

**RISK MANAGEMENT IN THE PUBLIC SECTOR- THE CASE OF  
THE NATIONAL HEALTH SERVICE, UNITED KINGDOM**

**BY**

**EMMANUEL TINAKPA TIDAKBI**

**This research report is submitted in partial fulfilment of the  
requirements for the degree of Master of Science in Built  
Environment from the University College of London**

**Bartlett School of Graduate Studies  
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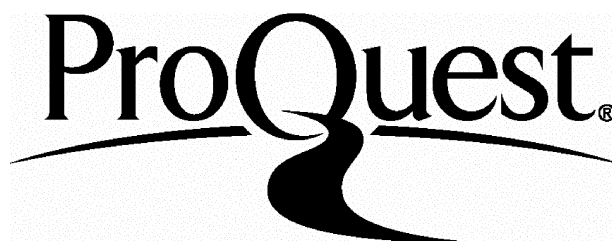
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UCL

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**ABBREVIATIONS**

CCC	Construction Clients Confederation
CIM	Capital Investment Manual
CIRIA	Construction Industry Research and Information Association
DANIDA	Danish International Development Agency
IM&T	Information Management and Technology
NAO	National Audit Office
NHS	National Health Service
NPV	Net Present Value
PFI	Private Finance Initiative
PPP	Public Private Partnership
RAMP	Risk Analysis and Management for Projects
U.K	United Kingdom
UCH	University College Hospital
UCL	University College London

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# **RISK ASSESSMENT IN THE PUBLIC SECTOR WORKS PROCUREMENT THE CASE OF THE NATIONAL HEALTH SERVICE, UK AND THE GHANA HEALTH SERVICE.**

## **ABSTRACT.**

All projects are conceived and designed with positive intentions to be completed on time, at minimum cost and fit for purpose.

In reality however, this is not always achieved especially with respect to the Public Sector which unfortunately has had the reputation for being the worst performer against these criteria.

Since the Latham Report (1994), and the Gershon Report (1999) later, there have been increased efforts from both the Government as a major client, and the private sector to shift the entire industry from this position to a more positive position where projects can be delivered on the basis of value for money and in a more collaborative manner. Several guidance documents and review reports have consequently been issued at all government levels- Cabinet Office, Treasury, Office of Government Commerce- for the public sector to make it more informed.

This report is an analysis of major government efforts at modernising procurement practices in the U.K. public sector, with the view to making it a "Best Practice" Client. It attempts to analyse the level of response of the National Health Service (UK) in line with these government guidelines in the specific area of risk assessment; and to determine how far risk assessment and management have been incorporated into the overall strategic investment programme of the National Health Service. Where practicable, attempts will be made to highlight useful lessons and cross references that can be useful to the emerging Health Service in Ghana.

The conclusions are drawn based on the review of these reports and the level of implementation in the NHS and to determine how much the service has

responded to the general call to improve on construction project management practices in line with Egan's "Rethinking Construction" (1997)  
Interviews of key management personnel of the NHS will be conducted.

## **KEY WORDS**

Risk, Risk Assessment Uncertainty, procurement, strategic investment plan

**Word Count**     10,384

## **INTRODUCTION**

All projects are conceived and designed with the good intentions to be completed successfully. A successful project is generally described as one that has been executed within the scheduled time frame, within the cost budget and fit for the very purpose for which it was conceived. On this definition, there is much agreement among contemporary writers on Project Management. Peter W. Morris (1994); C. Chapman and S. Ward (1999)

Graham Winch (Oct 2001) however emphasises quality as a strong additional criterion. He presents quality more in terms of perception gaps, the gap between the client or user's perception of the delivered project and their expectations. Winch, Usmani and Edkins (1998) place the minimisation of client surprise at the heart of all construction projects.

Successful project implementation therefore requires that client to be very clear and concise about the concept and the definition of the project objectives in order to reduce these perception gaps and enhance overall success both in the private as well as in the public sectors. For the Health Service, it is necessary that the strategic planning for any investment should first determine the health needs and service requirements before providing the right facilities for the service provision. It requires accurate assessment of service needs to match the growth of investment. (Kleczkowski & Pibouleau, 1983)

In reality however, it is not an easy ride through the project cycle, from the point where a client conceives of an idea for a facility through to the design and construction and final commissioning or occupancy. There are several inherent risks that need to be identified, analysed systematically and managed in a way that will reduce any gaps between the client's conception and his perception of the final product.

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Risk is an inescapable feature of business activity. Construction generally is subject to as much uncertainty and risks as any other industry. The construction industry in general and construction in the public sector in particular has a poor reputation for the effective management of risks. The common complaint is that projects in this sector often fail to meet costs targets and construction time schedules or more importantly for the health sector, meeting quality standards.

### **The Project Life Cycle and Risks**

The project definition phase is, metaphorically, the foundation of every project. Graham Winch (Oct.2001) describes states this phase as

- a strategic decision making process. It is about the client's relationships with the social and economic environment;
- about the proactive process of allocating resources between alternative projects
- It is related to the medium and long-term future of the client;
- It is a prerequisite for the successful implementation of any strategy of expansion or diversification.

The importance of this phase has far reaching consequences on the entire project integrity. It is important that systematic risk management processes be applied at this level. A systematic evaluation of project concept and objectives enables potential risks to be identified and the strategy for their management developed for the entire project life cycle

### **Are public sector clients aware of this?**

Project management to a very large extent entails risk management. Good practices in planning, coordination, setting milestones, change control procedures involves general responses to pervasive sources of risk such as human error, omissions, communication failures etc.

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The Construction Industry and Research and Information Association (CIRIA 1996) taken a survey to determine the level of awareness about risks in the management of their construction projects, as clients. Some responses are stated below:

1. *“From the client’s point of view, if you don’t get the brief right you don’t get the project you want. The brief has got to be right .....then you can start taking action to reduce those risks. If the brief is woolly, you go to the line without taking note of the risks”*
2. *“A poor brief or an ill-defined brief means you’re vulnerable to corrections, errors, misinterpretations, and therefore variations and hence claims..... ”.*
3. *“Unless the brief is absolutely correct, in what it is asking to be designed and constructed, the project cannot succeed. For example the accurate forecast of population served by plant is absolutely vital, or you end up with unused spare capacity.....”*

## **PROBLEM STATEMENT**

The National Health Service, UK has buildings worth approximately 23billion pounds and of varying ages (see appendix 1). Decades of low or erratic investment in the NHS estate is seen as a major factor in the current state of buildings which are unsuited to either the needs of modern patients or practice of modern medicine.

In the past, the building of new hospitals and other facilities for the NHS was wholly funded by public capital, distributed to individual Government Departments by the Treasury as part of the annual spending round. Now however there is a general trend to procure these through the Public Private Partnership (PPP)

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The inherent risks in this method of funding were;

1. Progress on NHS construction projects were dependent upon how much the government could afford each year
2. funding was erratic
3. Projects were often phased or scaled down.

Apart from the expected results of not meeting cost and time schedules in the face of these difficulties, it made strategic planning unreliable.

Under those circumstances, efficient management of projects was difficult.

It was not easy therefore to design facilities to meet needs, which very often were outgrowing supply of facilities.

### **The NHS plan –Investment and Reform**

The NHS has announced a major change to modernise NHS buildings. It set a target of building over 100 new hospital schemes by 2010. Through the PPP, it has set in train a range of other new buildings -primary, intermediate as well as acute care, all of this with an estimated 7 billion pounds of new capital investment.

- In modernising the buildings, the target is that by 2010, 40% of the total value of the NHS estate will be less than fifteen years old.
- It will have cleared at least 25% of its backlog of maintenance of 3.1 billion pounds by 2004. By 2002, capital investment will have grown by an average of 8% a year since 1997.

*The strategic focus of the National Health Service, as contained in Procure21 are summarised as:*

1. To deliver quality health care buildings
2. Ensure value for money in all these transactions
3. To invoke a change of culture as recommended in the Egan Report.

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The National Health Service, UK has buildings worth approximately 23 billion pounds and of varying ages (see appendix 1). Decades of low or erratic investment in the NHS estate is seen as a major factor in the current state of buildings which are unsuited to either the needs of modern patients or practice of modern medicine.

The National Health Service has therefore announced a new Investment plan the major objectives being:

1. Modernisation of all NHS buildings, the target being that by 2010, 40% of the total value of the NHS estate will be less than fifteen years old.
2. Buildings over 100 new hospital schemes by 2010. Through the PPP, it has set in train a range of other new buildings -primary, intermediate as well as acute care, all of this with an estimated 7 billion pounds of new capital investment.
3. By 2002, it was estimated that capital investment would have grown by an average of 8% a year from 1997.
4. In order to be able to attain these objectives, several guidelines have been issued for the guidance of the National Health Service from both Offices of Cabinet and HM Treasury. The Department of Health has supplemented these objectives with the "Capital Investment Management" manual (CIM) and the "Modernising Construction" to be used by the National Health Service, both as supplements of the Gateway Process from the Office of Government Commerce. All of these documents stress the role of competent risk assessment and management as very central to the attainment of the objectives of the NHS.



This research paper is an attempt to verify the progress the National Health Service has made so far in line with these various guidelines and how much the systematic application of risk assessment procedures have are being applied in this new direction.

### ***RESEARCH OBJECTIVE***

Since the Latham Report (1994), followed by the Gershon Report, there have been increased efforts from both the Government as a major client, and the private sector to shift the entire industry from the position of poor performance to a more positive position where projects can be delivered on the basis of value for money and in a more collaborative manner.

Several Guidelines to improve best practice in the industry have been published and disseminated for implementation by the Office of Government Commerce, the Treasury and the Construction Industry Board, Construction Clients Confederation (CCC) among others.

There have also been some institutional reforms in government machinery to decentralise procurement of works in government ministries and agencies with the role for monitoring performance vested in the Office of Government Commerce through the Gateway Process.

This research is interested in finding out

1. How the NHS is responding to the call for changes as contained in the various Treasury Guidelines and the Office of Government Commerce.
2. How the NHS Trust are using the various guides in the management of risks in construction.

3. The process of risk identification at the project definition stage and how these guides support the process.

### **Methodology**

1. Review academic literature on risk management.
2. Review and analyse current reports and case studies on public sector best practices in procurement.
3. Conduct and analyse personal verbal interviews with key National Health Service Personnel
4. Conclusion and recommendations.

### **LITERATURE REVIEW**

The United Kingdom construction industry is described as lacking in focus, often adversarial and very fragmented. It is under-capitalised and operate on low margins. Consequently, it is not able to deliver projects on the planned time schedule, cost or quality. The Latham Report (1994) highlighted the need to provide better guidance on best practices and legislative changes to simplify dispute resolutions.

Since the Latham Report, increasing efforts have been made to reform the public procurement systems to address the issues of legislation and to move away from the adversarial to a more collaborative relationship between the public sector client and the private sector.

The Levene Efficiency Scrutiny (1995) made recommendations to emphasise better communication between clients and contractors to reduce conflicts and disputes. It recognised the importance of risk identification and management as very important in improving efficiency in the industry.

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Sir John Egan in “Rethinking Construction” (1998) identified what he termed as “drivers” needed to be in place to secure improvement in construction. The report admits that there were inefficiencies in the general construction process and that there is a potential for a much more systematised and integrated project process in which waste in all its forms is significantly reduced and both quality and efficiency improved.

Peter Gershon (1999) for the Treasury, reviewed civil procurement in central government. In 1999, the review estimated that annual procurement expenditure in the civil Departments, their agencies is estimated to be in excess of 12.9 billion pounds at current prices. The scale and breadth of this level of expenditure require high levels of efficiency.

The report recommended that a common strategic framework should be established within which all Departments will conduct their procurement activities. The concern of Peter Gershon was that decisions by previous Governments to decentralise and delegate authority for procurement to Departments have been implemented without establishing a common framework within which these departments must operate to ensure coherence. He recommended a new central organisation, called the Office of Government Commerce. Subsequently, all civil procurements have been subject to Gateway Reviews to ensure that each project is examined critically at each life-cycle stage to ensure value for money.

### **Risk in Construction**

The identification and management of risk is not exactly new to public sector clients, including the NHS. In the research report by the Construction Industry Research and Information Association , (CIRIA 1996) one of findings is that:-

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“The client’s perception of risks in terms of how risk should be managed and what risks were important were varied and inevitably linked to particular circumstances. However, whether aware of it or not, it was apparent clients were already carrying out a significant amount of risks management instinctively”.

Risk can be defined as a threat or opportunity, which could affect adversely ( or favourably ) achievements of an investment objective RAMP (1998). A risk event implies that there is a range of outcomes for that event which could be both more or less favourable than the most likely outcome and that each outcome within the range has a probable outcome. (Smith 1999)

For the purpose of this research, risk is defined as any unforeseen outcomes that will have an effect on the three main construction targets of costs, time and quality.

### **Appraisal for Risk Identification.**

The appraisal phase of a project is the most crucial from the viewpoint of risk identification and management. During this phase, key decisions with far reaching consequences on the project life cycle are made on the various options or alternatives available. This requires that sound appraisal techniques are applied to make cost-effective decisions and at this stage of the project life cycle, to be able to develop broad strategic plans for the management of the project. Appraisals are useful in identifying risks in order that strategic plans can be developed for managing them.

Appraisal is the process of defining the alternative ways of attaining the project objectives. A good appraisal requires that objectives are clear and concise, thinking about alternative ways of meeting these objectives. It also requires the estimation and presentation of the cost and benefits of each potentially worthwhile option. Good appraisals must take full account of

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associated risks and uncertainties of the project being appraised. HM Treasury (1997)

A sound options appraisal, from another dimension, requires first and foremost that the project's objectives have been set and agreed by all members of the project organisation as well as all the stakeholders. Smith (1999) sums it up thus ' .... it is a fundamental risk that if the objectives are not clear, not agreed upon or communicated to those involved, the chance of the project being a success is reduced because the potential for changes and conflict is increased. It follows naturally that the choice and definition of project activities and other performance criteria has a fundamental influence on the level of project risks'.

Unfortunately, it is at this stage of the project cycle that uncertainty is highest because of the paucity of information necessary for good appraisals. However, for public sector projects, the criteria for appraisals necessary to justify any investment expenditure are that the project must satisfy a "best value for money" criteria. This is the most crucial phase of all projects. It is during this phase that the key decisions regarding the choice of options must be made( Smith 1999)

The benefits to be generated by a project need to be valued against the resources required for the investment. In the public sector where there are many competing demands on scarce resources, the problem of deciding how to allocate these resources efficiently can be great. The problem will be how to choose for investment those projects that will yield the greatest return. The good practice is to calculate the net present value (NPV) of proposed investment , the essence of which is that the value for money today is greater than the value of the money in the future. In principle, so long as the NPV of the expected income or benefits is greater than the investment outflow at the chosen rate of return, the project is worthwhile pursuing ( Winch, Oct 2001)

However, this is not easily the case and for such public goods as the health sector provides, it is not easy to value the benefits precisely. Governments and other stakeholders may have symbolic or other attachments to buildings, which cannot allow for precise comparison with investment appraisals such as with NPV. Markets may not always offer reliable information and may be distorted.

Costs and benefits are usually very uncertain at the beginning and:

- Benefits could have been optimistically valued.
- Operational costs of facility may be higher than predicted
- The facility may not be capable of being operated as planned.
- The facility may be delivered late
- The investment required may turn out to be higher than expected
- The impact of late delivery on existing facilities may be negative or delays in expected benefits.

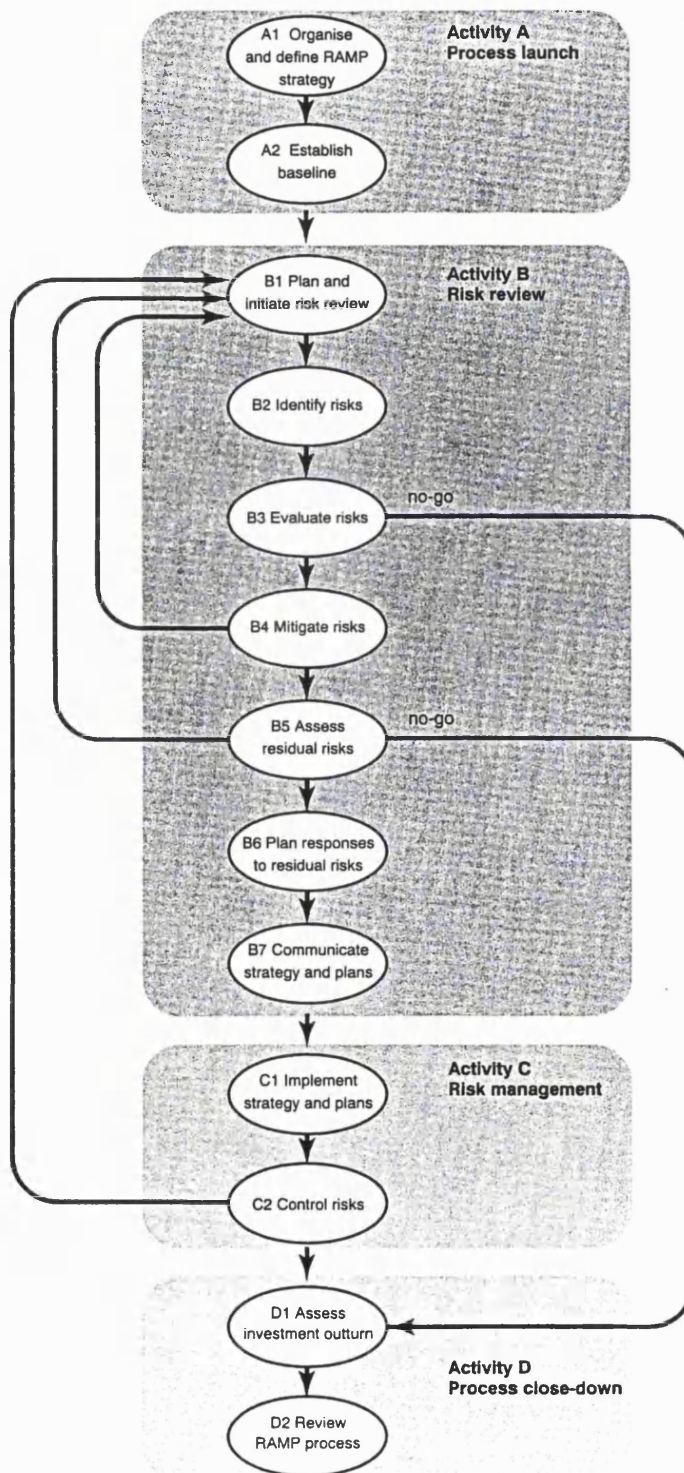
These uncertainties require effective risk identification and management strategies to be able to mitigate them throughout the entire project life cycle.

