



The Evidence Base for Vertical Integration in Health Care

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ABSTRACT

This paper reviews the evidence base for vertical integration in health care. We describe its impact on organisational structures, on how services are provided, and on such outcomes as cost, clinical outcomes and patient experience. We also outline conditions that support successful integration.

KEYWORDS: VERTICAL INTEGRATION; QUALITY IMPROVEMENT; PRIMARY CARE; SECONDARY CARE; SOCIAL CARE; PARTNERSHIP

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Introduction

The role of integrated health care, variously defined, in improving the quality of health care has been on the agenda of many health care systems for some time. Most recently, it has been highlighted in the latest policy developments in the English NHS, as outlined in the Department of Health's *NHS Next Stage Review* (DH, 2008a). It is assumed that vertically integrating care will lead to better co-ordination of and reduced demand on services.

Integrated care is a concept bringing together inputs, delivery, management and organisation of services

related to diagnosis, treatment, care, rehabilitation and health promotion. Integration is a means to improve services in relation to access, quality, user satisfaction and efficiency. (Gröne & Garcia-Barbero, 2002)

Vertical integration describes a situation where different components of a supply chain are brought together in a single organisation. In health care, there are two main types of vertical integration:

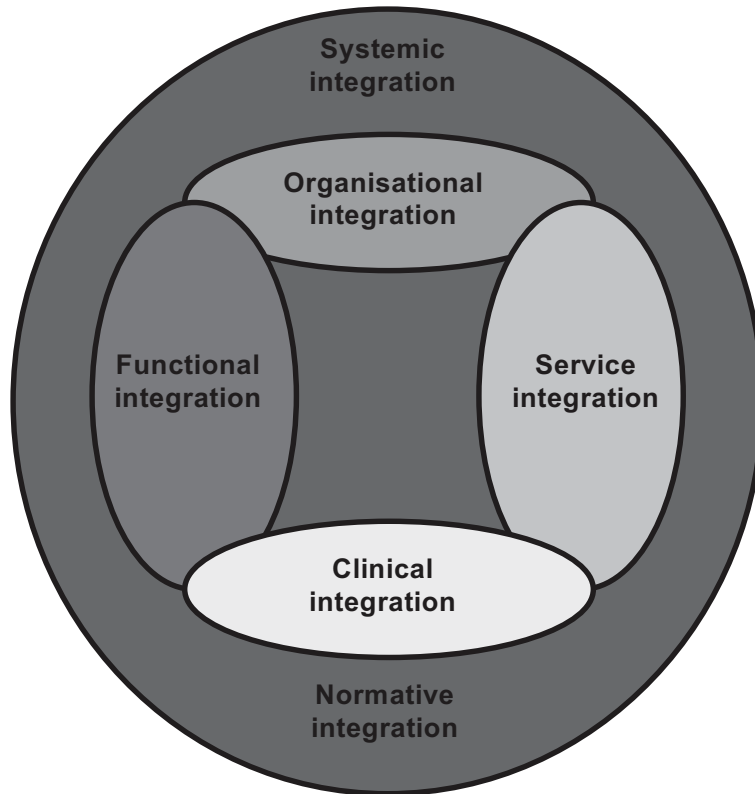
- where agencies involved at different stages of the care pathway are part of a single organisation
- where payer and provider agencies are part of a single organisation.

While integration can bring significant changes in organisational structures and governance arrangements, process and cultural changes are likely to be as important to its success. *Figure 1*, overleaf, identifies six key requirements that have been described for effective integration:

- organisational integration, where organisations are brought together by mergers and/or structural change, or virtually, through contracts between separate organisations
- functional integration, where non-clinical support and back-office functions are integrated
- service integration, where different clinical services provided are integrated at organisational level



Figure 1: TYPOLOGY OF HEALTHCARE INTEGRATION



Source: Fulop *et al* (2005), adapted from Contandriopoulos *et al* (2001) and Shortell (2000).

- clinical integration, where patient care is integrated in a single process both within and across professions, for example by use of shared guidelines
- normative integration, where there exist shared values in co-ordinating work and securing collaboration in delivering health care
- systemic integration, where there is coherence of rules and policies at all organisational levels.

Policy background

The Department of Health has outlined its plans to support the piloting of new models of integrated care in the document setting out the policy directions for primary and community care, following publication of the *NHS Next Stage Review: Our vision for primary and community care* (DH, 2008b). The plans include an evaluation of these models.

We were asked to update previous work that we had undertaken (Fulop *et al*, 2005) to provide a summary of the relevant research as a supporting document for the prospectus outlining the Integrated Care Pilot Programme launched in October 2008 (DH, 2008c) to assist those applying to be a pilot.

