

# IDENTITY AND IDEOLOGY

A comparative study of academic health organisations in the UK and the USA

by

**Stephen Davies**

Harkness Fellow 2001/2 (United Kingdom)

Foreword by John Wyn Owen, CB

## Contents

Introduction . . . . .	4
Definition of Academic Health Centres . . . . .	6
Policy towards Academic Health Centers in the USA . . . . .	7
Policy towards Academic Health Centres in the UK . . . . .	9
Activities of Academic Health Centers . . . . .	12
Comparative Analysis of Academic Health Centers' mission activity. . . . .	14
Case studies - purpose and methodology. . . . .	17
Case studies - profiles. . . . .	19
Results from case studies - cross-national themes. . . . .	23
Results from case studies - national themes. . . . .	31
Discussion. . . . .	36
Conclusion - policy implications. . . . .	39
Appendix A Academic Health Centers - United States of America. . . . .	42
Appendix B Academic Health Centres - England . . . . .	47
References. . . . .	48

ISBN 1-902089-74-X  
© The Nuffield Trust, 2002

Published by The Nuffield Trust  
59, New Cavendish Street  
London W1G 7LP

Telephone: 020 7631 8450  
Facsimile: 020 7631 8451

E-mail: [mail@nuffieldtrust.org.uk](mailto:mail@nuffieldtrust.org.uk)  
Website: [www.nuffieldtrust.org.uk](http://www.nuffieldtrust.org.uk)

Charity Number: 209201

## Foreword

The Nuffield Trust is publishing this report by Stephen Davies to further illuminate the policy issues around the interface between the National Health Service and the University sector. This is a topic of increasing significance in other European countries and this transatlantic comparison has, therefore, a wider relevance. The Nuffield Trust works in partnership with The Commonwealth Fund of New York to support the Harkness Fellowship Programme, and I would like to thank The Fund for its support in helping Stephen to research and produce this report, and in the wider context of furthering transatlantic learning in health policy.

John Wyn Owen CB  
Secretary  
The Nuffield Trust

*The author is grateful for comments, advice and support from:*

David Blumenthal, Ron Zimmern, Paul Griner, Atul Grover, Tom Smith, Linda Kohn, Joel Weissman, Eric Campbell, Rae Lamb and Manjusha Gokhale.

Supported by the Commonwealth Fund, a New York City based private independent foundation. The views presented here are those of the author and not necessarily those of the Commonwealth Fund, its director, officers or staff. This report was researched and prepared whilst attached to the Institute for Health Policy, Massachusetts General Hospitals/Partners HealthCare System September 2001 to July 2002.



*Stephen Davies is currently Director of Information and Planning for Addenbrooke's Hospital, Cambridge. He has worked in the NHS since 1990 and his career has also included spells as finance director in the private and voluntary sectors. More recently, his focus has moved to health policy and planning. He was a 2001/2 UK Harkness Fellow and spent the year at Massachusetts General Hospital, where he conducted the research for this report.*

Addenbrooke's NHS Trust  
Management Offices (Box 146), Hills Road, Cambridge CB2 2QQ, England

Tel: +44 01223 217313 Fax: +44 01223 216520  
Email: [stephen.davies@addenbrookes.nhs.uk](mailto:stephen.davies@addenbrookes.nhs.uk)

## Introduction

Complex institutional relationships between providers of clinical education, research organisations and health delivery systems are common to all developed countries. But how these relationships are interpreted differs between countries. In this respect, as in many other areas of health care, the United States and the United Kingdom present a marked contrast. In the United States these relationships are seen in institutional terms and have a name: 'academic health centers (AHCs)'.<sup>1</sup> AHCs are the subject of substantial volumes of research and commentary and their presence is often felt in public policy debate. For example, the Commonwealth Fund Task Force on AHCs has produced extensive empirical research on AHCs together with policy analysis and recommendations [1]. Other health policy foundations have also contributed to the debate [2]. A committee of the Institute of Medicine is considering the role of AHCs in the 21st century and its report, due in 2003, will doubtless be influential [3]. AHCs are also well represented. The Association of American Medical Colleges (AAMC) speaks for both medical school and teaching hospital interests and employs the AHC concept as a matter of course. The Association of Academic Health Centers, also based in Washington DC, represents the health complexes of the major universities and provides a further voice. The AAMC produces a journal, *Academic Medicine*, which regularly includes research and analysis from an AHC perspective.

The picture in the United Kingdom looks very different. Here the term 'academic health centre' is not widely used, and there appears to be no satisfactory alternative. Discussions tend to be couched in terms of issues relevant to medical schools, teaching hospitals and the health and education sector interface. A search of British academic journals reveals very limited research or commentary on academic health organisations. Where commentary can be found, it tends to emphasise the threats to teaching hospitals. These are portrayed as providers who are under attack for high costs that are increasingly difficult to justify with reference to a special role in the National Health Service (NHS) [4]. A search of the Department of Health website reveals a similar dearth. Only one foundation, the Nuffield Trust, has engaged with this topic, seeking to provide a new conceptual framework and terminology [5]. Representation of academic health organisations is weak in comparison with the USA, with separate bodies for universities and teaching hospitals. The Council of Heads of Medical Schools (CHMS) represents medical schools. The UK University Hospitals Forum keeps a relatively low profile, and has only one part-time member of staff, shared with CHMS.

One obvious explanation for this contrast would be that the circumstances in each country are quite different - that organisational arrangements are nationally unique and that clinical school/health care delivery partnerships are engaged in non-

1 Or less commonly, but it would appear interchangeably, 'academic medical centres'.

comparable activity. The handful of cross-national comparisons that have been carried out to date do not support this interpretation. A comparison of the relationships between universities, medical schools and health systems in fifteen developed countries showed consistent challenges across national borders [6]. A comparative analysis of the recent histories of two leading academic centres in the UK and USA found striking parallels, this despite the profound differences in national health care systems, suggesting the influence of forces which transcend national boundaries [7]. The pursuit of 'the tripartite mission' of teaching, research and patient care is common across national settings [8]. Furthermore, these are activities that are, by their nature, international. Clinicians' skills offer them international mobility and clinical education itself may soon fall within the scope of free trade agreements. International collaboration and exchange increasingly characterise biomedical research [9]. The overall context is one of increasing globalisation of health care, creating new challenges for academic health organisations [10,11].

Given these observations, how can we explain the contrasting picture that has been painted for the UK and the USA? On the one hand, we have a picture of international comparability and drivers of change. On the other, we have fundamental differences in the way in which the policy environment in each country responds to academic health organisations. This report seeks to explore and understand these apparent contradictions and to identify the policy implications.

The report initially looks in detail at the grounds for cross-national comparison. The characteristics and activities of academic health organisations in the two countries are analysed, using both quantitative data for national universes of academic health organisations and data from case studies of selected institutions. The case studies provide a wealth of information on the main challenges currently facing academic health organisations in both countries. These challenges are analysed between those that appear common to both national settings and those that appear more nationally specific. Public policy in each country is then appraised in the light of these findings.

International comparative studies run the risk of making over-simplistic assumptions about the portability of ideas, models and forms between national settings. There is the ever-present danger of understating the extent to which the specific historical origins of national institutions and their economic, social and political context determine what is possible. The benefit of this approach is that it can prompt questions about how a particular approach to health care organisation might be translated, conceptually and practically, across national boundaries [12]. The principal aim of this study is not to arrive at ready-made solutions for transatlantic shipping in either direction. Rather it is to give a new perspective on

the extent to which thinking about policy in this area is determined and bounded by national ideologies, in the hope that broader perspectives might lead to better policies.

## **Definition of Academic Health Centres**

As noted, the term academic health centre is American in origin and use and is rarely encountered in the UK. One explanation for this might be differences in organisational characteristics between academic health organisations in the two countries. In the United States, the term is employed to describe the combined endeavour of a medical school and its affiliated health care facilities and physician-employing organisations. In the simplest model, these three types of entity are integrated under the ownership and governance of the medical school. We refer to this as the 'Johns Hopkins' model, noting also the historical importance of this institution as a national prototype [13, p.87-89].

In the United Kingdom, the national model is one where governance and accountability of medical schools and teaching hospitals rests within separate sectors. Most hospitals are part of the National Health Service, almost entirely reliant on public funding and subject to a high level of direction from the Department of Health. The universities are self-governing corporations and enjoy greater autonomy but still receive over 60% of their funding from the government, mostly routed via the higher education funding councils. Funding for health and education sectors is subject to separate parliamentary votes, establishing separate lines of ministerial accountability.

But the picture is more complex than a straightforward contrast between integrated governance in private institutions in the USA and governance within separate parts of the public sector in the UK. American AHCs are, in fact, highly heterogeneous as regards structures and ownership. Only about half of AHCs fit the Johns Hopkins model and these are further split between public and private ownership [14]. A recent analysis proposed a typology of eight different organisational models for medical school-clinical enterprise relationships [15]. In terms of formal structures, American AHCs are characterised by a bewildering variety of voluntary alliances, affiliations, obligated group structures and cross-membership arrangements between their component organisations. Amongst this variety can be found relationships that are similar to British governance arrangements. These are the relationships between publicly owned medical schools, typically in state universities, and publicly owned hospitals. It does not appear, then, that the British style of governance arrangements is inherently inimical to the concept of the academic health centre. Nor is it immediately apparent why the organisational pluralism of academic health organisations in the USA has so little adverse effect on their group identity as AHCs.

These conclusions are supported by evidence from Canada, which, in this area as in others, represents something of a halfway house between US and UK approaches to health care. Here, as in the UK, governance of medical schools and teaching hospitals always resides within separate sectors. Despite this, the concept of the AHC (or to use Canadian terminology, the Academic Health Science Centre) appears to be as firmly rooted north of the border as in the USA [16]. The federal government appears to have concluded that there are advantages to be gained, in terms of realising a range of policy objectives, from treating academic health centres as distinctive entities [17]. Should UK policy-makers ever arrive at similar conclusions then, paradoxically, the AHC concept would be far easier to operationalise on a consistent national basis than is the case in the USA, because there is a standard organisational model. However, as will be shown, British policy has been largely blind towards the institutional challenges arising from the tripartite mission.

This policy slant, reinforced by the absence of a Johns Hopkins model, means that thinking about AHCs as integrated entities is much more difficult in Britain than is the case in the USA. This is reflected in the absence of any satisfactory British terminology for academic health organisations. The terms 'teaching hospital', 'university hospital', 'university teaching hospital' and 'main university hospital' are all used at different times, but these only describe the health service component of the combined endeavour and are all subject to problems of definition, non-exclusivity and dilution. The Nuffield Trust has suggested 'University Clinical Centre' as an alternative term, but this has yet to be widely adopted [5].

## **Policy towards Academic Health Centers in the USA**

Over the past decade Academic Health Centers have attracted considerable attention from academics and policy-makers in the USA. Two broad themes have dominated this debate: financial stability and the societal role of AHCs. Advocates of public policy to improve financial stability have, not surprisingly, based their arguments on the public interest activities of AHCs, so these two themes are inextricably linked [18].

The question of financial stability has been extensively debated. Essentially, the issue has been the extent to which growth of managed care and cutbacks in public funding have undermined the ability of AHCs to pursue their social missions and, more fundamentally, to remain financially viable. This debate was given urgency by the financial problems of some AHCs in the late 1990s. The consequences of these included a spectacular bankruptcy in one case [19] and painful decouplings of integrated academic systems in others, including the dissolution of recently

merged groups [20, chapter 7] and divestment of teaching hospitals by medical schools.

Public funding comes to AHCs through a variety of routes. Medicare provides payments and adjustments to cover the direct and indirect costs of graduate medical education. The latter (IME) implicitly allows for indirect costs associated with the other social missions of AHCs and the higher costs associated with teaching hospitals. Medicare also includes adjustments to allow for the higher costs incurred in serving large volumes of low-income patients (disproportionate share payments). Other sources of public funding are state appropriations to support undergraduate medical education in public universities and, in some places, indigent care. Funding for research also comes from public bodies, principally National Institutes of Health extramural funding, for both direct and indirect costs.

However, these sources of funding are not intended to be comprehensive - Medicare IME and DME payments, for example, have only ever been paid for the share of these costs that can be attributed to Medicare patients. As a result, AHCs have historically relied on cross-subsidisation from privately insured patients to fully cover their mission-related costs and balance the books. Under managed care, purchasers have pushed back against these arrangements, resisting the view that their role includes supporting the broader educational and research missions of AHCs [21]. As managed care gained momentum, the federal government imposed real-terms reductions upon Medicare payments in response to the Balanced Budget Act of 1997 and states imposed greater stringency upon Medicaid programs in response to their own budgetary problems. A set of financial equations that had previously supported AHC growth shifted, within a relatively short period of time, to one that was seen as threatening the continuing activities and perhaps even existence of AHCs.

The current financial status of the sector is far from clear, but there is no compelling evidence of any widespread financial crisis [1, 22]. A sense that the heat has gone out of the debate may be related to perceptions about successful pushback against managed care [23]. This argument would see the demand of the American public for excellence and unconstrained choice as coinciding with AHC interests. However, many would argue that the strategies required to ensure financial survival have undermined the very *raison d'etre* of AHCs. These commentators draw attention to the erosion of the learning environment under pressure to maximise clinical productivity [24]. The evidence on this is inconclusive. One study found no evidence of an adverse impact on teaching commitment where managed care penetration is high [25]. Inverse relationships have been demonstrated between managed care penetration and several measures of the health of the research enterprise of AHCs [26, 27].



What is clear is that this debate has drawn attention to the chaotic funding base upon which American AHCs rest, a situation that leaves them, in the words of one university president 'always only one federal policy change or payer consolidation away from difficulty' [28]. With health insurance premiums again rising at double-digit rates, renewed pressure from health plans to curtail payment rates appears inescapable and AHCs are clearly not yet out of the financial woods [29].