## **Sensitivity analysis**

Sensitivity analysis techniques are used to answer the question 'what if?' by isolating the key variables and evaluating the effects of incremental changes in the values assigned to the key variables. It is a quantitative technique, allowing effects of economic changes in a project to be explored; Smith (1999). It shows how changes in the values of various factors affect the overall cost or benefit of a project.

The first stage of sensitivity analysis is to decide upon the plausible range of values for the uncertain factors e.g. future relative price of building materials or wages

**FIGURE 1 RISK IDENTIFICATION PROCESS**



**SOURCE: RAMP (1998)**

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Second stage is to consider whether the sensitivities for the various factors are related in any way. At each step, the values of the project economic parameters are calculated using the value of the variable at that level. The advantage of this process is that the analysis can indicate fairly well the most crucial areas of the project, in terms of risk.

Like all other methods, the sensitivity analysis has its own limitations, the main one being the tendency to assume that only one variable changes at any one time, whilst the others remain constant. It requires that the analyst must know about the project in great detail and may not be very useful for public sector projects where traditionally there are not many well-trained staff in project analysis. Whilst it may be very useful in reducing uncertainties, it will not remove all the exogenous uncertainties that are peculiar to the public sector including the political and environmental risks. Nonetheless, swift action can be taken if the known assumptions to which the decision is sensitive prove to be significant inaccurate (Department of Health and Social Security, 1987)

Other appraisal methods used include

Monte Carlo analysis

Scenario planning

Programme Evaluation and Review Technique (PERT)

These are all used in combination with sensitivity analysis to generate options and make decisions on best options.

### **Possible Risks/What can go wrong in construction?**

- Design brief /project objectives unclear
- Unproven design solutions adopted
- Problems with supply base, e.g. single source for materials



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- Interface/integration problems for equipment installations
- Known failures of technology not identified
- Unforeseen poor ground conditions encountered
- Industrial relations problems
- Adverse effects of legislation
- Inadequate project funding
- Contract awarded on basis of lowest cost rather than
- quality
- Capability of contractor not matched to job
- Lack of quality control
- Inadequate project management
- Poor team communications
- Personality clashes within the project team
- Contractor goes bankrupt
- Project subject to unnecessary constraints
- Delays in obtaining planning permission

(CIRIA control of Risk- A guide to Systematic Management of Risk from Construction)

### **Peculiar Health Sector Construction Risks**

- A major risk in hospital construction is in the definition of the scale and scope of each component service that the hospital intends to provide. There are risks of over-provision as well as under-provision. Inaccurate assessment of needs can create cases of under-utilization or over use of facilities.

The quality of health care is greatly influenced by the clinical and technological environment. It is achieved with a careful combination between buildings and equipment in a functional relationship to provide

- the quality care. There is therefore the risk that staff may be compromising on many areas leading to lower staff morale as well as discontent from the patients if the right environment is not created. The bigger hidden risk is that technology is changing rapidly and clinical procedures may become obsolete too soon.
- There are several interested high profile stakeholders in hospital construction and unless well managed can distort the process of definition of scope and scale. Some investment decisions are made satisfy the whims of clinicians more than on a rational basis.
- Health care facilities should be constructed to fit specific needs. But needs are assessed based on past morbidity and mortality trends and other demographic data. There are inherent risks in making projections based on past data and faulty data can lead to grave faulty projection

The identification and management of risk is not exactly new to public sector clients, including the NHS. In the research report (CIRIA 1996), one of findings is that “...*the client’s perception of risks in terms of how risk should be managed and what risks were important were varied and inevitably linked*”

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*to particular circumstances. However, whether, whether aware of it or not, it was apparent clients were already carrying out a significant amount of risk management instinctively”.*

Some common risks in the public sector have been identified to include (CIRIA 1996)

1. Political and /or macro economic factors, particularly in public and quasi-public bodies where governmental changes can affect operations significantly
2. Pressure to spend budgets within particular dates or because of uncertainty about long-term policy can also increase risks- projects are dreamed up yesterday and expected to be in place tomorrow. Politicians are only here for a four-year term and they want to e seen to be doing something. And towards the end of political term, jobs have to be done quicker”
3. Satisfying bureaucracy was also listed as a major risk factor, especially in the public sector. Accountability is seen in the public sector as a major motivator with the primary concern of those involved being not necessarily to manage risks in the most effective manner, but to demonstrate themselves beyond reproach. Is it that the government employee is seen to be compliant all the time?
4. The source of funding and the level of cash flow has already be mentioned as a considerable risk factor. Will government withdraw its subsidy after commitments have been made?

## **ANALYSIS OF RESEARCH DATA:**

Data from the research consists of:-

1. Review of existing documentation for good practice.
2. Review and analysis of case studies and reports on public sector risks management practices
3. Review of and analysis of research data..

## **NHS-Organisation and Relationships**

The National Health Service is an executive agency of the Department of Health. The Chief Executive is the Chairman and is directly responsible to the Secretary of State for Health. Like all other Departments and agencies, the National Health Service of the UK have responsibility for managing their

own growing portfolio of estates. The Treasury and the Cabinet have the responsibility for monitoring by providing general guidance and advice on best practice in estates management including risk identification and management. The relationships are depicted as:

### **1. The Cabinet Office**

The key role of the Cabinet Office is to monitor the departments' responsibilities with regards to good practice in construction in the public sector generally. It is responsible for guidance on content of risk frameworks and training on management.

Guidelines for Risk Assessment in the NHS

### **2. The Treasury**

The Treasury is responsible for developing corporate governance across government and providing guidance and advice on risk management, appraisal and evaluation as well as policy for internal audit activity.**3.**

### **Office of Government Commerce**

Responsible for the technical advice and guidance on managing programme and project risks by way of the Gateway Process. The Computer Telecommunications Agency (CCTA) is responsible for providing guidance on developing information systems strategies and implementing Information Systems/ Information Technology- enabled programmes, projects and services. The CCTA works closely with the Central IT Unit of the Cabinet Office.

#### **4. Interdepartmental Liaison Group on Risk Assessment**

This is a forum for exchanging information on risk assessment and develops advice on technical and policy aspects of risk assessment. Its role is to provide a continuous learning forum by way of exchange of experiences and new knowledge and information.

#### **4. The National Health Service.**

In relationship with the above offices, the National Health Services is responsible for managing the risks associated with their activities, programmes, objectives and public service delivery. Through the National Health Estates, it develops its statements on risk frameworks, systems control and requirements for identifying, assessing and managing risks with regards to the planning for and construction of health facilities.

The National Health Service, UK was set up in 1948 to provide health care for all citizens based on need. It is funded by the taxpayer and therefore is accountable to Parliament. It is managed by the Department of Health which in turn is directly responsible to the Secretary for Health.

#### **5. NHS Trusts.**

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The NHS Trusts are at the frontline of the service and are actually the service providers, providing a general range of services. Some of these act as regional or national centres of excellence providing expertise for more specialised care. Others are attached to the Universities and are responsible for the training of health personnel.

Trusts have responsibility for health care delivery, including the construction of health care facilities to meet the defined health care needs at their level. They are therefore responsible for delivery at the project level.

### **Is risk management perceived as a serious issue by Managers in the National Health Service?**

Interviews with key personnel in the NHS indicate some awareness of risk in the management of projects.

Risk is not a new concept. The importance of sound controls and procedures to minimise financial risks and risks of impropriety and malpractices is well known in the service.

There is strong awareness at both the programme and project levels that projects or programmes may fail, that services may be not be delivered on time or to satisfactory standard, or that useful opportunities may be missed.

There is awareness that unless there is an accurate assessment of the likelihood of such situations, it is not likely that the National Health Service or Health Trusts can meet these objectives.

### **Risk Management in the Public Sector.**

United Kingdom Treasury has provided reasonable guidelines for public sector appraisal of projects. The Local Government Act 1999 sets out the general duty of Best Value with effect from the 1<sup>st</sup> of April 2000. From this date, the Audit Commission became responsible for the Best Value inspection

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role for government departments and agencies. All such agencies and government authorities are now required to set out their programme of reviews in Best Value Performance Plans, which together with other services, will be reviewed within five years( Hodgkinson 2001)

The Cabinet Office and the Treasury, as well as the National Audit Office have taken various initiatives, to improve risk management by departments. Since 1997, Treasury has been developing improved governance accountabilities. Statements on internal Financial Control were introduced for the year 1998-1999. Treasury guidelines on risk and uncertainty include the "Green book " : Appraisal and Evaluation in Central Government " (1997) Two initiatives in 1999 raised the importance of sound risk management in the public sector- the *Modernising Government White Paper* (CM 4310) published in March 1999 and in the private sector, guidance on Internal Control

developed by a working party of the Institute of Chartered Accountants in England and Wales known as the "Turnbull Report"(1999).

The Modernising government White Paper set out a programme to improve the way departments and agencies manage and deliver services. It encouraged innovation as one way of managing risks to improve service delivery and a comprehensive guide on what to look in reviewing their risk management strategies ( appendix 1)

At Sunningdale in September 1999, it was agreed in that meeting of Permanent Heads of Departments that departments must improve their planning processes so that the various components-objectives, target setting, monitoring, performance reviews and measurement – become fully integrated ( NAO HC 864 Session 1999-2000).

All these initiatives were meant to provide the public sector with the relevant competencies and initiative for innovation, creativity and risk management so that risks could be identified early and relevant strategies developed to manage them effectively.

## **How is risk assessed and managed in the NHS.**

The National Health Service understands that poor decision making and ineffective project control invariably mean a shift of scarce resources away from direct health care. Risk Management is therefore formally incorporated in the various guidance manuals from the Treasury and the Cabinet Office. The National Health Service in an effort to reinforce the impact of all these reforms for best practice has developed, within the NHS Estates, the Capital Investment Manual (CIM) for the guidance of the Health Trusts that have responsibility for capital projects management.

This research reviewed two guidance documents currently in use by the National Health Service particularly how they enable good practice in terms of risk assessment and management. These are the Gateway Process issued by the Office of Government Commerce that has responsibility for monitoring government procurement of civil works, and the Capital Investment Manual providing guidance for specific procurement of health facilities.

### **The Gateway Process**

All new procurements in the public sector are subject to Gateway Reviews. The Gateway itself is issued by the Office of Government Commerce to guide departments and agencies for best practice in their procurement. The process examines a project at critical stages in its life cycle to provide assurance that it can progress successfully into the next stage.

The process itself comes through in 6 stages, closely linked to the relevant stage of the project life cycle. The Gateway Review 0, the first stage of strategic assessment, is designed for major projects that have a high-risk element. At this stage the strategic assessment of the business needs as well as the assessment of the programme of project's likely cost are made and the potential for success evaluated.

This stage is particularly necessary and the review is to ensure that:-



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- The support or approval of key stakeholders has been obtained
- That arrangements for the identification and management of main project risks as well as the external risks have been reviewed.
- That financial provisions have been made for the project and that plans for the work are realistic, properly resourced and authorised. This, is meant to ensure proper costing and a regular cash flow for continuity of the work process.
- In terms of risk assessment and management, specific areas for probing have been stated at all levels of the project life cycle and the Gateway process.

**Checklist in the Gateway Process to ensure Risk identification and Management.**

Areas to probe	Evidence expected
<p>Are there processes to identify, assess and monitor current anticipated and emerging risks</p>	<p>List of risks, categorised as strategic, programme, project or operational risks</p> <p>Risk management strategy that is compliant with OGC guidelines</p> <p>Individual with responsibility for managing risk must be identified</p>
<p>Have the issues raised in the previous review been satisfactorily resolved?</p>	<p>Updated issue and risk logs with detail of actions taken</p>
<p>Have the risks for each of the options been evaluated</p>	<p>Current emerging, and anticipated risks classified by probability, impact, ownership, effect on the project and counter-measure</p>
<p>Have the risks for the preferred options been fully assessed?</p>	<p>Involvement of senior stakeholders in assessing strategic risks</p> <p>Assessment of risks, costs and benefits to demonstrate appropriate balance of risk and reward in the preferred option, demonstrating planned risk taking and support for innovation where appropriate</p> <p>Plans for managing the risks associated with the preferred option</p>
<p>Have the “worst case” costs associated with these risks been assessed?</p>	<p>Risks financially assessed or contingency funding available</p>
<p>Are the costs and time implications of managing the risks included in the cost and time estimates or treated as a contingency?</p>	<p>Costs and time for managing risks separately identified</p> <p>Where risks cannot be reduced, the costs of managing these risks separately identified and included within the base estimate or as contingency funding</p> <p>For construction projects, decisions on how residual risks are being insured.</p>

<p>Has the project assessed whether it is breaking new ground in the area?</p>	<p>Examination of leading-edge projects to assess the project's impact on the business, stakeholders and end users</p> <p>Evidence of similar projects or activities from which lessons may be learnt</p> <p>Innovative solutions assessed by experts</p>
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### **The Capital Investment Manual**

The National Health Service and Community Act 1990 led to the devolution of responsibility from the central government and the regions to the local National Health Service Trusts. The devolution also involved the responsibility for the management of capital projects in the Service. The National Health Service, through the National Health Service Estates, developed the Capital Investment Manual for the specific guidance of the Trusts and others responsible for the management of projects.

The investment manuals are useful tools and contain procedures that guide the Trusts and other units on the management of capital schemes from inception, design to evaluation after completion. They contain the methodology and techniques for the guidance of Trusts in analysing potential risks in their projects.

The CIM is useful for:-

- the establishment of an appropriate project organisation
- the approval and re-approval requirements for funding in compliance with the Gateway process of business case submissions
- complying with required tendering and contract procedures
- establishment of project control procedures
- carrying out post-project evaluation.

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Risk and contingency management is emphasised in the CIM for the guidance of Trusts.

### **Project Roles and Responsibilities.**

Roles and responsibilities are clearly defined and assigned. The Trust Boards remain the final decision maker. Known as the Investment Decision Maker (IDM), the Board decides whether to invest financial and human resources into any given project and have ultimate responsibility, although in all cases that decision will be based on the business case prepared for that project. The decision will be made after evaluating the anticipated investment costs against its benefits and that all risks associated with it have been carefully assessed and recommendation for managing them made.

The IDM's role is vital in the effective management of risks. A well defined project certainly minimises the risks associated with poor delivery in costs, time and especially quality. He is also to ensure that:

- A viable and affordable business case exists for the project and cost-benefit analysis made.
- The revenue impact of the project is clearly defined
- That all stakeholders are well informed and committed to the project with adequate presentation where required.

The project sponsor's understanding of the project is maintained and commitment assured to enable early authorisation of funds for the project on schedule.

### **The Project Owner**

The Chief executive serves as the project owner and defines the project objectives and to ensure that they are met as planned in time, cost and quality. He works directly to the Trust Board.