The prospectus invites applications for clinically-led integrated care pilots that may take a variety of forms, including vertical integration of primary/community and acute care, or integration of primary/community and social care. While they may take the form of new integrated care organisations, the prospectus is not prescriptive about structural models. The option to integrate both payers and providers is left open. Given the possibility with either integration of certain providers (for example, GPs with acute care) or integration of payers and



providers, the Department of Health has stated its willingness to consider waiving competition rules. It is important that these pilots, and their evaluation, take into account lessons from the evidence we have to date on vertical integration.

The evidence base

The evidence base is limited in the sense that, while there is a fair amount of evidence on the processes of integration that are important to understand, there is much less on outcomes. While much of the evidence on integrated health care initially came from the US, more recently there has been growing evidence from other health care systems on models of integrated care. There is also little large-scale evaluation, and a tendency to evaluate what have been called 'boutique' pilots (Ouwens *et al*, 2005) from which it is difficult to generalise the findings.

This section presents evidence related to relevant models of integration. We will give a brief definition for each form of integration. We will then outline key examples of their implementation and discuss their impact on:

- structures – the organisations that provide and pay for care
- processes – the way in which services are managed and provided
- outcomes – costs, access to and uptake of services, clinical outcomes, etc.

Integration of payment and provision

Much of the research reported in this section refers to integration of payer, typically a role referred to as 'commissioner' in an NHS context and 'provider' in the US, where there are many more options among insurers and providers and the option to 'vote with one's feet' is available to any who can afford it. The extent to which this applies to the NHS setting is limited. Later in this section, we present findings drawn from an evidence base developing beyond the US – for example the UK, Canada and Italy – illustrating some of the changes vertical integration has brought about in more relevant contexts.

Enthoven and Tollen (2004) suggest that systems that integrate payer and provider in

the form of health maintenance organisations (HMOs) are more coherent and effective, creating partnership between physicians and the insurer and supporting shared planning of membership and facilities. Robinson (2004), however, notes that these partners must overcome their differing priorities in which payers focus on regional or national levels, while providers look more locally.

Enthoven and Tollen (2004) describe the importance of 'organic' integration, where successful systems grow up and out from primary care. Burns and Pauly (2002) give numerous examples of failed attempts at integration in the opposite direction, such as hospital acquisition of primary care practices. They also present a largely negative picture of integration of payers and providers in the US health care system, for example in terms of the proportion of revenue that is spent on care.

Robinson (2004) suggests that vertical integration of providers and insurers can be less profitable than contracting independent suppliers. In noting that capitation payment encourages efficient and effective practice, in terms of cost, care and prevention, he also suggests that it can encourage selection of a healthier than average patient mix. He argues that a combination of prospective and retrospective payment might be more effective; for example, routine procedures might be capitated, while rare procedures are funded retrospectively. Finally, while recognising that multi-speciality group practice – where organisations combine general practitioners, specialists and non-physicians to provide inpatient, outpatient and long-term care – can cover many components of care and provide appropriate capacity to meet patient needs, he also notes that this approach risks increased bureaucracy and loss of cohesion in groups where specialities are too diverse.

Johri and colleagues (2003) review integration in older people's care, presenting case studies of programmes carried out in the US, UK, Italy and Canada that integrated payers with providers. Overall, this review suggests that integration reduces costs and admissions, provides more appropriate care and improves the quality of life of service users



and carers. The extent to which these effects are statistically significant is unclear. The authors also identify common features of effective systems of care. These include integration of case management into multidisciplinary teams, ensuring that ongoing evaluation informs long-term care, the presence of a single point of entry to services, and financial levers, for example where providers share responsibility for finances with commissioners. They also emphasise the 'pivotal' role of case managers in linking health and social care and, potentially, linking with financial responsibility.

Kaiser Permanente is a health maintenance organisation (HMO) developed in the US and is the largest organisation of its type, with 8.7 million members. Kaiser combines the roles of insurer and provider, providing inpatient and outpatient care, using a multidisciplinary approach across all relevant services. It focuses on chronic disease pathways, supporting prevention, self-management, disease management and care management. Key supports of the system include leadership training and a strong focus on IT and communications systems (Ham, 2005).

Following research indicating that bed use in Kaiser services is significantly lower than in the NHS (Feachem *et al*, 2002), a series of UK pilots, initiated in 2003, attempted to implement certain aspects of the Kaiser model. Integration took various forms, and commissioners and providers worked in partnership, looking to ensure accessible, well-co-ordinated care, with a key focus on reducing admissions to hospitals.

