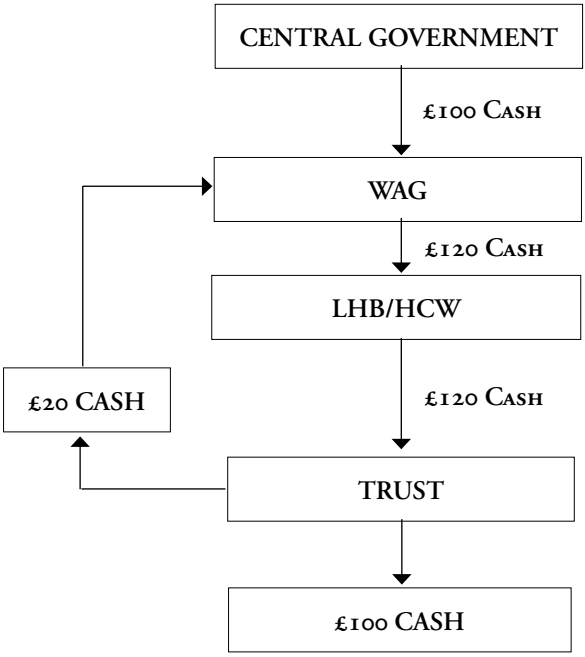


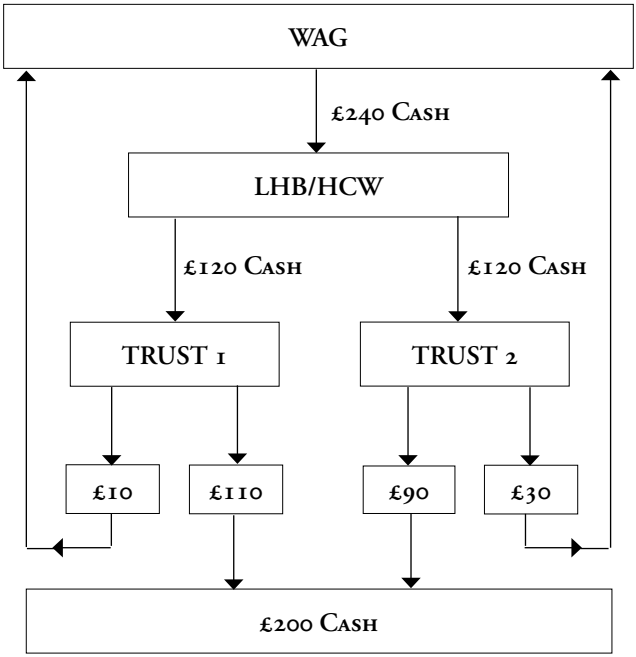
Figure 3.2 shows how a £20 capital charge cash flow is accounted for between the separate entities of LHB or HCW and a Trust but, from the WAG perspective, only £100 has been spent outside the system. Close monitoring is required to ensure that the Trust does not attempt to keep the full £120 and reduce the amount it recycles to the commissioners (Mellett 1990; 2001).

The system remains in balance as a whole, and for each individual Trust, provided that the sum received and paid by each Trust in respect of capital charges remains the same. Redistribution can take place where the resources are distributed on one basis, but recharged on another. For example, sums may be provided downwards according to pre-set prices for procedures carried out, based on a centrally set 'price list',

but collected on the basis of the amounts charged in a Trust's accounts. A Trust which incurs higher capital charges, for example, as a result of occupying a more expensive site, will have to pay more.

In Figure 3.3, the flow presented in Figure 3.2 is extended to encompass two Trusts which receive the same resources but have different capital charges; this can be amplified to any number of Trusts. It can be seen that the net amount of cash leaving the system is £200, but the impact of the capital charge flows leaves Trust 1 better off than Trust 2 in terms of what it can spend 'outside' the system. Thus, capital charges change from being book-entries with no overall effect to having a real impact on spending patterns. To the extent that they rely on accounting techniques of depreciation and asset valuation, they contain an arbitrary element. The situation is further confounded where one Trust uses PFI to fund its assets, and so has reduced capital charges, but increased revenue costs, while another owns its own assets and exhibits the reverse situation.

Figure 3.3 The circular flow of cash – multiple trusts



The flow systems shown in figures 3.2 and 3.3 represent an ideal theoretical model. In practice there are likely to be divergences. For example, the system is not closed and funds might be received from external sources; these might be from the public sector, such as English NHS units or private patients. The fees charged to these other sources include an element to cover the cost of capital related to the service provided. Similarly, payments may be made to outside bodies that include an element for capital charges.

Capital developments

The proposal for a new capital investment scheme in the NHS starts with the production of an Outline Business Case which presents the case for the development and considers the alternative options that would achieve the desired ends. The case includes the detailed planning assumptions together with comparative revenue and capital costings and an evaluation of associated risk factors. It is also necessary, when considering new capital projects, to explore the possibility of financing the investment through the PFI route (National Audit Office Wales, 2003). For comparative purposes, when preparing costings, the cash impact on the commissioning Trust of different routes is significant. Public sector provision involves a high initial outlay followed by regular payments throughout the life of the project to cover the revenue consequences; these include capital charges. The PFI route involves an annual revenue payment that includes the provider's capital charges and may also cover additional revenue services taken over as part of the project.

In the Outline Business Case an economic evaluation can be carried out using the Discounted Cash Flow (DCF) technique to compare the alternatives. This considers the cash flows that leave the public sector under each scheme and, provided equivalent outputs are obtained, the one with the lowest net present cost is selected. However, from the aspect of the Trust, notional charges are converted to actual cash flows and capital charges count against the achievement of the break-even requirement. As a result, a decision based on one measurement technique, DCF, is post-fact reported using another, accruals accounting. Furthermore, the impact of capital charges, for accruals accounting purposes, is difficult to predict owing to the regular revaluation of the assets; PFI payments, on the other hand, are set under the contract.

Annual reports

Each financial year, to 31 March, sets of accounts and reports are produced by entities within NHS Wales. Every Trust generates its own report which describes its activities and major events during the year together with a set of summarised accounts. In addition, each Trust produces a full set of accounts that includes much more detail than is shown in the annual report. These separate detailed accounts are then aggregated at national level to show the combined results for all NHS Trusts in Wales. There is no 'bottom line' measure in the NHS, such as profit in the private sector, which summarises the extent of success or failure. However, there are financial duties placed on Trusts, the achievement of which is measured using accounting techniques and reported in the accounts. These duties are: to break-even, which is measured in the Income and Expenditure Account and broadly means that expenditure has to be matched by income; and to not exceed the agreed external financing limit, which involves controlling the change in cash over the year so that the balance remains within the agreed cap. The content of these reports and accounts is now reviewed in the context of fixed assets.

A single Trust (Bro Morgannwg which serves an area located on the South Wales coast between, but not including, Cardiff and Swansea) has been selected to exemplify reporting at the Trust level and all the following data have been extracted from its annual report and accounts. Bro Morgannwg contains one major hospital with 566 beds and another with 273 beds; a further 464 beds are distributed around nine other units comprising five relatively small hospitals, two units related to learning disability, a health centre and a health clinic. The narrative part of its report for the year to 31 March 2005 comprises 42 pages while the summarised financial review and accounts cover 10 sides. The oversight of the Trust's capital programme is performed by the Capital Investment Committee. This is a sub-committee of the main

board, having responsibility for monitoring ongoing schemes and either approving or making recommendations on capital investment projects; it meets quarterly.

The first 30 pages of the report deal with personnel and performance matters. There follows a series of reports that review each of the Directorates and within these there is information on capital assets. For example, the Anaesthetics and Critical Care Directorate reports a refurbishment programme in the operating theatres of the Princess of Wales Hospital and the Radiology and Endoscopy Directorate refers to the purchase of a new mobile X-ray machine. A final page in the narrative section outlines planned developments some of which, such as a £1 million upgrade of the operating theatre ventilation system at the Princess of Wales Hospital, involve capital expenditure while others, such as appointing an additional Consultant Orthopaedic Surgeon, are of a revenue nature.

In the Financial Section, the Trust reports a financial surplus for the year of £4.876 million, but its retained surplus is reduced to £53,000 as a result of having to pay a dividend of £4.823 million to the Welsh Assembly Government. This dividend is calculated on the basis of the estimated cost of capital, which is 3.5%, and is adjusted for factors such as interest payable to the Welsh Assembly Government on short-term loans. The balance sheet reports the written down value of its tangible fixed assets of £171.626 million; there is no further analysis. However, it is possible from the Statement of Total Realised Gains and Losses to ascertain that stated asset values increased by £7.437 million as the result of revaluation or indexation.

The cash flow statement is more informative about capital flows. It shows that there was no increase or decrease in cash over the year. As part of this, £6.975 million was spent on fixed assets, offset by £0.487 million received from the sale of assets. In terms of long-term finance, £2.805 million of public dividend capital was received together with £0.701 of other capital receipts. However, in overall terms, the

amount of information concerning fixed assets is limited and, to a large extent, the narrative sections are more informative in terms of seeing the contribution capital expenditure has made to the achievement of the Trust's mission of providing a comprehensive range of high quality health-care services.

Far more detail is provided in the full accounts of the Trust, although the narrative aspect is greatly reduced compared with the annual report. The accounting policies are given and these show that tangible fixed assets are capitalised if they have an operating life in excess of one year and cost more than £5,000. They are initially valued at cost but this is indexed each year and every five years land and buildings are revalued by the District Valuer; the last valuation was carried out in 2002.

The full accounts provide a substantial number of analyses of the aggregate figures given in the summarised accounts. In the Income and Expenditure Account the annual depreciation charge is given as £7.496 million. The balance sheet total for tangible fixed assets is further analysed between: Land; Buildings; Dwellings; Assets under Construction; Plant and Machinery; Transport Equipment; Information Technology; and Furniture and Fittings. For each of these categories the opening balances of cost or valuation and accumulated depreciation are reconciled with the closing balances by showing the movements relating to indexation, additions, impairment and disposals.