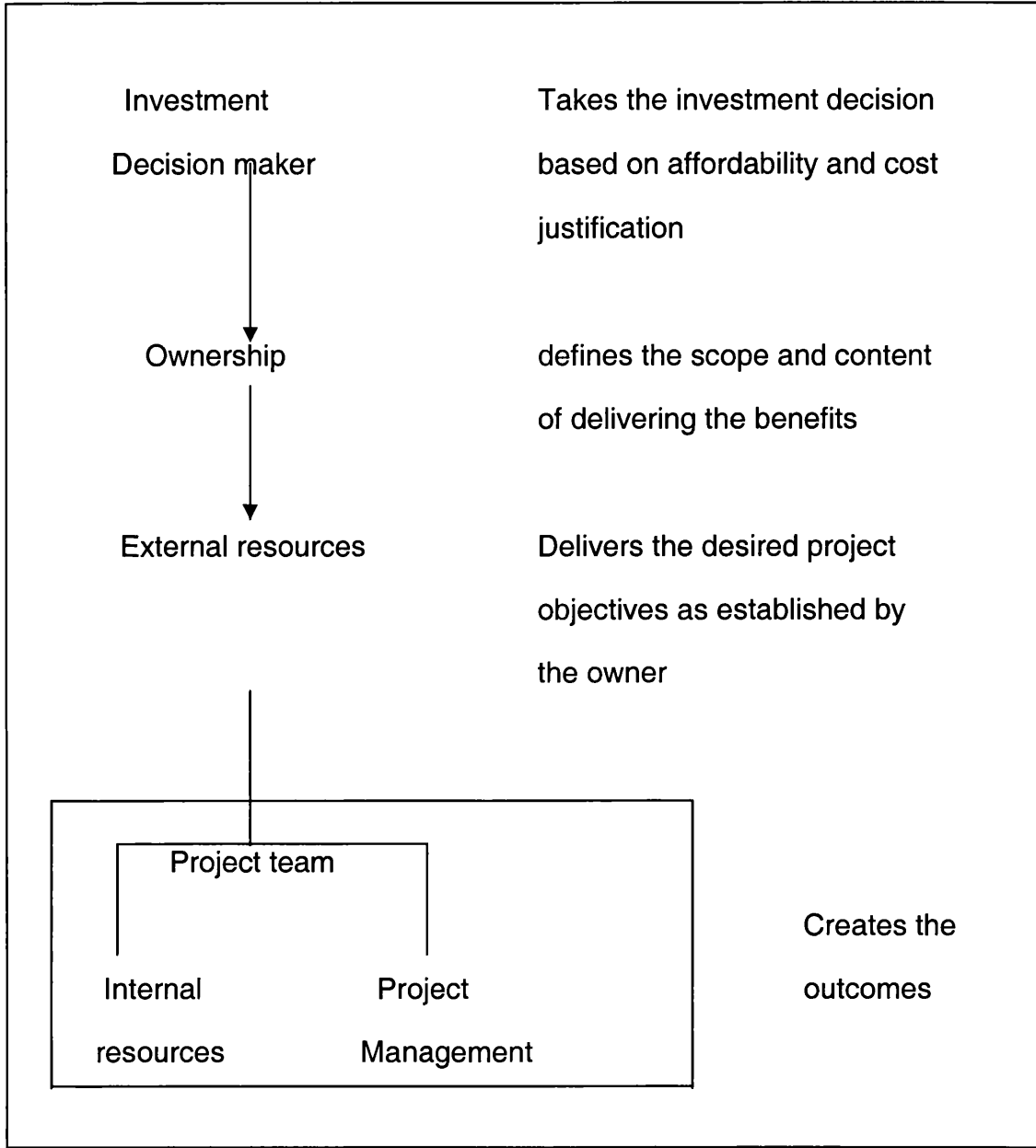
The role at his level is critical and will normally include the development of a project brief after consultation with the users. It is at this level that the project organisation structure is established to ensure that all project actors are clear on their responsibilities and the channel of communication and reporting procedures are established to respond to any emerging risks , e.g. changes in scope, possible cost escalation or delays.

### **The Project Management**

The CIM proposes that a single point of responsibility is created at this level to be responsible for production of the project brief and design with its business case and budget.

The activities at this stage are critical to efficient project delivery. Work is planned, resources are made available and carried out in accordance with the project plan, and to ensure that adequate procedures for monitoring and control of cost, time and quality are carried out. The NHS CIM lists the post-project evaluation as an important activity and places the responsibility at this level. Post-project evaluations are useful in providing information about past experiences necessary to better inform the next cycle of planning for projects and help identify and mitigate future potential risks more efficiently.

**Key Project Roles and Responsibilities**



**Figure 2**

**Source: Key Project Roles.- Capital Investment Manual, NHS, Estates**

An efficient project organisation is perceived as essential for the early identification and mitigation of risks. It enables responsibilities to be defined

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and relationships for effective communication developed. This way, there is a single point where responsibility for risk management can be placed.

Stakeholder relationships in the project definition stage where the scope and scale must be defined in a strategic context are a highly potential risk area. A well defined project organisation and relationships smoothen interaction between the key actors to and facilitates decision making at a scale necessary for an accurate assessment of needs for the services the project is intending to provide.

The Secretary for Health is ultimately responsible to Cabinet for the delivery of quality health care in the UK. This responsibility is delegated to the Department of Health and then to the National Health Service. There are many stakeholders in health care delivery- politicians, taxpayers and service users and staff- who are concerned about the quality of health care being provided against resources flowing to the health sector.

The NHS recognises the role of stakeholders and the risks of planning without consultation, involvement and commitment. The NHS Trusts have several consultative boards and committees which are actively consulted formally for inputs in the planning process.

Besides, the Trust Boards that monitor costs of projects, the Trust Chief Executive is required to work with a Project Board especially for the large, complex and high risk schemes that have a wide stakeholder interest. (e.g. senior staff in clinical areas, and support services, clinical management

Service departments, Estates , Finance , Information Management and Technology and Personnel.)

The rationale is to be able to determine first the required service level of health care before designing the relevant facility to meet those needs, thus minimizing the risks of quality and fit for purpose delivery.

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In the case of the UCH Redevelopment by the UCL Trust, stakeholder commitment was maintained at various levels of interaction and reinforced at meetings and workshops with the Trust Board. Milestones were set and evaluated at these meetings to ensure project objectives are on course.

### **User Panel**

On the other side of consultation is the User Panel. The user panel is intended to obtain in a systematic way the endorsement of the end users of the facility being constructed. The brief sets out the user requirements in a technical manner which must be accepted by staff who are responsible for operating these services- both medical and ancillary.

Although normally comprising representatives of relevant service departments, the Finance representative is included to be able, at that level, to consider the implications of the end user's requirements for financial viability of the project. The personnel inclusion is to ensure that relevant staff with the required skills are available to operate the facility when it is completed.

Once an agreement has been reached with the User Panel, it has no authority to make any changes in requirements and the brief is considered frozen. This is intended to limit the potential risks in frequent changes to the design that later can lead to high cost over-runs and delays.

### **What Risk Assessment techniques are used in the NHS?**

Because of constraints, and affordability of capital expenditure, there is a requirement that the full range of options must be considered in planning for



any new investment in the private finance alternatives as well as the in the purely public funded schemes.

### **The Business Case.**

The *Business Case* in the new CIM replaces the *Options Appraisal* as the recommended approach to ensuring a full capital investment appraisal. It also provides the framework for establishing management arrangements to ensure that the benefits of every capital investment are identified, evaluated and attained. Additionally, it ensures that all risks that may hinder the realisation of the project are identified, evaluated and managed effectively to mitigate their impact on project goals.

NHS Trusts are required to identify risks and consider strategies for managing them. For the health sector where technology has a significant influence on methods of health care delivery, there could be a significant potential risks that methods of delivery may change before a project is completed, rendering it unsuitable for the new demands.

There are three broad objectives in a *business case* (using the options appraisal):-

- It must demonstrate that the project is economically sound in terms of both the financial and non-financial benefits.
- That it is financially viable and affordable
- And that it will be well managed.

It must also show that the proposal has clearly identified benefits for patients and that it is supported by purchasers. It attempts to measure both the costs

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and benefits of all the alternatives under consideration using monetary values, **the optimal solution being that which affords the greatest ratio of benefits to costs**

### **How is a Business Case Prepared for the NHS**

Preparing a robust business case can take a long time and may be costly. The time scale between the first and last phase can take about 15 months

The process goes through three phases:

Phase 1 – strategic context: makes a case for change

Phase 2- outline Business Case; Identify the preferred option

Phase 3 – Full Business Case: Assess and Plan the preferred option in detail.

- The business plan should present clear valid answers to the key questions:
- What services should be provided now and in the future?
- How will these service requirements be met in the most efficient and effective way?
- Why is capital spending proposed?
- How does this proposal offer good value for money?

Detailed analysis is required especially within the time frame of 15 months to be able to assess changing needs and potential risks and consequently to identify solutions that consider costs, benefits and the potential risks.

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Usually a multi-disciplinary team is used in the preparation of the business case, and Managed by the Project Director. The ideal team is the multi-skill team in the areas of

- Business planning
- Management and operation of health care services
- Financial analysis and costing
- Clinical experience
- Construction and property planning
- Management and administration of assets

Between each of these phases, an active iterative communication and information between the NHS Trust and the NHS Executive Regional Office is recommended in the manual, for opportunities to review and reinforce decisions. The level of interaction is however, limited and involvement of the NHS Executive Regional Office is commensurate with the level of investment, perhaps not to limit the devolved authority of the Trust.

### **The Business Case as a technique for risk assessment**

The first phase of the business case cycle is the Strategic Context. The objective is to provide a clear reason for change and to ensure that any proposed capital investment is both consistent with the Trust's overall strategic direction and that the investment is affordable.

The second phase is to identify the preferred option for the investment through an objective investment appraisal process to identify risks and after a cost-benefit analysis, identify a preferred option.

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The third phase which is the full business case, presents the opportunity to review and validate the work in the previous two phases. A more precise quantification of future service requirements, as well as an update of a more precise strategic context, is made at this level.

Usually, approval to proceed to Full Business Case will be given by the Regional Office and Trusts can proceed to Full Business Case if capital funds have been identified and purchaser support obtained.

### **How are Options generated- the Case of the UCL Hospitals NHS Trust.**

The research at the UCL Hospital Trust was to examine how the UCH Redevelopment was defined and the procedures used to identify possible risks in defining the scope and scale of the project. Two interviews were done and three days Library reference work ( appendix..)

The University College of London Hospital Trust is one of UK's biggest offering a wide range of excellent clinical care to a large catchment population including the Southern part of Camden and Islington, The Marylebone, Kensington, Chelsea and Westminster.

There is currently an on-going redevelopment of the University Hospital at an estimated total cost of 225 million pounds. The entire process from inception to the point of financial close and award of contract was based on the Capital Investment Manual which also incorporates the requirements of the Gateway Process.

The need for change and the consequent investment was established first using the Business Process. The need for change was established on the basis that:

- It UCH before the decision to redevelop, provided services from several out-of-date buildings.
- Staff and patients were forced to shuttle between several different sites thereby creating unnecessary duplication of hospital facilities and support services to an estimated cost of 12m pounds a year.

### **The Strategic Context**

Once the need was established, the strategic context within which the redevelopment was to take place was developed. A process of SWOT analysis was undertaken to determine the Strategic Context of the project. Characteristics influencing the demand for services and their influence for change and risk levels were examined, including:

- i. The catchment area local population had mortality and morbidity levels higher than England and Wales
- ii. Relatively more deprived profile of higher unemployment.
- iii. Large numbers of one parent family and more overcrowded housing than England and Wales.
- iv. Large population of ethnic minority groups with specific needs
- v. A considerable daily and seasonal influx of commuters/tourists with particular impact on the services.
- vi. Any possible impact from other developments on the UCH were reviewed vis-à-vis developments in St. Barts, Hammersmith, Barking and Havering, Lambeth, Soutwark and Lewinsham.
- vii. The activities of other Medical Schools in London were also examined.

Based on these analysis, a strategic decision was made that the UCH required a new configuration of specialists services that will impact on the Trust Specialist Services to the target population.

Finally, a project objective was established to relocate facilities of the University College into a single site purpose built complex on the Euston Road. The new hospital is expected overcome the existing and set new standards for patient care.

### **Defining the scope and scale**

The Business Case Process was used to define the scope and scale of the project and consequently in the identification of associated risks.

To determine the levels of future activity and provision, the process was to:

- Determine the current position in terms of activity and provision levels
- Forecast these for the next 8 years to 2006
- Forecast provision levels in terms of beds by specialties, Outpatient sessions or occupancy levels.

During this process, risks from likely pressures for change were analysed. (figure 3 ) Then a forecast of provisions are developed using scenario analysis.

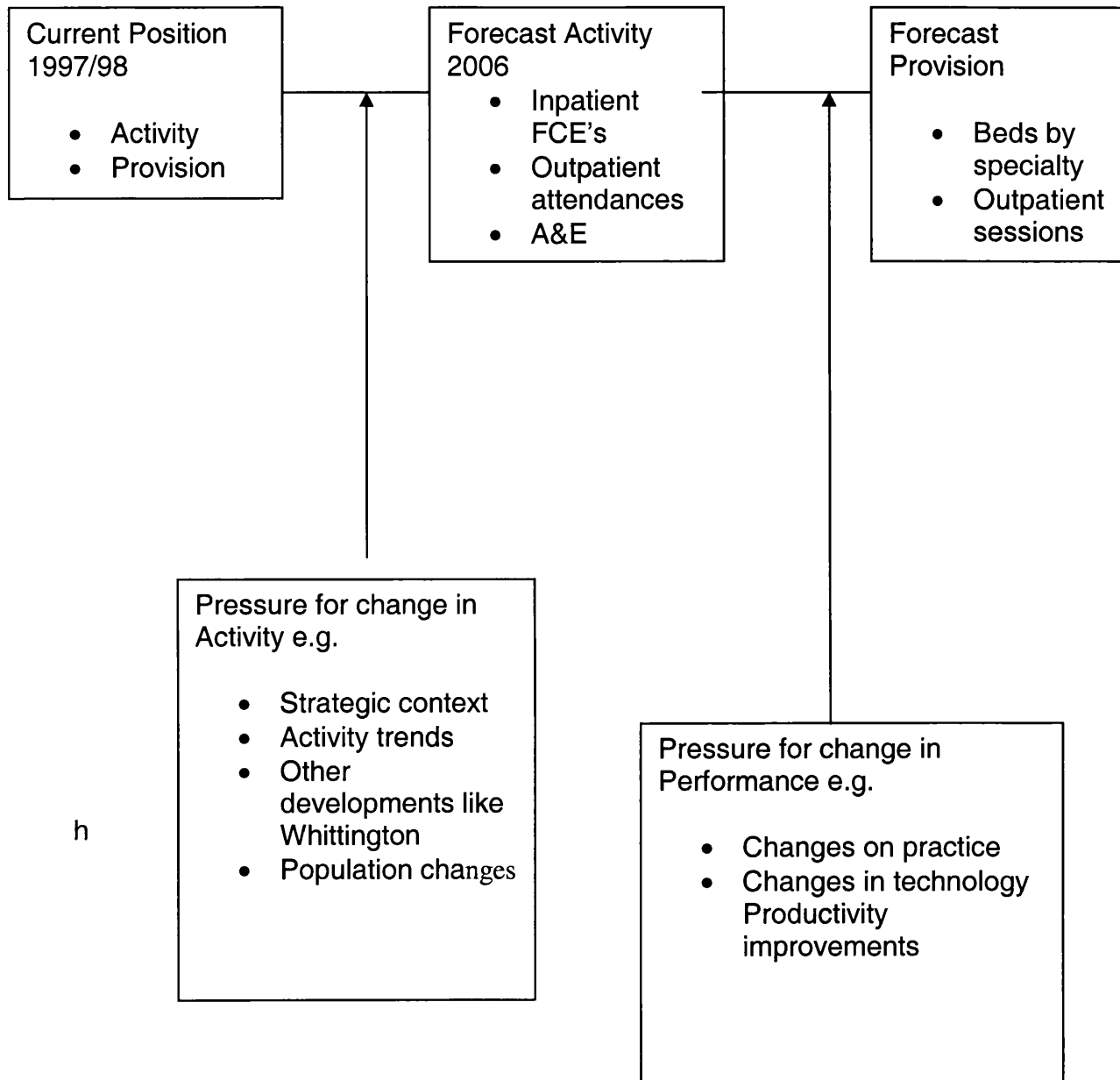
The steps adopted were:

- i. Confirmation of baseline levels of activity and provision for the Trust. This was meant to validate the integrity of the data. In this case, the 1997/98 was taken as the last year that data is complete and available.

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- ii. Identification of needs/ demand related pressures for change. In this case, changes the demographic structure of the catchment population as well as changes proposed for the development of other providers were taken into consideration. A form of SWOT analysis was done to look at the influences of other providers.
- iii. Definition of assumptions to quantify the effect of these pressures and group them to develop a forecast in the form of a range of scenarios.
- iv. Identification of pressures to change in performance and the identification of the appropriate performance targets to determine provision levels.
- v. Development of forecasts of provision again in the form of scenarios by applying these targets to activity scenarios. Appendix 7 and 8) Thereafter, options are appraised and the suitable outcome determined.

Process for assessment of future activity and provision levels, UCH



**Figure 3**

**Source:** Full Business Case Document. UCH Redevelopment.



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This process allows for the examination of critical external factors in the assessment. The weakness inherent in SWOT analysis is the reliance on

external factors more than critical internal factors. This analysis seem to have considered more external factors than it did with the internal strengths and weaknesses of the Trust although in the sensitivity and scenario analysis, the variables were internal. Figure ... is a summary of project risks using both optimistic and pessimistic case scenarios. In an externally biased scenario, the increase or decrease by 15% scenario could be as a result of increased utilization perhaps because of a change in disease patterns or increased population in absolute terms or in its structure. Viewed as an internal scenario, activity could increase as a sign of acceptance of the quality of service because of improved quality in staff competence or of facilities. In reality both are possible although the Trust should be more able to control the internal factors more than the external ones.

Options were generated and shortlist of options developed. From these, a range of scenarios were developed to generate the final outcome.

Probabilities of outcomes of the various scenarios and their impact, using sensitivity analysis enable a best choice to be made. For example, the choices were between configuring the services along these lines:

- Centralised services with single site operation to be centralised at Gower Street UCH or The Middlesex Hospital; or Queen Square locality.

OR

- 2-site option- all services within UCH or The Middlesex Hospital

OR

Multi-site option- where services would not be centralised but retained in the UCH, Middlesex, and Queens Square sites. There would be no relocation of services in this combination.