Increased local partnership was demonstrated in a concrete fashion in some pilots with the formation of care trusts. Beyond this, the main impact of pilot status was in reducing admissions and lowering length of inpatient stays (Ham, 2006). The extent to which pilot status influenced these outcomes is not evidenced. The data presented tend to be cross-sectional, drawing comparisons with the rest of the NHS rather than showing pilots' performance 'before and after'. It is difficult to attribute the changes to the pilots, as there have been similar patterns of reduction across the NHS.

IT systems were identified as central to the pilots' progress. Other improvements, such as improved leadership capacity, partnerships and identification of individuals' care needs, were reported by local (usually senior) personnel, who viewed pilot status in a very positive light. These improvements were not grounded in any suitable measures, such as training evaluations or frequency of meetings with local partners. Explicit measures of the impact on cost have been difficult to locate.

Evercare

Evercare was piloted in the period 2003–2004 in nine primary care trusts (PCTs). It sought to improve care for people aged over 65 by introducing case management administered by specially trained advanced practice nurses (APNs) who were based in the PCTs and mentored by a nominated GP. Case management was intended to support more appropriate care for the target population by bridging all key service providers (for example primary care, secondary care, social services).

An evaluation of the programme (Boaden *et al*, 2006; Gravelle *et al*, 2007) describes reported changes in the ways in which people worked, with developments in project management, increased frequency of contact with high-risk patients (for example, in regular medication reviews), nurse-reported improvements in appropriate treatment, and patients' and carers' views of services. The evaluation reports no significant impact of Evercare on admissions, bed days and mortality (with the caveat that the small number of pilot practices gave the analysis little statistical power, thus reducing the likelihood of finding significance).

The evaluation argues for a more dramatic redesign of services, recommending better IT systems, a less cumbersome administration system and significant integration of primary and secondary care, *Box 1*, opposite, summarises the impact of payment and provision.

Integration of provision

This section covers integration of different elements of care provision – either by service integration or



Box 1: SUMMARY OF THE IMPACT OF INTEGRATION OF PAYMENT AND PROVISION

- Perceived improved partnerships
- Some increases in capacity are reported, but not quantified
- Increased focus on case management and use of IT systems
- Mixed evidence on admissions and lengths of stay
- Mixed evidence on costs, with little information available from the NHS and inconsistent international evidence

by organisational integration (*Figure 1*). The first review reported covers reviews of work carried out internationally; the rest of the research presented comes from the NHS context and therefore has high relevance to Integrated Care Organisation pilots.

Ouwens and colleagues (2005) summarise the findings of systematic reviews of the effectiveness of care programmes that integrate providers rather than commissioners, covering research carried out in the US, the UK and other parts of the EU, such as Sweden and the Netherlands. They identify common elements of the work described: self-management support and patient education, clinical follow-up, case management, multidisciplinary patient care teams, multidisciplinary care pathways, and feedback, reminders and education for professionals. The authors report trends suggesting positive impacts of integration, among them improved staff adherence to guidelines, reduced hospitalisation (re-admissions and length of stay, reduced cost, and improved patient health, quality of life and satisfaction). Only one effect related to health outcomes was statistically significant, and no patient experience or cost effects were significant.

This review also identifies certain enablers of successful integration. These include supportive clinical information systems, the presence of specialised clinics, agreement between the personnel involved on the nature of the integration, leaders with a clear vision of integrated care, finances for implementation

and maintenance, management commitment and support, patients capable of and motivated for self-management, and a culture of quality improvement.

Finally, the authors raise a concern that the evidence base might suffer from a traditional bias towards publication of research that shows positive results in processes and outcomes.

Macdonald and colleagues (2006) review several processes relevant to integration carried out in the NHS setting over recent years, including local health care co-operatives in Scotland (which brought together GPs, community nurses and other health and social care professionals) and the introduction of primary care mental health workers. The majority of impacts reported relate to organisational structures, and include formation or strengthening of local partnerships and an improved focus on organisational governance. Some impacts on processes are reported, in terms of some changes in service delivery, for example increasing personnel to provide services, reductions in waiting times and, in some cases, extending the range of services provided. However, the authors found very little evidence relating to the cost and quality of care and health outcomes, because few studies had addressed them.