Note 26 to the accounts describes a PFI deal that the Trust has entered into that is deemed to be off-balance sheet. This is for the provision of a 270 bed local general hospital; the contract started in 2000 and ends in 2030; the cost for the current year was £11.602 million. The PFI operator pays no rent for the lease of the site that reverts to the Trust at the end of the contract. The current value of the asset which will eventually revert to the Trust at the end of the contract (£13.772 million) is recognised in the Balance Sheet.

Taken together, the annual report and detailed accounts of the Trust provide a comprehensive picture of the accounting impact of economic

events related to fixed assets. However, it is not possible to reconcile all of the movements that are given in financial terms with the descriptive parts of the report.

The accounts prepared at the all-Wales level aggregate the information provided by the individual Trusts but cancel out any transactions that have taken place between the Trusts. Such transactions are likely to be minimal in the case of fixed assets. The cash flow statement contains expenditure on fixed assets of £123 million, a total depreciation charge for the year of £94 million is reported and the written down value of tangible fixed assets was £1,969 million. The same accounting policies are applied as at Trust level which is an essential feature for meaningful consolidation and is achieved because the policies are set centrally. The overall impact of PFI schemes is reported together with details of the individual Trusts; this enables the accounts of the Trusts to be consulted should more detail be sought.

Summary

This chapter has shown how the strategy for fixed asset investment has developed from the initial identification of the need for a strategy through to its implementation. There has also been a growing recognition of the extent to which the estate had been allowed to deteriorate and the degree to which this is deemed to impede the delivery of quality health care. The funding consequences of owning capital assets, as measured by accounting procedures, are not neutral if they result in shifts when resources are received and paid in different amounts. The outcome of the strategy is expressed in the annual report and accounts that are available both for internal review and to inform the various stakeholders of the NHS. Delivering the strategy involves deciding which capital projects to undertake and how to fund them. One of the intentions of the interviews and questionnaire survey carried out for this project is to ascertain whether these different aspects mesh in a mutually neutral or reinforcing way or whether they in fact impede each other.

4 Research Method

Introduction

This chapter explains the method employed to address the aims of this study. The first phase of the research involved obtaining the information about the ownership of capital assets within the overall package of accounting information for Wales NHS Trusts. In addition it sought to identify the users of this information including managers at different levels within the Trusts and those with external interests, such as the Welsh Assembly Government and the Audit Commission in Wales.

The approach adopted had a number of distinct stages that are described in this chapter. After reviewing the literature in the area to enable some prior expectations to be established, a number of scoping interviews were conducted to enable a more focused approach to be developed for further interviews. A questionnaire was then prepared, based on both the prior literature and the interviews, for distribution to all the Trusts in Wales. Throughout this process guidance and assistance was received from WHfMA. The members of this committee facilitated access to individuals, commented on drafts of all documents produced and encouraged colleagues to respond. While this provided a supportive environment it, at the same time, sometimes created delays as the committee did not meet frequently.

Research method

After the initial literature review and three scoping interviews at Trust One, a two-stage method was employed to investigate the issues in full. The first stage involved interviews at two Trusts with a number of key actors in the Finance and Estate Departments representing various management groups within the Trusts. The findings of these interviews then allowed for the formulation of a questionnaire to be distributed to all Welsh NHS Trusts.

The literature review provided an outline of prior research with regard to accounting for capital assets and the impact of RAB. This study provides an insight into the use and consequences of the capital charging process from a Welsh NHS Trust viewpoint, an issue which has been subject to limited prior research in the UK. Therefore, the start of this research was mainly exploratory in nature and was based upon a case-study approach. This form of research method as depicted by Ryan *et al*. (2002) will:

> *Enable the researcher to generate hypotheses about reasons for particular accounting practices. These hypotheses can be tested subsequently in larger scale studies. As such, the case study represents a preliminary investigation, which is intended to generate ideas and hypotheses for rigorous empirical testing at a later stage.*

Furthermore, the process of research analysis may be viewed from two standpoints, deductive and inductive. The former of these assumes that any research is instigated by a set of hypotheses developed using pre-existing theory, their truth being tested by empirical data. However, the limited research in the area of accounting for capital assets within the UK NHS dictated an inductive approach to this research. This approach assumes that the analysis is driven by the data themselves

'from which theoretical categories and relational propositions may be arrived at by inductive reasoning processes' (Lincoln and Guba, 1985). Where possible, and in the majority of cases, all researchers attended the interviews and notes were taken. Following the informal interviews, a number of individuals were interviewed on a formal basis and verbatim transcripts produced. These transcripts were used to provide a fuller insight into the areas being researched. Key individuals at two Trusts and the Welsh Assembly Government took part in the study at this stage.

The initial interviews were held on a totally informal and unstructured basis and not recorded. This process was chosen to allow respondents to talk freely and in an unconstrained manner to ensure that all issues, no matter how controversial, could be raised. This style of interview has been carried out in accounting research in the private sector by Horton *et al*. (2004) who noted its importance by stating:

> *...given the novelty of the issues being discussed (so that it was not even clear initially what would be the most important questions to ask) and the need to ensure that the views of the most important protagonists were obtained, the flexibility of semi-structured interviews greatly outweighed the limitations on statistical analysis that would result.*

The initial interviews also allowed the development of pre-constructed interview guides that could be used for the formal interviews later on and ultimately for the questionnaire to be distributed as stage two of the research. The formats of the interview guides were adapted to incorporate the issue of capital charges pertinent to the two departments, finance and estates, and both were designed so that the interview could be completed within approximately one hour. The questions within the interview guides were made up of both open-ended and closed-ended questions. The open-ended style of questioning did not restrict the

respondent to predetermined responses and as such provided richer data for the development of the questionnaire.

All participants at the Trust interviews were assured of confidentiality and therefore are described simply by their title and location at either Trust One or Trust Two in the remainder of this report. Further, at the outset of the meetings, the participants were told that they could have access to any notes or transcriptions created prior to any publication. This was to establish a level of trust and to ensure the reliability of the record of their responses. The participants were also informed that the interview was not similar to an audit process and therefore they could answer freely, safe in the knowledge of anonymity outside that of the researchers.

The guide produced for interviewing individuals within the Estates Department of the Trusts (available from the authors on request) was partitioned into three sections: records, financial issues and external issues:

- The records section included questions relating to the record-keeping of capital assets such as where they were kept, how they were kept, who maintained them and subsequently used them. The answers to these questions were intended to investigate the diffusion of accounting techniques and the mode of coupling. If it was found that a completely separate set of capital asset records was maintained for estate management purposes, then the lack of integration and articulation would suggest that capital accounting techniques had not diffused throughout the organisation and that loose coupling was present.
- The financial section comprised questions relating to the financial consequences of accounting for capital assets. This included behavioural issues surrounding the budgeting process, acquisition and disposal of assets and general questions on the perceived impact of capital charges. Again, the answers to these questions reflected

upon the diffusion and coupling issues and the perceived role of depreciation.

- The external section of the guide enabled an identification of external users of capital asset information and the influence of these external users. This helped to locate the information relating to capital assets and charges in the overall strategic context.

The finance-related interview guide (available from the authors on request) was lengthier than the version for estates and had six divisions. These were: general issues; internal issues; budgeting; the financial reporting process; the business case process; and external issues:

- The introductory general section located the interviewee in the context of capital asset accounting.
- The questions on internal issues were concerned mainly with the procedures for producing asset-related information and how policies were determined to deal with such matters as depreciation and the categorisation of the state of assets. They also dealt with the cash consequences related to the flow of resources measured as capital charges. The responses were intended to provide insights into the manner of diffusion and the extent of coupling within the organisation and in its relations with superior tiers in the organisation.
- The budget section questions dealt with the extent of inclusion of capital charges in the budget process, the involvement of budget holders with capital charges and the interviewee's role in the process. This reflected on whether the accounting innovation represented by capital asset accounting had permeated the organisation or whether diffusion had been limited to meeting the requirements of imposed accounting regulation.

- The financial section covered how the details relating to capital charges in the external annual report and accounts were generated.
- The questions in the business case section related to the process of acquiring assets through internal funds as a comparator to externally funded sources, such as the Private Finance Initiative and Public Private Partnerships. This reflected how the overall Welsh strategy was delivered at the level of the individual Trust.
- The external section was similar to the guide for estates in that it identified external user involvement with the output of accounting for capital assets.

The first scoping meeting was held with a Director in Trust One and involved an overview of the research and an explanation of the need for identifying relevant actors within the Trust who would be appropriate individuals to take part in subsequent interviews. A second initial meeting was held with a senior member of the WAG in order to establish links with other relevant parties at that level. This initial interview allowed the researchers to identify the background of accounting for capital assets in Wales. The third informal meeting took place with another senior member of the WAG with direct responsibility for accounting for capital assets.

The WAG performs a stewardship role in accounting for public sector entities; it is essentially a body that controls flows of money into and out of the Welsh Office, and therefore has no direct link with the Treasury. However, on an annual basis, each Welsh NHS Trust provides the WAG with its financial accounts; these are consolidated, produced in summary format and made available for public inspection. In addition, WAG provides the guidelines for accounting for capital assets which are set out in the Capital Accounting Manual. Given that the WAG plays this intermediary role in accounting for Welsh public sector bodies, it was important that its perspective was incorporated into the research.

One Trust Director who had a direct association with capital and interest charges provided a brief outline of the budget process within the Trust and informed the researchers of a capital asset group that oversaw the capital acquisition process. He also identified six individuals in the Estates Department who had a direct association with capital and interest charges. The six were subsequently contacted and informed of the research and the possibility of their being called upon for interview. As a direct result, the Estates Manager, the Financial Controller and Director of Finance of the Trust were formally interviewed, recordings of the interviews took place and verbatim transcripts were created.

Three formal interviews were held at Trust Two, again with the use of the interview guide. The interviews were held consecutively and all three were recorded and transcribed. The interviewees were the Estates Manager, his Assistant and the Senior Assistant Director of Finance of the Trust. The WHfMA research committee member who facilitated the session was present and interjected occasionally.