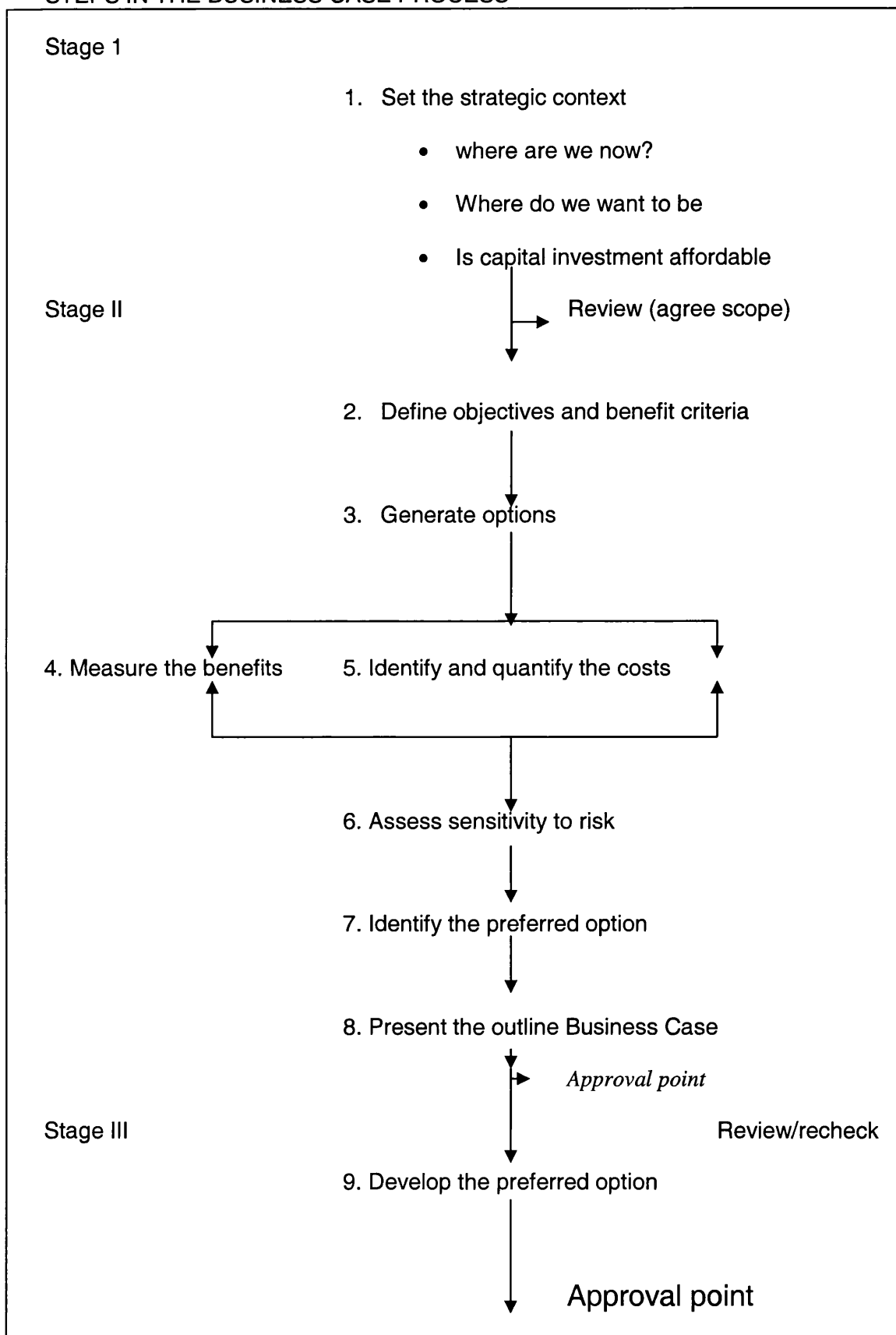
Besides the determination of non-financial benefits of this project, other financial benefits were analysed using the NPV procedures and matching other output specifications with the PSC but this was not covered in the research.

The preferred option based on this exercise was that majority of the services be retained at Gower Street with new buildings on the Odeon and Rosenheim sites.

Further analysis was made on this single site choice at Gower Street before determining the final scope and scale of the project. The Gower Street site was too small to accommodate all inpatient beds. It meant that clinical services would have to be decanted in temporary accommodation and moved back when the redevelopment is completed. This would be costly besides the inconvenience of patient transport between component parts and the competing demands between patient services and support services for service routes like corridors, lifts etc. There is also the fact that converted buildings for temporary accommodation may not provide the right clinical environment for staff as well as patients.

**Figure 4**

**STEPS IN THE BUSINESS CASE PROCESS**



Source: Capital Investment Manual, NHS-Estates

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Due process and detailed reviews along the same lines as in the UCL Trust and within the CIM methodology have been made for the redevelopment of other existing hospitals.

### **Queen Mary Hospital**

. The procedures as in the CIM and the Estates strategy were followed and the after rationalization, the decision was to halve the size of the hospital. Peripheral parts of the site will be sold for residential development, even a prime area on one corner of the site will be sold for residential development to a superstore. All the in-patient services will be moved to other sites and the hospital will house an ophthalmology day surgery unit, an audiology centre and an EMI day hospital.

### **Downside Hospital**

This hospital provides a range of community child health services including child psychiatry, a family planning health centre and a drug abuse-counselling unit. The agreed plan in the Estates Strategy is to retain half the site, with significant redevelopment and new capital investment. Space will be retained for the wide range of ambulatory services.

### **St. Martins Hospital**

This is a community hospital and needs considerable investment. Outpatient, day care for the elderly will continue to be operated. In the plan, EMI beds, will be transferred to nursing homes to release space to allow elderly care rehabilitation beds to be introduced. It is significant that in this plan also four parcels of land will be available to be sold off in order to fund the new construction.

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What is significant in these three schemes is that there will be space released to be sold off to private interests for redevelopment. There is the danger that NHS Trust will be getting deeper into speculative development and resale of existing assets than keeping focused on the provision of health care which cannot be accurately estimated, being a social good. The risk of missing out on the level of need and new methods of care may soon require new land which may not be easily available.

### **CONCLUSIONS AND RECOMMENDATION**

There was evidence that responsibilities are being devolved to the Trust level for project management and to the Primary Care level for service delivery, whilst the programme level concerned itself with monitoring and guidance.

The Cabinet continues to encourage the NHS to adopt coherent approaches to risk assessment and management.

The Treasury is encouraging the NHS towards the improvement of risk management and corporate governance and supporting it, like all other departments, with guidance protocols.

The Department of Health has further devolved power to the Trusts but continues its monitoring role over Trust activities although it still retains final responsibility for ensuring good practice at all levels, and is answerable to the Secretary of State.

The programme level is concerned with formulating strategic plans and guidance for best practice at the Trust level. Besides the Gateway Process from the Office of Government Commerce, the Department of Health has developed several guidance documents for the Trusts.

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The Capital Investment Management (CIM) has been developed as an operational guide (this is being revised). An Estates Strategy has been developed which clearly defines the vision for the NHS with clear objectives

and performance indicators to monitor progress and take prompt action to mitigate potential risks as they are identified.

There was evidence of a shift in the traditional culture within the NHS. The NHS Plan, as in Procure21, sets out a long-term strategy in which historic levels of investment are being combined with radical reforms to redesign health services around the needs of the patient. Business risk assessment and management practices are being introduced into the service.

At the project level, the NHS has the responsibility to ensure that the principles of sound risk management are understood and widely adopted. It is the operational level where the guidance protocols from Cabinet level and through the NHS Executive are put into practice. The NHS Estates collects and analyses capital scheme information from all trusts in England who are undertaking major schemes ( above 32.5m ) using public funds. Trusts are required to submit information as required in the CIM and must satisfy accountability of the Cabinet for ensuring effective risk management and general project controls. The Procure21 has the theme " Building Better Health" and it is the Department of Health's response to the Egan Report "Rethinking Construction" and the government's general initiative "Achieving Excellence"

### **Recommendations**

There is no doubt that there is a changing culture in the public sector, and the NHS in particular. There is a general awareness of the importance of good risk management practices in accordance with the various guidance protocols

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for attaining excellence in construction. The changes in the NHS are very pervasive and involve the application and full use of business appraisal techniques in making decisions about project delivery. It will be useful if this research could be carried further to determine quantitatively the role place of quality risk assessment and management practices in successful project

delivery. In the case of the UCH, it was quite clear that the methodology in the Capital Investment Manual was followed in the determination of the scope and scale of this project. It also determined the procedure for the assessment of the financial and non-financial benefits to determine value for money and the subsequent development of a comprehensive plan for the management of these risks (appendix 11)

This project was began in January 2001 and there is every indication that it is going on schedule after 15 months. So far, there are no risks regarding cost over-run as well. It is yet early to determine the pay offs from the Business Case methodology in terms of efficient risk identification and management. Being a PFI project, the requirements for risk identification and management are tighter than in traditional procurements. Work is in progress and the Main Wing of the Hospital is expected to be operational in 2005.

The gestation period for this project is long. It will take a considerable time before benefits expected become visible. It will be easier to evaluate the construction aspect of the project soon after completion in terms of cost, time and quality of construction but the evaluation in terms of scope and scale will be an interesting research area when it has been completed and been in service for sometime

BIBLIOGRAPHY

1. A.T.O'Donnell and T.E.Rhodes, *Risk, Uncertainty and Public Sector Investment Appraisal*, HM Treasury Working Paper No. 27
2. B.M Kleczkowski & R. Pibouleau, *Approaches to Planning and Design of Health Care Facilities in Developing Areas*. WHO Offset Publication No.72
3. C. Chapman and S. Ward (1999) *Project Risk Management –Processes, Techniques and Insights*, Chichester, Wiley & Sons
4. Cabinet Office Efficiency Unit (1995)- *Construction Procurement by Government- An Efficiency Unit Scrutiny*, HM Stationery Office, London
5. CIRIA (1996) *Risk for construction Projects*, Report no. 19
6. David Hodgkinson (2001) *Public Authority Procurement Strategy*. Institution of Engineers, Thomas Telford
7. DETR (1998), *Rethinking Construction*, HMSO, London
8. George Ofori (1990) *The Construction Industry-Aspects of its Economics and Management*, Singapore, Singapore University Press
9. Graham Winch (2001), *Managing Construction Projects: An Information and Processing Approach*. ( Unpublished)
10. HM Treasury (1997) *Appraisal and Evaluation in Central Government- "The Green Book"*, The Stationery Office, London.
11. Latham, Sir Michael (1994) *Constructing the Team*, HMSO, London
12. Ministry of Health Ghana (2001) *The Health of the Nation- An Analysis of Health Sector Programme of Work 1997-2001*
13. Mott MacDonald (2002)- *Review of Large Public Procurement in the UK*



14. N.J.Smith (1999) *Managing Risk in Construction Projects*, London, Blackwell Science Ltd.
15. NAO (2000) *Supporting Innovation: Managing risk in government departments*
16. National Health Service Executive (1995) *Capital Investment Manual*
17. Peter Gershon. *Review of civil procurement in central government*. (April 1999) HM Treasury.
18. Peter W.G Morris.(1994),*The Management of Projects*, London, Thomas Telford
19. Roger Flannagan & George Norman, (1993) *Risk Management and Construction*, London, Blackwell Sciences Ltd.
20. *The Construction Industry- Issues and Strategies in Developing Countries*, A world Bank Publication. (1994)

#### Websites

1. [www.nhsestates.gov.uk](http://www.nhsestates.gov.uk)
2. [www.soldonhealth.gov.uk](http://www.soldonhealth.gov.uk)
3. [www.gov.uk](http://www.gov.uk)
4. [www.nao.gov.uk](http://www.nao.gov.uk)
5. [www.danida-health-ghana-org](http://www.danida-health-ghana-org)

## Annex 1

### Key questions for Departments to consider when reviewing their approach to risk management

#### 1. Do senior management support and promote risk management?

- Does a formal risk policy exist and is this documented, endorsed by the head of the organisation, readily available to all staff and subject to regular review?
- Does senior management have a good understanding of the key risks facing the organisation and their likely implications for service delivery to the public and the achievement of programme outcomes?
- Is senior management routinely in a position to be aware of the key risks and does it have systems in place to ensure that this is up to date?
- Are contingency arrangements in place to maintain standards of service to the public and the delivery of programmes in the event that risks result in adverse consequences?

#### 2. Does the department support well thought through risk taking and innovation?

- Is there an explicit policy to encourage well managed risk taking where it has good potential to realise sustainable improvements in service delivery and value for money and is this policy actively communicated to all staff?
- Is individual success rewarded and support given by management when things go wrong so as to avoid a blame culture?
- Are staff encouraged to take responsibility for risks when they are best placed to do so rather than transferring it to other organisations?
- Are staff encouraged to report bad news to senior officials as well as good?

- Are staff encouraged to challenge existing practices, to identify new ways of doing things and to be innovative?

### **3. Are risk management policies and the benefits of effective risk management clearly communicated to staff?**

- Are there clear statements which set out the organisation's risk policies and its approach to risk taking and innovation, and are staff encouraged to read them?
- Is a common definition of risks and how they should be managed, adopted by all staff throughout the organisation with detailed guidance for staff drawing up or implementing programmes?
- Is it clearly communicated?
- Are appropriate staff clearly assigned responsibilities for assessing, reporting and managing identified risk and are these responsibilities regularly reviewed?
- Do staff receive appropriate guidance and training on the typical risks which the organisation faces and the action to take in managing these risks?

### **4. Is risk management fully embedded in the department's management processes?**

- Are there well established approaches for (i) identifying risk and (ii) assessing and reporting risk which are fully understood by staff?
- Are arrangements in place, such as reviews by internal audit and benchmarking with other organisations, to ensure that risk management approaches reflect current good practice?
- Has management sought advice from internal and external audit on good practice in the development, implementation and maintenance of robust risk management processes and systems?

- Has professional advice been taken to ensure that the most appropriate tools and techniques are used to assess risk and the likelihood of it maturing?
- When practicable is a monetary or other numerical value put on risk to emphasise to staff the potential loss or missed opportunity which could occur if risks are not well managed?
- Is the action planned to deal with consequences of risks maturing such as the impact on the delivery of services to the public regularly reviewed to ensure that it remains appropriate, sufficient and cost effective?
- Is risk management ongoing and integrated with other procedures so that staff accept it as a standard requirement of good management and not a one-off or annual activity?

**5. Is the management of risk closely linked to the achievement of the department's key objectives?**

- Are the risks which could result in key objectives or service delivery responsibilities not being met identified and the likelihood of them maturing regularly assessed?
- In assessing risks are the potential implications for key stakeholders – citizens as both taxpayers and consumers of government services and specific client groups such as business – taken account of?
- Are early warning indicators in place – covering for example, quality of service or seasonal increase in customer demand not being met – to alert senior management of potential problems in service delivery or that the risk of planned outcomes not being met is increasing?
- Are reliable contingency arrangements in place so that if problems arise services to the public will be maintained and the adverse impact on key programme outcomes such as late delivery or reduced quality will be minimised?

- Is there a reliable communications strategy in place so that if risks mature those most affected by the potential adverse consequences fully understand and have confidence in the remedial action which the department may need to take?

**6. Are the risks associated with working with other organisations assessed and managed?**

- Are all those organisations which are likely to have some influence over the success of a programme or service to the public identified?
- Is consideration being given to the need for a consistent and common approach to managing risks which cut across departmental boundaries, for example cross-departmental projects?
- Are the risks associated with joint working not being successful jointly identified and assessed, with responsibility for managing them by all those involved in the joint working or partnership clearly assigned and understood?
- Do organisations understand and have confidence in the risk management arrangements of all those involved in the joint working or who could influence the success of the programme?
- Has the extent to which risks can be transferred to organisations – both public and private – best placed to manage them been considered and acted upon?
- Is there reliable and regular information to monitor the risk management performance of all those organisations involved in a joined up programme and partnerships?
- Are there adequate contingency arrangements to minimise the adverse effects on public service delivery of one or more party failing to deliver?