As noted, debate about the financing of AHCs is inextricably linked to discussion of their role in American society. Much of the analysis linking these two themes has a powerful normative, not to say moral, tone. Ludmerer's influential history of American medical education, for example, concludes with an analysis that directly relates many of the current ills of AHCs to their having succumbed to commercial imperatives at the expense of academic mission, growing huge clinical enterprises to the detriment of the learning environment. Now that the financial equations that supported this growth have turned sour, AHCs find that their moral case for public support has been weakened. In this analysis, the need is for a restored 'social contract' between AHCs and American society, which involves a fundamental re-examination of the public interest role of the AHC [30, chapter 18]. Reflection on these issues has led to a renewing of debate about the relationship between medical education and university ideals [31]. The current examination of the role of AHCs in the 21st century by a committee of the Institute of Medicine should be seen in this context. Any recommendations for funding reforms are likely to be placed in the context of a call for a broader conception of social role. This may include consideration of questions that have received relatively little attention from AHCs to date. These include the extent to which hospital and medical interests dominate academic centres; the relationship between medicine and other clinical professions; and the role of public health and preventive medicine. AHCs may find themselves asked to take more of a leading role in assessing the broader societal impact of the innovations they generate and addressing issues of workforce development.

## **Policy towards Academic Health Centres in the UK**

It has been observed that the concept of the academic health centre has virtually no currency in the UK and, given this, the absence of policy with this specific focus is not surprising. The interface between the health service and higher education has been a subject of ongoing, if intermittent, debate since 1948. In recent years a number of challenges have arisen which work across this interface. Yet the shift to acceptance that an institutional focus for policy is necessary to achieve an integrated response to these challenges has never occurred.

One illustration of this is the mismatch between plans for growth and modernisation of the clinical workforce and the recruitment of clinical academics. The UK

government is pursuing a policy of unprecedented growth in funding for the NHS, matched by ambitious targets for improved performance [32]. The total NHS budget will rise from £65.4bn in 2002-03 to £105.6bn in 2007-08. Waiting-time reductions and other targets will require a massive increase in human resources at a time when, in common with health services in other developed countries, the NHS is facing difficulties in maintaining its existing workforce [33]. Meeting national targets for the NHS will be critically dependent upon the ability of education providers to produce an adequate supply of appropriately educated clinicians. Government policy increasingly emphasises education and training beyond the traditional focus of pre-registration education within professional groups [34]. This policy of 'more and different' presents its own challenges for academic health centres, which are discussed later. However, the delivery of more qualified professionals through traditional routes presents in itself a major challenge. For example, it is planned that by 2005 the annual intake of medical students will be 63% above 1998 levels, with five new medical schools and growth in student numbers at established schools. Similar ambitious growth is planned for nurses, midwives, therapists and scientists [35].

Unfortunately, this challenge comes at a time when higher education institutes are facing a growing crisis in the recruitment and retention of clinical academics. It is estimated that 20% of clinical lecturer posts and 10-15% of professorial posts are unfilled. Yet the planned growth in medical education alone will require up to 1000 additional clinical academic posts [36]. Since the mid-1990s there has been discussion about the growing crisis in clinical academic careers, some of which has focused on the pressures that are placed upon individuals whose roles require them to integrate the differing goals of the health, education and research sectors. The Richards Report on clinical academic careers suggested that existing governance arrangements might be inherently inimical to the academic mission and proposed that the concept of an integrated teaching and research hospital should be explored, using models from North America and Europe [37]. However, government has not been receptive to this message. This proposal, made in 1997, appears to have been effectively diluted into some cautious explorations of good practice in NHS/University links at the local level [38].

A similar reluctance to adopt a new perspective can be seen in the official response to the retained organs scandal at the Royal Liverpool Children's Hospital [39]. In this episode, a maverick academic pathologist engaged in a sustained breach of both legal requirements and trust towards the parents of deceased children, to amass a large collection of retained organs. As part of the government response to the resulting public outcry, the Department for Education and Skills commissioned a report on governance arrangements for clinical academics, known as the 'Follett Report' [40]. This report limits its discussion of shared governance to some cautious proposals for joint strategic planning, concentrating instead on the issues of job plans and appraisal arrangements.

The emergence of new and challenging issues such as these has not been accompanied by a reappraisal of policy focus around the relationship between the universities and the NHS. The historical focus of attention on the medical school/teaching hospital relationship has come to seem too narrow both in scope and conceptualisation. In scope, because it has neglected the challenges facing the other clinical professions; the extent to which clinical education needs to be extended to community settings [41]; and the lifelong needs of the entire NHS workforce [42]. In conceptualisation, because it has emphasised concordats between the two sectors as the means of managing the relationship [43]. This is despite the failure of this approach to adequately address issues of institutional integration at the local level. Various committees, representing higher education and NHS interests, are responsible for liaison at a high level. However, there is evidence that the existence and remit of these bodies remains mysterious to many of those working at a senior level within these sectors [44].

Academic health organisations will be the principal theatre where these issues are played out, yet they have no presence in the debate. Worse, it appears that the ability to think through these issues and formulate debate is constrained by institutional frameworks. The moribund arrangements for managing the health and education interface persist despite the fact that they cannot deal with matters of this scope. Where debate on these specific issues leads back to the need to re-conceptualise academic health organisations then it falls on stony ground, as in the case of the Richards Report.

Given the picture painted, it might appear paradoxical that teaching hospitals continue to receive substantial and explicit public funding for the excess costs of their academic missions, yet this has been the case since the late 1970s. The 1977 NHS Act included designation of 'teaching area health authorities' with special responsibilities for teaching and research. With this extra responsibility came extra funding in the form of SIFT (service increment for teaching), which was intended to cover the excess service costs associated with undergraduate medical education. Later, SIFT became SIFTR as the same mechanism was extended to cover the service costs associated with research. Under current arrangements, SIFT and R&D support funding are financed by a levy on all health authorities and primary care trusts. The level and distribution of these funding streams is far more a product of history, politics and pragmatic judgments than any rational analysis [45]. Teaching hospitals, originally the sole recipients of this funding, still continue to receive the lion's share. This is a source of frustration to those who have looked to SIFT to finance a shift of medical education towards community settings or who have expected to see research funding directed with greater regard to NHS 'priorities and needs' [46]. Despite this pressure, radical reform of the two levies has been repeatedly deferred out of concern not to destabilise the teaching hospitals [47]. Since 2001, SIFT has been a component of a 'Multi-Professional Education and Training Budget' (MPET), which also includes

funding for elements of the costs of training other clinical professions. It is clear that this will provide a platform for renewed criticism of SIFT and proposals for greater flexibility between SIFT and the other elements of MPET [34].

The circumstances set out above can be summarised as follows. Health and education sectors face a set of major challenges that can only be met by effective joint working. Yet the mechanisms for this joint working appear inadequate in scope and conceptualisation. The contribution and role of academic health organisations appears central and yet the policy-making process does not recognise this. This denial of the exceptional nature of AHCs makes the continuation of specific funding to privileged institutions appear anachronistic. The result is a climate in which debate about medical school/NHS relationships has been seen as *recherche* and motivated by a sense of entitlement. Claims to a distinctive role have been resisted and funding arrangements have served as a source of resentment [4]. There is no counterbalance to this in terms of awareness from policy-makers that academic health organisations might have particular contributions to make in pursuing national policy goals.

## Activities of Academic Health Centers

In the discussion so far AHCs have been defined in organisational terms. They could also be described with reference to their activities, that is as entities in which health care provision is combined with significant teaching and research activities in a shared institutional setting.

Measures of health care delivery, education and research can be collected for both countries, although there are problems of reliability and comparability. These might be referred to as 'mission activities', reflecting the concept of the tripartite mission. In the American context, the AHC health care delivery mission is often discussed with an overwhelming emphasis on two of its elements: care of the poor and the uninsured [48] and specialist services provision [49]. This is to distinguish those areas of activity in which AHCs make a disproportionate commitment, or where their organisational values generate a special sense of responsibility, from routine service provision to insured patients. These special responsibilities are central to AHC identity and feature large in any discourse about their societal role and recommendations for public policy [50]. However, in terms of comparing organisational characteristics, it should be noted that uncompensated care is essentially an issue of financial viability, which is subject to many other considerations, and 87% of the care provided in American AHCs is for common or ubiquitous conditions [51, p48]. On this basis, the health care delivery 'mission' is taken to refer to all health care delivery in both national settings, an approach that also simplifies comparison with the UK where issues of indigent care do not arise.

To undertake comparisons of mission activities, an operational definition of AHCs is required for both countries. This is not straightforward in either country: in the USA because of organisational diversity and in the UK because of the lack of currency of the AHC concept. For the USA, AAMC definitions have been used. These define AHCs with reference to ownership of a teaching hospital or system by a medical school, or by reference to faculty dominance of teaching hospital staffing. In some cases, this may result in one centre combining a medical school with a number of teaching hospitals or systems. The resulting list of 125 American AHCs is detailed in **Appendix A**.

In the UK, the principal clinical partners of the 23 medical schools have largely self-identified themselves by participation in the UK University Hospitals Forum. Membership of this forum is defined not merely on the basis of being a university teaching hospital, but using tests of research intensity, links to external research funders and significant academic influence over the hospital. At present, 28 hospitals are represented. Specialist hospitals, including children's hospitals, have also been included in UK data collection to give greater comparability with American AHCs. These hospitals, which are principally a London phenomenon, are linked to medical schools and are major contributors to research and postgraduate education. For reasons of data availability, the analysis has been confined to the 17 medical schools in England in 2001 (i.e. excluding the four new English schools opened in April 2002 and the 6 in the rest of the UK). The resulting list of 17 English AHC equivalents is detailed in **Appendix B**.

These definitions represent a pragmatic approach, but this pragmatism has a price. Even in the USA, data is generally not available for the entirety of the AHC endeavour but rather must be obtained discretely for their principal component parts: medical schools and teaching hospitals. This undermines the concept of the AHC as an integrated entity as well as pointing to problems with transparency and accountability, which are further discussed below. This approach also reinforces the prevailing conceptualisation in the American literature, which focuses overwhelmingly on the bilateral medical school/teaching hospital relationship as the substance of the AHC. Any discussion in the British context is likely to benefit from an AHC definition that includes other professional schools and clinical settings. Nevertheless, given that no previous comparative analysis of this nature has been attempted, it was judged that analysis using these definitions would still advance understanding.

## Comparative analysis of Academic Health Centers' mission activity

The discussion so far has identified that, in terms of governance and organisation, American AHCs appear less homogeneous as a group than their British equivalents. AHCs have been described as academic/health care delivery complexes where the three activities of service, teaching and research are pursued with an intensity that distinguishes them from other providers. Data on mission activity can be used to explore three inter-related questions:

1. What is the contribution of AHCs in each area of mission activity?
2. How dispersed are mission activities? Is, for example, research more concentrated in a few super-AHCs in the US than the UK?
3. How variable is the activity mix of AHCs?

The purpose of these questions is to form a view on how far AHCs have a distinctive contribution within national health care delivery systems and how homogeneous they are as a group. The resulting picture can then be matched against the differing perception of these institutions that has been noted for the two countries.

Table 1 summarises the **contribution** of AHCs by mission activity within each country. This is the contribution of AHCs to total combined health and higher education sector activity. This will be self-evident for patient care and medical education. Drawing the boundaries is more problematical for biomedical research, where there is a major involvement by various industrial sectors.

*Table 1 AHC activity as a proportion of total care, medical education and biomedical research activity in health care and higher education sectors: England and USA*

Mission	AHC as % total USA	AHC as % total England	Notes
Patient Care	7%	17%	
Undergraduate Medical Education	71%	62%	
Graduate Medical Education	40%	32%	
Biomedical Research	95%	Not available	1

Note 1: Comparable figures by value are not available for the UK. However, an analysis of the NHS National Research Register shows that 60% of all registered projects are located in AHC affiliated hospitals. It can be assumed that the average value of these projects is higher than that of the remaining 40%, many of which are small projects in community settings. However this can not be quantified. AHC affiliated hospitals also received 73% of all R&D support funding in 2002/3, although the relationship of this figure to current research activity is confounded by historical factors.

Table 1 Definitions and Sources

**Patient Care**

US: percentage of all acute hospital beds in AHC affiliated teaching hospitals. Source [14]

England: percentage of all hospital bed days in AHC affiliated teaching hospitals. Source: Department of Health Hospital Episode Statistics 2000/2001

**Undergraduate Medical Education**

US: percentage of undergraduate teaching time in non-ambulatory settings. Source [52]

England: percentage of undergraduate teaching time in AHC affiliated teaching hospitals. Source [53]

**Graduate Medical Education**

US: percentage of all resident posts in AHC affiliated teaching hospitals. Source [52]

England: percentage of all hospital training grade posts (whole time equivalents) in AHC affiliated teaching hospitals. Source: Department of Health NHS/30/09/01 Workforce Statistics at [http://vwww.doh.gov.UK/stats/d\\_results.htm](http://vwww.doh.gov.UK/stats/d_results.htm)

**Research**

US: value of research grants to medical schools and AHC affiliated teaching hospitals as % of all NIH grants to medical schools and independent hospitals (as defined by NIH) <http://grants1.NIH.gov/grants/award/>

The **diversity** of AHCs as a group in each country can be examined by comparing the distribution (Figure 1) and correlation (Table 2) of mission activity.