To maintain anonymity, codes have been used to attribute quotations. Table 4.1 provides a key to assist in the interpretation of the qualitative evidence.

Table 4.1 Interviewee codes

Position	Trust	Code
Financial Controller	Trust 1	Interviewee 1
Director of Finance	Trust 1	Interviewee 2
Estates Manager	Trust 1	Interviewee 3
Senior Assistant Director of Finance	Trust 2	Interviewee 4
Assistant Estates Manager	Trust 2	Interviewee 5
Estates Manager	Trust 2	Interviewee 6

Stage 2: The questionnaire

A questionnaire was developed and distributed to the Directors of Finance of the 14 NHS Trusts in Wales. The eight page questionnaire (obtainable from the researchers) was presented as an A4 size booklet and the Cardiff University, WHfMA and ICAS logos were placed on the front cover to enhance its credibility. The covering letter introduced the researchers, the reasons for the study, its importance and the value of the respondents' participation. To assure the respondents' anonymity, a confidentiality statement was placed on the front page of the questionnaire and reiterated within the covering letter. Respondents were informed that they would be given a copy of the findings if required. The aim of the survey was to capture the detail required without discouraging potential respondents because of an excessive length. The questionnaire was split into six sections, A to F, and comprised a mixture of dichotomous (Yes/No), multichotomous (several possible answers) and open-ended style questions.

- The questions in Section A related to the asset register and the frequency of its use. The questions, all multichotomous, were divided such that respondents could refer to three categories of asset, equipment, land, and buildings, and included questions related to the physical condition of the assets and the existence of other asset registers within the Trust and how frequently these were updated. The answers to these questions provided an underpinning of how resource flows and assets stocks were measured. The frequency indicated whether the arrangements were simply to provide required information or whether, being more frequent, the measures and verifications had entered more deeply into the organisational culture. This in turn allowed reflection upon the extent and nature of diffusion and coupling.

- Section B dealt with the financial regime and the impact on the Trust of capital charges, both present and potential, from a resource and cash flow view point. The questions were dichotomous in this section and respondents were asked to provide reasons for their responses. The difference between resource flows, such as depreciation, and the cash impact provided an indication of how accounting mechanisms might assist, impede or be neutral in delivering the overall strategy.
- Section C included a number of questions related to budgetary issues. First, respondents were asked whether any elements of capital charges were included in the Trust's budgeting plans. Where this was the case respondents were asked how the figures were calculated. Issues such as backlog maintenance were also considered and the budgetary consequences of asset disposals. General open-ended questions relating to the introduction of capital charges and their impact on budgetary control concluded the section.
- Section D was a brief section which included a question related to the financial accounts and annual report of the Trust. In this section respondents were asked to indicate the level of detail relating to capital assets, if any, which was provided in its annual accounts. Respondents were also asked in this section whether they felt that RAB had assisted accountability.
- Section E included a number of open-ended and dichotomous questions relating to Business Cases and the generation and impact upon them of capital charges. Respondents were also asked in this section about their experience with the PFI. The responses indicated the extent to which capital charges impacted on capital development plans.
- The final section, F, asked respondents to identify any schemes held under the all-Wales Capital Programme and their amount and timing.

The final question provided respondents with the opportunity to make any additional comments and asked them to identify their Trust and state their position.

Interview analysis methods

As described previously, the initial interviews were exploratory and helped to form the basis for more formal, semi-structured interviews at the two Trusts. The process of recording the exploratory interviews involved note-taking by two researchers. These notes were then typed out to produce an agreed record of the interview. The formal interviews were recorded and transcribed verbatim. The transcripts of these interviews and the notes from the informal interviews were then transformed into an appropriate format and analysed using the qualitative data package, NVIVO.

The process of analysis within the package involved a thorough reading and re-reading of the transcripts and notes in order to find themes. This process falls under the category of inductive research where the data provides information rather than being used to test a set of pre-constructed hypotheses developed from extant theory. As with any qualitative analysis, there is a risk that the level of subjectivity involved introduces bias. Therefore, this analysis involved two researchers, initially working independently to minimise subjectivity, to develop and categorise the themes.

A number of themes emerged from the interviews that were consistent with those identified in chapters two and three. The software package then provided descriptive results relating to the occurrence of these themes and where they overlapped. This also enabled the theoretical frameworks identified in the literature to be used to explain the findings.

Questionnaire analysis methods

The questionnaire results were compiled into a spreadsheet and provided data for the mainly descriptive findings. A formal statistical analysis of the questionnaires was not undertaken due to the small sample size. However, despite being a small sample, a 100% response rate was achieved with all of the 14 NHS Hospital Trusts in Wales responding. The results therefore provide conclusive evidence from the Wales perspective. In some cases the questionnaire was completed by the Director of Finance, or their deputy or senior assistant, but in other cases it was completed by the planning or capital accountant (see Table 4.2).

Table 4.2 Profile of Questionnaire Respondents

Title	No.
Director of Finance	1
Deputy Finance Director	4
Senior Assistant Director of Finance	2
Associate Director of Finance	1
Assistant Director of Finance	4
Financial Planning Accountant	1
Capital and Planning Accountant	1
TOTAL	**14**

As noted previously, the questionnaire was designed so that respondents had the opportunity to give reasons for their answers to particular questions. In addition, the questionnaire provided a section which asked respondents for any further views on the issues covered and provided space for this and any other information that they felt had not been covered in the questionnaire. The nature of such responses

gave rise to further qualitative data which was analysed using the same computer package as for the interviews. The findings were compiled within the existing dataset and the analysis was again carried out by two of the researchers, initially independently, reading the data and matching it with the themes that had emerged from the interview transcripts. In addition, any further themes that had not been drawn out from the interview transcripts were identified.

Summary

This chapter has explained how the research into the impact of RAB and the introduction of depreciation and capital charging within the NHS in Wales was conducted. The method involved a two-stage process: interviews; and a questionnaire survey. The initial interviews were exploratory in nature and were followed by a more formal interview process using a semi-structured format. The interviews were conducted with key actors from two Welsh NHS Trusts, and supplemented by external parties to the Wales capital accounting regime such as the WAG and the Audit Commission in Wales. The second stage of the research involved the development of a questionnaire, informed by the findings of the interviews, which was distributed to all NHS Trusts in Wales. The findings of the interviews and questionnaires are presented in chapters five, six and seven and discussed in chapter eight.

5 Diffusion

Introduction

Diffusion represents the spread of new ideas and procedures throughout, and between, organisations. This chapter presents the analysis of the results of the formal semi-structured interviews with senior officials at the two Trusts together with the results of the questionnaire survey, insofar as they relate to the diffusion of new capital accounting techniques.

Interviews

There is little doubt that the diffusion or spread of a consistent capital charging policy across Wales had been one of forced adoption in a hierarchical manner. There was no evidence of adoption being a rational, free choice. For example, it was noted that asset registers came in five or six years ago as the result of a central directive:

> *Yes, very much so, very much part and parcel of Assembly or Welsh Office guidance that asset registers had to be compiled, very much in terms of setting down the standards in terms of accounting lives, the way they're recorded. The policy is very much driven by the Assembly and that would be part and parcel then of the manual of accounts so that there's a consistency in the way the accounts are structured and the asset register was a key to that* (Interviewee 2 - Director of Finance).

While the accounting change emanated from government, there was doubt expressed as to the utility that this information had at all levels of the organisation in such a highly revenue-driven service industry. As interviewee 2 said:

> *To be entirely honest I would say its [use is] fairly limited throughout. I would have said it's limited both for us as well as the Assembly. …When you look at a Trust like this, we've got a revenue budget of £Xm and we've got a capital budget, notwithstanding PFI and others, of £(2% of X)m…whilst we've got millions of pounds worth of assets. The concentration, I would have said, is about managing our resources very much from a revenue day-to-day basis.*

There was evidence to suggest that the accounting changes had started to permeate into decision-making, but mainly at the higher levels of the organisation:

> *There are two impacts. There are two things that have occurred over the last twelve months that have impacted on us. They're beginning now to have a real effect whereby the Trust board for the first time is having a discussion about it whereas, in the past, the Trust board would not be having a discussion about capital charges or depreciation. It would be something they would not want to get into* (Interviewee 2 - Director of Finance).

One reason why diffusion had been restricted to the higher echelons appeared to have been the manner in which the change had been implemented as it had been seen as just book entries but this was set to change:

Up to now yes. In fact, they [depreciation and capital charges] are a financial control report that has been devolved down to divisions and directorates. There's a budget put in there which equals our capital charge estimates and … any difference between the actual and the budget, the budget is matched as we go through the year, any difference up until now has been offset against PDC [Public Dividend Capital] dividends and they come back with no effect on the Trust's bottom line. But that won't be the case any more (Interviewee 4 - Senior Assistant Director of Finance).

There was a view that the accounting changes in Wales were some way behind Trusts in England. A comparative line of questioning was explored with one interviewee who had knowledge of English developments:

They're maybe two and a bit years ahead in England because of the drive to take money out. So selling off assets, reducing space, are all likely to reduce your costs. The incentive there for divisions to reduce costs is that they would have to see that cost on their budget line otherwise it's still seen as 'What's the point in us rationalising the estate and getting rid of assets if it just takes money out of Finance's budget' (Interviewee 6 - Estates Manager).

While recognising that the English Trusts were perhaps in advance of the Welsh Trusts, this had not manifested itself by speeding up the diffusion process and seemed to be based more on the drive to reduce costs, rather than to implement change. The capital charge information did not feature on the budget reports that divisional heads would use to manage their departments:

No. It didn't filter through. They still think it's free money, the capital.… If there's a scheme with a capital charge included in it

then it should drift through to their budgets eventually. But now … they're not interested in the revenue consequences at all as it doesn't filter through to their budget lines.

When they come to work, they just switch off about the cost of money. But it does need to get right down into a budget statement for divisions to make it real. And…, they need to have it explained to them 'what is the flexibility to manage that', and sit down and have a look at it (Interviewee 6 - Estates Manager).