# UCLH Full Business Case

## Content and Structure of Full Business Case:

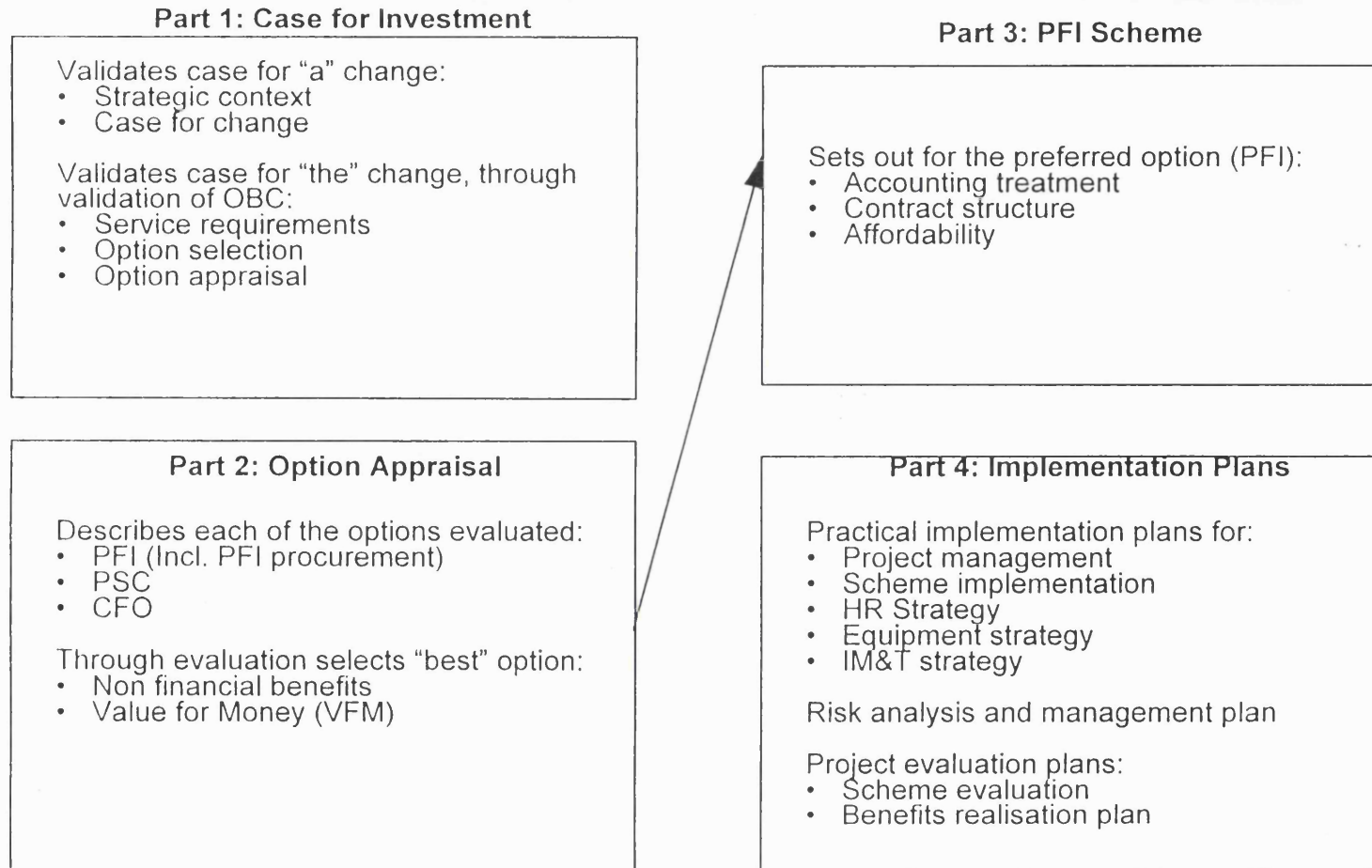


FIGURE 4 CAPITAL INVESTMENT PROCESS FOR PRIVATE FINANCE

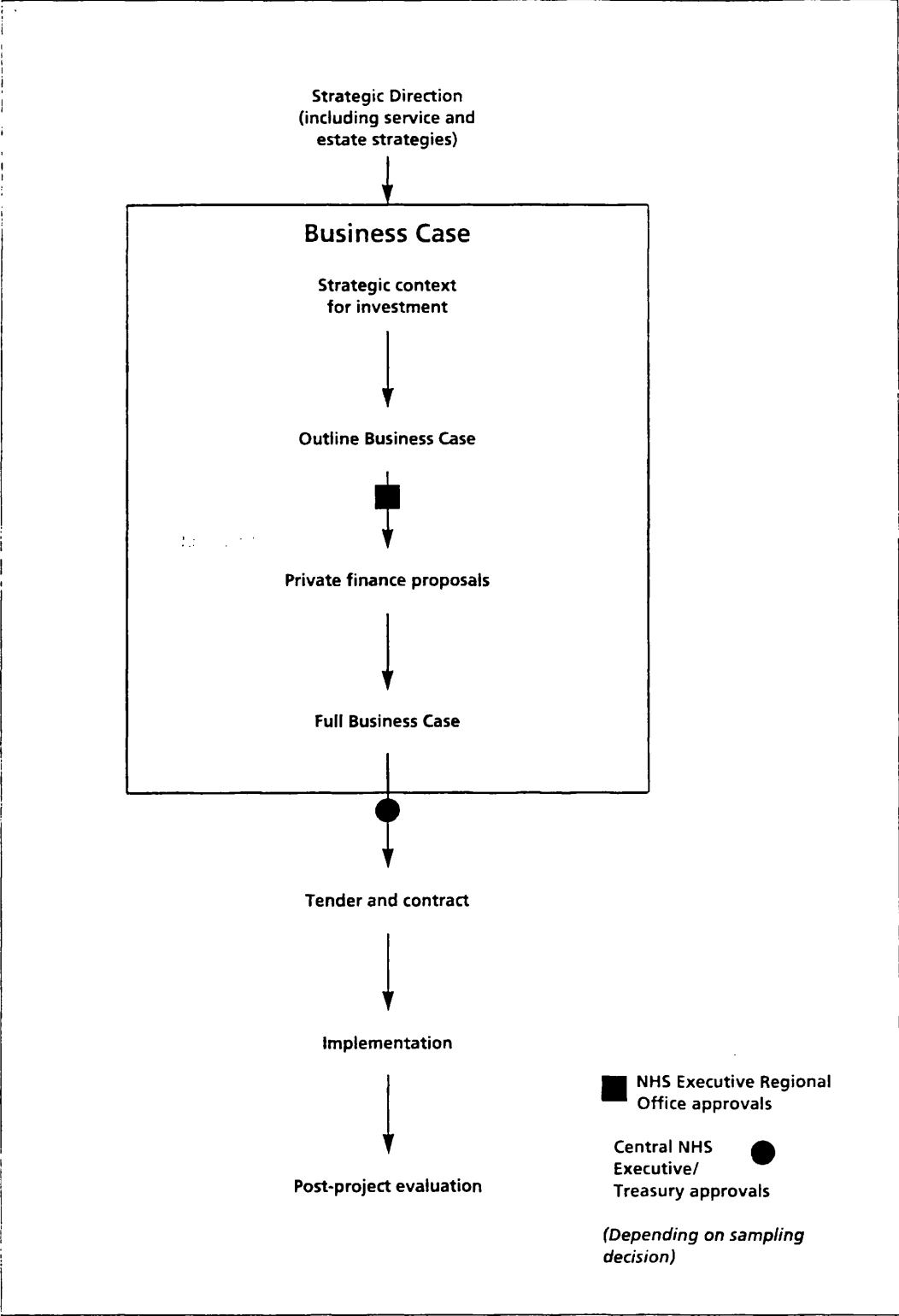


FIGURE 5 CAPITAL INVESTMENT PROCESS FOR IM&T SCHEMES

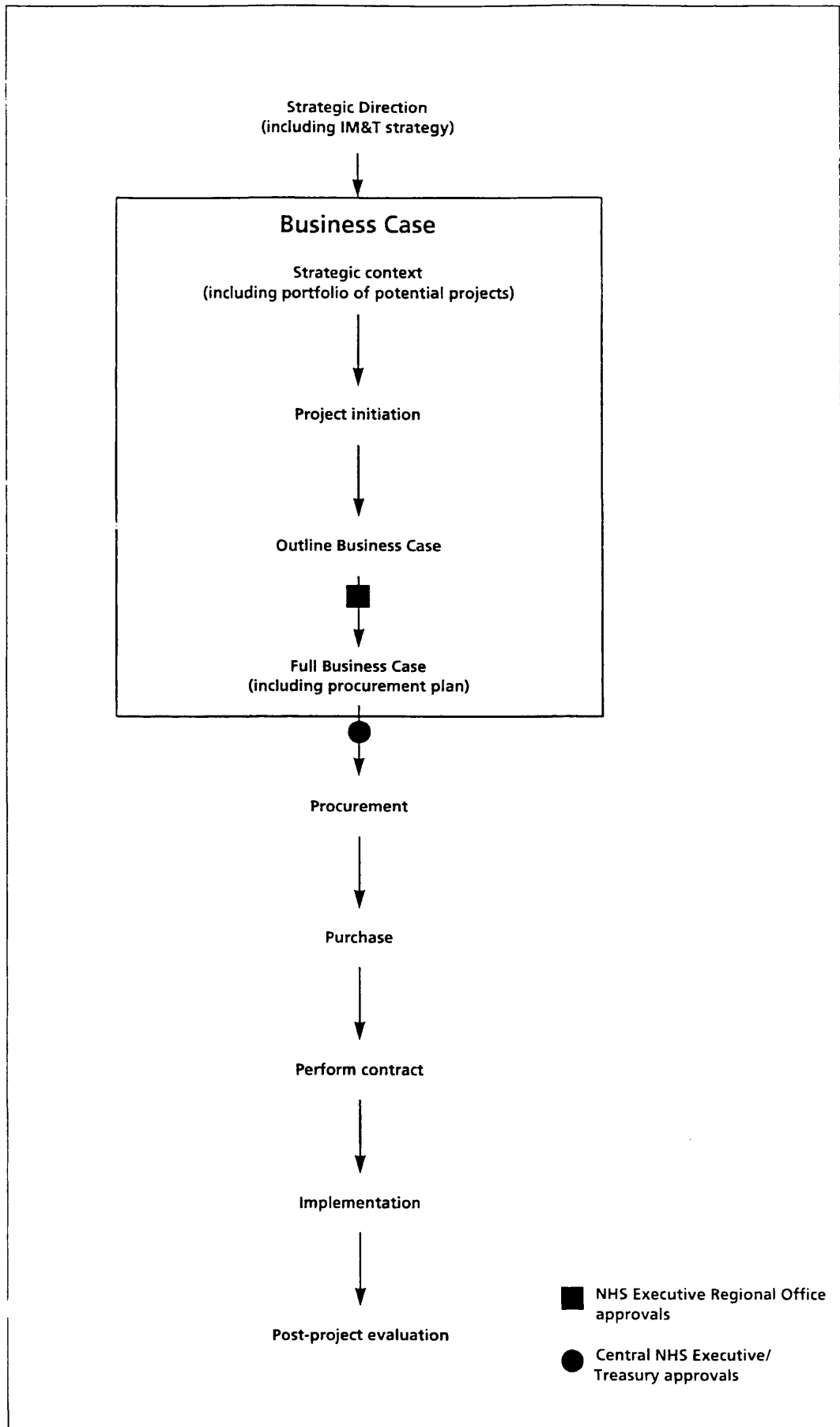
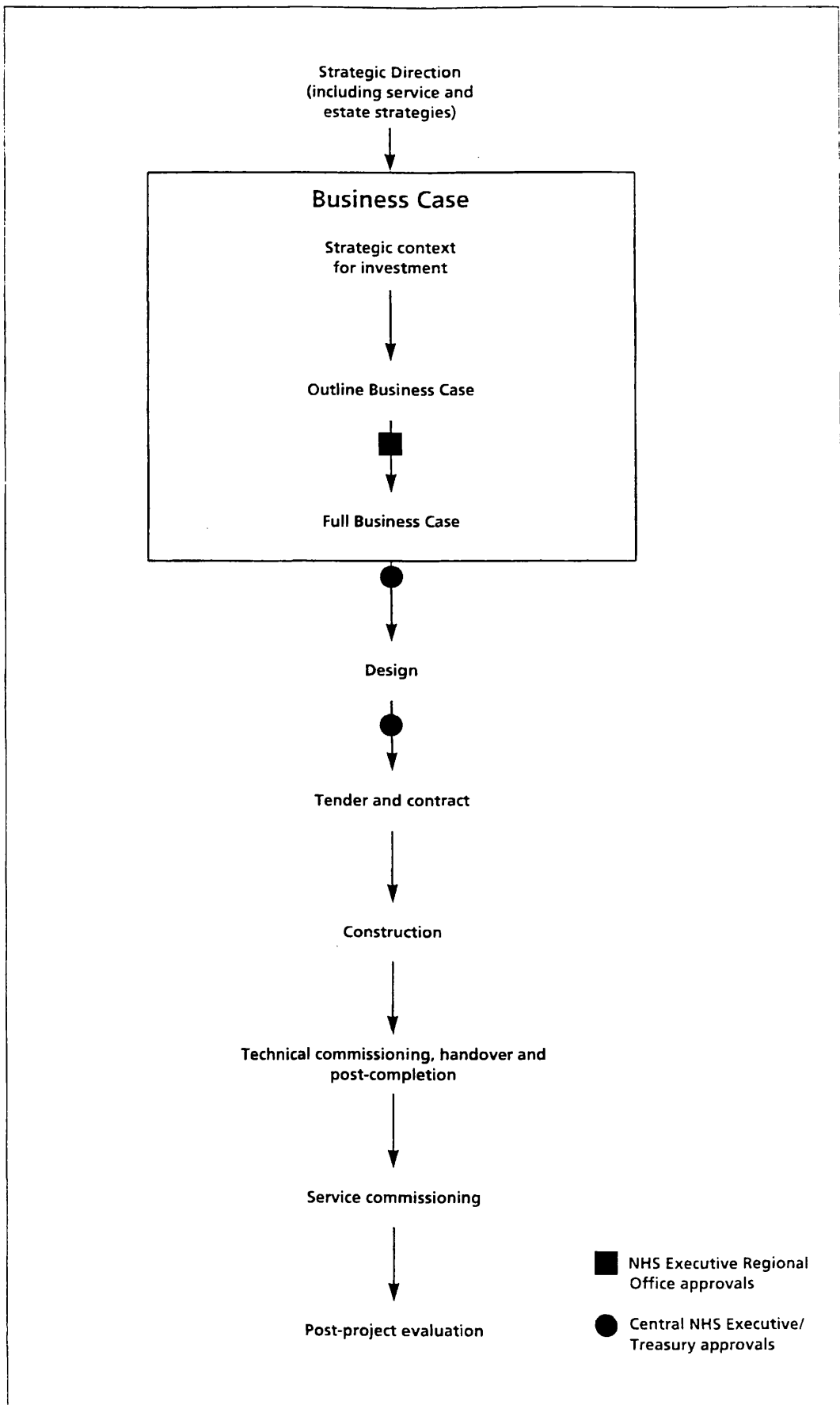




FIGURE 3 THE CAPITAL PROCESS FOR HEALTH BUILDINGS AND EQUIPMENT





## UCLH Full Business Case

### Risk Management:

Risk Area	Risk Management	Contingencies
Activity and Performance <ul style="list-style-type: none"> <li>• General</li> <li>• Whittington</li> <li>• Cancer</li> <li>• Cardiac</li> </ul>	<ul style="list-style-type: none"> <li>• Purchaser involvement</li> <li>• Low activity scenario (only 0.3% more than 1997/98)</li> <li>• Low net movement on Whittington</li> <li>• Cancer growth extrapolated at 3% p.a. (last 3 years is 14%)</li> <li>• Cardiac growth totals 300 FCEs</li> </ul>	<ul style="list-style-type: none"> <li>• Flexibility within hospital accommodation</li> <li>• Flexibility with regard to timing (6th linac)</li> <li>• Flexibility on scale and scope of the EGA Wing</li> </ul>
Academic Income <ul style="list-style-type: none"> <li>• R&amp;D (£15.1m)</li> <li>• E&amp;T (£20.8m)</li> </ul>	<ul style="list-style-type: none"> <li>• Research quality</li> <li>• National priorities for R&amp;D</li> <li>• Partnership work with NHS approved partners</li> <li>• Placement numbers to be maintained</li> <li>• MADEL impact of lost junior doctors (c. £0.5m)</li> </ul>	<ul style="list-style-type: none"> <li>• Further cost savings with income loss</li> <li>• Ability to change mix of consultants to junior doctors to minimise loss of MADEL</li> </ul>
Financial Benefits <ul style="list-style-type: none"> <li>• UCLH cost savings (£22.2m)</li> <li>• HMG cost savings (£4.6m)</li> </ul>	<ul style="list-style-type: none"> <li>• Nurse staffing falls by 257 WTEs (£7.0m) but nurse per bed down from 2.07 to 2.06</li> <li>• A&amp;C staff (£5.2m) driven by single-site and IM&amp;T</li> <li>• Non-pay (£6.9m) - 33% achieved from transfer of St Martin's</li> <li>• HMG savings forms part of fixed unitary fee</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively small staff per bed reduction at this stage of development</li> </ul>
Unitary fee & affordability <ul style="list-style-type: none"> <li>• Unitary fee</li> <li>• Land disposal</li> </ul>	<ul style="list-style-type: none"> <li>• Contractually fixed fee subject to indexation other than EGA Wing</li> <li>• DV's value exceeds funding in unitary fee</li> <li>• Accounting treatment discussed with NHSE</li> </ul>	<ul style="list-style-type: none"> <li>• Further reduction to unitary fee being negotiated (lifecycle investment etc.)</li> </ul>

Appendix 7

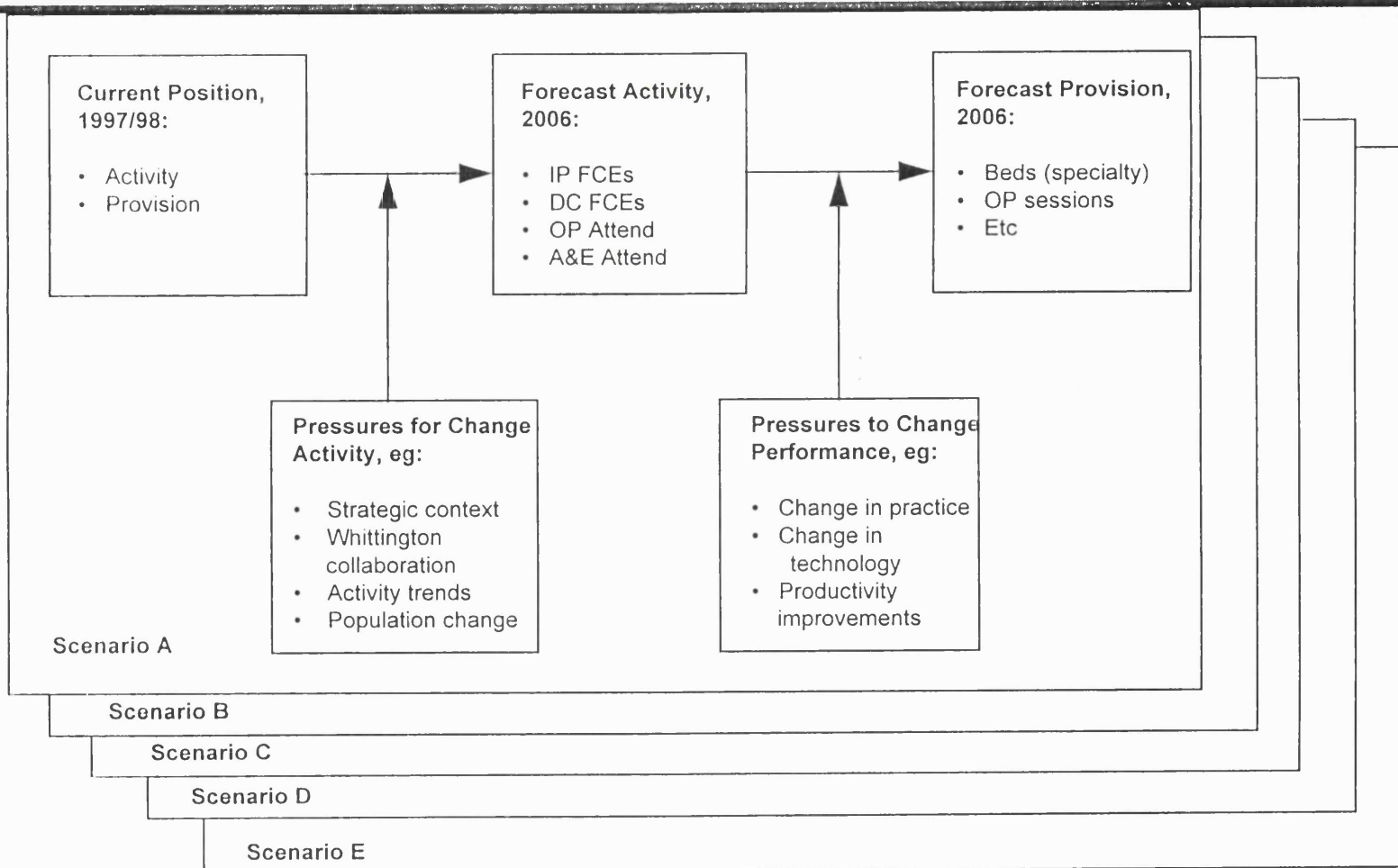
**Table 14.1: Significant Project Risks**