Figure 1: Distribution of mission activity by AHC quartile based on ranking for each of four indicators: England and USA

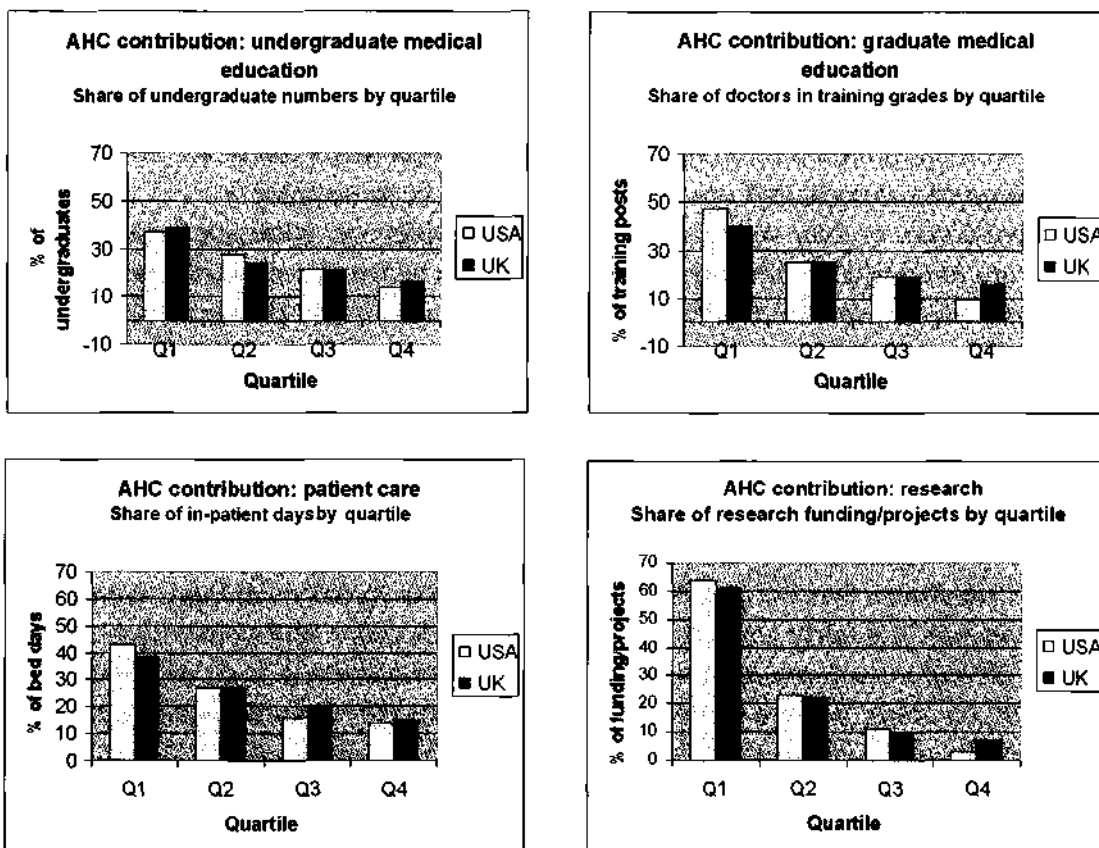


Figure 1 Definitions and Sources

**Undergraduate Education**

Numbers of enrolled medical undergraduate students. Sources US: AAMC Institutional Profile System (April 2002); England [53]

**Gradual Medical Education**

Numbers of housestaff/ doctors in training grades. Sources US: AAMC Institutional Profile System (April 2002); England: Department of Health NHS Workforce Statistics at 30/09/01

**In-Patient Care**

Numbers of hospital bed days. Sources US: Ingenix hospital benchmarks data; England: Department of Health hospital episodes statistics 2000/2001

**Research**

Numbers (England), value (USA) of research projects. Sources US: AAMC Institutional Profile System (April 2002); England: National Research Register Issue 1 2002

*Table 2 Correlation coefficients for paired mission indicators: England and USA*

	USA	England
Undergraduate education/graduate education	0.44	0.82
Undergraduate education/patient care	0.12	0.62
Undergraduate education/research	0.22	0.55
Graduate education/patient care	0.68	0.88
Graduate education/research	0.68	0.62
Patient care/research	0.66	0.43

Definitions and sources as Table 1

Table 1 illustrates the extent to which AHCs in both countries dominate medical education and research, and how their contribution in these areas is disproportionate to their share of total patient care delivery. Although figures in this format are not available, this conclusion would also be true for specialist services in both the USA [49] and the UK [54] and for indigent care in the USA only [48]. This contribution appears to be more disproportionate in the USA than in England because American AHCs provide a lower share of overall patient care but a greater share of mission activity. In this sense, American AHCs, if treated as a homogeneous group, appear to be more differentiated from the rest of the health care system than English AHCs.

Figure 1 illustrates that the distribution of scale of activity between English and American AHCs is fairly consistent. In the case of education and patient care the top ranked 25% of institutions account for around 40% of activity in both countries. Research, however, is more concentrated with the top 25% of institutions responsible for over 60% of activity and, in the American case, the lowest ranked 25% for only 3% of research activity. Overall, American activity is slightly more widely distributed for all measures except undergraduate education.



Table 2 addresses the question 'are the institutions in each quartile generally the same for each mission activity?' by showing measures of correlation between activities. It can be seen that most pairs of activities are more strongly correlated for English AHCs. The exceptions are graduate education/research (where the difference is minimal) and patient care/research.

The overall picture is that English AHCs are more homogeneous as a group than American AHCs. Some American AHCs are very different from the rest of the American health care system, others will be less so. English AHCs will be more consistent in their characteristics and therefore in their difference from the rest of the health care system. The analysis of mission activities supports the view that the more coherent group identity of American AHCs is paradoxical. Differences in attitudes towards AHCs between the USA and the UK can no more be explained with reference to objective differences in their activities than by differences in their organisational arrangements.

### **Case studies - purpose and methodology**

The argument developed thus far is that the very different policy environments for academic health organisations in the two countries can not be wholly explained by differences in organisational form, or by differences in their activity profiles or group characteristics. It could still be argued, however, that the specific characteristics of each national system and the specific characteristics faced by AHCs are so different as to render comparison meaningless.

One way of addressing this argument is through detailed comparative case studies of the challenges facing selected AHCs in both countries. Critical appraisal of case study methodology has stressed its ability to offer rich and focused evaluation of 'mega-systems' in real-life circumstances of flux and change [55]. AHCs, which have been described as amongst the most complex of all organisational types [16], certainly match this description and a number of intensive case studies have been published [56, 57]. With one exception, these have, however, all been confined within one national system.

Cases were selected to try to give both international comparability and contrast within countries. A decision was also made to define the case studies by teaching hospitals, rather than by medical schools, to ensure relatively clean case definition and focus. This was important, given the ambiguity in AHC definitions referred to above.

Preliminary conclusions from the one international study to date were confined to urban AHCs, being based on case studies from the crowded and competitive Boston

and London markets [7]. London remains extremely important in the UK context, with around 40% of all medical students still trained in its five medical schools and 27% of research occurring in London [9]. A London centre was, therefore, required and King's College Hospital Trust (KCH) in South London was chosen. Despite its smaller size as a city, Boston continues to provide a good contrast with London because of the intensity of academic and medical activity that is present.

Massachusetts General Hospital (MGH) was chosen as a comparable institution. To contrast, a relatively rural centre with little natural competition was sought in each country and on this basis Addenbrooke's NHS Trust in Cambridge, England and Mary Hitchcock Memorial Hospital in New Hampshire were also chosen. More background details on each of the case studies is given below.

The limitation of the case study approach is that it can not be used for statistical generalisation. However, it can be used to expand and generalise theories (analytic generalisation) if it proceeds from a theoretical framework [58]. Using the available literature on policy and management issues relating to AHCs, reflected in the discussion above, an investigative framework was developed covering the following areas: finance, governance, integrated delivery systems, primary care integration, managing markets, workforce development, innovation and leadership. Semi-structured interviews were carried out with 42 informants across the four centres, selected to provide a cross-section of managerial, clinical and academic roles. Each interview commenced with very broad and open questions about the major challenges facing the AHC and then focused on one or more of the areas of inquiry, depending on the response received. The intention was to build up a comprehensive picture from multiple informants, rather than seeking to cover all areas of inquiry with each individual. These interviews were supplemented by analysis of documents such as annual reports, bond prospectuses, brochures, strategies and business plans as well as published data sources for the sector.

30 of the 42 interviews were recorded. The decision not to record was taken in about one in four cases because a judgement was made that a more informal 'off the record' discussion would yield a useful additional perspective or because of difficult environmental conditions. Transcriptions of interviews were analysed using 'Ethnograph' software, coding both for the themes used to structure interviews (see above) and other themes identified as they emerged.

## Case studies - profiles

Key details of the four cases are summarised in Table 3 below. A brief commentary on each case follows.

**Table 3 Case Study - Key Statistics**

<b>Teaching Hospital/System</b>	King's College Hospital (KCH)	Massachusetts General Hospital (MGH)	Addenbrooke's Hospital (ANHST)	Mary Hitchcock Memorial Hospital (MHMH)
Location	Camberwell, London	Boston, MA	Cambridge, England	Lebanon-Hanover, NH
Ownership	King's College Hospital NHS Trust	Partners HealthCare System Inc.	Addenbrooke's NHS Trust	Dartmouth-Hitchcock Medical Center
Constitution	NHS Trust	Voluntary - not for profit	NHS Trust	Voluntary - not for profit
Staffed Hospital Beds	980	855	1,020	317
In-patient Episodes pa (inc.observation)	44,275	46,000	53,000	18,750
Out-patient Visits pa	435,000	Clinic 407,000 MGPO 466,000	365,000	367,300
Emergency Room Attendances pa	81,500	71,250	56,750	20,650
Total Hospital Income	£236m	\$1,151m	£250m	\$340m
Research Income Hospital	£9m	\$294m	£12m	-
<b>Medical School</b>	Guy's, King's and St Thomas' School of Medicine and Dentistry, (GKT) King's College, University of London (KCL)	Harvard Medical School, Harvard University (HMS)	School of Clinical Medicine, University of Cambridge (UCSCM)	Dartmouth College Medical School (DCMS)
Research Income Medical School	£36m	\$185m	£25m	\$80m
Undergraduate Medical Students	1055	723	390	274

**Note:** Figures are for financial year 2000/2001 UK, 2000 USA

**Sources:** Websites, annual reports, bond issue prospectuses

UK Rural - Addenbrooke's NHS Trust is the principal clinical partner for the University of Cambridge School of Clinical Medicine. Both organisations share a city-edge campus with various other academic and research institutes.

Addenbrooke's is the local hospital for the Cambridge sub-region (population c.460,000) and the principal provider of specialist services to much of the eastern region of England. A full range of acute services is provided, with the exception of cardio-thoracic surgery. This is located at Papworth Hospital, a super-specialist hospital fourteen miles from Cambridge. The two Trusts have many operational interdependencies and there are plans for Papworth Hospital to relocate to the Addenbrooke's campus by 2010.

The University of Cambridge School of Clinical Medicine is the second smallest medical school in England in terms of student numbers. Founded in 1976, it is also relatively young, despite the antiquity of pre-clinical medical education in Cambridge.<sup>2</sup> The school has around 340 academic staff (excluding unestablished research assistants). Research grant income has increased threefold over the past decade, but starting from a low base. The school relies on the NHS for funding of 59% of its clinical academic posts and over 500 NHS staff in 17 hospitals contribute to teaching.

The local market is characterised by relatively low population density but by a high rate of population growth, a result of the economic strength of the Cambridge sub-region. Population health indicators are above national averages. Addenbrooke's dominates specialist service provision in the eastern region as far south as the more densely populated areas of south Essex and Hertfordshire, which fall within the London sphere of influence. The establishment of a new medical school at Norwich, sixty miles away, may challenge this dominance in the future. Since April 2002, service commissioners have been small and fragmented. There are three Primary Care Trusts in the south of Cambridgeshire responsible for populations of up to 150,000.

US Rural - Mary Hitchcock Memorial Hospital is the principal clinical facility within the Dartmouth-Hitchcock Medical Center (DHMC). Other components of DHMC are Dartmouth College Medical School, the Dartmouth-Hitchcock Clinic and the VA Medical Center in White River Junction, Vermont. Dartmouth-Hitchcock clinic is a multi-specialty group practice, employing over 620 physicians at over 40 sites in New Hampshire, Vermont and Massachusetts. The Clinic's physicians comprise substantially all of Dartmouth Medical School's clinical faculty and Mary

2 Cambridge medical education can be confusing, especially for those used to straightforward American degree structures. Pre-clinical education is taught in the faculty of biology, leading to the award of a BA (which is subsequently converted to an MA) after three years. Students are, at this stage, graduates of Cambridge University but in the context of medical education are still referred to as undergraduates as they have not yet acquired the dual degrees of Bachelor of Medicine and Bachelor of Surgery (MB, BChir), these being the qualifications allowing provisional registration as a Medical Practitioner. This clinical stage of undergraduate education is taught by the School of Clinical Medicine over five terms.

Hitchcock's clinical staff. DHMC is based on voluntary affiliation between these components, rather than formal obligations or ownership. Mary Hitchcock is also the founding member of an obligated group, the Dartmouth-Hitchcock Alliance, established in 1983 to facilitate the establishment of a regional health care network. This group includes community hospitals, nursing homes, mental health agencies and home nursing services. Mary Hitchcock is New Hampshire's largest hospital and only teaching hospital and serves as a tertiary referral centre for a population of around 1.5m people in eastern Vermont and New Hampshire as well as a local centre for the Lebanon-Hanover area.

Dartmouth Medical School is also relatively small with an average enrolment of around 270 MD students, placing it in the lowest quartile on this measure. In another parallel with Cambridge University it also combines a venerable history with a relatively recent move into clinical education. Although the medical school dates back to 1797 the school confined itself to pre-clinical education between 1913 and 1970 when a four-year MD program was introduced. The school is mid-ranking in research income, receiving \$80m in research funding in 2000/2001, including \$49m of NIH funding. There are around 900 full-time faculty (note that in making comparisons with the UK it must be kept in mind that all senior clinical staff members have faculty positions).