It can, therefore, be seen that this accounting innovation was not assimilated into the culture and only a minimum level of diffusion was found that was just sufficient to meet central requirements. As a result, the data was analysed to discover whether any mediating behaviour could be found. Such behaviour might be indicated if managers satisfied the requirements of the imposers of innovation, while at the same time protecting others in the organisation from involvement in the accounting change and from its consequences. This behaviour was evident in Trust 1 but what was interesting was that, when questioned, the Director of Finance started to doubt his mediating strategy, but stopped short of changing his strategy and retracted after starting to consider the likely consequences:

My own view at the moment is, it comes back to what can they [service groups] influence, what can be influenced. It's interesting, having said that, I know that if it was at their level … if they knew that there were assets that were costing them money, they would be thinking twice about whether they should hang on to them etc. It may be something that we should…it's certainly not in my horizons at the moment (Interviewee 2 - Director of Finance).

This view was not restricted to Trust 1. In Trust 2 a minimal incremental diffusion policy was also evident with a reluctance to follow the process through to its natural conclusion:

> *At the moment we haven't got capital charges down to individual budgets, they sit on central finance reports. That is about to change in the next couple of months, not necessarily devolving the budgets to them but giving them more information on the assets that they've got, the financial implications of the assets that they've got and what depreciation charges are* (Interviewee 4 - Senior Assistant Director of Finance).

One reason for the reluctance to diffuse the accounting change to managerial level was that limited use was made of existing financial information and there was a view that the additional information would be ignored:

> *The medical directors will always want new kit but they've never seen the financial consequences of having that kit. …they are supposed to identify the revenue consequences associated with that piece of kit. But obviously they don't look at capital charges* (Interviewee 4 - Senior Assistant Director of Finance).

Diffusion was thus restricted due to a perceived reluctance of managers to assimilate the revenue consequences of capital investment decisions and their capital charge implications that led to a reluctance to devolve on the part of senior managers:

> *It [the capital charge] does cause us a problem … the N divisions … don't see it as real money. They'll say, 'Build us a new cancer and tertiary service centre for £Ym' then that becomes a Trust revenue problem. It's a bit of a cultural thing in the Trust which is 'we'll get what we want then it's a Trust board problem to try*

and balance the budget'. So they're not particularly over-concerned about capital [or] revenue consequences of the capital development (Interviewee 6 - Estates Manager).

However, the implications that a wider dissemination of capital charge information could have was not disputed:

I think it potentially has a huge impact. Particularly given the guidance that Trusts in Wales have to break-even each year rather than on a 3-year rolling programme. I think it's going to concentrate peoples' minds in terms of looking at how they use the assets that they have on their capital asset register. It's finally going to make people realise what they've got and how they're using it….. It's going to result in a need for improved information as well (Interviewee 4 - Senior Assistant Director of Finance).

Questionnaire

The questionnaire respondents were asked if elements of capital charges were incorporated into the Trust's budgeting arrangements at central level. The majority (n=12) stated that interest and depreciation charges were included but one respondent reported that neither element was present and there was one non-response to this question.

When asked specifically about how interest elements in the Trust's budgeting were calculated, four respondents stated that it was based on 3.5% on relevant net assets, sometimes on a quarterly basis with an appropriate adjustment in month 12 to ensure interest over the year had been calculated correctly. Other replies included 'as per actual', 'as per WAG Manual' and others referred to future estimates of fixed assets or capital charges. Depreciation elements were mainly included as an annual estimate for the following year, using a straight line basis with varying asset lives.

The replies to the question asking respondents to estimate their Trust's backlog maintenance were interesting. Ten were able to provide very detailed figures ranging from £2m to £72m, with an average of £33m. One respondent stated that there was little backlog maintenance and one did not know the estimate. The remaining two respondents did not answer this question. On average, just 22% of this backlog maintenance was planned to be undertaken in the next five years in replies received from eight of the Trusts, and ranged from 0% to 70%. Another respondent did not know how much would be undertaken.

When questioned about how their Trust budgeted for the financial consequences of asset disposals a varied picture emerged. In most cases Trusts did not dispose of assets that had not been fully depreciated, unless there was an unanticipated asset/equipment failure. Budgeting for disposals was a function of the submission of a replacement business case or inclusion into the annual capital programme, but there did not appear to be any specific budgets for asset disposals. One Trust indicated that disposal proceeds in excess of £1m were returned to WAG. Another was unclear, believing that losses on disposals could be neutralised using accelerated depreciation and funds flow. The planning for the financial consequences of asset disposals in Trust budgets was a short-term exercise varying from one to three years, if it was done at all.

When a variance arose between the budgeted and actual capital charges, 12 of the 14 respondents stated that they would participate in any resulting consequences. The main action taken, if any, tended to be some form of review of estimates with actual, identifying consequences of any variances and the implication for future funding of capital charges. This action was taken at a Trust level and not at an individual asset or even department level.

In only two cases did budget holders currently receive information about capital charges, although a further four thought budget holders would receive this information in the future.

Only three respondents felt that the introduction of depreciation and capital charge aspects of RAB had improved budgetary control. Specifically, this included making the Trust review the use of its assets and ensured regular revaluation exercises of completed assets; better decision-making and an incentive to manage the NHS estate; and an improved awareness of capital charges at a strategic level. Most comments were negative relating to hindering major capital programmes through the impact on the affordability of new schemes, the introduction of uncertainty and misunderstandings, and a lack of delegation to budget holders, as demonstrated by the following anonymous responses:

It has not made any real impact on management of capital assets but has certainly had an impact on affordability of major capital investments i.e. the capital charges impact has put pressure on reducing other revenue costs in the business case in order to make the scheme affordable.

Capital charges funding is fixed into the Trust's allocation without recognition of future capital indexation issues and the Welsh Assembly Government's plans to triple capital expenditure across Wales.

Capital charges becoming 'real' are hindering capital developments.

Introduced uncertainty into forecasting the revenue out-turn as actual capital charges are not known until the fixed asset accounting is completed at the end of the financial year.

The providers of capital funding do not understand or consider all revenue consequences – often assuming that revenue efficiencies

will cover capital charges – which on fully depreciated assets or leased asset (if replaced) is not so.

Whilst in reality it has improved awareness at a strategic level and [about] the impact of [the] capital investment/programme management decisions on revenues until devolvement takes place [it is] difficult to get grass roots ownership.

Not really as it has not been devolved to budget holders yet.

Summary

Data collected from both the interviews and the questionnaire reveal a lack of diffusion of RAB that has consequently had a limited impact on the management of the fixed asset base. The capital charges became operational at Trust level as the result of imposed hierarchical diffusion and are generally managed only centrally. There has been minimum delegation to those managers responsible for the day-to-day use of the assets, although there have been some moves in this direction. Further, the charges are seen in a negative light as being a hindrance to the delivery of a capital programme consistent with a strategy that is intended to develop a capital base appropriate for the objectives of the Trust. The next chapter explores the context of the limited extent of diffusion and seeks to explain this in terms of the extent of organisational coupling.

6 Organisational Coupling

Introduction

This chapter examines whether the components of a loose-coupled system were present in the NHS in Wales. The diffusion aspect examined in chapter five had already demonstrated loose-coupling characteristics, with health-care professionals driving asset acquisition policy within a government-inspired reform process. This chapter presents the results of the qualitative analysis of the formal semi-structured interviews with senior officials at the two Trusts together with the results of the questionnaire survey, as described in chapter four, insofar as they relate to organisational coupling.

Interviews

Loose-coupling entails departments exhibiting independence from each other whilst also functioning together to deliver the intended outcomes. In the NHS in Wales, there was evidence that two asset registers were being maintained, one in the Finance function and one in the Estate function. However, there was a degree of ignorance in Finance about the Estate register and its function and vice versa:

> *Estates have the capital asset register, which we effectively manage, and then there's a non-capital asset register, which they manage* (Interviewee 4 - Senior Assistant Director of Finance).

When asked about how the Estates Department managed their asset register, finance had no knowledge:

> *I have no idea* (Interviewee 4 - Senior Assistant Director of Finance).

However, finance had to employ someone to manage its asset register:

> *We have an estate database officer* (Interviewee 4 - Senior Assistant Director of Finance).

Further, these asset register records did not appear to be integrated with the financial accounts:

> *Not that I'm aware of. I'm not sure whether the director of finance in his overall report includes reference to that. The records though have to be annually returned to the Assembly once the board is aware of them as part of the review of the estate. Oh yes, they would have to be because [name of finance director removed] would include some of the backlog issues in his overall report. It's not a task that we actually get involved in apart from providing information. What he does with it I'm not quite sure* (Interviewee 3 - Estates Manager).

This separation of functions was apparent in Trust 2, where accounting information was regarded as a 'foreign language' by the Estates function. When they prepared their records and made adjustments to them they were neither aware of the impact on the financial accounts nor did they appreciate the accounting consequences:

No, not at all. That is something which is a foreign language, it is something that we would not get involved with at that level (Interviewee 5 - Assistant Estates Manager).

The revenue consequences of capital schemes were not a consideration in estate planning decisions and prioritisation was purely a function of service risk assessment with no financial consideration:

Not normally. If you take our discretionary allocation, £Zm, we get the £Zm and we see the revenue aspects of that parked somewhere in finance and we develop the list of projects based on a risk assessment and get on with the project (Interviewee 5 - Assistant Estates Manager).

The integrity of the systems was also questionable, with verification of assets not taking place routinely. Furthermore, verification of the estate asset register was completed by the Estates function and the financial repercussions of inaccurate data were not apparent:

In the last 12 months they've started the rolling asset checks across departments (Interviewee 5 - Assistant Estates Manager).

Thus, the asset registers maintained by Estates may have been out of date:

Yes, what we haven't historically been very good at, is doing the rolling asset checks from Estates every year (Interviewee 5 - Assistant Estates Manager).

The behavioural consequences of such a mismatch could possibly be that, when they saw an item on their budget statement, they would start saying 'hang on, I haven't got that':

> *Yes, we've started to see that…The asset manager …does a verification within that department. But …because there are no financial implications, there's not really an incentive there to make sure that it's 100% accurate and if they do transfers to other departments, they're not particularly good at saying that the asset has been transferred…people catching up and saying 'that piece of kit went in 1999'. I think as we remove assets from the capital asset register, the capital charges will decrease* (Interviewee 5 - Assistant Estates Manager).