Risk	Probability	Indicative Quantitative Probability	Income (loss)/gain or Savings (loss)/gain	Maximum Income Gain/(Loss) Using Crude Price Per FCE £m	Expected Value of Risk
General increase in activity of 10%	Medium	75%	10% gain in NHS service income @ 50% marginal price	8.8	3.3
General decrease of 5%	Low	25%	5% loss in NHS service income @ 50% marginal price	(4.4)	(0.6)
Reversal of Whittington flows	Medium	50%	Net gain of 511 FCEs @ 50% marginal price	0.8	(0.2)
Synergy Group - UCLH gains 3,000 obstetric FCEs and loses 1,800 inpatient paediatrics	Low	25%	Net gain of 1,200 FCEs @ 50% marginal price	1.1	0.3
Cancer activity remains unchanged	Low	25%	Loss of 2,419 FCEs @ 50% marginal price	(4.2)	(0.6)
Growth in cardiac surgery is not achieved	High	75%	Loss of 301 surgical FCEs @ 50% marginal price	(0.3)	(0.2)
Loss of all cardiac surgery	Very Low	10%	Loss of 1,151 surgical FCEs @ 50% marginal price	(2.0)	(0.1)
R&D income falls by 5%	Medium	50%	Loss of 5% of R&D income	(0.8)	(0.4)
Education income falls by 5%	Low	25%	Loss of 5% of SIFT income	(0.7)	(0.2)
Nurse staffing only reduces only by 50% of projected fall	Low	25%	Loss of £3.5m cost savings	(3.5)	(0.9)
Administrative and clerical staffing reduces only by 50% of projected fall	Low	25%	Loss of £2.5m cost savings	(2.5)	(0.6)
Underwritten value for surplus properties only achieved and no central funding of the 6%	Medium	50%	Added cost of £5.1 m	(5.1)	(2.6)
Medical school accommodation is treated as a project cost to be funded by the Trust	Medium	50%	Added cost of £1.5 m (representing capital charges on £15 m investment at Rockefeller Nurses Home)	(1.5)	(0.8)



# UCLH Full Business Case

## Service Requirements Assessment - Methodology:





## UCLH Full Business Case

### Future Inpatient Bed Assessment - Outcome:

Scenario	Total Beds*		Bed Management Performance **	
	Beds	Change from Baseline	Beds/1,000 FCEs	Change from Baseline
Baseline 1997/98	749	-	13.9	-
A, 2006	669	-10.7%	12.1	-12.9%
B, 2006	654	-12.7%	11.5	-17.3%
C, 2006	672	-10.3%	11.2	-19.4%
<b>D, 2006 (revised)</b>	<b>629</b>	<b>-16.0%</b>	<b>11.6</b>	<b>-16.5%</b>
E, 2006	692	-8.2%	11.6	-16.5%
Average, 2006	662	-11.6%	11.6	-16.5%

\* Includes PP beds

\*\* Average LOS for London Teaching Hospitals, "more challenging" occupancy and day case rates

**Table 6.1: Non-Financial Benefit Criteria Definitions**

Criteria	Criteria Definition and Attributes
<b>A. Service</b>	
<b>A.1 Service Concept:</b>	
“Whole Hospital” Key Components	Delivers the vision of the teaching hospital of the future.  Within the whole hospital concept there are seven key components which the scheme will need to deliver. These are the adolescent unit, the critical care unit, the acute assessment, the ambulatory interventional, the cardiac unit, the cancer service and the infectious diseases unit.
<b>A.2 The Scheme:</b>	
Quality of Accommodation	Meets acceptable standards for internal and external accommodation and is welcoming for patients, staff and visitors.
Functional Relationships	Tests how far the options achieve clinically coherent groupings of services and departments to improve functional relationships between services/departments and within departments.
Flexibility	The ability of the options to use accommodation flexibly to meet changing requirements of healthcare delivery and fluctuations in demand.
<b>A.3 Accessibility</b>	The ease of getting to the new hospital and, once there, the ease of getting round the hospital.
<b>A.4 Human Resources:</b> Attract and retain staff	Tests the ability of each option to retain and attract key staff.
<b>A.5 Implementation:</b>	
Disruption	Tests each option against the need to minimise disruption to patients, staff and visitors throughout implementation.
Timetable	Timing of implementation.
<b>B. Education and Teaching</b>	
<b>B.1. Good quality E&amp;T facilities:</b>	
Quality of accommodation	Meets acceptable standards for internal and external accommodation.
Functional relationships	Proximity and integration with research and service locations/other education providers.
Flexibility	Ability to use accommodation flexibly to meet changing requirements of education and training delivery.
<b>B.2 Relationships with services</b>	Enhance relationships with research and service provision.
<b>B.3 Attract and retain staff</b>	Tests the ability of each option to retain and attract key education and training staff.
<b>B.4 Implementation:</b>	
Disruption	Tests each option against the need to minimise disruption to training activities throughout implementation.
Timing	Timing of implementation.
<b>C. Research and Development</b>	
<b>C.1 Good quality research</b>	Tests options against ability to deliver high quality research.
<b>C.2 Attract and retain staff</b>	Tests the ability of each option to retain and attract key education and training staff.
<b>C.3 Implementation:</b>	
Disruption	Disruption to research programmes throughout implementation
Timing	Timing of implementation.

## 14. Risk Management Strategy

The section identifies those areas of material uncertainty that have arisen either from discussions with external stakeholders or from the Trust's implementation plans. For each major risk area identified, the section summarises the impact that the risk might have and the probability that it will crystallise, the process by which critical assumptions relevant to the underlying uncertainty have been arrived at and how the chances of material risk arising have, so far, been minimised through the business case process. Finally, it identifies the nature and scale of the contingencies which are available to the Trust should the risk, in fact, crystallise.

The section suggests that, in financial terms, the greatest risk to the affordability of the scheme comes from the unresolved funding treatment of capital charges which result from the creation of the deferred asset and which represents the economic benefit enjoyed by the deal as a result of the inclusion of property sales. The possible impact of this uncertainty is substantial. If the NHS Executive does not sanction the Trust's approach, an affordability gap of £5.1 m per annum would be created.

Other risks which, were they to materialise individually or in combination, would have major financial impact on the affordability of the project are identified and described in more detail in this section. Because the development will take place over a long period of time, the Trust has worked with internal and external stakeholders to develop a number of other important assumptions. Whilst the FBC demonstrates that they are both reasonable and supportable, those assumptions and projections that would have the greatest impact were they to be proved incorrect would include the Trust's cost savings programme, the treatment of capital charges associated with the NHS's investment of the Rockefeller Nurses' Home and growth to be experienced in cancer and cardiac services.

The section concludes that the UCLH scheme is being undertaken in an environment in which there are a number of quite significant uncertainties. A number of these uncertainties are introduced by the scheme itself and, if they were to materialise, it is clear that the Trust's existing configuration would be poorly placed to cope with them. Despite these uncertainties however, the case for investment at UCLH remains undiminished although the need for flexibility, at a strategic and physical level is paramount.

### 14.1 Introduction

Risk is relevant to the new hospital in three ways. First, the process of defining the nature, scale and scope of the new hospital is inevitably based on assumptions and projections about the future. These may prove to be incorrect. Second, the process of implementing change itself introduces new risks that would not otherwise arise. These specific risks need to be identified and carefully managed. Third, the development of a new hospital will alter the way in which the Trust is able to respond to changes in the external environment which would

have arisen in any case. These risks and the constraints they introduce need to be clearly understood.

The broad headings under which risks have been identified are:

- Activity and performance (general and in specific specialities)
- Research & development income
- Education & training income
- Financial benefits (clinical and non-clinical).

This section of the FBC identifies, in some detail, a number of specific risks under each of these headings. **Table 14.1** seeks to quantify and then rank those risks where the product of impact and probability is likely to have the most significant effect on the project. This section goes on to describe how these and other risks will be managed and mitigated by the Trust.



**Table 14.1** suggests that, certainly in terms of potential financial impact, the greatest risk to the affordability of the scheme comes from the unresolved funding treatment of capital charges which result from the creation of the deferred asset and which represents the economic benefit enjoyed by the deal as a result of the inclusion of property sales. The possible impact of this uncertainty is substantial. If the NHS Executive does **not** sanction the Trust's approach, an affordability gap of £5.1 m per annum would be created.

Other risks which, were they to materialise individually or in combination, would have major financial impact on the affordability of the project are identified and described in more detail below. Because the development will take place over a long period of time, the Trust has worked with internal and external stakeholders to develop a number of other important assumptions. Whilst the FBC demonstrates that they are both reasonable and supportable, those assumptions that would have the greatest impact were they to be proved incorrect would include:

- If the Trust fails to achieve its £22.2 m cost savings programme
- If the capital charges associated with relocating academic accommodation into the Rockefeller Nurses' Home becomes a cost that must be borne by the project
- If the growth projected in cancer does not materialise
- If the growth projected in cardiac surgery does not materialise and this leads to the removal of all cardiac surgical activity from the Trust.

It is worth noting that, at a general level, the Trust has been actively involved in managing the risks inherent in the project throughout the business case process. A number of mechanisms have been set up and processes established which have been specifically designed to identify and manage uncertainty. Some of these have had an exclusively internal focus, such as the involvement of the 40 user groups in the hospital design. Others have involved external stakeholders in the development of key assumptions underpinning the business case. The most obvious is the work of the Purchaser Forum, chaired by the Trust's host purchaser, C&I. Given the scale of its research & development and education & training income, the Trust has also worked closely with the NHS Executive, particularly on the potential impact of future changes in academic medicine.

It is also worth noting that, in terms of physical contingency planning, the new hospital will be seen as the Trust's primary acute health facility in the years to come. A number of clinical and clinical support services remain in peripheral buildings even after the redevelopment has been completed. These include:

- Rosenheim Wing (owned by the Trust)
- Bonham Carter House (basement and first floor leased by the Trust)
- Doran and Dorville House (owned by the Special Trustees and leased by the Trust)
- 140 Hampstead Road (leased from UCL Medical School).

In general terms, if activity projections prove overly optimistic, more intensive use will be made of the main hospital either by transferring these services directly into it or, alternatively, re-specifying some elements of the EGA Wing to accommodate appropriate changes. The

opportunity to engineer significant step cost savings therefore, remains relatively high, even once the new hospital is completed.

In terms of project structure, risk management during the project will be the explicit responsibility of the Project Implementation Board and will be viewed as being an integral part of each Project Implementation Group's work programme. The Development Directorate will need to liaise closely with business and service planning processes more generally to ensure that year-on-year changes are recorded and their incremental impact on the scheme, and the project more widely, are fully worked through.

## **14.2 Activity, Performance and Future Service Requirements**

This element of the FBC examines the assumptions made relating to future levels of activity and performance and the process by which they have been arrived at. It identifies those areas where material uncertainty still exists and how this uncertainty will be both minimised and, should it materialise, what contingencies might be available to the Trust.

### **14.2.1 General Activity**

#### **Size and Probability of Risk and Risk Management to Date**

In the light of substantial changes in strategic context, current activity and the financial environment in which UCLH operates, the activity basis for the new hospital has been completely recomputed in the FBC. In developing its analysis, the Trust has worked with a sub-group of the Purchaser Forum convened specifically for the purpose. As a result, the projections included in the FBC are fully supported by purchasers.

A range of pressures for change to activity levels were identified and their potential impact, by specialty and by purchaser, have been assessed. These assumptions were grouped into:

- Demographic change
- Definite service changes (for example, the transfer of plastics caseload to the Royal Free)
- Past activity trends
- Predictable service shifts (for example, the transfer of caseload to and from Whittington Hospital).

A number of scenarios, based on optimistic and pessimistic assumptions, have been developed. From an FCE baseline of 49,125 in 1997/98, these scenarios range between 49,251 FCEs (0.3% increase on current performance) and 54,645 FCEs (11.2% increase on current performance).

In terms of bed performance, the Trust commissioned a report by the benchmarking company, CHKS, to examine the scope for achieving bed reductions. The bed management targets which form part of the FBC are derived using average length of inpatient stay for London teaching hospitals and using more challenging targets for occupancy and day case performance, broadly based on upper quartile London teaching hospital performance. Under the different scenarios, the bed numbers ranged from 623 to 692.

In conjunction with its purchasers, the Trust has modelled its service requirements on the lowest activity scenario, requiring 49,646 FCEs. The key features of this scenario are:

- At 49,646 FCEs, this represents an increase on current activity of less than 1%
- The activity is 9% below the optimistic scenario
- 1,662 day cases in general surgery and urology are assumed to transfer to Whittington Hospital
- Long stay elective (8 days or more) general surgery and urology inpatient activity are assumed to transfer to the Trust and short stay general surgery and urology inpatient activity are assumed to transfer to Whittington Hospital, with a net loss of 373 FCEs to the Trust
- There will be some further repatriation of secondary care services to local providers, especially urology and general surgery
- There will be no significant change to the configuration of women's and children's services
- 138 inpatient FCEs in elderly rehabilitation (around 10% of the Trust's caseload) will be transferred from the Trust to a new rehabilitation unit at Whittington Hospital
- Cardiac surgery activity will expand to 1,000 open heart procedures each year, an increase of around 25%.

The most significant increases in the Trust's projected activity are set out in **Table 14.2**.

**Table 14.2: Projected Activity Changes 1997/98 and 2004/5**

	Baseline 1997/98	Actual 3 Year CAGR	Projected 2004/05	Projected 7 Year CAGR	Total Growth
Haematology	5,582	16.6%	6,617	2.5%	18.5%
Cardiothoracic surgery	850	-0.4%	1,151	3.9%	35.4%
Cardiology	1,871	-1.1%	2,209	2.4%	18.1%
Oncology/radiotherapy	5,104	9.1%	6,479	3.0%	26.9%
Paediatric oncology	368	NA	377	0.3%	2.4%

### Risk Management Post FBC Approval

The fact that processes for developing and testing critical assumptions have been established provides substantial comfort to stakeholders that, at the time of approval, the business case addresses **foreseeable** changes in the external and internal environment. However, existing risks will crystallise and new uncertainties will emerge throughout the implementation process and beyond and these will need to be managed and mitigated.

The development of the new hospital will be completed over a number of years and the annual service level agreement process should provide a suitable forum by which changes in general levels of activity required by commissioners are communicated to the Trust. In

addition, the Synergy Process in C&I will provide a forum for more local debate and discussion.

Risk will be managed during the implementation period by the Trust ensuring that its individual Project Implementation Groups are fully informed of changes in activity assumptions and incorporate the implications of such changes in their service design and capital planning work. The development of the EGA Wing provides the Trust with a major strategic opportunity to recalibrate the hospital estate in line with commissioners' requirements five years into the construction if material change is required.

### Contingency Planning

Given the timescales over which the hospital is being planned, there are inevitably a number of risks that projected activity and performance is significantly under or over-stated. Whilst the Trust's planning work so far has sought to minimise this risk, it has defined contingency measures which seek to mitigate the impact of risks which may crystallise in the future.

It is extremely difficult to determine ranges between which general increases or decreases in activity may range. For the purposes of contingency planning, the Trust has modelled how it would seek to accommodate the most optimistic activity projections emerging from its activity modelling work (i.e. 54,645 FCEs and 692 beds). Given recent activity trends which have shown activity rising by 10% at UCLH in the last five years, and the fact that projected activity in the FBC is predicted to stay virtually unchanged, a reduction in activity of only 5% (2,500 FCEs and 31 beds) has been used to determine contingency measures.

On the basis that activity is **greater** than is currently envisaged the Trust would first and foremost seek improvements in the performance of existing resources. Bed throughput would need to improve from 11.4 to 10.4 beds per 1,000 FCEs to accommodate the most optimistic scenario. This is a large increase and is likely to require some re-organisation of the projected bed complement.

In extremis, the Trust could group together the 35 bed adolescent facility and 20 paediatrics inpatient beds, thereby freeing up one whole floor able to accommodate a maximum of 63 beds, depending on case mix. This would also require some increase in utilisation of existing outpatient clinics as space previously dedicated to paediatric outpatients is absorbed by inpatient resource. This is likely to be achievable through changes in the basis of the working day for such clinics, extending hours, perhaps introducing three rather than two clinics each day and/or opening at week-ends.

