



Networks *Briefing*

Key lessons for network management in health care

Clinical networks represent a step change in ways of organising services and managers face special challenges in making them work. This report, drawn from a systematic review of networks across both public and private sectors, reveals important messages for network management in health care.



NHS Service Delivery and Organisation R&D Programme





Networks *Briefing*

Contents

Key lessons for networks	2
Summary of findings	3
Network structure	
How should networks be structured?	4
Enclave networks	4
Hierarchical networks	4
Individualistic networks	5
Does one type of network work better than another?	6
Network management	
What are the lessons for successful network management?	7
Achieving a position of centrality	7
Clarity of goals	8
Inclusiveness in design and development	8
Avoiding large networks and inertia	8
Developing cohesion: the roles of the 'boundary spanner' and of IT	9
Avoiding over-regulation and mandation	10
Engaging professional leadership	10
Avoiding network capture	11
Maintaining the net worth of the network	11
Providing the mandate for managers	11
Key characteristics, strengths and weaknesses of different network structures	12
Network governance	
How are networks best regulated?	13

Networks *Briefing*

Key lessons for networks



Since new professional and organisational networks will have a major impact on the future quality of health and social care and on the experiences of users and carers, better understanding of the management of networks is vital for the development of intelligent management practice and policy.

The development of mandated and formally encouraged networks in the NHS as a way of planning and delivering services is gathering speed – for example:

- in co-ordinating service provision between agencies within specialties
- between small hospitals that might otherwise be unviable and vulnerable to centralising reconfiguration
- in sharing information and expertise within and between specialties
- in clinical governance
- in joint commissioning.

Recently, attention has focused on the development of clinical networks that concentrate on the creation of new linkages between secondary and tertiary care. Networks are increasingly being drawn into mainstream policy and decision-making discussions, particularly in Scotland where ‘managed clinical networks’ are being piloted across both specialties (such as neurology) and diseases (such as diabetes and cancer). Clinical networks allow for a continuous working relationship between organisations and individuals to improve the treatment of patients who require care across a range of different institutions by, for example:

- making more efficient use of staff
- reducing professional and organisational boundaries
- sharing good practice
- putting the patient at the centre of care
- improving access to care.

Managers face new and special challenges in making networks work yet there is little evidence on how best this may be done.

- What is the most efficient structure for a network?
- How formal should the structure be?
- How are networks best managed?
- Should networks be regulated?

These are just some of the many questions being posed by health managers involved in establishing and in membership of networks.

In 2003 the NHS Service Delivery and Organisation R & D Programme (SDO) commissioned a systematic literature review to examine managing across diverse networks of care by drawing on lessons from public and private sector literature. The researchers, Nick Goodwin, Perri 6, Edward Peck and Tim Freeman from the Health Services Management Centre, University of Birmingham, set out to derive key lessons and implications for management, governance, leadership and policy in health and social care, and to help managers and policy makers in both health and social care to develop and lead networks effectively.

This document summarises the implications for managing networks in health care under the following headings:

- network structure
- network management
- network governance.

Network management

Ten key lessons for managing networks

Each type of network requires different management styles. For each of the ten key lessons, the types of network for which the management practice is most appropriate are listed:

1. **Achieve a position of centrality within the network.** Centrality is crucial in individualistic and hierarchical networks. Network co-ordination should be financed, proactive and 'in-control'. Consider employing a neutral manager or agency where there are competing interests.
2. **Have a clear mission statement and unambiguous rules of engagement** particularly within hierarchical networks.
3. **Be inclusive – ensure all agencies and individuals gain ownership of the network** especially within enclaved networks, but also helpful in hierarchical ones.
4. **Large networks should be avoided – they incur high administrative costs and lead to inertia in all networks.**
5. **Develop strategies for network cohesion**
 - Joint finance arrangements, pooled budgets, agreed care protocols and common targets help promote cohesion across hierarchical and enclaved networks, as does the removal of physical and jurisdictional boundaries.
 - A 'boundary spanner' acting as an intermediary between organisations and agencies allows individualistic networks to function effectively and helps hierarchical networks engage with peripheral agencies.
 - IT can be a key enabler in promoting network cohesion across all network types.
6. **Ownership may be facilitated by formalised contracts and agreements** since clear and established operational procedures can lead to trust and understanding. However, over-regulation of hierarchical networks should be avoided.
7. **Actively engage respected professional leaders who will promote the network to peers** (all networks).
8. **Avoid network capture by, for example, a professional elite or a dominant organisational culture** (all networks).
9. **Respond to the needs of network members in such a way that the network remains relevant and worthwhile** (all networks).
10. **Professionals in networks must provide the mandate to allow managers to manage and govern their activities** (individualistic, hierarchical).