While these systems appeared to operate reasonably independently, there were repercussions for the Estate function, who were the asset managers, as a result of the capital charge information produced by the Finance function, but there was no involvement of the Estates function in the determination of this information:

> *None. But I'm always affected by it [depreciation and capital charges] as it's the kiss of death to a lot of business cases* (Interviewee 3 - Estates Manager).

Further, the only input into the depreciation charge on buildings was from finance:

> *No. That's finance and the Trust Board* (Interviewee 3 - Estates Manager).

It could be argued that there was also evidence of mediating behaviour by managers as information was provided to the government but not disseminated to divisions, or even to groups responsible for asset management:

I'd be very surprised if it [finance asset register] is used by the group that has … the responsibility for the Trust's assets. … I suppose part of it is about how does the accounting and the supporting information about a piece of kit adequately describe its genuine use and value within a department. It may be that it would work five years beyond what the accounting life should be. So perhaps you start to lose some element of how much value it delivers (Interviewee 2 - Director of Finance).

The convoluted way in which capital expenditure decisions were made can be witnessed in the following quotation which outlines the process. This lengthy quote demonstrates the loosely-coupled organisational features, with a rigid central control process, over the total capital spending allocation, that then changed to a different system to produce the desired outcomes at the service level:

The Trust Board gives a proposed capital programme for the year based on the available capital funding that we have in the Assembly. … we've got £Nm discretionary capital and then we've got about £Pm which is specifically for All Wales central funding scheme… We [finance] will tell Estates what the capital allocation is for this year. The Estates Director will go away, he has put in place a risk assessment tool within the Trust whereby each Division is asked to [determine] their major risks of equipment and building. They put together a proposed capital programme, which inevitably will be way in excess of £Nm discretionary amount available. The Trust Board will set aside a broad sum for backlog maintenance £Rk, for IT equipment £Sk. It goes back then to each of the individuals in charge of that area, so if it's the medical equipment panel chaired by the medical director where they will have a list of equipment required, risk assessed and the agreements made (Interviewee 4 - Senior Assistant Director of Finance).

However, the effectiveness of such a loose-coupled independent system was in doubt, with the term 'asset register' used to refer to different information. There were also a series of such registers all designed to meet the needs of different parts of the organisation:

> *We've got an asset register and we keep records of all the physical estate, all equipment, medical, non-medical. We also have land and property register, where we maintain a database on freehold/ leasehold properties and property ownership* (Interviewee 5 - Assistant Estates Manager).

This was different from the asset register that was managed by finance and there was no linkage into this:

> *What I'm referring to as the asset register is the land and property portfolio…but the information from that feeds into finance's register and all of the information is held on capital charges… we have the main asset register and then over and above that, which is not part of estates, medical equipment and medical electronics will maintain their own database of items. This is primarily in relation to the state of the equipment, maintenance arrangements and when something is coming in for renewal or maintenance. That sort of database is slightly different from the one kept by finance which is very much based on depreciation and the life of an asset* (Interviewee 5 - Assistant Estates Manager).

The 'value' of an asset was not reflected in the estate asset register, but it held more qualitative data such as maintenance agreements. This information was the key driver for asset replacement policy:

> *As far as I know… it's simply, we have that asset, it cost this much and this is its location. We don't necessarily record the state of*

the physical asset … I'm really referring to equipment, plant and machinery here. However, in terms of plant and non-medical equipment, Estates would be more interested in the maintenance agreements that are in place. Those maintenance agreements provide the means and mechanism for monitoring the state of the asset deterioration. This will lead to advice on how to replace the asset. As regards to a definitive way of evaluating the life of an asset, I couldn't honestly say that that was something that is done (Interviewee 5 - Assistant Estates Manager).

Questionnaire

One set of questions in the survey asked for information about the frequency of updating the finance asset register (Table 6.1). A mixed picture emerges including non-responses to some questions, especially relating to 'Disposals' and 'Other revaluations'. Updates for acquisitions and disposals sometimes occurred quite frequently, however, most updates were quarterly or annually, especially those for indexation.

Table 6.1 Frequency of updating the finance asset register

	Weekly	Monthly	Quarterly	6 months	Annually
Acquisitions					
Equipment	0	2	9	0	3
Land	0	1	9	0	4
Buildings	0	1	9	0	4
Disposals					
Equipment	1	0	7	0	3
Land	0	0	7	0	4
Buildings	0	0	7	0	4
Indexation					
Equipment	0	0	0	0	13
Land	0	0	0	0	13
Buildings	0	0	0	0	13
Other revaluations					
Equipment	0	0	2	0	6
Land	0	0	2	0	6
Buildings	0	0	2	0	6
Depreciation charges					
Equipment	0	1	7	0	5
Land	0	0	7	0	4
Buildings	0	1	7	0	5

Unsurprisingly, no Trusts recorded information on the physical condition of equipment, land and buildings on the asset register held by the finance department.

Table 6.2 reports how often test checks were conducted from the finance department's asset register to the physical assets. Equipment was generally checked annually but, if non-responses are taken at their face value, land and buildings were often not checked at all and, if they were, it was also annually.

Table 6.2 Frequency of asset verification

	Weekly	Monthly	Quarterly	6 months	Annually
Equipment	0	0	1	2	10
Land	0	0	0	0	7
Buildings	0	0	0	0	7

Ten of the Trusts were aware of another asset register maintained by another department, but four were not. In the follow-up question, respondents indicated that other managers, such as Electro-Biomedical Engineering (EBME) and Medical Engineering, held asset registers of equipment. In addition, Estates Departments held registers of property assets.

The infrequency of the maintenance of the asset register, on which capital charges were based, indicated that this was not used for operational decision making. Furthermore, the existence of alternative registers indicated that loose-coupling was a feature of most of the NHS Trusts in Wales.

Summary

There was clear evidence of a loose-coupled system. A number of departments maintained their own records of assets and, while sometimes aware that other registers existed, they did not integrate their information with that available elsewhere. Each register was kept for a specific purpose and recorded only data relevant to that purpose. In these circumstances, it was possible that strategy delivery was sub-optimal as all the ramifications of particular approaches were not apparent or considered. In particular, the financial consequences were not appreciated. This effect was reinforced by the lack of delegation of budgets for capital charges which removed the incentive to become

involved in the financial aspects. Even if delegation took place, there remained the need to overcome the fact that a financial quantum attached to an asset did not necessarily reflect its ability to deliver appropriate outputs. The next chapter discusses the implications of depreciation and financial reporting.

7 Depreciation, Developments and External Reporting

Introduction

The introduction of RAB gave visibility to aspects of costs associated with owning fixed assets, namely depreciation and interest, and the amount invested in such assets. Values for these charges were generated by the application of specific accounting rules. This chapter reports the perceived impact of this as disclosed by the interviews and questionnaires.

The consequences of capital charges

The potential for depreciation to provide meaningful information in the private sector has been questioned and it is no surprise that the interviews confirmed this to also be the case in NHS Trusts, where the government-imposed capital charge mechanism included a 'merry-go-round' of cash distribution and repayments.

> *Capital charges have not been real. They've always been 'nilled off' and therefore why worry too much about the impact of the ongoing cost of capital? If at the end of the day it's not something that you have to account for, we'll not have to live with because you didn't have to make decisions by it….. If your estimates went up by £3m then there would be a corresponding £3m pounds worth of additional income that would cover it off. If they went down by £3m there would be a corresponding reduction. There were no*

> *decisions immediately made. If there were decisions being made then they were very much at a Treasury/Assembly level - they didn't really have much impact on the day to day users such as ourselves* (Interviewee 2 - Director of Finance).

There was no attempt to encourage managers to make the most efficient use of their physical resources and the charges did not feature in the internal operation of the entity. The exercise of calculating charges was undertaken merely to comply with central government regulation and provided further evidence of limited diffusion and loose-coupling.

Even the central government depreciation policy itself was seen to be flawed in many cases, producing information that was less than meaningful. The following example indicates how Trust 2 had varied its accounting policy to reflect more accurately its asset consumption.

> *Yes, it's straight line, historic costs, indexed up as per Assembly guidelines, the manual of accounts… The only thing within our remit is that we have the opportunity to vary lives. It used to be prescribed standard lives for each category of asset. We now have the opportunity to vary the life of an asset from that standard life, provided we can satisfy our auditors the reason for doing it. A good example is an MRI scanner. Their standard lives are still 10 years, but there's no way an MRI scanner lasts 10 years these days. So there's advice …from the Royal College of Radiologists which says 7 years max for an MRI scanner. So we put it in now as 7 years but we've got to report it. So that's the only thing which affects depreciation* (Interviewee 4 - Senior Assistant Director of Finance).

The questionnaire responses revealed that the depreciation and interest charges generated for a Trust's business plans usually used a

manual calculation carried out by the financial planning department or divisional finance department depending on who was on the project team for each Business Case. Depreciation was usually calculated on a straight line basis over the life of an asset. Interest was charged at 3.5% of net relevant assets for the first 30 years and 3% thereafter.

The respondents surveyed were asked to comment on the neutrality of the resource consequences of capital charges for their Trust (Table 7.1). Twelve of the respondents agreed that the consequences were not neutral with two non-responses to this question. In one case it was noted that the surplus on capital charge funding was returned to the LHB. Respondents stated that the Trust had to bear any shortfall in funding created by capital charges in excess of an inflationary uplift; one indicated that an unfunded increase in capital charges required significant savings to be made in operational service budgets. WAG funded capital schemes required additional LHB funding, but one respondent indicated that capital developments were delayed considerably, even after having capital finance approved, as revenue funding issues had to be resolved with those commissioning the health care. There was also a concern that the resource level that had been capped by WAG two years ago had only increased by inflation since. However, actual capital charges had increased above this level, resulting in a resource shortfall, which had to be managed internally within the Trust's budget strategy.