Both Vermont and New Hampshire are sparsely populated, with 0.6m and 1.2m residents respectively. The south of New Hampshire is more densely populated and more prosperous and is influenced by proximity to the urban conurbation of Boston and eastern Massachusetts. Mary Hitchcock's share of its local service area is around 70% and it has no academic centre competition nearer than Boston and Burlington, Vermont. Competition for tertiary services is limited to a few for-profit non-academic centres providing services in areas such as Cardiology and Orthopedics. The market structure for health plans is highly fragmented, with the largest plan providing only around 20% of income and contracts with over one hundred plans in total.

UK Urban - King's College Hospital NHS Trust is one of two acute teaching partners for the Guy's, King's and St Thomas' Medical School (GKT) in London. In the 1990s the London medical scene was dominated by massive reconfiguration, prompted by the Tomlinson report [59]. However this turmoil was not visited upon King's, one of only two London teaching hospitals out of fifteen in 1992 not to have subsequently been involved in merger or closure. This reflects King's strong local service base in south-east London, which led Tomlinson to rate it as the least vulnerable of the 15 to competitive forces. Both King's medical school partner and its largest neighbour have, however, been greatly changed by this process. GKT medical school was formed in August 1998 from the merger of King's College Medical School and the United Medical and Dental School (itself the product of a

merger between the former medical schools of Guy's and St Thomas' Hospitals in 1982). Prior to this, UMDS had been a stand-alone medical school within the University of London. The merger brought this large entity into a multi-faculty college, King's College London, for the first time. Guy's and St Thomas' hospitals merged in April 1993 to create one of the largest hospital trusts in the UK. GKT is spread across multiple sites in south London, but has a presence on the main Denmark Hill site of KCH, which is being strengthened by new investment. The identity of Denmark Hill as an academic centre is reinforced by the adjacent presence of the Maudesley Hospital, a major mental health facility and home of the Institute of Psychiatry, which is also affiliated to King's College. KCH provides acute hospital services to its local population and a range of tertiary services, including liver transplantation in which it has the largest programme in the UK.

GKT is the largest medical school in the UK in terms of undergraduate numbers. Research grant income is relatively modest and there are around 400 faculty members. King's College also includes schools of nursing and midwifery, health and life sciences and public administration.

KCH serves a local population of around 700,000 in the London boroughs of Southwark, Lambeth and Lewisham. This area includes some of the most disadvantaged areas of London, with numerous social and economic problems reflected in poor health status. A 30% vacancy rate amongst local GPs adds to pressure on the hospital. As everywhere in England, the purchaser base has been fragmented by the creation of PCTS from April 2002. Local PCTS will serve populations of up to 300,000.

US Urban - Massachusetts General Hospital (MGH) is a principal teaching affiliate of Harvard Medical School and part of the Partners HealthCare System, which includes two major teaching hospitals and four acute care community hospitals, as well as mental health facilities, rehabilitation facilities, physician organisations and practices, home health agencies and educational programs. As such, MGH is part of one of the largest and most successful academic health groups in the USA. Around 90% of MGH physicians are faculty of Harvard Medical School. Partners essentially operates to a holding company model, reserving certain powers and functions to head office but otherwise leaving the numerous boards of its component parts to operate with a high level of autonomy [20, chapter 3]. MGH provides a full range of acute services to its local population in central and north shore areas of the Boston conurbation. It provides tertiary services to Eastern Massachusetts, Rhode Island and southern New Hampshire.

With an annual MD student intake of around 165, Harvard is in the top quartile of medical schools on undergraduate enrolment. But what sets Harvard and its affiliated teaching hospitals apart from other centres is its remarkable dominance in

research. For example, the medical school and its five largest affiliates attracted \$737m of NIH awards in fiscal year 2001. By comparison, the second ranked centre for NIH awards, University of Pennsylvania, attracted \$305m. HMS has over 3,000 voting faculty, the majority with clinical commitments.<sup>3</sup>

MGH has around 7% share of the eastern Massachusetts in-patient care market. The local insurance market is dominated by three plans, who between them covered 58% of MGH's insured workload (excluding Medicare but including self-payers) in 2000. The largest plan, Tufts Health Plan, covered 20% of the insured workload. This is below the one-third share that some commentators have identified as being required before an individual purchaser can significantly influence provider behaviour [60, p143-144].

## Results from case studies - cross-national themes

From the interview analysis, a number of themes could be discerned which were common to the two countries. Other themes appeared consistently within each country, but did not obviously translate across national boundaries. The common cross-national themes are discussed in this section.

### Financing

Financial viability was prominent in the list of strategic challenges identified by informants in both countries. American informants clearly believed that the most that has been achieved is a reprieve, identifying continuing structural problems with AHC's three main sources of funding. With health insurance premiums again rising at double-digit rates renewed pressure from health plans to curtail payment rates to AHCs was seen as inescapable. The introduction of an increased co-payment for use of the AHC for routine services by one Massachusetts plan was referred to by a number of informants as a significant development [61]. Below inflation increases in Medicaid were seen as inevitable as a consequence of State budget deficits, and it was commented that although reversals in Medicare cuts had been achieved these were non-recurrent and the consequences of the Balanced Budget Act had yet to be fully worked through. Both US hospitals rely on Medicare for around 40% and on Medicaid for 12% (MGH) and 9% (MHMH) of their income. MGH had an operating margin of 0.3% and a total margin of 3.4% in 2000. MHMH had an operating margin of 1.8% and a total margin of -0.7% in 2001.

3 In making comparisons it should be noted that Harvard is unusual in that the majority of awards are granted to the teaching hospitals, rather than the school, reflecting the atypical situation where the majority of faculty are employed by the hospitals (or their physician employing organisations), rather than medical school.

In the UK, the system of funding for AHCs appears less chaotic and more transparent. As has been noted, a system of levies on health authorities pays for the indirect hospital costs of teaching and research. Further levies contribute towards the cost of graduate medical education and non-medical education and training. Higher education is funded under a 'dual support' system, whereby the funding councils<sup>4</sup> provide block grants to cover the core costs of teaching and research. The research councils,<sup>5</sup> research charities and commercial sponsors then provide grants for specific projects. These sources, together with tuition fees and endowments, are intended to cover school costs. Despite this apparent rationality, the case studies revealed a number of financial challenges for AHCs. These included the fragility of arrangements for time bartering between university and NHS partners; the vulnerability of the levy streams of financing; the degree to which cost pressures impacted disproportionately on AHCs; and the financial risks associated with the fragmentation of commissioning in the NHS.

KCH provided a vivid example of the complex issues around time bartering between partners. These revolve around an issue colloquially known as the 'knock-for-knock', whereby both parties agree not to cross-charge for the services of their staff. Medical school faculties provide clinical services for the NHS, with clinical academics providing about 10% of service delivery at consultant level. NHS medical staff provide about two-thirds of all undergraduate teaching. There is a fiction that no cross-charges are made between the NHS and medical schools to reflect these resource inputs. In fact, the NHS pays for around 40% of the costs of clinical faculty on average [36]. But this subsidy is only loosely linked to the service input of clinical academics and rather reflects the accretion of years of 'deals' between the NHS and university partners on a local basis, a fact reflected in the wide variation in rates of subsidy between centres.

In south-east London, GKT is faced with a need to reduce costs by around 10%, largely as a consequence of unresolved issues arising from the merger that created the school in 1998. The school's strategy will involve the loss of a number of academic posts, funded by the higher education sector, but providing a significant clinical contribution to KCH. A 6% cut, or 38 clinical academic posts, has been reported as planned [35]. To the extent that there is a loss of clinical sessions the hospital will be required to provide replacement sessions. But the hospital will not be at liberty to fund these by reducing the time NHS employees allocate to teaching medical school students. KCH regard this as potentially a unilateral breach of the knock-for-knock, which may solve GKT's financial problems at the cost of destabilising the hospital's finances.

4 In England: The Higher Education Funding Council for England' (HEFCE). Equivalent bodies exist for the other UK countries.

5 For medical schools, principally the Medical Research Council (MRC).



Financial risk was also perceived in connection with levy funding. 84% of the annual SIFT budget is still paid to acute teaching hospital trusts, despite the fact that these provide only 62% of teaching time, reduced from 70% in 1996/7 [53]. Teaching hospitals are seen by the rest of the NHS as continuing to receive a disproportionate share of SIFT given their reduced importance in teaching. Teaching hospitals' response to this is that most of SIFT reflects fixed infrastructure costs which can not be reduced following a marginal reduction in teaching load. Their sense of vulnerability in this area is reinforced by proposals to establish Teaching Primary Care Trusts (PCTS) and the merger of SIFT into a single levy stream for education and training. KCH had begun negotiations with the London regional office to 're-base' (i.e. reduce) their SIFT, a process which would require compensating adjustments to local purchasers in allocations to maintain financial neutrality. This can be seen as initiating a process to reduce dependency on these income sources in a controlled way, rather than waiting for an uncontrollable process to be visited upon the Trust. This strategy, which is far from risk-free, indicates that even greater risk is associated with continuing dependence upon SIFT.

The R&D levy is also seen as a source of risk, because of the unpredictable consequences of proposals to reform the basis of allocation [46]. The centre has repeatedly deferred these proposals, which are intended to make NHS R&D funding more responsive to priorities. A common interpretation of this among interviewees was that a more objective basis of allocation could not be introduced without destabilising the London teaching hospitals. In 2002/3, 68% of all R&D levy funding was still allocated to London. Any reform is likely to involve some movement of funds away from London and, unsurprisingly, KCH were more nervous about this change than Addenbrooke's. Total income for education, teaching and research<sup>6</sup> amounted to 14.8% and 15.6% of gross income for Addenbrooke's and KCH respectively in 2000/2001, compared to a national teaching hospital mean of 15.2%.

Some respondents perceived various cost pressures as having disproportionate impact upon teaching hospitals. These include the costs of initiatives to reduce junior doctors' hours, compliance with the recommendations of the National Institute for Clinical Excellence (NICE) and implementation of National Service Frameworks (NSFs). The latter, when combined with an increasingly rigorous framework for quality assurance ('clinical governance') was seen as creating strong centripetal forces, drawing work towards specialist centres. Systems for commissioning and financial allocations in the NHS were seen as insufficiently responsive to these pressures.

6 Including SIFT, R&D levy, Medical and Dental Education Levy (MADEL), Non-Medical Education and Training Levy (NMET) and research grants.

Analysis of all English NHS Trust accounts for 2000/2001 showed that the average cumulative deficit for the 31<sup>7</sup> teaching hospitals was 0.26% of gross income. This compares with an average break-even position for other non-specialist acute hospitals.<sup>8</sup> This modest difference suggests that if disproportionate cost pressures are present then teaching hospitals must have identified strategies for managing these. These might include securing additional income through negotiation with service commissioners, transferring capital allocations to support revenue or receiving additional support from the regional offices of the NHS Executive. Such measures are often non-recurrent, and therefore short-term. They cannot be identified from the accounts, so it is not possible to say whether or not they are more frequently resorted to by teaching hospitals. Table 4 summarises some key financial statistics for English NHS providers.

*Table 4 Financial statistics 2000/2001 - English NHS Trusts*

	Main University Teaching Hospitals	Other general acute hospitals	All providers
Number	31	150	325
Average income	£220.3m	£108.6m	£97.2m
Average accumulated surplus / (deficit)	(£569,000)	(£10,000)	£23,000
Accum. surplus as % income	(0.26%)	(0.01%)	0.02%
Average education, training and research income	£33,392	£5,893	£7,242
E, T & R income as % total income	15.2%	5.4%	7.5%

Notes: All providers includes all acute teaching, acute general, acute specialist, community and mental health but excludes ambulance trusts

Accumulated surplus is for four-year period 1997/8 through 2000/2001 from TAC20

Source: Department of Health TAC returns 2000/2001

### Integrated Delivery Systems

Discussion of the challenge of developing integrated systems of care was the single most consistent theme to emerge from interviews on both sides of the Atlantic. In both countries, the ideal was described as a system that cares for the patient in a seamless way across institutional boundaries, encompasses all stages of the 'patient journey' and reliably achieves high quality standards through the use of a variety of tools. Academic centres were seen as having a key role to play in these systems in both countries.

7 Two Trusts in Manchester merged in April 2001 to reduce the number of AHC linked teaching hospitals to 30 as Appendix B.

8 These margins may appear surprisingly small to an American audience. It should be noted that the NHS Trust financial regime is designed to achieve breakeven.

Despite the commonality of the concept, the national drive for the creation of integrated systems appears quite different upon first examination. In the USA, the creation of organisational networks, whether through acquisition, merger or affiliation, has been seen as a defensive mechanism for AHCs [62]. It was anticipated that larger health care systems would provide greater market share, increase volumes and reduce administrative overheads through economies of scale. Some commentators also argued that integrated systems would improve the overall functioning of the health care market by creating more organised entities, better able to respond to market signals [63]. Alongside these drivers, there is a broad strand of discussion that emphasises the quality gains to be made from integration. Much of this discussion has a high normative content [60]. These views drove a wave of mergers and acquisition of primary care networks in the late 1990s, which included the creation of Partners.

In the UK, the development of service networks and national service frameworks has been mandated by central government with the goals of improving outcomes, standardising treatment and achieving greater equity [64, 65]. Implementation will require collaboration between hospitals and sectors in 'partnership working' [66]. American innovations such as the organisational integration of primary and hospital care in single delivery systems are not an option within nationally prescribed structures.