Care trusts

Care trusts were introduced by the *NHS Plan* (DH, 2000), supported by the *Health and Social Care Act* (DH, 2001), and encourage closer working between NHS and local councils to support better co-ordinated health and social care. They are based on the principles of pooled budgets (where partner organisations contribute resources to a common budget, and staff are given a say in how resources are to be used), lead commissioning (where one partner organisation commissions integrated services provided by both partners) and integrated provision (where a single organisation provides both health and social care services) (Glendinning *et al*, 2003). To date, 10 care trusts have been formed, though more are anticipated (NHS Choices website).



Glasby and Peck (2005) report significant concerns among local personnel over integration, including its evidence base, its limited focus (which did not include the voluntary sector) and the possibility that social care could be dominated by NHS targets. Glendinning and colleagues (2005) report that, due to service-specific external factors such as audit and inspection, the components of the 'integrated' organisations were forced to remain quite inward-looking. Glasby and Peck (2005) report that, ultimately, care trust status is viewed locally as having been hard work to establish, but worthwhile; services are felt to be more accessible and flexible, building a foundation for future improvement. Respondents, however, could not identify anything that makes care trusts stand out from other forms of partnership. Clear measures of effectiveness, for example in terms of cost and impact on health outcomes, are yet to be reported.

Unique care

The Unique Care approach integrates health and social care by creating a small team containing staff from both domains, then basing this team in one of the local services (social services, for example, or a GP surgery). The Unique Care team identifies people who have complex needs or are at high risk of hospital admission, and it engages with all local providers, for example obtaining daily updates on admissions from the local hospital and visiting patients there to help plan for discharge and aftercare in the community. This approach was first piloted in 1999 in northwest England and reported

substantial reductions in hospital admissions and length of stay (Lyon *et al*, 2006); this finding has been replicated in pilots elsewhere in the UK, some suggesting that integration has resulted in reduced costs (Keating *et al*, 2008). The extent to which pilot status influenced these patterns remains to be established satisfactorily.

Box 2, below, summarises the impact of integrating provision.

Networks

Evidence from the UK shows that the formal organisational integration of acute and community care trusts that took place during the 1990s did not necessarily result in delivery of more integrated care (King *et al*, 2001). In fact, what this research demonstrated was that effective forms of both formal and informal clinical integration can develop regardless of the organisational configuration of the trust. Both formal and informal networks remained significant factors in provision of child health services, and the authors argue that the incentives to develop these networks need not necessarily be provided through organisational structures. Indeed, reconfiguration can result in unintended consequences, such as finding that community services in combined acute and community trusts may lose out to the more powerful acute interests.

There is some evidence to show that virtual integration using networks can provide a valid alternative form of health care delivery to the **structural** reorganisation involved in horizontal or vertical integration. Studies on the former have found that the process of change itself can constrain service improvement (Fulop *et al*, 2002). This section presents two examples, one from the UK and one from Sweden.

Managed clinical networks

Managed clinical networks were established in Scotland in response to concerns about things such as the quality of emergency care, provision of care to a dispersed population and meeting workforce requirements.

Box 2: SUMMARY OF THE IMPACT OF INTEGRATION OF PROVISION

- Some evidence of strengthened partnerships, but also of organisational integration being hampered by lack of co-ordination at national policy level
- Some reports of improved capacity, for example personnel, and improved focus on governance and adherence to guidelines
- Little evidence of impact on health outcomes
- Limited evidence of impact on cost



Consisting of multidisciplinary teams of health care providers, networks provide appropriate and high-quality care, irrespective of their organisational and professional boundaries (Goodwin *et al*, 2004). Hamilton and colleagues (2005) report on a case study indicating that involving patients, sharing information, mapping patient pathways and constructing protocols, standards and guidelines have been relatively successful aspects of some network development. They also report a small number of significant improvements in care provision. While there was a significant cost of setting up and maintaining the network in 2001, no benefits in resource costs could be demonstrated four years on.

Chains of care

This model consists of a network of providers aiming to deliver high-quality, co-ordinated health care, supported by a system of contractual relationships between purchasers and providers.

Ahgren (2003) reports that there have been no significant changes in systems or services. There has been resistance from staff, particularly doctors, and consequently reluctance on the part of front-line staff to adopt new roles and practices. Noting slow progress of the scheme, Ahgren and Axelsson (2007) present a comparison of successful and unsuccessful chains of care, with criteria of success focused on structure and process-level changes. Where changes are successful, the process is driven by local staff and aims to improve service delivery,

change agents must be respected by personnel, and managerial support and local willingness to innovate and collaborate are vital.

Box 3 provides a summary of the impact of networks.

Lessons for integration

The lessons below are adapted from Fulop *et al* (2005). Further guidance on the practical issues relating to the integration of health and social care provision is provided by Glasby and Peck (2006).