There was an apparent mismatch between the accounting arrangements of the Trusts and their commissioning bodies, with one respondent stating that Trusts did not operate under the resource budgeting arrangements that LHBs and the Welsh Assembly Government were operating under.

When asked about the cash consequences of capital charges, again ten stated that these were not neutral (Table 7.1). Specifically one respondent commented that the depreciation level assumed in the External Financing Limit (EFL) was not fully funded by commissioners so the Trust's capital expenditure represented a real cash outflow. Another

stated that WAG still required the dividend payment to be based upon the capital charge estimates, even though they were not fully funded. Similarly any scheme, unapproved by the LHB, would have a cash impact on the calculation and payment of the dividend.

Table 7.1 The neutrality of capital charges

	Yes	No	No response
Are the resource consequences of capital charges neutral for your trust?	0	12	2
Are the cash consequences of capital charges neutral for your trust?	2	10	2
Are the resource consequences of capital charges scheduled to change?	0	11	3
Are the cash consequences of capital charges scheduled to change?	2	10	2

Respondents were specifically asked if the resource consequences of capital charges were scheduled to change and eleven stated they would remain unaltered (Table 7.1, question 3) and three Trusts did not answer this question. In written responses it was indicated that additional capital charges would arise if the WAG provided discretionary money for additional fixed assets above the amount in the Trust's initial plan. A similar response mentioned that they would change depending on the success of Business Cases submitted to the Welsh Assembly Government and what the commissioners of health care were prepared to support or fund. Of those that thought it would change, one specifically mentioned that the change would occur when RAB was implemented at Trust level, indicating that discussions had already commenced at that Trust.

When asked about any scheduled changes to the cash consequences of capital charges, one respondent stated that, as the charge increased as

more capital became available, the cash allocation would not be sufficient to meet the actual costs.

Internal effects

The impetus behind the accounting reform was that depreciation and notional interest provided visibility to the cost associated with fixed assets. However, it can only have an incentive effect on managers who use these assets if diffusion takes place to enable reports of capital charges to reach lower down the organisation than the 'head office' level. One unique feature of the capital charge system is the government's policy of counterbalancing cash transfers, designed to prevent Trusts building up cash reserves. This characteristic of the accounting system ensures strong central control in what has already been established as a loosely-coupled organisation:

> *I think they [Welsh Assembly] treat us like kids really. They say, 'submit a business case', which means they delay it for 3 or 4 months when they've got no intentions of doing it because they haven't got any money. So why make us do all that work on the business cases instead of just saying forget it, it's not going anywhere* (Interviewee 6 - Estates Manager).

Central control also prevents efficient asset disposals and acquisitions at a local level as large asset receipts, say from the sale of surplus land or sale of a hospital site, have to be returned to central government, with no guarantee of the Trust recovering any of the cash for reinvestment in replacement assets. This situation is further exacerbated in a cash-stretched service that generates no surplus income, resulting in an increase in the deterioration of the estate:

The money just isn't there to be able to address the problems. To illustrate, the gap between what we've been able to invest in backlog and the need, means that the estate is worsening. The problem is getting to a point where services will be affected. But there isn't the money, so there is a dilemma. And then, we've got money which is tied up in assets that you can't free up (Interviewee 5 - Assistant Estates Manager).

Any other business would say that if they had an asset at [name of hospital removed] that was worth £20m on the open market compared to the net book value, sell it and re-provide the facilities, better facilities, somewhere else in [name of place removed]. So I don't think we use our assets particularly well, as a business would. Now there are issues about closing it [hospital], but that's the politics. So we tend to stick with what we've got rather than use our assets more dynamically (Interviewee 6 - Estates Manager).

Generally we don't look to dispose of assets where there is a loss. That tends to come around as a bit of a surprise which we couldn't avoid. That may be something again in terms of risk, to what extent are we picking up through the asset register the potential for disposals that could have a hit (Interviewee 2 - Director of Finance).

There was also disquiet about the lack of PFI initiatives in Wales, as PFI did not receive political support, but without any extra cash in the system, no other alternative was foreseen:

…unofficially we're not to proceed with PFI as it's looked upon very unfavourably. Yet, in reality, given the size of the backlog situation in Wales, the only realistic way forward is partnership in some shape or form with the private sector. It's absolutely critical (Interviewee 5 - Assistant Estates Manager).

While the efficacy of PFI schemes has political repercussions, this Trust manager had no qualms about using private money to fund capital acquisitions and maintenance:

> *I'm not bothered about who builds it or who maintains it. All I want to do is get patients through it. I don't think we need to manage it or anything. There are a lot of people who wouldn't agree with that because PFI has got a bad name* (Interviewee 6 - Estates Manager).

As a result of the restricted discretionary capital allocation and the delays in the process of submitting business cases for All Wales funding, this Trust was actively trying to use revenue funding to undertake capital schemes:

> *Currently, PFI is not the flavour of the month, but to get around that, we're more likely to submit a business case, which could take anything between 7 months to a year. It's easier to try and 'revenue-ise' projects assuming you can tick all the boxes for a minor service* (Interviewee 6 - Estates Manager).

New capital investment was viewed as the only way to solve the Welsh waiting list problem and the availability of capital in England was a reason behind their success in reducing patient waiting times:

> *I think that the English regions had so much capital last year that they handed back more than Wales was spending. …English waiting lists are a fraction of what they are in Wales, in almost every speciality, particularly in orthopaedics, so England is now able to say because they spent £20m on a new unit in Kidderminster they are able to say to the Welsh health community 'we now have the facilities to do your orthopaedic treatments'. The only reason*

they are able to do that is because they had the capital investment in the first place (Interviewee 3 - Estates Manager).

However, current waiting list initiatives were seen as wasteful and inefficient:

You've got further external pressures on the service, reduce waiting times and improve service standards, which is creating more pressure to use your assets differently. This compounds the problem, which means we've got to put more money after wasted money (Interviewee 5 - Assistant Estates Manager).

However, a diffused capital charging accounting system could have repercussions in actual management practices, but these were not apparent to managers yet:

Where the impact I think is going to be greater is estates because they are now going to have to ensure that the assets are where they are supposed to be … I think we're going to go back to the very early days of capital charges when it was new and everybody was keen. .. there will be resource implications but …I don't think people realise the implications that there are going to be (Interviewee 4 - Senior Assistant Director of Finance).

Even if information about the cost of assets was available to managers, there would be some doubt about whether this would change established working practices to reflect the economic reality:

You know that you have insufficient space for delivering certain services, but the way service works is a 9 to 5 basis Monday to Friday, you're not necessarily sweating your assets. So you're not getting best return or best use of that capital asset …because

of working practices… (Interviewee 5 - Assistant Estates Manager).

The questionnaire also addressed the internal effects of capital charging and respondents were asked to describe how potential capital expenditure schemes were identified in their Trust. There was a wide diversity of responses to this question; however, there was a degree of consensus around a three-year capital programme and regular meetings (quarterly or even more frequently) of a capital management group or the like. These groups tended to prioritise bids received from each division depending upon factors such as funding availability, recommendations and Trust performance. All bids had to be followed up by Business Cases and approved by a Trust board.

Three quarters of the respondents also stated that they were involved in generating Business Cases as well as preparing the financial accounts.

The questionnaire contained a question asking whether the respondents had any recent experience of PFI schemes at their Trust. They were also asked about the impact of depreciation and interest charges on these Business Cases compared with the non-PFI alternative. There were only three responses to the qualitative elements of this question and only two respondents had had any recent experience of preparing PFI schemes. However, the replies were interesting. One stated that there were significant accounting issues associated with PFI and capital charges that required resolution and went on to state that PFI demonstrated the weakness of the capital charges process in relation to buildings and 'funding arrangements' for internal costs. Another respondent wrote that the avoidance of capital charges was one of the benefits of PFI schemes as they were not subject to depreciation and the carrying value in the balance sheet was less than if the same asset had been purchased at the same time. The third respondent stated that most schemes had been 'off balance sheet' and so this was not an issue.

Respondents were then asked to describe what the impact on any future Business Cases of their Trust would be if depreciation and interest charges became 'real'. Nearly all replies contained concerns about the affordability of such schemes, either from obtaining the support of the commissioners of health care or from funding through revenue savings. This reply neatly summarises the responses:

> *It will make the business case argument more difficult in as much as a major new hospital development will attract millions of pounds in additional capital charges and to make this affordable other revenue costs have to decrease or commissioners have to put more money into the revenue implications of the project meaning there is less available for other health developments. … Capital has a cost and this has to be taken into account somehow. However, the NHS in Wales is not in a market place and we cannot increase top line income through offering better facilities that might be the case with an investment project in the private sector where the investment may be partly justified by assumptions about price increases or improved market share.*

Thirteen of the Trusts currently had new schemes in the All Wales Capital Programme. These varied from a new hospital costing £37m, due for completion in June 2007, to replacements of major pieces of clinical equipment such as a linear accelerator and new A&E departments. Thirteen schemes were listed, totalling £124m, with an average value of £9.5m. This was skewed by the new hospital and the median was £6.2m. Total scheme costs were analysed, even if respondents listed the planned annual expenditure over more than one year.

Finally there was a question that allowed the respondents to make any additional comments. Only four took this opportunity and two are worth reproducing in detail:

The capital charges system, as currently constructed, is fundamentally flawed in relation to buildings and associated costs. It does not allow for any robust financial projections to be made in relation to the business cases and often schemes are viable or not based on the 'valuation' applied abstractly by the District Valuer. The system and other associated restrictions, do not allow decisions regarding operational leasing etc. to be made purely on commercial considerations.

It seems to me that making capital charges 'real' distorts the financing regime of Trusts. The reason for this is that in the commercial world companies will invest in capital projects if they add to shareholder value (positive net present value in financial terms). In NHS Wales, Trusts have a largely fixed income stream and therefore capital investments are rarely able to show a positive NPV because we have no source of additional income. So, for example, a new build project that improves throughput and quality would attract income at a full or indeed premium rate in the private sector. Trusts, however, will be lucky if they are able to assume only marginal costs in any business case justification and therefore invariably the project delivers a negative net present value and hence the revenue streams will be insufficient to fund capital charges. The affordability argument surfaces time and again with commissioners as a consequence and delays the approvals process. What is the point of this process then when capital is rationed at Assembly level anyway? It has no impact on behaviour other than to slow the capital approvals process further.