Partners is notable for the extent to which it has not pursued clinical integration within its group structure. Examples of rationalisation of services were limited to a handful, mentioned by several respondents, for example the multiple sclerosis service, where separate services at the MGH and the Brigham and Women's Hospital have been combined. Interviewees emphasised the importance of allowing clinicians to take the lead in developing service integration and of potential quality improvements in mobilising clinicians. The prevailing philosophy was characterised as one where no major service change occurs unless there is a political will and an economic necessity. This approach was seen as having contributed to the relative success of Partners compared, for example, with the troubled Care Group system (Partners' main rival in Boston) which had pursued aggressive policies of clinical integration.

Work has been done to develop service lines across the group, for example in cardiac care. However, this was described as being more about standardisation of care pathways, collaborative quality improvement and co-ordination of marketing, than about integration of service provision. The role of Partners here was seen as largely facilitative, convening forums for physicians who had previously been isolated and providing evidence-supported challenges to existing practice. But the principal role of Partners is seen as the provision of collective bargaining power in dealings with purchasers of services. The policies of these purchasers are seen as neutral or unhelpful to integrated care development. Within MGH, for example, the

development of a service line approach for cancer services including multi-disciplinary teams and common pathways, has meant the construction of elaborate internal mechanisms to create the required financial incentives, given that plans' reimbursement systems do not provide these.

The development of cancer networks in the UK presents an interesting contrast. Cancer services have been the prototype for the development of the National Service Framework model under which services are rationally restructured according to evidence-based service models [67]. In the case of cancer, this process has been going on since the mid-1990s. In the Eastern Region of England, substantial progress has been made in the development of the West Anglia Cancer Network, which provides an integrated cancer service for 1.6m people.<sup>9</sup> Addenbrooke's and Papworth hospitals provide the specialist centre in this network. Committed clinical leadership at Addenbrooke's was seen as instrumental in implementation. In south-east London, in contrast, relatively little progress seems to have been made in implementing a cancer network, with difficulties in reaching agreement on service re-configuration between KCH and neighbouring Guy's and St Thomas's NHS Trust.

The experience of MHMC and the Dartmouth-Hitchcock Alliance (DHA) presents another contrast. The DHA has been used as a vehicle to promote rational service configuration throughout the hospital's wider referral area, principally by supporting community hospitals in maintaining a wide range of routine acute services. The rationale for this has been partly the preservation of capacity for more specialist work at MHMC, which operates at above 90% occupancy. But interviewees also referred to broader issues of perception of the academic centre amongst local communities and the need to maintain public trust. The legal structure of DHA and local market structures (limited competition, fragmented purchasers) would enable MHMC to adopt aggressive policies. But a model of 'benevolent imperialism' was seen as more likely to sustain the long-term interests of all parties involved. The fact that MHMC is relatively sheltered from competition and managed care were seen as important in permitting this model of behaviour.

In the context of major expansion plans for the hospital, Addenbrooke's has also been involved in attempts to shift more routine work to neighbouring hospitals.<sup>10</sup> Behind this policy lie broader issues about the minimum size of acute hospitals and the centralising forces which drive work towards specialist centres [68, 69]. Progress with these plans has been slowed by passive resistance from medical staff in neighbouring hospitals, driven in part by fear of further increasing Addenbrooke's influence over the sub-regional health care system.

<sup>9</sup> [www.wacn.nhs.uk](http://www.wacn.nhs.uk)

<sup>10</sup> These hospitals are referred to as District General Hospitals (DGHS) and are comparable to larger American community hospitals.

## Governance

The question of governance is extensively discussed in literature from both countries, but with different meanings. In the American context, it is usually taken to mean the formal structures of boards, ownership relationships and representation that are adopted by an AHC. It can be extended to include the wider set of management arrangements that support these formal relationships, and this wider interpretation is used here. In the UK too, governance is given these meanings, but is also used to describe arrangements for ensuring safe, effective and ethical practice, as in 'clinical governance'.

The American literature tends to emphasise the importance of effective governance to strategic planning and rapid decision-making within an increasingly competitive environment. Differences in objectives, performance criteria, outputs and culture between medical school and university mean that this is a challenge even in circumstances of common ownership. Case studies have identified key components to successful strategic planning. These include the development of a shared vision; creation of key posts with liaison responsibilities; mechanisms for resolving conflict and improved financial management [56]. In the case of MGH, these components seem to have been achieved by comprehensive internalisation of academic goals within the hospital. When interviewed, service chiefs and administrators made it clear that they saw their role as being the achievement of excellence in all three aspects of the tripartite mission on a departmental basis. This reflects a unique set of relationships in Boston, in which primary responsibility for clinical education and clinical research has rested with the teaching hospitals, rather than with the medical school. HMS has limited direct and formal control over these areas of academic mission, although it is able to exert enormous influence through its control of faculty appointments [20, chapter 2]. Interviewees at MGH made relatively little explicit reference to governance as an issue, perhaps reflecting this internalisation. However, extensive reference was made to the challenge of integrating the component missions, which was seen as the essence of the management task.

At Dartmouth-Hitchcock, in contrast, MHMA is embedded in a complex set of relationships in which power and responsibilities are more distributed. The hospital must manage the voluntary relationships of the Dartmouth-Hitchcock Medical Center alongside the obligations of the Dartmouth-Hitchcock Alliance. More than one interviewee identified governance as the principal challenge facing both hospital and medical school. In this context 'challenge' was not a euphemism for 'difficulty'. The complexity of the governance arrangements often causes laborious process, for example a medical appointment requires agreement, including agreement of funding, between hospital, medical school and clinic. But respondents also saw merit in the explicit approach to these issues that this necessitated, recognising that in a more integrated organisation this might be absent.

In the UK, as has been described, only one model exists for governance in the sense of formal institutional relationships. In this model, NHS organisations and professional schools are located within separate sectors, which provide different goals and incentives. The fate of the Richards Report, which sought to provoke thinking about different models for governance, has already been noted (page 8). The Follett report, produced as one outcome of the notable failure of current governance arrangements at the Royal Liverpool Children's Hospital, also steers clear of recommending any fundamental change. By its own admission, this report avoids any discussion of new institutional structures 'preferring to put forward proposals that will work within existing structures but improves them significantly' [40]. The report's boldest recommendation is that universities and their clinical partners should establish new 'joint strategic planning bodies'. This idea is little developed and can be seen as an unthreatening restatement of the preference for improved inter-sector liaison in response to governance challenges. Given this context, it is not surprising that British interviewees confined their thinking to the current governance frameworks for health and higher education.

In contrast to American service chiefs, British clinical directors demonstrated only a very limited sense of responsibility for managing the tripartite mission. Instead the primary task was seen as meeting the targets set by the NHS performance management regime. This illustrates how separate lines of accountability and performance management regimes for health and education can actively work against the integration of the tripartite mission. One medical school informant was able to articulate a clear analysis of how the incentive structures of the NHS prevented the hospital partner from giving high priority to academic missions however much these were genuinely supported in principle. The system of performance rating for NHS Trusts, which is accompanied by a tough system of sanctions for the management of poorly-performing organisations, includes no performance indicators which relate to the education and research missions. Neither does it recognise university hospitals as a separate group of organisations that might merit their own set of performance indicators (in contrast with specialist trusts, ambulance trusts and mental health trusts) [70]. In contrast, in the USA work has been commissioned by the Department of Health and Human Services to develop performance indicators relevant to AHCs [71].

Another common theme was the importance of managing relationships in the three-way relationship of clinical enterprise, medical school and parent university. This was least in evidence in Boston, perhaps reflecting both the nature of the relationship between hospitals and medical school as described above and the highly autonomous nature of schools within the Harvard system. At the other three sites it emerged as a strong theme. Both hospital and medical school representatives identified the benefits of these links as supporting a broader, liberal and more multidisciplinary approach to the education of doctors and other clinical

professionals. Links between different academic disciplines, extending beyond science and into areas like philosophy and law, was also seen as increasingly important to medical research. There was also a sense that three-way dialogue was helpful in maintaining the commitment of universities to the clinical service and research of medical school faculty, activities which will have a lower academic 'payback' than exclusive commitment to basic research [72].

## **Results from case studies - national themes**

As noted, some other themes appeared consistently within national settings, but did not seem to translate from one country to another. Some of these contrasts simply represent differences in the health care systems of the two countries. Others may cast light on the frame of reference applied to AHCs in each country and differences in ascribed role. This section focuses on this latter category of contrasts.

### Innovation and Leadership

A dominant theme in discussion with American AHCs was the importance of innovation and leadership. As in the area of indigent care, AHCs appear to see it as their role to compensate for the lack of government leadership in other areas, such as information management, knowledge management and workforce development. This sense of a leadership role is linked to a perception of their particular attributes as organisations. It has been argued that the attributes of AHCs that make them suited to lead on the development of electronic medical records include their size, scope of services, level of integration, scholarly expertise, high levels of physician-hospital integration, familiarity with change and the presence of postgraduate trainees [73]. Others point out that the essence of AHC activity is the production, dissemination, transmission and application of knowledge. In this view AHCs need to become leaders in knowledge management if they are to survive in the new information age [74]. Another area of leadership is research, where AHCs conduct nearly 30% of all health-related research in the USA, and around half of all NIH funded research [75]." The role of AHCs in leading the development of integrated health systems for a locality, as exemplified by Dartmouth-Hitchcock has also been discussed.

In contrast, British informants rarely mentioned any leadership role for AHCs. This can be seen as a response to the renewed emphasis on equity in government health policy. As a result, AHC leaders are very reluctant to employ language of excellence or leadership, which is seen as likely to attract opprobrium from the rest of the NHS

11 50% of all NIH funded research as opposed to 95% of total NIH funding to medical schools and independent hospitals (see Table 1).

whilst conferring little practical benefit. Another inhibiting factor is the presence of national strategies in IT, workforce development and other areas, which, when combined with rigid central controls over capital expenditure, inhibit innovation. The allocation of 'modernisation funds' for IT, for example, seems to have been determined largely by principles of equity, rather than seeking to develop centres of excellence. A centralised approach to commissioning health care research has also been adopted in the NHS, a policy which has led, in the views of one commentator, to 'the disastrous subjection of research to the overwhelming imperatives of health care delivery' [76].

Addenbrooke's, a relatively research-intensive AHC, has responded to this situation by developing a strategy which engages with government policy beyond the agenda of the Department of Health. This includes policy on international competitiveness [77] and cluster development [78]. Working in close partnership with the University of Cambridge and Medical Research Council, the Trust has developed a strategy to expand and develop its already extensive site as a biomedical campus, including a commercial medical research park. As well as strengthening its identity as a major academic centre, this strategy will draw in external funding that will enable the Trust to expand its service provision to meet rising demand [79]. The tripartite mission is here seen not just as a challenge but as an opportunity to realise multiple public policy goals. The development of a strategic vision of this scope and ambition appears exceptional in the UK context.

The leadership role of American AHCs often appears to have occurred by default as a consequence of government failure, for example in the area of indigent care. It is also largely self-appointed, although clearly with societal consent. As a consequence it can appear partial, and this was a source of criticism of AHCs in some interviews. For example, AHCs were criticised for their lack of interest in reducing overuse of hospital services and lack of engagement with developing evidence-based models of care for chronic disease. From a British perspective, American AHCs appear excessively dominated by the medical profession and preoccupied with issues of medical education and medical research. The education of other clinical professions, development of a population health perspective, workforce development and health services research were all topics notable by their absence in interview responses.

Physician-hospital integration featured as an important theme in the responses of American informants. This has been defined as the extent to which physicians and the organisations with which they are associated agree on the aims and purposes of the system and work together to achieve mutually shared objectives [60]. This issue is obviously not unique to AHCs, although it is present here in a particularly complex way because of the dual roles of large numbers of physicians as practitioners in the health care delivery system and as medical school faculty



members. American AHCs have developed a variety of organisational responses. At MGH, for example, the physicians' organisation (MGPO), which employs the majority of doctors in the hospital, has a management structure parallel to that of the hospital. This arrangement allows the objectives of the medical staff to be made quite explicit and negotiated with the hospital administration in a spirit of seeking common ground. MGPO also deals with the development of compensation schemes by practice groups. The Dartmouth-Hitchcock clinic occupies a similar role at MHHM, although with a very different history.

These arrangements contrast with the British approach, in which there is no organisational acknowledgement of differences in objectives between hospital management and medical staff, nor any great flexibility in developing incentive schemes. As has already been noted, the dual accountability of clinical academics has been a source of concern in the UK, which has found expression in a particular interpretation of governance. Greater freedom to innovate in models of physician integration might better allow AHCs to address this issue than prescriptive central guidance, as well as better engaging physicians in meeting performance targets.

Integration between primary and secondary care was the most notable example of a British concern that found little echo in American responses. This is important to acute centres for a number of reasons, including demand management. With very limited financial compensation for over-performance against contracts in year and constrained capacity, most NHS acute centres are only too willing to work with primary care partners to keep work away from the hospital. Primary care providers will probably have a philosophical preference for care to be provided away from the hospital setting whenever possible but may resist transfers of work in practice for financial reasons. All this sets up a 'push-pull' relationship between sectors in which rhetoric and reality can be hard to disentangle. Acute hospitals will also want to improve dialogue with primary care at the present time for political reasons, as a wholesale transfer of power to Primary Care Trusts is underway [80]. Both KCH and Addenbrooke's had devoted considerable effort to improving partnership working with local primary care partners through the establishment of liaison posts and forums.

In America the setting of care excites little interest and is regarded principally as a matter of consumer choice. Primary care physicians and specialists are free to practise between hospital and community settings as they choose. From the British perspective, this may lead to an excessive concentration of care in hospital settings. From an American perspective it is difficult not to see the prominence of this debate in the UK as principally related to the long-standing power struggle between the two main branches of the medical profession [81].