Additional theatre demand of 10% would suggest the provision of one more theatre to add to the 12 currently being planned in the main hospital and two in the EGA Wing. Suitable capacity could be provided either by increasing the number of theatres to be built as part of the EGA Wing or by increasing utilisation of the existing theatres, which are planned currently on a two session per day basis.

A **reduction** in general activity of 5% would create space of around 30 beds in the main hospital. The physical solution in the FBC involves retaining some clinical and clinical support services in peripheral buildings. Contingency plans focus on freeing up a single unit of space in the main hospital building and doing one or more of the following:

- Repatriating into the main hospital activity which is currently planned to transfer to other hospitals and facilities such as pain management, ophthalmology and maxilo-facial
- Incorporating services currently planned for the Rosenheim Wing such as pathology and other elements of clinical support into the main hospital.

In the PFI contract, the Trust has retained considerable scope to change both the design and content of the EGA Wing. The specification of this facility will not be completed until 2004/05 enabling significant flexibility should this be required.

#### 14.2.2 Whittington Transfer

##### Size and Probability of Risk and Risk Management to Date

Over the past eighteen months there have been extensive discussions, undertaken through the Synergy Process established by C&I, to determine the future pattern of hospital services in C&I. Whilst the work has some way to go before final conclusions are drawn, a number of principles have emerged upon which important assumptions on the nature and level of activity to be undertaken at UCLH have been made. These include:

- Complex and long stay surgery will gravitate towards UCLH from Whittington Hospital
- Day case, simple and short stay surgery will gravitate towards Whittington Hospital from UCLH
- Women and children's services will be rationalised between the three C&I hospital sites

In addition, the plans for redevelopment at the Whittington Hospital incorporate the development of a rehabilitation unit for the elderly. This is designed to re-orientate elderly care services away from a predominantly institutional model. It would also provide a comprehensive rehabilitation services to patients from other specialties. In the scenario which the Trust has used as the basis for detailed FBC analysis it is assumed that some appropriate UCLH patients (equivalent to around 10% of the Trust's current workload) will be admitted to this unit.

Clearly, there remains a risk that the projected shifts in activity do not, in fact, take place.

Whilst there are significant inflows and outflows, the net change in FCEs projected for UCLH currently show a net loss of 373 surgical FCEs and a loss of 138 elderly medicine FCEs. The main impact of this flow of surgical activity not taking place would be on theatre time required. The fact that UCLH is losing short stay and gaining long stay means that the effect on bed days is negligible. However, the reversal of projected flows would increase the number of surgical episodes to be completed by UCLH and hence, theatre requirements would increase. It has been estimated that an additional two theatre sessions per week would be required to accommodate a **total** reversal of flows. This is likely to be achieved by increasing the number of sessions by extending the working day. In terms of inpatient elderly rehabilitation the reversal of the flow of 138 FCEs would increase the demand for general/geriatric beds from 49 to 55, an increase of six beds.

There continues to be debate around the future configuration of women and children's services in and around C&I. The UCLH redevelopment includes 35 obstetric beds, 30 neonatal cots, 20 paediatric beds and 14 gynaecology beds.

The Synergy Group has been considering the current configuration of inpatient services between UCLH, Royal Free and Whittington Hospital. There is clearly some concern that the number of births does not support three obstetric units in the area. The emerging findings of the Group suggest that the high risk neo-natal service located at UCLH will remain under any of the options being considered and that this is likely to mean that high risk pregnancies and the associated critical mass required to deliver this service (defined in Changing Childbirth at around 4,000 births per annum) is also retained. In terms of obstetrics, the major risk would appear to be that UCLH becomes one of only two (or perhaps even one) hospitals in C&I providing a consultant-led obstetrics service, leading to increased demand on obstetric inpatient facilities.

In contrast, the Group's emerging findings suggest that inpatient paediatrics and neo-natal services need not be co-located. The risk here is that inpatient paediatrics are centralised on a hospital other than UCLH. This would remove the need for the 20-bed inpatient paediatric service, although ambulatory paediatrics would probably remain under all options.

### **Risk Management Post FBC Approval**

The Synergy Group continues to make progress in determining the future pattern of services and UCLH will continue to contribute to the work. The Group will be fully apprised of the critical assumptions made in the FBC and the extent to which they introduce new constraints and/or concerns.

UCLH's contribution to the Group's work will include reports on the progress of the hospital development and quantification of the impact of new assumptions from the Group upon the hospital. UCLH will also be in a position to compute the effect of changes to purchaser's requirements and to feed these into the design and construction process through its ongoing client liaison with HMG. Where practical and cost effective, the specification of the new hospital can and will be recalibrated.

### **Contingency Planning**

Contingency measures for changes in the projected caseload to be transferred to and from Whittington Hospital primarily takes the form of achieving improved resource utilisation. Only after exhausting the scope for such improvements will the Trust seek to locate additional physical resources, either from within the new hospital or by using other resources available to the Trust (for example NHNN).

The number of theatres currently being built into UCLH is 14 and utilisation is currently based on a two session day. Suitable capacity could be provided either by increasing the number of theatres to be built as part of the EGA Wing or by increasing utilisation of the existing theatres, which are planned currently on a two session per day basis. Accommodating an additional inpatient elderly medicine bed complement of six would require an increase in the hospital's overall bed complement of 1% and an increase in bed throughput (in terms of beds per 1,000 FCEs) from 11.4 to 11.3. In these circumstances the Trust would also examine the scope to reduce the number of single rooms as each takes up space equivalent to a two bed bay.

The need for UCLH to accommodate a possible increase in its obstetric caseload over the next decade of between 1,000 and 2,000 births would lead to an increase in bed requirements of

between 10 and 20 obstetric beds and around 7 to 10 neo-natal cots. The Trust judges that no additional delivery suite capacity would be required to that envisaged for the EGA Wing. In physical terms, the removal of paediatric inpatients would free up 20 beds. If both scenarios were to come about then the Trust would seek to create use the capacity in the main hospital either to relocate gynaecology or neo-natal care, thereby freeing up space for additional obstetric facilities in the EGA Wing.

### 14.2.3 Cancer

#### Size and Probability of Risk and Risk Management to Date

Of UCLH's total projected NHS caseload of 49,646 FCEs, cancer accounts for 13,473 FCEs (27%). In terms of projected beds, it accounts for 13% of the new hospital's projected bed complement of 629. UCLH's cancer caseload is also critical in attracting over £3.1 m of NHS R&D income directly related to costs supporting the research base of the hospital and UCLMS. Clearly, the FBC makes a fundamental assumption that UCLH will remain a major cancer centre well into the future. The Trust already enjoys cancer centre designation under the Calman-Hine arrangements and plays a central role in maintaining UCLMS's pre-eminent position in cancer research.

The review currently being undertaken by the London Regional Office on the organisation of cancer and cardiac care, following the announcement of the development of St Bartholomew's as a cancer and cardiac centre serving the North East sector of London, will report by the end of June 1999. This is expected to show that, whilst the impact would be extremely high, the probability of UCLH not being a cancer centre in the future is extremely low.

On the basis that UCLH's role as a cancer centre is not fundamentally changed, the risk attaching to the projections of cancer activity fall into two categories. First, under a scenario of no fundamental change in the current organisation of cancer services in North Central London, there is a risk that the projected growth in cancer activity at UCLH from 11,054 FCEs in the baseline year to 13,473 in 2004/05 (22% increase) may not materialise. Second, in circumstances that there are changes in the organisation of cancer services elsewhere in the North Central Sector (or in fact, in other sectors of London) and these benefit UCLH, there is a risk that UCLH's cancer resources are specified so tightly that it is unable to accommodate step increases in future activity requirements.

It is important to recognise the nature of the projected growth in cancer FCEs. Growth is expected to arise mainly as a result of clinical predictions that cancer treatment will be more aggressive, both in terms of dosage provided to patients diagnosed and the earlier recognition of patients with malignancies from improvements in cancer screening. The increase in interventions indicates that, since 1994/95, cancer activity at UCLH has increased by 49%, a compound annual average growth rate of 14%. Despite this recent trend and the clinical predictions that suggest this will continue, projected growth in the FBC predicts a slowing in the annual growth rate to 3%.

Clearly, there could be examples of specific purchasers repatriating cancer activity. It has been suggested that West Surrey, Ealing, Hammersmith & Hounslow and South Essex Health Authorities are all quite distant purchasers with comprehensive cancer services available more accessibly than UCLH. If it is assumed that geographical access is used as the main criterion for these referrals and all relevant FCEs were successfully repatriated by these three Health

Authorities, UCLH's total cancer activity would reduce from 13,473 FCEs to 11,749 FCEs, a reduction of 13%. However, the compound average growth rate for the specialty over the period would only need to increase from the projected 3% to 5%, still well below recent trend growth of 14%, to again reach the projected level.

The 22% projected increase in cancer FCEs are day cases, so that the bed complement dedicated to cancer will remain unchanged. The additional physical resource required as a result of the projected increase in activity is confined to LINAC capacity. These increase from four now to five in the new hospital. A sixth bunker, albeit unstaffed and without a LINAC, is also built into the basement of the new hospital.

The Trust has computed the need for 5 LINACs on the basis that current caseload can be accommodated on 3.89 LINACs working a 10 hour day. A 20% increase in caseload could be accommodated by five LINACs and the 10 hour day maintained. In addition, the need for regular replacement would require the LINACs to operate a 12 hour day for between six and eight months every two years. The Trust could maintain the projected 20% growth with four LINACs **only** by increasing the standard day to 12 hours and increasing it to between 14 and 15 hours during periods of machine replacement. Clearly, if the increase in UCLH's caseload does not materialise, either the need for the fifth LINAC is removed or alternatively, each LINAC can be operated less intensively, reducing to a standard eight hour day (rising to 10 hours during replacement).

The case for the sixth bunker revolves almost exclusively around whether or not it makes sense to build in the potential for additional capacity to accommodate further increases in demand arising either from increases in excess of 20% or from the need to accommodate step increases in demand re-directed from elsewhere. Given that the sixth bunker will remain unstaffed and no LINAC will be procured as part of the FBC, the cost to purchasers is limited to the revenue impact of the capital cost of the bunker. The capital cost of a bunker introduced in to an existing hospital has been estimated to total between £500,000 and £1 m. The incremental cost of including an additional bunker in the main hospital will be substantially less than this. A prudent estimate of the revenue implications of including a sixth bunker would be £50,000 per annum.

### **Risk Management Post FBC Approval**

The introduction of a new LINAC into the sixth bunker will be subject to the Trust's normal capital planning processes. Investment will only take place once activity and demand is both evident and supported by commissioners.

### **Contingency Planning**

The introduction of a sixth LINAC is itself a contingency measure aimed at providing UCLH and its commissioners with sufficient strategic flexibility and at a relatively low revenue cost, to introduce changes in the configuration of cancer in the North Central sector.

The retention of UCLH's cancer centre designation is fundamental to the current basis of the business case and contingency measures of sufficient magnitude to accommodate a change in this status have not been developed. However, if the projected increase in activity does not materialise, there will be no compelling need to introduce the fifth LINAC. Depending on the



pace at which cancer activity grows, the need for one fewer LINAC may become obvious in the next twelve months.

The demand for LINAC capacity will remain under review throughout the implementation period. UCLH has estimated that there is scope to review the need for the sixth bunker (although not the space in the basement where the bunker will be located) up until the beginning of 2001. Investment in the fifth LINAC is scheduled to take place three months before practical completion of the main hospital and again, could therefore be avoided if increased demand is not evident by then.

#### **14.2.4 Cardiac Surgery**

##### **Size and Probability of Risk and Risk Management to Date**

Of UCLH's total projected NHS caseload of 49,646 FCEs, cardiac surgery accounts for 1,151 FCEs (2%). In terms of projected beds, it accounts for 5% of the new hospital's projected bed complement of 629. UCLH's cardiac caseload plays an important role in attracting just over £700,000 of NHS R&D income directly related to service costs supporting the research base of the hospital and UCLMS.

The review currently being undertaken by the London Regional Office on the organisation of cancer and cardiac care, following the announcement of the development of St Bartholomew's as a cancer and cardiac centre serving the North East sector of London, will report by the end of June 1999.

The risk attaching to the projections for cardiac surgery activity are twofold. First, there is uncertainty that the projected growth in activity at UCLH from 850 FCEs in the baseline year to 1,151 in 2004/05 (35% increase) may not materialise. Recent trend activity from 1994/95 to 1997/98 indicates that cardiac surgical activity at UCLH has remained largely unchanged. However, activity in 1998/99 has benefited from the successful transfer into UCLH of services for grown-up congenital heart disease and activity is expected to rise further as a result of the recent appointment of the Trust's fourth cardiac surgeon.

The projected increase in activity stems less from underlying demand experienced recently and more from the need for UCLH (along with other NHS hospitals) to achieve viability thresholds for open heart surgery. The second risk results from the uncertainty that, without achieving the required growth, cardiac surgery is deemed to be unviable at UCLH and transferred elsewhere.

The development of cardiac services is one of UCLH's prime strategic goals. The London Specialty Reviews undertaken following the Tomlinson Review indicated that, other than achieving sufficient critical mass, UCLH was a high quality provider of cardiac services. It is also interesting to note that activity modelling which is being completed for the St Bartholomew's OBC assumes that UCLH will achieve its goal of completing its strategic target of 1,200 open heart procedures each year.

The future pattern of cardiac surgery is currently the subject of considerable uncertainty. The development of St Bartholomew's as a specialist centre for cardiac care is starting to take shape, albeit through the redirection of work currently being undertaken at the London Chest Hospital which is part of the Royal London Hospitals NHS Trust. In west London, embryonic plans are being developed to test whether the centralisation of tertiary cardiac

services currently being undertaken at Royal Brompton Hospital and Harefield Hospital onto the St Mary's Hospital campus would bring benefits. Whilst this planning activity clearly introduces some turbulence it is worth noting that all changes have a number of common features:

- They are being planned and prosecuted within the framework established by Turnberg which divided London into five discrete sectors, each with their apex adjacent to the River Thames
- Each change programme is organised around and being facilitated by one of the five multi-faculty Colleges of London University with which London medical schools have recently merged
- The changes in North East London and North West London are based on re-providing cardiac activity which is already being undertaken within each sector, albeit on single specialty sites.

This suggests that whilst the geographical distance between St Mary's, St Bartholomew's and UCLH is relatively small, each serves and supports largely discrete tertiary networks. Whilst competition may be relatively intense **within** each network, close relationships with discrete medical schools form a very effective barrier to entry across sector boundaries. This also suggests that, if UCLH is to increase cardiac surgical activity without overall growth, this will need to be done at the expense of providers within the North Central sector.

### **Risk Management Post FBC Approval**

The Trust's cardiac services working group has set out the approach to be taken in achieving the projected activity. This involves:

- Joint appointments with other hospitals, especially those with whom good historic relationships are in place
- Building on new strategic alliances (with for example the Royal Free)
- The appointment of new cardiac surgeons.

The fourth cardiac surgeon, recently appointed by the Trust, has already increased activity from the 1997/98 baseline of 850 FCEs.

### **Contingency Planning**

The design of the new hospital tolerates much less segregation of cardiac services from other services in the hospital. 19 of the 39 cardiac surgical beds will be located in the multi-specialty intensive care and high dependency unit, increasing the Trust's flexibility both to deal with peaks and troughs in surgical activity and to re-direct resources for use by other specialties if required.

If projected growth in cardiac surgery does not take place but recognition is retained, the requirement for intensive care beds would fall by around 5 beds (25% of projected bed complement). If cardiac surgery is **removed** from the development entirely, 19 intensive care beds would be freed up alongside 20 inpatient beds and three of the 12 theatres in the main hospital would become redundant. Clearly, this is a substantial loss. The absence of cardiac surgery would also have the indirect effect of restricting the scope of cardiological

interventional procedures to be undertaken by the Trust probably resulting in one of the two planned catheter laboratories becoming surplus to requirements.

In the event that cardiac surgery is removed in its entirety UCLH could put in place the following contingency measures:

- Transfer the 15 renal watered beds into the critical care and high dependency unit as dependency levels are not markedly different, thereby freeing up additional general inpatient beds
- Reorganise the [?] floor so that the 15 renal watered beds and the 20 cardiac inpatient beds are united to provide a whole floor which could either be used for other commissioned services or could be closed, thereby securing the maximum step cost savings
- Re-visit the need for two theatres to be included as part of the EGA Wing
- Consider relocating some or all of the clinical support services currently planned for the Rosenheim Wing or other parts of the Trust into the main hospital
- Consider re-specifying the requirements for the EGA Wing with a view to transferring obstetrics and gynaecology and NICU into an integrated women's facility in the main hospital and using the EGA Wing to accommodate clinical support services retained in outlying buildings.

#### 14.2.5 Clinical Care Concepts

##### Size and Probability of Risk and Risk Management to Date

The innovative care concepts to be introduced by the Trust during the development of the new hospital include:

- The acute assessment unit (56 beds)
- The critical care unit (40 beds)
- The adolescent unit (35 beds)
- The ambulatory interventional unit (intervention equipment only).

A total of 131 of the new hospital's 629 beds have been allocated to these multi-specialty areas. Each concept has a slightly different risk profile. The acute assessment unit requires a reduction in the number of beds currently supporting A&E from 72 to 56 and relies on the implementation of new working practices by medical and nursing staff for it to be achieved. The 40 bed critical care unit brings together the Trust's current 22 beds designated for intensive care, together with the cardiac HDU beds, alongside a central resource for high dependency patients who currently find themselves cared for on general wards. The risk of over-provision here arises if dependency levels reduce or the number of highly dependent patients falls.