External reporting and accountability

During the interviews capital charging was seen as a finance-driven rather than a management-driven exercise. Certainly there is evidence

that the external reports of assets are not used in asset replacement or acquisition decisions. These financial reports are used by the Welsh Assembly Government to compile aggregated national data but the utility of that information is questionable as it is based on source data of limited validity, demonstrating the problems of loose-coupling.

The questionnaires revealed that eight of the fourteen respondents worked in departments that provided capital-related information for the inclusion in the descriptive part of the annual report (i.e. other than the financial accounts). Typically this included a report on developments such as a description of some of the major schemes started or completed during the year (including PFI), but some included detailed accounting methodology, such as information about the capitalisation of assets, the criteria used, valuations and depreciation.

Only four respondents felt that the introduction of depreciation and the capital charge aspects of RAB had improved accountability, including an increased awareness of the revenue consequences of capital expenditure; this was especially so when budget holders were aware of the financial issues. Eight stated that RAB had not improved accountability, but this included two who qualified their response by stating that improved accountability might arise in the future. Two did not respond to this question.

Summary

The RAB reforms, as reflected by capital charges, have not diffused into the management accounting practices of the two Trusts. However, there were quite significant effects as the impact of the cash allocation and repayment system, the lack of cash in general and the political reluctance to endorse PFI schemes, had led to an underinvestment in the NHS estate in Wales and perpetuated the existence of an inefficient asset base relative to the current demands on it and the desire to deliver

the required strategy. Capital charges were seen as just another hindrance in the approval process of new projects and the lack of cash for capital investment and the dearth of PFI schemes added to the frustration of managers anxious to enhance service delivery. Accounting information about fixed assets was only used to compile reports for central government where even the utility of aggregated data was questionable and its enhancement of accountability limited. Restricted use was made of capital accounting information in external reports, where only highlights such as new capital schemes were commented upon.

8 Conclusions and Recommendations

Introduction

This chapter draws together the findings from the interviews and questionnaire and relates them back to the questions originally posed in chapter one. In interpreting the findings the themes from the literature review, chapter two, have been utilised and set against the background described in chapter three.

Are the claimed potential benefits of RAB being accomplished?

Recognition of the opportunity cost of fixed asset acquisition or construction

Under RAB the cost of an asset is expressed in two ways: first, the capital cost of acquisition is shown in the balance sheet and is regularly indexed; and second, the revenue cost resulting from the depreciation and the notional interest charge, based on the written down value in the balance sheet, is included in the Income and Expenditure Account. In a climate of capital rationing, where it is not possible to undertake all desirable fixed asset investments, it is theoretically possible to list potential projects in order of return and carry out those with the highest return. The opportunity cost of any project from the set that is undertaken is that of foregoing the benefits to be derived from a project that is rejected where the opportunity cost is the next best alternative which is foregone whenever an economic decision is made. An ideal allocation mechanism ensures that an optimum set of projects is undertaken so that an increase

in resulting aggregate benefits cannot be secured by substituting a rejected project for one that has previously been accepted.

Ranking projects in the NHS involves a high degree of subjectivity because of the intangible nature of the returns from delivering improved health care. The NHS is not a market and so, by implication, market-based returns cannot be used to decide which projects to undertake. However, the cost side of the analysis can be informed by data about the amount of investment required and its impact on costs, as expressed through capital charges. This is starting to occur at Health Board level, but is not yet permeating to lower levels of the organisation where the demand for capital spending is generated. Also, the financial consequence of an investment decision, as expressed in accounting statements, is not a driver of the capital investment programme that is mainly determined by the amount of cash available. To attempt to introduce depreciation charges into managerial decisions would require education and training, as managers currently perceive that the depreciation policy is flawed.

Thus, this research did not find any evidence that the opportunity cost of capital expenditure, as reflected through measures based on resource accounting, was a matter of active consideration when acquiring or constructing fixed assets or determining investment programmes.

The allocation of fixed assets to a functional unit responsible for managing them

One of management's responsibilities is to safeguard the assets entrusted to it by the providers of finance for that organisation. Fulfilling this obligation requires that adequate records are maintained of the fixed assets; these can then be used as the basis for checks against assets physically present. Such records could be kept independently of any accounting requirements, but there is a need to ascertain their value to include them in the accounts, which makes them an essential part of the accounting system. Uniformity throughout Wales has been established,

at Trust level, because the WAG has detailed the policy to be adopted by all Trusts.

The NHS adopted accruals accounting as part of its reforms in the 1990's but, prior to that, asset registers had been of low priority and so had to be created at that time for accruals accounting purposes. Once a register has been produced, however, the individual assets that it contains can be identified through appropriate coding and updated for acquisitions, disposals and internal transfers.

However, even though the information about the location of assets is available, the responsibility for the financial consequences of asset ownership has not been devolved; only two cases were identified where departmental budget holders received information on capital charges. The outcome of this lack of involvement is an absence of feeling that there is any grass roots ownership of the assets register and hence there is no concern for its accuracy.

With asset registers, accounting change has been a catalyst for the adoption of what, in any well managed entity, is good practice. The adoption of RAB was a sufficient condition for their creation but it was not a necessary condition. Taken as a whole, it can be concluded that the first part of the claimed benefit, the creation of asset registers, did in fact transpire. Similarly, the identification of assets with functional units was achieved, but this information has been rendered largely redundant because it is not used as the basis for managerial decisions at the operational level. However, this information could be of future use should managerial responsibility be devolved.

The identification, proper recording and maintenance of asset records

Once an asset register has been created it is important that it is kept up to date. It should be revised as a matter of routine for acquisitions, disposals and transfers so that the aggregate values it contains are the

same as the totals carried in the related nominal accounts. It became clear during the research that separate registers are kept for different purposes. In general, one was maintained by the Finance function and another by Estates with others arising on an ad hoc basis in other departments. These registers are not linked and serve different purposes. The finance register is used for generating values for the accounts and audit verification while the Estates register is concerned with the maintenance and condition of assets.

The research found a lack of financial consequences of the register used for accounting purposes because it was not being updated frequently. It was particularly noted that the lack of financial consequences meant that transfers between departments were not always recorded; presumably this would change if charges were delegated as the department losing the asset would be keen not to continue to be charged with its related costs. In the main, registers were updated every three months, but indexation, which has an impact on the related costs of depreciation and notional interest, was uniformly recorded only once a year. Similarly, verification of assets was mainly an annual event; although Estates endeavoured to obtain accuracy with regular verification, this did not interact with the financial based register.

Again, what is apparent is the lack of the financial consequence of asset ownership, resulting in a low priority being assigned to ensuring that the registers are up to date and accurate. RAB has brought about the implementation of asset registers, but their ongoing accuracy depends on the information they produce being of use and having real consequences. Once departmental managers have a need for accurate real-time information, then they will have an incentive to ensure that the register is a current reflection of reality.

The research has identified that the foundation of an accurate set of asset records has been established, but the fragmented approach and the lack of financial consequences permeating below the centralised level

means that the impetus has not been present to integrate asset registers into the ongoing management and control system.

The completion of an asset register is part of the process of implementing accruals accounting. However, other independent asset registers are kept by some departments. Responses suggest that it is these other registers that contribute to asset planning and management while the register kept for accounting purposes contributes only to the accounting objective. The overall finance-based asset register will only contribute when the costs of having assets are reflected in the budgets of the managers using them and these managers are also in a position to influence the costs. In addition, financial information is only a minor part of the decision on how to use assets. To minimise average costs based on accounting considerations would result in an attempt to utilise the assets all the time, but any attempt to do this would have other consequences, such as the cost of additional labour and maintenance and the need to persuade staff to work unsocial hours.

Renting, buying, retaining or disposing of assets

The choice of whether to rent or buy an asset results in different cash flows. Buying has a large immediate cash outflow followed by ongoing costs, such as maintenance, while renting results in a steady outflow over the life of the agreement; there may also be different ongoing costs if the rental agreement includes elements of upkeep. The most theoretically sound method to decide whether to rent or buy an asset uses discounted cash flows. In the context of a non-profit organisation, like the NHS, the alternative cash outflows should be forecast and discounted back to a net present cost; the option with the smaller net present cost is then chosen. This model is based on cash which is not encompassed by accruals-based measures such as depreciation. When a Trust acquires an asset it incurs costs, depreciation and interest, based on the asset's

written down value, and these can impact on the rent or buy decision, even though they are just book entries.

A number of issues related to asset acquisition and disposal arose from the research. First, it is clear that accounting information does not give an adequate description of an asset in terms of its contribution to delivering health care. Second, a Trust does not have the same freedom to manage its assets as in the private sector, from where the RAB accounting approach has been drawn. Trusts are limited in geographical terms as the services have to be provided locally; liquidating all the assets and reinvesting in a remote, but cheaper, area is not an option. Third, a Trust's decisions for significant acquisitions and disposals are subject to scrutiny and control at the political level.

Rather than aiding decisions, the RAB accounting consequences can in fact be a hindrance. A disincentive to dispose of an asset can arise if this results in a significant loss, as this is charged in the Income and Expenditure Account and, thus, affects the year's out-turn in terms of whether the Trust has broken even. Normally disposal decisions are driven by the acquisition of a replacement rather than being viewed as a separate activity, or as a short term solution as a result of a failure. Another disincentive arises from the fact that Trusts are not permitted to retain cash received from the sale of assets above a limited amount; any surplus goes to the WAG for use in funding the All Wales Capital Programme.

At the time of the research the capital asset charging system, using depreciation and notional interest, was neutral in that money was recycled around the system, as explained in chapter three. However, managers expect that there will be a significant impact of capital asset charging when these capital charges are no longer automatically funded, and so they will have a redistributional effect on the money flowing to individual trusts. In these circumstances, accounting entries may have an impact on the decisions of whether to rent or buy and retain or dispose. It is to be expected that surplus assets will be disposed of to avoid the

charges but this will have to be weighed against 'taking a hit to the bottom line', as one interviewee put it, if an asset is disposed of at a loss.