### Managing Fragmented Markets

The challenges posed by the 2002 structural reform in the NHS also featured large in the response of British AHCs. The fragmentation of the commissioning function between numerous Primary Care Trusts was expected to create particular difficulties for AHCs for a number of reasons. By their nature, AHCs have larger referral areas than other hospitals. The sheer scale of the task of agreeing service and financial frameworks (SAFFs) with a multitude of small purchasers, each with limited management and public health infrastructure, was seen as presenting significant financial risk. KCH, for example, now has to agree SAFFs with around 65 Primary Care Trusts each year. The existence of lead commissioner' arrangements was seen as offering limited amelioration, as newly-created PCTS were anxious to establish their autonomy. This risk was further exacerbated by uncertainty about the future of the regional specialist services commissioning group, a set of arrangements only created in 1998.

PCTS were seen as largely indifferent to, or uncomprehending of, the wider mission of AHCs, largely confining their attention to the role of AHCs as local service providers. The future role of Strategic Health Authorities, still as yet largely undefined at the time of interview, was seen as critical. The potential for protracted power struggles between these new organisations and their PCTS was seen as high. Doubts were expressed about the basic competence of PCTS to perform their various functions, given their small size. In Cambridgeshire, for example, PCTS will be responsible for populations of less than 150,000 people. These doubts are supported by the evidence from USA managed care organisations which suggests that a population base of at least 350,000 is needed to support effective management of both provision and commissioning [82]. Another concern was that PCTS would find it extremely difficult to maintain an objective approach to the allocation of commissioning budgets between primary and secondary care given that they will also be responsible for the provision of primary and community care. All these anxieties were fuelled by the invisibility of the issues of concern to AHCs in policy documents. The policy document that sets out the rationale for these structural reforms, for example, contains only two sentences on future arrangements for commissioning tertiary services [80].

In contrast, American AHCs regarded the fragmented nature of the markets in which they operated as entirely unremarkable, reflecting the long-standing attributes of the environment in which they operate. Relationships with health plans appeared adversarial and focused around negotiations on the pricing of services. Providers can 'go nuclear' in contract negotiations by threatening not to contract with major plans unless satisfactory rates are offered, tactics recently employed by Partners. This is only credible as a threat in a situation where purchasing is fragmented and the provider commands a large market share. This is the market

structure now being created as a matter of policy in England, which will inhibit policy options in the future should there be a return to a more competitive paradigm for the NHS.

### Workforce Development and Planning

Another policy area that featured large in British responses, but was largely absent in America, was that of workforce development and planning. In the UK, there is a long tradition of rigid central control over numbers admitted for both pre-registration and specialist training in the main clinical professions. The Department of Health exercises strict control over the number of doctors in training grades through the use of the National Training Number system. The Department for Education and Skills similarly limits the amount of medical and dental degrees offered at undergraduate level in consultation with the Department of Health.

The USA offers a complete contrast to this paradigm of rational planning and state control. There is no quota system for either undergraduate or graduate medical education in the USA. The Council on Graduate Medical Education (COGME) is charged with advising the Secretary for HHS and various congress committees on workforce trends, training issues and financing policies, and to recommend appropriate federal and private sector efforts to address identified leads. However, the powers of this body do not extend to quota setting, which is seen as unacceptable in the American political context [83].

The UK Department of Health has also produced a raft of workforce policy initiatives in recent years, covering planning for growth and redesign of the NHS Workforce, education and training, pay modernisation and reforming the regulatory framework for health care professionals [34, 84]. These policies make it clear that the Department of Health sees the one million plus employees of the NHS as a single workforce to be managed and developed according to centrally determined models. This philosophy has also led to the creation of Workforce Development Consortia (WDCs) on a sub-regional basis from April 2001, a significant structural development. The missions of these organisations include integrated workforce planning and commissioning of clinical education on a multi-disciplinary basis [85]. Such an approach would be unimaginable in the USA.

This climate of rapid policy development by the centre had placed the British AHCs visited somewhat on the defensive. Aside from the challenge of responding to the sheer volume of central policy development, many specific proposals are challenging for teaching hospitals. Internal structures were still built around a focus on uni-professional education, and in particular medical education. There

was dawning recognition, however, that an integrated approach towards education and training on a multi-professional basis is now required to respond adequately to the new external environment. There was also some recognition that these changes offered scope to AHCs to expand their role as providers of education and training.

## **Discussion**

The case studies reveal a wealth of detail about the challenges facing AHCs. Some of these challenges appear common to both countries, others appear much more nationally specific. Even where common themes can be discerned they are heavily moderated by factors specific to each country. What, then, can be distilled from this analysis that is of international relevance?

### Leadership

Among all the areas examined, the degree to which a leadership role is conferred upon AHCs presents the starkest contrast between the UK and the USA. In the USA, this role has not been formally mandated but has developed in the absence of government leadership. As a consequence, defining the scope of leadership has been largely left to AHCs themselves, leading to a relative neglect of some areas as discussed above. For UK AHCs such a self-appointment role would have distinct political risks, bearing in mind the apparent hostility of the centre to any claims of exceptional status by university hospitals.

### Funding and Accountability

In both countries there is a diversity of funding sources that is a reflection of shared characteristics of organisational complexity and multiple outputs. There is a common concern about the difficulty in relating financial inputs to these various outputs, reflecting a desire to improve both accountability and the management of resources. In the USA this has found expression through attempts to improve 'funds flow analysis' and in the UK through initiatives like the funding council's transparency and accountability review.<sup>12</sup> However, it is not clear that these concerns can ever be fully addressed, given the methodological issues of joint product costing, which it has previously been observed can not be resolved in any situation where the outcome will be inescapably contentious [86]. If this is the case, then discussion of issues of 'cross-subsidy' in the USA is conceptually flawed, obscuring the fact that it is not actually possible to obtain, for example, patient care service from an AHC without also procuring an element of teaching and research.

12 <http://www.jcpsg.ac.uk/index.htm>

The arbitrary basis of calculation and allocation for SIFT has already been discussed. Similarly, the level of IME payments in the Medicare system has been described as being the result of fiscal and policy decisions, rather than objective analysis [87]. It is of note that both national systems include an element of subsidy for the excess costs of teaching hospitals which is identified with medical education, that does not stand up very well to detailed scrutiny, but which has proved resistant to challenge. In the USA, this is attached to graduate medical education and in the UK to undergraduate medical education. One view of this would be that both societies value AHCs and are prepared to subsidize their higher costs but feel compelled to legitimise this through pseudo-objective mechanisms like SIFT and IME. This does not sit comfortably with a dominant paradigm of increasing accountability [88].

British experience might also counsel caution in calling for an 'all-payer' trust fund to explicitly finance the social missions of AHCs [18]. Central government is prone to impose cuts by stealth on centralised budgets, typically by short funding price inflation as happened with SIFT in 1998/9 and 1999/2000. Where this happens in the USA, for example real term cuts in Medicare payments under the Balanced Budget Act, AHCs have greater freedom to compensate by increasing patient revenues on the basis of either cost or volume.

### Integrated Delivery Systems

It is clear that the role AHCs should occupy in integrated care systems is a major concern of institution leaders in both countries. This concern extended beyond questions of internal organisation to encompass the relationship of AHCs with the rest of the health care system.

The case studies suggest that neither market nor mandate can drive service integration in the absence of physician will and leadership. Physician commitment will be driven or constrained by professional values as well as reimbursement incentives. Similar challenges related to management of growth at Addenbrooke's and MGH also illustrate this. Both hospitals have sought to manage serious capacity problems by moving work into neighbouring community hospitals under their control or influence.<sup>13</sup> In both cases, despite serious capacity problems, a long and continuing campaign of persuasion has been required to achieve this. The resistance of the medical profession to change in these circumstances appears as much related to issues of prestige, job satisfaction, lifestyle, convenience and scope for personal development, as it does financial considerations.

The case studies also raise some interesting questions about the extent to which competitive forces are likely to drive or inhibit the development of integrated

<sup>13</sup> Princess of Wales Hospital Ely and North Shore Medical Center respectively.

systems. The Dartmouth-Hitchcock experience suggests that the absence of competition may facilitate systems development. However, this is clearly not the whole story. In the Cambridge sub-region competition is limited, but institutional and professional resistance has slowed integration with neighbouring hospitals. This suggests that other factors, for example the legal and regulatory framework, are required for a model of 'benevolent imperialism' to be an option. More empirical study would be required to unravel these questions.

### Governance

One interviewee at MHMH commented that governance is the most important issue for AHCs, but that there are no governance magic bullets and no one 'right answer'. What is important is the quality of the constant dialogue required to achieve integration of the tripartite mission. Effective dialogue may be achievable under a variety of formal governance arrangements. This is an observation that touches on the characteristics of AHCs as organisms - their complexity, permeable boundaries and multiplicity of loosely coupled sub-systems. These characteristics mean that insights from complex adaptive systems theory seem readily adaptable to AHCs. Effective governance may thus rest more on creating an environment that facilitates a flourishing community, motivated in the pursuit of multiple goals, than in creating the right structures. To borrow a metaphor, effective AHC governance may be more about gardening than engineering [89].

American institutions have considerable freedom to experiment in this area. Not so in the UK, where issues of reform in governance are firmly off the agenda. The question for the UK is whether rigidity in this area inhibits the sort of exploration of possibilities that might result in local solutions to issues of governance and whether it legitimises tolerance of poor quality dialogue between partners. The British system of separate sectors, each with its own performance regime and set of targets, creates strong bifurcating forces between health and education. Counterbalancing these and achieving integration at the institutional level is required to achieve goals which include, but are not confined to, maintaining the clinical academic workforce and regulating its activities. In comparison to their American counterparts, British AHC managers are offered a very limited set of tools for achieving this and few incentives.

The commitment of service chiefs and senior management to integrating all three strands of mission in the American case studies has been noted and contrasted with the British experience. At the root of this is a division of accountability for the elements of the tripartite mission at both the institutional and personal level. In the USA, there has been a school of thought that has argued for 'mission management' in AHCs. This involves the creation of management arrangements that allocate responsibility for one mission element only to individuals, although usually within

a matrix structure [90, p11-12]. The British experience does not suggest that this is likely to be a more successful strategy than the integrated model currently pursued by MGH, for example.

## **Conclusion - policy implications**

This report commences with the portrayal of a stark contrast in policy, academic discourse and representation for academic health organisations between the USA and the UK. This was described as paradoxical, given that many of the challenges faced by these organisations appear consistent across national boundaries. The evidence from the quantitative analysis and case studies presented in this report strengthens this view. It has been demonstrated that British AHCs approach American AHCs in their unique contribution to the three areas of mission and are less diverse as a group. The case studies reveal underlying consistency around issues of funding, accountability, governance and integration with the health and education systems within which AHCs exist. These issues also appeared consistently in both urban and rural settings, where contrasts were observed mainly around the adverse impact of competition on the ability to develop integrated delivery systems on a sub-regional basis.

It has been demonstrated that the profound differences in the treatment of academic health organisations between the two countries cannot be explained only with reference to objective differences in the nature and activities of these organisations. A satisfactory explanation requires reference to a wider set of historical, social, cultural and political considerations. In the USA, the making of health policy is a complex and pluralistic process, with non-governmental groups exercising considerable influence in the absence of any unifying plan for government action [91]. In this context, strong group-identity and representation arrangements are both acceptable and advantageous. In contrast, the Department of Health in London sees it as the business of the government to make health care policy, and tight political management of the NHS inhibits the creation of representative groups from within the service unless consistent with the agenda of the day. This agenda is focused on equity, cost control, accountability, public health and the development of a primary care led system [92].

The North American model of AHCs is based on a scientific, specialised, reductive paradigm that has its 'scripture', in the form of the Flexner report, and its paragons in the form of the leading research-intensive AHCs. The model of the integration of scientific inquiry and clinical application was never as self-consciously adopted in the UK, where the dominant London voluntary hospitals historically resisted the needs of education and research [93]. More fundamentally, the evolution of health care systems in the UK, with relatively well-developed primary care and public health functions, has provided a counterbalance to the specialised acute paradigm.

It might be argued that the practical importance of these differences in perception is overstated. In both countries, policy instruments are not usually built around institutional characteristics but are principally linked to mission activities. The principal policy instruments of federal government in the USA are, as has been noted, Medicare and research funding. Similarly in the UK, there are policy instruments for research, education and specialised services. But in the USA the government has access to a limited range of policy instruments for all aspects of health care, reflecting limitations on the role of government in health care provision. Much of the American debate is a response to this limitation, seeking ways to use the cumbersome levers of Medicare funding, for example, to better support institutions whose unique role is recognised and valued. In contrast, the highly centralised nature of the NHS would offer scope to develop policy with an institutional focus should this be seen as important.

Ultimately, differences in perception of academic health organisations may rest in large part upon difference in national values. Such a concept involves an implication of homogeneity and stability of views where none exists but empirical evidence is available on prevailing opinions [94]. Americans celebrate success and excellence, especially in the fields of academic and scientific endeavour. They have a high level of faith in science and technology to solve problems and value choice and diversity but have little concern for equity [95]. Americans also distrust government, and prefer leadership to come from non-governmental organisations. In contrast, the British appear far more concerned with equity, given to higher expectations of government and less fixated with choice [96]. AHCs reflect the society in which they exist and the extent to which properties of leadership and a distinctive identity are conferred upon them is first and foremost the result of social processes.

What are the implications for policy? With regard to the UK, it has been argued that recognition of the distinctive nature and contribution of AHCs might greatly facilitate the development and implementation of policy in a number of areas. These include addressing the crisis in clinical academic careers, growing and modernising the NHS workforce and meeting concerns over clinical governance. But there are additional questions of interest to society that cannot be adequately framed in the absence of an AHC concept. For example, what is the role of AHCs in supporting government objectives for UK success in a knowledge-based economy, in improving the impact of research, and in technology transfer? How can AHCs leverage their academic resources to contribute to improved quality in the NHS? What is the social and economic contribution of AHCs to local communities? Can AHCs provide leadership in the development of new models of partnership working and the development of clinical networks? To even pose these questions it may be necessary to develop a 'British AHC model that is significantly differentiated from American models. Definitions from some other national settings, for example from Canada, may prove more transferable.