Lesson 1. Integrate for the right reasons

Successful integrated systems have grown organically; situations where top-down attempts to integrate care, for example through vertical integration or mergers of service providers, have often had less happy outcomes. The objectives of integration need to be made explicit. If they include reduction in use of hospital beds, then the implications within the current payment by results system need to be addressed.

Lesson 2. Don't necessarily start by integrating organisations

Integration that focuses mainly on bringing organisations together is unlikely to create improvements in care for patients. There is also the danger that integration might act only to distract local personnel. An alternative approach is to begin integration at the front line, which has a direct impact on the patient experience; the most apt organisational supports for service provision might be identified. Excessive focus on patient pathways might lead to loss of the benefits of overall service co-ordination, for example in managing comorbidities.

Lesson 3. Ensure that local contexts are supportive of integration

This review identifies several key contextual elements that are important to successful integration. They include a culture of quality improvement, a history of trust between partner organisations, existing multidisciplinary teams,

Box 3: SUMMARY OF THE IMPACT OF NETWORKS

- Mixed evidence on networking; while some cases show improved communication across organisations and with patients, others show key personnel resistant to role changes
- Some evidence of improvements in care provision, but few statistically significant
- Little evidence of improvements in costs or health outcomes



local leaders who are supportive of integration, personnel who are open to collaboration and innovation, and effective and complementary communications and IT systems.

Lesson 4. Be aware of local cultural differences

Several cases reported in this review demonstrate the very significant challenge of bringing together organisational cultures that have, in many cases, evolved separately over decades. Clearly, this is an obstacle that must be considered when planning future integration.

Lesson 5. Ensure that community services don't miss out

One of the most valuable potential outcomes of vertical integration is better integration of community services. King *et al* (2001) notes the existence of longstanding power imbalances between acute and community services which make such integration a challenge.

Lesson 6. Provide the right incentives

It is important that frontline staff recognise and buy into the integration process. Shortell (2000) suggests that this requires not just persuasion from a clinical standpoint, but also financial incentives.

Lesson 7. Don't assume economies of scope and scale

Significant improvements in quality of care could follow better co-ordination of previously fragmented service providers. Potential economies of scope and scale are likely to take time to achieve, however, and much evidence from the US (Burns & Pauly, 2002; Robinson, 2004) suggests that integration has seldom increased efficiency. This is due to factors such as the significantly different practices in the organisations that are to be integrated, and the steep learning curve inherent in joining with another organisation.

Lesson 8. Be patient

The time required to implement effective integration is a recurrent theme, and is unsurprising

given the changes required to address all six elements of integration summarised in *Figure 1*. While the research we cover in this document shows limited impact of integration, it should be kept in mind that some of the integration work evaluated took place quite recently; some is viewed positively by local personnel, and it might, in time, bring about more positive outcomes. It takes time to effect demonstrable changes in organisational structures and processes and to have them filter down to outcomes.

Integrated care in the NHS in England – system reform issues

Integration of payer and provider within the English NHS is problematic as it creates a monopoly and, therefore, may restrict patient choice. Integrating providers in certain geographical areas may also create monopolies. The prospective payment system, payment by results, may provide obstacles to integration by creating a 'zero sum game' between primary care and hospitals, where one partner can only benefit at the expense of the other. New mechanisms may need to be developed, such as pooled budgets with risk and benefit sharing between primary care and hospitals, or joint venture arrangements between providers.

Conclusions and recommendations for future research

The evidence presented here indicates that vertical integration can benefit organisations and the public they serve in certain ways, such as in building partnership between local services. Empirical evidence remains weak, however, especially regarding patient experience, clinical outcomes and costs.

There are significant gaps in the evidence related to key measures of the impact of integration, especially in identifying change in performance over time. Future research should focus on building the evidence base in the following areas:

- impact on patient experience, for example the development of specific 'markers' for improved processes of care required such as



the number of interactions between patients and professionals

- impact on use of services, especially inpatient beds
- impact on costs (and differentially on different parts of the system)
- impact on outcomes; this needs careful thought if evaluations are going to be over a relatively short time period; again some markers need to be developed.

Future work should also describe clearly the distinct components of integration and attempt to identify which are having an impact. As noted earlier, much research to date has been carried out on what have been referred to as 'boutique' experiments or pilots (Ouwens *et al*, 2005) and arguably the gaps in evidence identified in this review are in part a result of this approach. With greater use of comparators and consideration of local contexts when evaluating impact, we might learn lessons that can be applied across the NHS.

Acknowledgement

This paper is based on work commissioned by the Department of Health.

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