The 35 bed adolescent unit brings together patients from the age of 12 to 19 and who have specialist needs together onto one floor of the hospital. Given that each floor can accommodate a theoretical maximum bed complement of 63 beds, there is a risk that either lower or very volatile levels of activity could make space usage in this unit inefficient. Finally, the ambulatory interventional unit accommodates the hospital's image-guided

therapies and procedures on one floor. This represents a significant change from the dispersed and widely fragmented service currently being delivered.

### **Risk Management Post FBC Approval**

Each concept has arisen from internal discussions, facilitated multi-disciplinary groups or from programmes which have been planned for some time and which will be implemented well before the completion of the new hospital. Each will be introduced into the hospital using simulation and, where possible, pre-completion piloting (for example the acute assessment ward will be piloted almost immediately, starting in August 1999).

Perhaps, the greatest risk in terms of operational working practice is presented by the large generic wards mainly because they are largely untested in the UK. Generally, these 50-60 bed wards are replacing much smaller wards (14 bed wards are common in The Middlesex Hospital). The Trust is seeking to manage and mitigate risk around the implementation of new working practices for the new hospital by focusing on the development of integrated care pathways and associated protocols to be developed and delivered by multi-disciplinary teams well before the new hospital is complete. Once these protocols are developed, working practices in the existing hospitals will be amended as far as is practicable given the physical constraints. In addition, simulation of how the units will work in practice once the new hospital opens will be completed as part of general clinical and non-clinical training.

### **Contingency Planning**

Clearly, the fact that the Trust is seeking to develop and introduce innovative care concepts brings risks that would not be present if the traditional infrastructure of acute care were simply being recycled. Having said this, the Trust is aware that it is breaking new ground and needs to ensure both that implementation risk is minimised and that contingency plans are available should critical assumptions prove to be incorrect.

Some concern has been expressed that the acute assessment unit will prove to be too small to accommodate the required activity, especially if the envisaged changes in medical and nurse practice are not forthcoming. The number of beds on the acute assessment unit is not easily increased although the projected throughput of the unit is determined by a series of assumptions, some of which could be amended to create additional capacity in the unit.

Changes to key assumptions could include:

- Reduce average length of stay on the unit prior to discharge into other hospital beds (using earlier discharge from the projected three day stay) thereby increasing the caseload on the larger hospital bed pool
- Increase pre-assessment triage direct to specialty beds for some groups of patients such as re-admissions, thereby increasing the caseload on the larger hospital bed pool.

If there is a sustainable reduction in the level of intensive and high dependency activity there may be limited scope to develop increased assessment beds by transferring the Trust's 15 renal watered inpatient beds adjacent to a smaller critical care unit, thereby freeing up general inpatient capacity for use as additional assessment beds.

If the adolescent unit proves to be overly large it would be possible to integrate it with inpatient paediatrics freeing up a ward floor for use by other clinical services or which can be closed and left unstaffed, thereby saving the majority of the running costs.

If the ambulatory interventional unit proves to be too large in terms of specific procedures, the Trust would seek to review the space dedicated to intervention with a view to creating space for those outpatient clinics which will remain off-site (for example ophthalmology).

## 14.3 Research

### 14.3.1 Size and Probability of Risk and Risk Management to Date

Research risk for UCLH comes largely from the loss of research & development income in the future as NHS priorities encourage research & development to be undertaken **outside** London and in non-hospital subjects. The impact of a loss of research income is magnified by the largely fixed nature of many research & development costs embedded within hospitals which support the research work of major academic partners.

It is important to realise that the probability of loss of research & development income for UCLH is **not** increased by the development of the new hospital. The risk exists already and the judgements to be made around risk essentially revolve around whether or not the development of the new hospital improves or impedes the Trust's ability to accommodate any risks that do crystallise.

**Table 14.3** shows that research & development funding earned by Trusts located in London dominates the national picture. London, now only one of eight regions, account for 70% of the national research & development spend. It would be difficult to conclude that, as a region, London's share of the national research & development levy would not come under intense pressure from the other seven regions at the next bidding round. A best case assumption for NHS Trusts in London currently enjoying significant research & development income might be that the region retains its current level of funding.

The probability of risk crystallising at particular NHS Trusts however, can be mitigated by ensuring that the Trust's research programme closely fits the criteria by which bids will, in the future, be appraised. Such criteria will include:

- High quality of the research product as externally assessed (mainly through the HEFCE Research Assessment Exercise (RAE))
- Aligning the research & development programme being supported by the Trust closely with national NHS priorities
- Increasing the proportion of research costs which support the costs of research undertaken by the NHS's approved partners.

An analysis of UCLH's research & development service support costs suggests that there are a number of reasons to conclude that the risk of research & development income loss faced by UCLH is considerably lower than that being faced by hospital NHS Trusts in London more generally.

## Research Quality

A significant factor in maintaining or losing research & development income will be the quality of research work being undertaken. The results of the most recent RAE shows UCL Medical School are producing pre-eminent medical research. A number of subjects received 5 and 5\* awards which denotes research of international standing. The overall average institutional RAE scores for all subject disciplines and for biomedical subjects is shown at **Table 14.4**. The ratings of UCL Medical School are uniformly excellent in a national context.

## Aligning the Research Portfolio with National Priorities

From UCLH's point of view it is comforting to see that cancer, coronary heart disease, mental health and ageing have been recognised by the Clark Group as research & development priorities. Depending on the precise definition of research & development being undertaken in mental health and ageing, this could result in two-thirds of the Trust's total research income (25% at UCLH) fitting within areas prioritised by the NHS.

## Partnership Funding

Research & development funding is available to cover the service support costs of those organisations supporting either their own research programmes or those of their non-commercial partners. **Table 14.5** also identifies the proportion of the Trust's research & development costs which are specifically directed at supporting the research projects of its non-commercial partners. This totals 55% for the Trust (45% for UCLH).

The analysis suggests that UCLH is better placed than many London NHS Trusts to minimise the impact that any shift in funding away from the capital or from hospital-based research. Risk management processes in the immediate future will focus on assuring and supporting research excellence, increasing the alignment of the research portfolio that UCLH's service costs are supporting with national priorities and increasing the number and quantum of non-commercial partnership programmes that the service costs are supporting.

### 14.3.2 Risk Management Post FBC Approval

Risk will be managed mainly by ensuring that research costs demonstrably support research and development programmes which are of the highest quality, are closely correlated with national priorities and attach to those programmes which attract partnership funding. Whilst the construction project will need to be kept apprised of developments in this area, changes in the level of research funding are not likely to be known until well into the construction period (probably 2001).

The risk that the Trust faces material income loss will be managed and mitigated through the Trust's ongoing research & development liaison with UCL Medical School. Strategic objectives are currently aligned and will continue to be aligned through the active participation of the Trust's Research & Development Director, a post jointly funded by the Trust and UCL Medical School.

In addition, the system whereby UCL Medical School identifies new research protocols and submits them for evaluation by UCLH in order to ratify the case for service support costs will

be increasingly used as a way of ensuring that the strategic objectives of the Trust and UCL Medical School provide maximum protection for UCLH's research & development funding.

### 14.3.3 Contingency Planning

The London Regional Office has concluded that it would be unwise for NHS Trusts in London to project research & development income in excess of the amount currently being received. For the purposes of contingency planning and in agreement with the Regional Office, the Trust has agreed to model the impact of a drop in research & development income of 5%. Whilst any such loss of income would see a reduction of £1.5 m in the Trust as a whole, the Trust has addressed the impact of a loss of income of £0.75 m which reflects a drop of 5% in the proportion of the Trust's research & development income associated with UCLH.

Under current NHS guidance the Trust is obliged to remove costs from those areas which directly support research & development. However, the fixed nature of these costs makes it extremely difficult for such costs to be separately identifiable. The need to reduce costs would fall as a general cost pressure although a reduction in NHS research and development income of £0.75 m represents less than 0.5% of UCLH's total cost base and just under 1% of its service cost base.

## 14.4 Projected Financial Benefits

Financial risks fall into three main areas:

- Ongoing cost of running the new hospital
- Securing the contribution from the sale of surplus properties
- Accessing public capital for non-PFI elements of the FBC

### 14.4.1 Size and Probability of Risk and Risk Management to Date

The net change in operating costs from the 1997/98 baseline totals just under £12m. Approximately two thirds of these savings will be used to eliminate transitional funding (currently £8.7m). The remainder represents a reduction on prices and will be returned the commissioners through future SLAs.

Through transferring risk under the PFI, the Trust has been able to effectively eliminate risk relating to an overrun in capital costs and the facilities management running costs of the new hospital. In addition, savings programmes for facilities management services have also been built into the contract. Whilst the Trust is not compensated for delay, it does not make any payments under the unitary fee until the new hospital has been completed.

The net annual financial benefit of £12 m comprises savings and additional costs, contributed to by both HMG and UCLH. Savings from budgets over which UCLH will continue to exercise control total £22.2 m, of which £6.9 m relates to non-pay savings. HMG will be obliged to generate savings of around £4.6m from the budgets it will inherit. A total savings programme of £26.8m is envisaged.

The £14.3m savings falling to the Trust's pay budgets are derived mainly from nursing and administrative budgets. Nurse staffing is set to reduce from 1,560 WTEs to 1,303 WTEs (16%) contributing savings of £7.0m. The main cost driver determining the level of these savings is the fall in the number of inpatient beds. However, the hospital's nurse per bed ratio reduces only marginally as a result of this change from 2.07 to 2.06. Projected nurse staff numbers have been arrived at with the co-operation of senior nurse managers in the nursing directorate and through the workforce planning process. Latterly, the nursing staff numbers generated from this process have been subject to external assessment and comparison with staffing norms and benchmarks found elsewhere in the NHS by independent health care consultants, First Consultancy Group. Administrative, clerical and senior management staff reduce from 907 WTEs to 667 WTEs (26%), contributing savings of £5.2m. This reflects the introduction of integrated IM&T systems, the dismantling of the internal market and the reduction in the number of hospital sites managed.

Of the £6.9m projected reduction in non-pay budgets, £2m comes almost immediately through the avoidance of rent and rates on the St Martin's site and a further £600,000 comes from the closure of EGA in 2000/01. Other non-pay budgets reduce largely in line with the reduction in bed numbers, associated bed days and downsizing of facilities.

Budgets from which savings falling to HMG are expected to be generated will pass to the company at the point at which staff transfer. Staff are expected to be transferred within 12 months of financial close. The cost savings to be delivered by HMG will be contractually protected through the set unitary fee. Quality standards will be maintained separately through the quality assurance provisions laid out in the contractual service agreement.

The second area of risk relates to the treatment of surplus property in the PFI deal. The level of the unitary payment for PFI depends on the Trust introducing cash into the deal through the disposal of surplus property. Category I and Category II properties have been included in HMG's financial model as contributing £19m and £39m respectively. The District Valuer (DV) however, has ascribed a combined value which is £25m greater than that attributed in the deal currently. In agreement with the NHS Executive, the Trust has already removed Category II properties from the deal. In exchange, the NHS Executive has provided an underwriting that it the Trust can expect to receive £39m for Category II properties as and when the funding is required (probably at the start of the construction of the EGA Wing).

The unitary payment currently assumes that the NHS Executive does **not** introduce any additional value from the sale of properties into the deal. The Trust is awaiting confirmation from the NHS Executive that the whole of the value secured from the sale of property would be made available to re-invest in the UCLH scheme.

The Trust has included the **full** £83m value provided by the DV in its value for money calculations as the whole of the gain accruing to the public sector needs to be accounted for and the DV's valuation represents the best proxy for this. For the purposes of the affordability calculation, the Trust has assumed that it will amortise the deferred asset that the sale of property establishes and that it will need to fund the requirement to make a 6% return on the reducing value of the deferred asset. The Trust has requested that funding from the NHS Executive be made available to fund the 6% return in line with other agreed PFI deals in the NHS.



There are a number of investment proposals which are peripheral to the new hospital development but which rely on £26.3m capital funding from sources other than PFI. The effect of the absence of public capital funds for the range of investments not covered by the PFI is more practical than financial. Enabling works such as Vezey Strong are essential for the decanting programme to be implemented. If capital associated with the Medical School move to the Rockefeller Nurses Home is not forthcoming, the capital receipt from the Middlesex Hospital would be significantly reduced. Perhaps more importantly, a number of the non-financial academic benefits from the project could not be achieved.

#### **14.4.2 Risk Management Post FBC Approval**

Whilst cost savings have been both modelled and validated by the Trust, responsibility for implementing and achieving cost savings will remain the primary responsibility of the Project Implementation Board. A number of the Project Implementation Groups will be tasked explicitly to work through the financial assumptions as the development proceeds and to implement plans for achieving the savings.

#### **14.4.3 Contingency Planning**

Whilst at £22.2m the Trust's cost savings program is substantial, it is worth noting that the reductions in the number of clinical staff modelled as part of these savings assume no reduction in the number of clinicians per bed. In addition, and in the absence of other information, nurse staffing levels have been computed on the basis of 28 bed wards although the new hospital will, in large part, be organised on 60 bed floors. A great deal of work will be undertaken between financial close and the opening of the new hospital to develop, test and challenge the operational policies and procedures and the staff requirements resulting from them which have so far been assumed in the FBC.

There is little doubt that the development of the new hospital should provide the Trust with the opportunity to improve the efficiency of staff, even from that projected in the FBC. For example, every one percentage point improvement in the nurse per bed ratio from the projected 2.06 generates savings of £353,000. FCG's analysis suggests that, despite its specialist bias, UCLH's caseload is not sufficiently different to other general hospitals and teaching hospitals to continue to justify the skill mix currently employed and, in large part, still projected in the FBC.

Appendix 12

SCHEDULE OF INTERVIEWS CONDUCTED

PERSON CONTACTED	DATE OF CONTACT	DATE OF INTERVIEW
1. Simon Tanner, Department of Health.	10/ 08/02	No response was received
2. Simon Wright, Department of Health	18 / 08/02	Recommended some reference material.
3. Rolf Meyer, Deputy Director and Head of Planning, UCL Hospitals Trust	27/08/02	1 <sup>st</sup> interview 04/09/02 2 <sup>nd</sup> Interview 06/09/02
4. Amanda Challis, Capital Projects Manager, Camden Primary Care Trust.	28/08/02	28/08/02

Emmanuel T.Tidakbi

Bartlett School of Graduate Studies, University College of London  
MSc in Construction Economics and Management- Report Topic

Improvements in risk management for programme/project delivery in the National Health Service.

1. The context of the research is that in which: -
  - a) the National Health Service is seeking to improve its record of facility construction project delivery in terms of value for money within the context of :
    - a. the stated broad objective areas of the NHS Estates ( in Procure 21) of:
      - i. delivering quality health care buildings,
      - ii. ensuring value for money in building procurement
      - iii. contributing to a culture change as envisaged in the Eghan Report
    - b. the latest NHS Investment plan whose objective includes:-
      - i. the modernisation of all NHS buildings such that by 2010, 40% of the total value of the NHS built assets will be less than 15years old.
      - ii. the construction a variety of primary, intermediate and acute health care facilities (including 100 new hospital schemes by 2010) using mainly the vehicle of the PPP to deliver £7bn of new capital investment,
      - iii. the achievement of an annual average capital investment growth rate of 8%in the period 1997-2002,
  - b) The government have issued the Latham (1994) and Gershon (1999) Reports
  - c) Relevant guidelines have been issued by (among others) the Office of Government Commerce (OGC), The Treasury, The Construction Industry Board and the Construction Clients Confederation,
  - d) Reforms have been made in order to delegate government capital works procurement to individual ministries and agencies using OGC in a monitoring role and the Gateway Process as a monitoring/decision support tool.
2. The general aim of the research is to find out how the experience in the implementation of the NHS investment plan is contributing to improvement in project delivery. More specifically, the research wishes to concentrate on: -

How risk-taking and risk management has changed: -

- a) in the context of:-
  - i. The risk-adverse approach of the public sector (noted by Eghan)

- ii. Guidelines issued by the OGC and the Treasury
  - iii. A large and diverse stakeholder community
- b) within the framework of existing or new decision, appraisal and approval processes both at programme and individual projects levels
- c) in the application of :-
  - i. Techniques of appraisal of political, financial and environmental risks
  - ii. Feedback from experience through post occupancy reviews

Emmanuel T.Tidakbi

The Bartlett College of Graduate Studies, University College of London. MSc Construction Economics and Management- Research Report.

QUESTIONS FOR PERSONAL INTERVIEWS ON RISK MANAGEMENT IN THE PUBLIC SECTOR

1. What is the planning process in the National Health Service for:
  - New facilities
  - Expansion/rehabilitation/demolition of existing facilities
2. How is planning for capital investment organised- who is responsible for what at the programme and project levels and how does each level inform the other for comprehensive planning?
3. To what extent is planning centralised or decentralised from the Cabinet Office to the individual Trust level?
4. How much are sector plans influenced by Treasury or Cabinet Office?
5. How is the National Health Service Estates organised? Who is responsible for what between the National Health Service and the Department of Health?
6. How is risk assessed during the planning process? How is this incorporated into the overall strategic plans for project delivery?
7. There have been a number of guidelines for the identification and management of risks in public sector works procurement e.g. The Green Book. In your opinion, how effective have these guidelines been for the Health Sector in particular?
8. Does the Health Sector have any risks that are peculiar to the sector alone? If so how are these being managed?
9. To what extent, if any, do you think that the NHS has changed from the risk-adverse label (noted by Sir Eghan) into adopting a more systematic approach to risk management?
10. Is post-occupancy review of health facilities a regular activity in your planning process? If so how much is it used in assessing risks in facility planning?