"The totality of university health professional schools, including a faculty of medicine, associated research enterprises and care delivery organizations that provide physical facilities and funding for education and research, and which are aligned towards a common mission of advancing patient care, education and research" [16]

American AHCs have more freedom to define the scope of a leadership role that is part self-appointed and part conferred upon them by broad consensus in the absence of government leadership. However, this too has its perils in terms of the dominance of medical and provider interests. The risk is relative neglect of a range of issues to which AHCs could bring a unique contribution. These include workforce research and development; fostering multi-disciplinary practice; population health management; chronic disease management; primary care development; leadership in relation to the ethical and social aspects of health; and evaluation of the social impact of medical innovation. These issues are certainly not entirely neglected in discourse around American AHCs [97, 98], but they appear somewhat peripheral from the British perspective. The statement of task for the Institute of Medicine committee emphasises the need for a broader mission for AHCs, linking this explicitly to the theme of accountability [3].

For each country, then, there is both an up side and a downside to their approach to academic health organisations. The British approach is more likely to foster equity, economy and an integrated approach to health care systems. Its downside may be the stifling of innovation and excellence and perpetual tension between health and education sectors. The American approach seems more likely to create centres of excellence in which fulfilling clinical academic careers can be pursued. But this may be at the expense of equity, economy and integration. These statements could, of course, all be applied more generally to the health care systems of each country. Both systems face profound challenges. The British system must translate funding growth into a step towards improvement in capacity and quality. The American system must find a way to break out of its cycle of escalating costs and growing exclusion. Academic health organisations have a role to play in meeting these challenges and comparative study can assist in formulating this role.

**APPENDIX A Academic Health Centers - United States of America**

<b>Medical School</b>	<b>State</b>	<b>Affiliated Hospital/System</b>
Albany Medical College	New York	Albany Medical Center
Albert Einstein College of Medicine of Yeshiva University	New York	Montefiore Medical Center
Baylor College of Medicine	Texas	The Methodist Hospital Harris County Hospital
Boston University	Massachusetts	Boston Medical Center
Brown University	Rhode Island	Rhode Island Hospital
Case Western Reserve University	Ohio	University Hospitals of Cleveland MetroHealth Medical Center
Chicago Medical School, Finch University of Health Sciences	Illinois	NA
Columbia University	New York	New York and Presbyterian Hospitals
Cornell University	New York	New York and Presbyterian Hospitals
Creighton University	Nebraska	St Joseph Hospital
Dartmouth Medical School	New Hampshire	Mary Hitchcock Memorial Hospital
Duke University	North Carolina	Duke University Hospital
East Carolina University	North Carolina	University Medical Center of Eastern Carolina - Pitt County
East Tennessee State University	Tennessee	community-based
Eastern Virginia Medical School	Virginia	community-based
Emory University	Georgia	Crawford Long Hospital of Emory University Emory University Hospital
George Washington University	District of Columbia	George Washington University Hospital
Georgetown University	District of Columbia	Georgetown University Hospital
Harvard University	Massachusetts	Beth Israel Deaconess Medical Center Brigham and Women's Hospital Massachusetts General Hospital Children's Hospital Boston
Howard University	District of Columbia	Howard University Hospital
Indiana University	Indiana	Indiana University Medical Center Wishard Health Services
Johns Hopkins University	Maryland	The Johns Hopkins Medicine
Loma Linda University	California	Loma Linda University Medical Center
Louisiana State University, New Orleans	Louisiana	Medical Center of Louisiana at New Orleans

Louisiana State University, Shreveport	Louisiana	Louisiana State University Hospital
Loyola University, Stritch	Illinois	Loyola University Medical Center
Marshall University	West Virginia	community-based
Mayo Medical School	Minnesota	St. Mary's Hospital
MCP Hahnemann School of Medicine (Allegheny University of the Health Sciences)	Pennsylvania	Medical College of Pennsylvania Hahnemann University Hospital Allegheny General Hospital Graduate Hospital
Medical College of Georgia	Georgia	Medical College of Georgia Hospital and Clinics
Medical College of Ohio	Ohio	Medical College of Ohio Hospitals
Medical College of Wisconsin	Wisconsin	Froedtert Memorial Lutheran Hospital
Medical University of South Carolina	South Carolina	Medical University of South Carolina Medical Center
Meharry Medical College	Tennessee	None
Mercer University	Georgia	community-based
Michigan State University	Michigan	community-based
Morehouse School of Medicine	Georgia	Grady Memorial Hospital
Mount Sinai School of Medicine of the City University of New York	New York	The Mount Sinai Hospital
New York Medical College	New York	Westchester County Medical Center
New York University	New York	NYU Medical Center
Northeastern Ohio Universities	Ohio	community-based
Northwestern University	Illinois	Northwestern Memorial Hospital
Ohio State University	Ohio	Ohio State University Hospitals
Oregon Health Sciences University	Oregon	Oregon Health Sciences University Hospital
Pennsylvania State University	Pennsylvania	Perm State University Hospital The Milton S. Hershey Medical Center
Ponce School of Medicine	Puerto Rico	NA
Rush Medical College of Rush University	Illinois	Rush-Presbyterian-St. Luke's Medical Center
Saint Louis University	Missouri	St. Louis University Hospital
Southern Illinois University	Illinois	community-based
Stanford University	California	Stanford University Hospital
State University of New York, Brooklyn	New York	University Hospital of Brooklyn SUNY Health Science Center
State University of New York, Buffalo	New York	Buffalo General Health System
State University of New York, Stony Brook	New York	University Hospital, SUNY Health Science Center, Stony Brook

*IDENTITY AND IDEOLOGY*

State University of New York, Syracuse	New York	University Hospital SUNY Health Science Center, Syracuse
Temple University	Pennsylvania	Temple University Hospital
Texas A&M University	Texas	Scott & White Memorial Hospital
Texas Tech University	Texas	community-based
Thomas Jefferson University	Pennsylvania	Thomas Jefferson University Hospital
Tufts University	Massachusetts	New England Med Center, Inc.
Tulane University	Louisiana	Tulane Medical University Hospital and Clinic Medical Center of Louisiana at New Orleans
Uniformed Services University of the Health Sciences	Maryland	NA
Universidad Central del Caribe	Puerto Rico	NA
University of Alabama at Birmingham	Alabama	University of Alabama Hospitals
University of Arizona	Arizona	University Medical Center
University of Arkansas	Arkansas	University Hospital of Arkansas
University of California, Davis	California	UC, Davis, Medical Center
University of California, Irvine	California	UC, Irvine, Medical Center
University of California, Los Angeles	California	UC, Los Angeles, Medical Center
University of California, San Diego	California	UC, San Diego, Medical Center
University of California, San Francisco	California	UC, San Francisco, Medical Center
University of Chicago, Pritzker	Illinois	University of Chicago Hospitals
University of Cincinnati	Ohio	The University Hospital
University of Colorado	Colorado	University Hospital
University of Connecticut	Connecticut	John Dempsey Hospital, University of Connecticut Health Center
University of Florida	Florida	Shands Hospital at the University of Florida
University of Hawaii	Hawaii	community-based
University of Illinois	Illinois	University of Illinois Hospital and Clinics
University of Iowa	Iowa	University of Iowa Hospital and Clinics
University of Kansas	Kansas	University of Kansas Hospital
University of Kentucky	Kentucky	University of Kentucky Hospital
University of Louisville	Kentucky	University of Louisville Hospital
University of Maryland	Maryland	University of Maryland Medical System
University of Massachusetts	Massachusetts	University of Massachusetts Medical Center

University of Medicine and Dentistry of New Jersey, New Jersey Medical School	New Jersey	UMDNJ, University Hospital
University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School	New Jersey	Robert Wood Johnson University Hospital
University of Miami	Florida	Jackson Memorial Hospital
University of Michigan	Michigan	University of Michigan Medical Center
University of Minnesota, Duluth	Minnesota	community-based
University of Minnesota, Minneapolis	Minnesota	Fairview-University Medical Center
University of Mississippi	Mississippi	University Hospitals and Clinics University Mississippi Medical Center
University of Missouri, Columbia	Missouri	University of Missouri Hospital and Clinics
University of Missouri, Kansas City	Missouri	Truman Medical Center
University of Nebraska	Nebraska	University of Nebraska Medical Center
University of Nevada	Nevada	community-based
University of New Mexico	New Mexico	University of New Mexico Hospital
University of North Carolina	North Carolina	University of North Carolina Hospitals
University of North Dakota	North Dakota	community-based
University of Oklahoma	Oklahoma	The University Hospitals
University of Pennsylvania	Pennsylvania	Hospital of the University of Pennsylvania
University of Pittsburgh	Pennsylvania	UPMC Health System
University of Puerto Rico	Puerto Rico	NA
University of Rochester	New York	Strong Memorial Hospital
University of South Alabama	Alabama	University of South Alabama Medical Center
University of South Carolina	South Carolina	community-based
University of South Dakota	South Dakota	community-based
University of South Florida	Florida	Tampa General Healthcare
University of Southern California	California	USC University Hospital LA County - USC Medical Center
University of Tennessee	Tennessee	Regional Medical Center at Memphis
University of Texas, Galveston	Texas	University of Texas Medical Branch, Hospitals at Galveston
University of Texas, Houston	Texas	Hermann Health Care System
University of Texas, San Antonio	Texas	University Health System

*IDENTITY AND IDEOLOGY*

University of Texas, Southwestern	Texas	Dallas County Hospital District/Parkland Zale Lipshy University Hospital
University of Utah	Utah	University of Utah Hospital
University of Vermont	Vermont	Fletcher Allen Health Care
University of Virginia	Virginia	University of Virginia Medical Center
University of Washington	Washington	Harborview Medical Center University of Washington Hospital University of Washington Medical Center
University of Wisconsin	Wisconsin	University of Wisconsin Hospital and Clinics
Vanderbilt University	Tennessee	Vanderbilt University Medical Center
Virginia Commonwealth University School of Medicine	Virginia	Medical College of Virginia Hospitals
Wake Forest University School of Medicine	North Carolina	North Carolina Baptist Hospitals, Inc.
Washington University	Missouri	Barnes-Jewish Hospital
Wayne State University	Michigan	Detroit Receiving Hospital
West Virginia University	West Virginia	West Virginia University Hospitals, Inc.
Wright State University	Ohio	community-based
Yale University	Connecticut	Yale-New Haven Hospital

**APPENDIX B Academic Health Centres - England - March 2002**

<b>Medical School</b>	<b>Affiliated Hospitals</b>
Birmingham	University Hospital Birmingham NHS Trust Birmingham Children's Hospital NHS Trust
Bristol	United Bristol Healthcare NHS Trust
Cambridge	Addenbrooke's NHS Trust
Guy's, King's and St Thomas'	Guy's and St Thomas' Hospital NHS Trust King's College Hospital NHS Trust South London and Maudesley NHS Trust
Imperial College	Chelsea and Westminster Hospital NHS Trust St Mary's NHS Trust Royal Brompton & Harefield NHS Trust Hammersmith Hospitals NHS Trust
Leeds	Leeds Teaching Hospitals NHS Trust
Leicester/ Warwick	University of Leicester Hospitals NHS Trust
Liverpool	Royal Liverpool and Broadgreen University Hospitals Royal Liverpool Children's NHS Trust
Manchester	Central Manchester and Manchester Children's University Hospitals NHS Trust South Manchester University Hospitals Trust
Newcastle / Durham	Newcastle upon Tyne Hospitals NHS Trust
Nottingham	Queens Medical Centre, Nottingham University Hospital NHS Trust Nottingham City Hospital NHS Trust
Oxford	Oxford Radcliffe NHS Trust
Queen Mary and Westfield College	Barts & The London NHS Trust
Royal Free/University College London	UCL Hospitals NHS Trust Royal Free Hampstead NHS Trust Moorfields Eye Hospital Great Ormond Street Hospital for Children NHS Trust
Sheffield	Sheffield Teaching Hospitals NHS Trust Sheffield Children's Hospital NHS Trust
Southampton	Southampton University Hospitals NHS Trust
St George's	St George's Healthcare NHS Trust

## References

1. Commonwealth Fund, *Creating a Vision: The Academic Health Center of the Future*. Forthcoming.
2. Aaron, H.J. (ed) *The Future of Academic Medical Centers*. 2001, Brookings Institution Press: Washington DC.
3. Institute of Medicine, *The Roles of Academic Health Centers in the 21st Century. A Workshop Summary, in Workshop 24-25 January 2002*. 2002, National Academy Press: Washington DC.
4. Roberts, A., *University Challenge*. Health Service Journal, 1999 (4 March 1999): p. 20-22.
5. Smith, T., *University Clinical Partnership. A New Framework for NHS/University Relations*. Nuffield Trust Series. 2001, The Stationery Office: London.
6. Smith, T. and C. Whitchurch, *The Future of the Tripartite Mission: Re-examining the Relationship between Universities, Medical Schools and Health Systems in OECD Conference on Universities, Medical Schools and the Health Sector, 16-17 August 2001*. 2001. IMHE: Paris.
7. Blumenthal, D. and N. Edwards, *A Tale of Two Systems. The Changing Academic Health Center*. Health Affairs, 2000.19(3): p. 86-101.
8. Tjam, F.S., *University Teaching Hospitals: An Outline of Some Major Issues*. World Hospitals and Health Services, 1997. 33(3): p. 35-39.
9. Dawson, G., et al., *Mapping the Landscape. National Biomedical Research Outputs 1988-95*. 1998, The Wellcome Trust: London.
10. Wyn Owen, J., *The globalization of health care, in Mission management. A new synthesis*, E.R. Rubin, Editor. 1998, Association of Academic Health Centers: Washington DC. p. 387-407.
11. Price, D., A.M. Pollock and J. Shaoul, *How the World Trade Organisation is Shaping Domestic Policies in Health Care*. The Lancet, 1999. **354**: p. 1889-1892.
12. Klein, R., *Risks and Benefits of Comparative Studies: Notes from Another Shore*. The Milbank Quarterly, 1991. 69(2): p. 275-289.
13. Rogers Hollingsworth, J., *A Political Economy of Medicine: Great Britain and the United States*. 1986, Johns Hopkins University Press: Baltimore.
14. Reuter, J.A., *The Financing of Academic Health Centers: A Chart Book*. 1997, The Commonwealth Fund: New York.
15. Weiner, B.J., et al., *Organizational Models for Medical School- Clinical Enterprise Relationships*. Academic Medicine, 2001. 76(2): p. 113-124.
16. Lozon, J.C. and R.M. Fox, *Academic Health Sciences Centres Laid Bare*. Healthcare Papers, 2002. 2(3): p. 10-36.
17. Shugart, I., *AHSCs: An Indispensable Partner for Governments*. Healthcare Papers, 2002. 2(3): p. 80-84.
18. Commonwealth Fund, *Leveling the Playing Field. Financing the Missions of Academic Health Centers*. 1997, The Commonwealth Fund: New York.
19. Burns, L., et al., *The fall of the house of AHERF: the Allegheny bankruptcy*. Health Affairs, 2000.19(1): p. 7-41.
20. Kastor, J.A., *Mergers of teaching hospitals in Boston, New York and Northern California*. 2001, The University of Michigan Press: Ann Arbor.