Network structure

Three key, active network types exist:

- **Enclave networks** have a flat internal structure with no central authority; they are based on shared commitment. Such networks are often most successful in enabling information and ideas to be shared among professionals with a common interest.
- **Hierarchical networks** have an organisational core and authority to regulate the work of members via joint provision, inspection and/or accreditation. They are most successful in co-ordinating and controlling a pre-defined task that involves complex division of labour.
- **Individualistic networks** are those in which an individual or organisation develops a loose association of affiliates. They are often based on the procurement of a network of service providers through the negotiation of contracts. Individualistic networks are highly responsive to change and are most successful for exploring innovations and flexible working practices.

Each network type has strengths and weaknesses and real networks are often hybrids of these forms.

Network governance

- All regulators 'outside' a network face a common problem associated with authority to enforce their power.
- Enclave and individualistic networks tend to be self-governing with little formal accountability; mandated networks often work poorly because network members have not accepted the authority required for them to be governed in this way.
- The potential solutions to this 'governance gap' include providing incentives (individualistic networks) or building upon already shared principles (enclaved networks) for members to agree to a system of self-regulation and governance.
- Networks based on the use of contracts along a care pathway might engender compliance, but evidence suggests such networks are less effective in integrating care provision than managed networks or single organisations.
- Government targets, audit and incentive arrangements need to be harmonised to promote and reward working in networks.

Networks *Briefing*

Network structure



How should networks be structured?

The research team found that networks are not organised in any uniform pattern. They vary across a range of key dimensions. They concluded that different network forms appear suited to achieving different tasks and require different management approaches.

Three active forms of network were identified:

- enclave networks
- hierarchical networks
- individualistic networks.

Enclave networks

Commonly a close-knit group with a high level of social cohesion, an enclave network is sustained through common bonds and by a flat structure in which there is a high level of equality between members. Shared commitment, trust and egalitarianism are key, with little inclination to accept central or mandated authority but with a strong sense of group membership.

Many local partnerships and informal networks in health and social care take on enclave forms, drawing strength from the legitimacy and ownership provided by their association. Good examples are national and international associations such as the National Pathways Association in the UK, professional groups such as the BMA, and information sharing groups such as policy forums, or the evidence-based medicine movement.

Example of an enclave network

Project CHAIN

Community Health Alliances by Integrated Networks (Project CHAIN) is a co-ordinated information network aiming to improve the quality of life of older people in South Wales. The participating organisations do so voluntarily and identify local priorities for action such as income improvement, reduction in the fear of crime, mobility, and managing medication in the community. Commitment to, and ownership of, the goals of the network, combined with active facilitation by a neutral (university) agency, has enabled the network to flourish.

Warner *et al.*, 2003

Such networks have great value in creating and developing legitimacy and trust between individuals, professionals and organisations, leading to the sharing of information, ideas and strategies and to new ways of working.

Principled commitment and integrity are powerful cohesive forces in enclave networks. However, these networks can fail where the commitment and sense of membership required results in 'burnout', or where emerging disagreements over what the shared values and principles really are, leads to the network splitting up. They can be unstable where there is insufficient institutionalisation (such as shared resources).

Hierarchical networks

Hierarchical networks have an organisational core which has the authority to regulate the work of its members. They exhibit characteristics similar to single organisations and many hierarchical networks take the form of partnership organisations with their own constitutions, distinct from their members. Such networks are often controlled by steering groups and via direct authorities that, for example, undertake inspection and accreditation. Hierarchical networks also tend to be sustained by commonly shared values, but those values are of a kind that prepare people to accept working to structured joint agreements or protocols. Such networks, therefore, are most successful in co-ordinating and controlling a pre-defined task such as a quality improvement programme. The co-ordinating function of the hierarchical network has the potential to clarify complex divisions of labour for certain tasks.