Better planning and management of assets

Planning is underpinned by an assumption that rational processes can be used to direct resources and define appropriate future action to produce desired outcomes. In the context of capital assets, this involves planning acquisitions and disposals together with their maintenance. These activities are driven by the strategy of the organisation, as described in chapter three, and the need for relevant information to be successful. For those assets that are already owned, data is needed about their physical condition and the financial consequences, such as maintenance costs, of retaining them. Planning for the future requires financial information about the impact of alternative courses of action. In summary, planning results in deciding in advance what to do, how to do it, when to do it and who is to do it.

A constant theme in responses to the research questions, both in interviews and the questionnaire, was that, in Wales, the Capital Asset Programme for development and maintenance takes place in the presence of very restricted cash availability. Notwithstanding the limited money available, capital spending at the local level is a convoluted process. As a result, the planning and management of assets by Trusts cannot develop the asset base required to meet their published strategies.

Another finding is that, in an ideal world, Trusts would not start from their present position to deliver the services demanded of them. As a result, information relating to the present position might be misleading. For example, the identification of individual assets in a register allows each one to be assessed for its need for backlog maintenance. The sum of these values represents a substantial call for funds but, if all this money was to be made available quickly as a lump sum, it is likely that, rather than spend it on maintenance, it would be used to acquire a completely

new set of assets, as the total cost of repair exceeds replacement cost; the problem is the timing of the availability of cash to expend on new assets.

Other factors that are not under the Trusts' control are also influential on capital asset decisions. PFI is not a politically favoured route in Wales. Although the Trusts are not concerned about the manner of funding, they are interested in acquiring assets to enhance the service that they provide. Whatever amount of information is available, delays are caused by the need to prepare business cases and negotiate with the health care commissioners; schemes are often agreed, based on what the commissioners would pay rather than any alternative criteria based on accounting measures.

Resource accounting has started as a backward-looking exercise that retrospectively measures flows and stocks of resources between and at dates in the past, present and future. The use of such information lies in monitoring the stewardship function of management and providing actual results to compare with budgets; the outcome of these comparisons can then inform future budgets and actions. The budgeting aspect relates to specifying expected future outcomes for later comparison with actual results, which contributes to the iterative facet of control. As a package, the introduction of RAB could contribute to better planning and management of assets through imposing asset-related charges that should discourage the retention of surplus assets, and provide a comprehensive framework for planning and control through the budgetary system. It appears that this is only partially being achieved as the system only operates at a high-level and has not diffused downwards throughout the Trusts.

Improved awareness of maintenance costs

Maintenance costs that relate to assets purchased in the past are reported as an item in the accounts prepared on an accruals basis.

Measures of the state of the assets and their related requirements for future maintenance, including backlog maintenance, are not generated from the RAB system. Such information, together with details of maintenance agreements, comes from the records kept independently by other departments and, therefore, has not been created or enhanced by the introduction of RAB. One aspect that became clear from the questionnaire is that Trusts vary in their routine knowledge of backlog maintenance and this indicates the absence of a uniform system amongst Trusts.

Are the prospective concerns being realised?

The practical application of RAB

Although a minority of managers consider that RAB has improved accountability, the overwhelming conclusion from the responses gathered for this study is that the information on capital charges resulting from RAB has been of limited use. The reasons for this appear to stem from the fact that the calculation of the information is detached from its potential for influencing managerial activity. Actual capital charges are not known until the year end, which introduces uncertainty and a lack of controllability, and variances are only reviewed at Trust level, not at departmental level. The charges are not viewed as 'real money' and the possession of assets, at the operational level, do not impose a cost. As a result, managers have no incentive to dispose of surplus assets. Assets charges will only be real if they are included on divisional budget statements and cost managers' money. These aspects are compounded by a perceived lack of articulation between the capital charge regimes of the Trusts, the commissioners and the WAG.

The remoteness of capital charges is further evident in terms of managing the estate. Estate planning does not include capital charges and the Estates function has no input to the calculation of depreciation

charges; it is more concerned with the physical condition of assets. A consequence is that one of the parameters by which a Trust is judged, financial out-turn, does not enter into consideration when decisions are made at Estates level even though these decisions will impact on future reported financial performance.

Thus, the practical application of RAB in terms of capital charges is limited. This will continue to be the case until these costs are fully integrated into the budgets of those responsible for the assets. Even then, managerial responses will be conditioned by the extent to which they have freedom of action to manage the assets in such a way as to have an impact on the capital charges. Finally, action may be influenced by the amount of benefit managers directly receive from managing the assets under their control so as to reduce costs.

Misunderstandings, misuse of information, inappropriate signals and incentives

At an operational level there cannot be any misunderstanding or misuse of owning assets, as detailed information is not provided to medical directors who, thus, do not see the financial consequences of owning assets. However, the absence of RAB-based information may cause problems if decisions are taken in the absence of any consideration of their impact on a Trust's financial outcome which includes capital charges. This is compounded by the lack of incentive to dispose of assets as sales receipts are not necessarily retained by the generating unit.

It is possible that political tensions may arise from asset charges, as capital charges may bias business cases towards PFI. Whether a bias towards one particular method of finance rather than an alternative one is essentially a political decision, but RAB is not seen as a neutral basis for decision making. As a result the outcome of an investment decision may be directed towards a financing technique that is not necessarily welcomed by the WAG. A further consequence may be a relative lack of

investment in the NHS in Wales that could impact adversely if patients cross the border for treatment elsewhere in the UK, taking the funding with them.

The impact of capital charging and depreciation on managerial behaviour and decision taking

The visibility of capital charges is restricted to the top managers of Trusts, whereby charges are only found in central finance reports and are not devolved to operational units. Managers feel that this will change with the imminent advent of 'real capital charges' although operational managers may not yet grasp the implications of this. As a result, capital charges currently have little or no impact on day to day decisions.

Capital development is one area where charges can affect decisions. Their inclusion in scheme costs can make a potential project unviable and the fact that they are not necessarily fully funded by the commissioners can restrict acquisitions. In addition, the need to incorporate capital charges and obtain agreement for them can slow down the project approval process.

Summary and recommendations

Accounting information is useful to managers if it assists in making rational economic decisions. This research has found that RAB diffusion has been restricted to the top layer of management and has not penetrated below that level. Where information on capital assets has been required below board level, lower management has put in systems to provide it locally. There is no single centralised database to provide all the different aspects of asset information to those who require it in NHS Trusts.

Accruals accounting, which underpins RAB, was developed in the private sector in the context of allocating limited resources to those projects where profit would be maximised and so enhance distributable

profit. Such a profit measure does not exist in the NHS and increased demand for a particular health service does not automatically attract additional resources as it would in the private sector. In addition, the amount of cash available for capital developments in the NHS is severely limited. There are also disincentives to dispose of assets that are no longer required as the capital receipt may not remain with the generating unit even though it will have to carry any loss on disposal in its Income and Expenditure Account. In these circumstances the loose-coupled managerial response, whereby operational decisions are taken that ignore capital charges, is logical given the relative cost and lack of benefits from producing and disseminating information.

There is no evidence that the perceived benefits from the introduction of RAB are being realised in the NHS in Wales, at least not at the time of this research. Moreover, with the current level of enforced diffusion and the loose-coupled organisational context, it is difficult to see when or where these benefits will be realised. However, it is not difficult to find evidence of the problems of implementation. It is apparent that RAB is inconsistent with a cash-managed environment and the current accounting system is impeding the implementation of strategy. There is no incentive to dispose of inefficient or underutilised assets as replacements cannot be funded and even if they can, the capital charge implications would impact on revenue expenditure.

The claimed benefits for RAB will not materialise unless the loose-coupled system is revised so that there is a single integrated asset-management system to deal with both the physical and financial aspects of ownership. All the functional units that are responsible for different aspects of asset possession should use one integrated system and then further diffusion can take place within each Trust to locate responsibility for asset management at their point of use. Any devolution of information needs to be accompanied by responsibility, otherwise the information will be redundant. However, such diffusion may create

tensions between central control, designed to deliver overall strategy, and devolved responsibility necessary for strategy implementation.

This work has focused on the NHS in Wales. With the advent of devolution the separate nations within the UK are developing their own unique aspects for delivering health-care free at the point of use. As a result, it may be possible to find instances elsewhere in the UK where the consequences of RAB have been dealt with differently. For example, the NHS in Wales essentially follows the guidance given by the Westminster Department of Health, unlike Scotland, which has a Parliament rather than an Assembly. Further work in the rest of the UK would add to the findings of this study by providing a basis for comparison and the potential to identify best practice.

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NHS Resource Accounting in Wales: Problems of Implementation

The NHS is a capital intensive organisation and the quality and maintenance of its assets are important to the delivery of a quality service. This report assesses how the NHS managed the process of accounting innovation relating to accounting and budgeting of capital assets in the NHS Wales. The research gathers views from staff in Welsh NHS Trusts, the Welsh Assembly Government, and the Audit Commission in Wales, by way of interviews and a questionnaire survey to investigate whether the perceived benefits and potential concerns of reform have come to fruition.

The authors argue that successful implementation depends upon how accounting reform is accepted within the culture of the organisation at the grass roots level. It is also affected by the extent to which any new accounting reports are used by management to deliver the strategy of those higher up in the organisation.

The findings of the report are that there is no evidence that the perceived benefits are being realised in the NHS in Wales and that "diffusion" of the accounting requirements has been restricted to the top layer of management, and has not penetrated below that level in the majority of NHS Trusts. In fact only a minority of Trusts thought that budgetary control has improved as a result. The report also provides evidence of the consequences of accounting change and the impact of behavioural considerations on the successful implementation of change.

The authors recommend the introduction of a single integrated management system, dealing with both physical and financial facets to locate responsibility for asset management at the point of use. The authors also identify the need for further research in other parts of the UK to help identify best practice.

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