21. Gold, M.R., *Effects of the Growth of Managed Care on Academic Medical Centers and Graduate Medical Education*. *Academic Medicine*, 1996. 71(8): p. 828-838.
22. Kane, N., *The Financial Health of Academic Medical Centers: An Elusive Subject*, in *The Future of Academic Health Centers*, H.J. Aaron, Editor. 2001, Brookings: Washington D.C.
23. Robinson, J.C., *The end of managed care*. *Journal of the American Medical Association*, 2001. 285(20): p. 2622-2628.
24. Ludmerer, K.M., *The Embattled Academic Health Centre*. *Healthcare Papers*, 2002. 2(3): p. 59-65.
25. Campbell, E.G., J.S. Weissman, and D. Blumenthal, *Relationship Between Market Competition and the Activities and Attitudes of Medical School Faculty*. *Journal of the American Medical Association*, 1997. 278(3): p. 222-226.
26. Campbell, E.G., et al, *Status of Clinical Research in Academic Health Centers*. *Journal of the American Medical Association*, 2001. 286(7): p. 800-806.
27. Moy, E., et al., *Relationship Between NIH Research Awards to US Medical Schools and Managed Care Market Penetration*. *Journal of the American Medical Association*, 1997. 278(3): p. 217-221.
28. Rodin, J., *The relationship between the university and academic health centers*, in *Institute of Medicine committee on the roles of Academic Health Centers in the 21st Century*. 2002, Washington DC.
29. Broder, D.S., *Health care in a 'death cycle'*, in *Washington Post*. April 17 2002: Washington DC. p. A15.
30. Ludmerer, K.M., *A Time to Heal*. 1999, Oxford University Press: New York.
31. Bonner, T.N., *Crushing the Commerical Spirit hi Academic Medicine: A Crusade that Failed*. *Academic Medicine*, 1999. 74(10): p. 1067-1071.
32. NHS Executive, *The NHS Plan*. 2000, Secretary of State for Health: London.
33. Aiken, L.H., et al., *Nurses Reports on Hospital Care in Five Countries*. *Health Affairs*, 2001. 20(3): p. 43-53.
34. Department of Health, *Funding Learning and Development for the Healthcare Workforce*. 2002, Department of Health: London.
35. Court, S., *The case of the missing professors*. *Public Finance*. July 26-August 1 2002: p. 26-27.
36. Smith, T. and P. Sime, *A Survey of Clinical Academic Staffing Levels in UK Medical and Dental Schools*. 2001, Council of Heads of Medical Schools: London.
37. CVCP, *Clinical Academic Careers (Richards Report)*. 1997, Committee of Vice-Chancellors and Principals: London.
38. JMAC, *Good Practice in NHS/Academe Links*. 1999, Joint Medical Advisory Committee to the UK higher education funding bodies: Bristol HEFCE.
39. RLCI, *The Report of the Royal Liverpool Children's Inquin/*. 2001, Royal Liverpool Children's Inquiry: London.
40. Follett, S.B. and M. Paulson-Ellis, *A Revieio of Appraisal, Disciplinary and Reporting Arrangements for Senior NHS and University Staff with Academic and Clinical Duties*. 2001, Department for Education and Skills: London.
41. GMC, *Tomorrozo's Doctors*. 1993, General Medical Council: London.
42. Department of Health, *Working Together - Learning Together. A Framework for Lifelong Learning in the NHS*. 2001: London.

43. SGUMDER, *Undergraduate Medical and Dental Education (Fourth Report of the Steering Group on Undergraduate Medical and Dental Education and Research)*. 1996, SGUMDER: London.
44. HEFCE, *Developing a joint university'/NHS planning culture*. 1999, Higher Education Funding Council for England: Bristol.
45. Clack, G.B., G. Bevan and A.L.W.F. Eddleston, *Service Increment for Teaching (SIFT): a review of its origins, development and current role in supporting undergraduate medical education in England and Wales*. *Medical Education*, 1999. 33: p. 350-358.
46. Department of Health, *Research and Development for a First Class Service. R&D Funding in the new NHS*. 2000, Department of Health: London.
47. Bevan, G., *The Medical Service Increment for Teaching (SIFT): a £400m Anachronism for the English NHS?* *British Medical Journal*, 1999. 319(2 October): p. 908-911.
48. Commonwealth Fund, *A Shared Responsibility. Academic Health Centers and the Provision of Care to the Poor and Uninsured*. 2001, The Commonwealth Fund: New York.
49. Commonwealth Fund, *Health Care at the Cutting Edge. The Role of Academic Health Centers in the Provision of Specialty Care*. 2000, The Commonwealth Fund Task Force on Academic Health Centers: New York.
50. Blumenthal, D., E.G. Campbell, and J.S. Weissman, *The Social Missions of Academic Health Centers*. *New England Journal of Medicine*, 1997. 337(21): p. 1550-1553.
51. AAMC, *Meeting the Needs of Communities. How Medical Schools and Teaching Hospitals Ensure Access to Clinical Services*. 1998, Association of American Medical Colleges: Washington DC.
52. Commonwealth Fund, *Training tomorrow's doctors. The medical education mission of academic health centers*. 2002, The Commonwealth Fund Task Force on Academic Health Centers: New York.
53. Department of Health, *SIFT Accountability Report 1999/2000*. 2000, Department of Health: London.
54. NSCAG, *National Specialist Commissioning Advisory Group Annual Report 1999-2000*. 2000, National Specialist Commissioning Advisory Group: London.
55. Yin, R.K., *Enhancing Case Study Quality*. *Health Services Research*, 1999. 34(5, Supplement): p. 1209-1224.
56. Griner, RE, et al., *Managing Change: Strategies from Case Studies of Schools and Teaching Hospitals*. 2000, Association of American Medical Colleges: Washington DC.
57. Blumenthal, D., J.S. Weissman and RF. Griner, *Academic Health Centers on the Front Lines: Survival Strategies in Highly Competitive Markets*. *Academic Medicine*, 1999. 74(9): p. 1038-1049.
58. Yin, R.K., *Case Study Research. Design and Methods*. 1994, Thousand Oaks: Sage.
59. Tomlinson, S.B., *Report of the inquiry into London's health service, medical education and research*. 1992, HMSO: London.
60. Shortell, S.M., et al., *Remaking Health Care in America. The Evolution of Organized Delivery Systems. 2nd ed. Jossey-Bass Health Care Series*. 2000, Jossey-Bass: San Francisco.
61. Kowalczyk, L., *HMOs eyeing surcharge for high-end care, in Boston Globe*. August 28 2001: Boston.
62. Blumenthal, D. and G.S. Meyer, *Academic Health Centers in a Changing Environment*. *Health Affairs*, 1996.15(2): p. 200-215.

63. Baker, R.J., *The Clinical Enterprise: Creating New Strategies and Structures, in Mission Management: A New Synthesis*, E.R. Rubin, Editor. 1998, Association of Academic Health Centers: Washington DC. p. 321-359.
64. NHS Executive, *THE NHS Cancer Plan*. 2000, Department of Health: London.
65. NHS Executive, *Comprehensive Critical Care. A review of adult critical care services*. 2000, Department of Health: London.
66. Le Grand, J., *Competition, Cooperation , or Control? Tales from the British NHS*. Health Affairs, 1999.18(3): p. 27-39.
67. Kerr, D.J., *The Calman-Hine Plan and a Framework for Improving Cancer Services, in Health Care UK 2000: Autumn Issue. The King's Fund Review of Health Policy*, A. Harrison, Editor. 2000, The King's Fund: London, p. 40-46.
68. JCC, *Organisation of Acute General Hospital Services*. 1999, Joint Consultants Committee: London.
69. Ham, C, J. Smith and J. Temple, *Hubs, spokes and policy cycles*. 1998, The King's Fund: London.
70. Department of Health, *NHS Performance Ratings*. 2002, Department of Health: London.
71. Grover, A., *Performance measures - AHCs - personal communication to author*. 2002, Washington DC.
72. Catto, G.R., *Interface between university and medical school: the way ahead?* British Medical Journal, 2000. 320: p. 636-9.
73. Retchin, S.M. and R.P. Wenzel, *Electronic Medical Record Systems at Academic Health Centers: Advantages and Implementation Issues*. Academic Medicine, 1999. 74(5): p. 493-498.
74. Blue Ridge, *Academic Health Centers as Knowledge Leaders*. 2000, Blue Ridge Academic Health Group: Charlottesville, VA.
75. Commonwealth Fund, *From Bench to Bedside. Preserving the Research Mission of Academic Health Centers*. 1999, The Commonwealth Fund Task Force on Academic Health Centers: New York.
76. Swales, J.D., *Science and Health Care: An Uneasy Partnership*. The Lancet, 2000. 355: p. 1637-1640.
77. DTI, *Our Competitive Future. Building the Knowledge Driven Economy*. 1998, Department of Trade and Industry: London.
78. Sainsbury, L., *Biotechnology Clusters. Report of a Team led by Lord Sainsbury, Minister of Science*. 1999, Department of Trade and Industry: London.
79. Addenbrooke's NHS Trust, *Addenbrooke's: The 2020 Vision*. 1999, Addenbrooke's NHS Trust: Cambridge.
80. NHS Executive, *Shifting the Balance of Power with the NHS. Securing Delivery*. 2001, Department of Health: London.
81. Honigsbaum, E, *The Division in British Medicine*. 1997, St Martin's Press: New York.
82. Weiner, J.P., R. Lewis and S. Gillam, *US Managed Care and PCTs. Lessons to a Small Island from a Lost Continent*. 2001, The King's Fund: London.
83. Reinhardt, U.E., *Planning the Nation's Health Workforce: Let the Market in*. Inquiry, 1994. 31(3): p. 250-260.
84. Department of Health, *A health service of all the talents. Developing the NHS Workforce*. 2000, Department of Health: London.

85. Department of Health, *Workforce Development Conferederations - Functions, Accountabilities and Working Relationships*. 2002, Department of Health: London.
86. Perrin, J., *The Costs and Joint Products of English Teaching Hospitals*, Financial Accountability and Management, 1987. 3(209-230).
87. Lewin, L.S., *Politically Feasible and Practical Public Policies to Help Academic Medical Centers*, in *The Future of Academic Medical Centers*, H.J. Aaron, Editor. 2001, Brookings: Washington D.C.
88. Davies, H., *Falling public trust in health services: implications for accountability*. Journal of Health Services Research and Policy, 1999. 4(4): p. 193-194.
89. Kernick, D., *The demise of linearity in managing health services: a call for post normal health care*. Journal of Health Services Research and Policy, 2002.17(2): p. 121-124.
90. Commonwealth Fund, *Managing Academic Health Centers: Meeting the Challenges of the 'New Health Care World*. 2000, The Commonwealth Fund Task Force on Academic Health Centers: New York.
91. Litman, T.J., *The Relationship of Government and Politics to Health and Health Care - A Sociopolitical Overview*, in *Health Politics and Policy*, L.S. Robins, Editor. 1997, Delmar: Albany NY.
92. Department of Health, *The New NHS - Modern, Dependable*. 1997, HMSO: London.
93. Abel-Smith, B., *The Hospitals 1800-1948. A Study in Social Administration*. 1964, Harvard University Press, Cambridge: Massachusetts.
94. Blendon, R.J. and J.M. Benson, *Americans' views on health policy: a fifty-year historical perspective*. Health Affairs, 2001. 20(2): p. 33-46.
95. Blendon, R.J. and M. Brodie, *Public Opinion and Health Policy*, in *Health Politics and Policy*, L.S. Robins, Editor. 1997, Delmar: Albany, NY. p. 201-219.
96. Blendon, R.J. and M. Kim, *When it comes to health policy, Americans are not British*. Harvard Health Policy Review, 2001. 2(1): p. 72-75.
97. Williams, J.F., R.K. Riegelman and J.H. Grossman, *Academic Health Centers can bridge the gulf between medicine and public health*. Academic Medicine, 1999. 74(5).
98. Barondess, J.A., *The Academic Health Center and the Public Agenda: Whose Three-legged Stool?* Annals of Internal Medicine, 1991.115(12): p. 962-967.