Good examples in the health care field include the development of vertically integrated care pathways in NHS Trusts where professionals from different institutions are regulated by working to

evidence-based guidelines or prescribed pathways of care. Networks that are called into action to tackle local outbreaks of infectious disease or major emergencies, and many of the networks produced by county-level hospital reconfiguration planning exercises are also hierarchical in character.

In other countries there have been experiments with vertically-integrated networks, particularly for older people's care. In the USA federally-funded managed care projects have combined health and social care for older people into integrated care management networks. In Canada similar hierarchical networks were piloted in Edmonton and Montreal. Evaluations of these networks suggest that central control led to better integration at an organisational level, though this did not necessarily translate into integration at the clinical level, nor lead to cost savings.

Example of a hierarchical network

The PRISMA model for integrated service delivery for frail older people in Canada

The PRISMA network co-ordinates care between organisations through a joint governing board of all health and social care service organisations, including voluntary agencies. The group decides strategies and allocates a pooled resource to fund the network. A professionally-led co-ordinating committee facilitates the adoption of a 'service continuum' comprising a single referral entry point, single assessment and individual care plans. Multidisciplinary teams of practitioners are managed collectively through a mix of contracts and/or direct management. Claimed beneficial impacts have included shorter hospitalisation times, reduction in admissions to long-term institutions, and less functional decline in older people living in the community. However, roll-out of the model in Canada has been hampered by the willingness of clinicians to work within such a managed network.

Hebert *et al.*, 2003

The weakness of hierarchical networks is that they may fail through over-regulation and over-bureaucratic procedures that limit their ability to innovate and so demotivate their members. This problem appears to be present in networks mandated by government that wish to simultaneously stimulate local innovation through clinical networks while imposing a degree of authority and control over activities. Other reasons for failure include that network members lose respect for the authority that regulates the network, or that the network does not appear to provide

proportional benefits to all of those individuals and organisations involved.

Networks imposed by government to stimulate local innovation while imposing a degree of authority and control may fail.

Individualistic networks

Individualistic networks are those in which a single individual or organisation develops an association of affiliates in order to achieve a certain task. Individualistic networks tend to be innovative and flexible, providing managers with the capacity to respond to change by cultivating a fluid membership. As a consequence, there tends to be no strong sense of shared values and limited formal prescription of activities. Such networks might be based on the procurement of services from providers through the negotiation of contracts or via long-term service agreements. Control of access to, and distribution of, resources provides the central organisation with the power to exercise leverage and shape the network.

Examples include information-sharing networks for research between clinicians and long-term patients with certain chronic diseases, ties between chief executives in the NHS, local authorities, the police and other public bodies at sub-regional level, and some of the loose structures used by Primary Care Trust leaders for negotiating the early stages of outline plans and commissioning strategies.

Individualistic networks tend to be innovative and flexible, with the capacity to respond to change because membership is fluid. However, such networks can fail due to the high level of transaction costs and the competition and conflict between agencies that can restrict the capacity and motivation for joint working.

Individualistic networks are most often found in the private sector and are characterised by companies exchanging one strategic alliance for another.

A major trend in the USA has been a corporate strategy by health insurance companies to develop 'integrated health care networks' by contracting with a wider range of independent providers to provide a more integrated package of care for enrollees. The resulting contractual network attempts to demonstrate to consumers the advantages of comprehensive benefits over competitors. However, research into over 100 of these networks suggested they were not as effective as hierarchical networks or single organisations in integrating health care services across a care pathway.

Example of an individualistic network

The Henry Ford Integrated Health Care System

The Henry Ford Integrated Health Care System integrates health care coverage through external contractual partnerships. The insurance plan that it offers includes an integrated set of hospice programs and an ambulatory care network at more than 70 sites. It has a centralised management structure that controls:

- contractual decision making between provider organisations
- care integration packages
- integrated information technology
- integrated purchasing.

The system was ranked the third most integrated system in the USA in 1999 and represents a best effort in developing an individualistic care network committed to a 'continuum of care' using case management and disease management programs. However, the structural and operational characteristics of the system have not been economically efficient or profitable, making a loss of \$43.8m in 1998.

Bellandi, 1999

The lessons to be learned from such networks are highly relevant to policy direction in the NHS, particularly Foundation Hospitals, patient choice and provider pluralism. Integrating care may be problematic in such networks, though the use of contracts remains a key way of getting compliance from otherwise separate provider institutions.

The rise of the idea of care pathway commissioning that rewards integrated care working between providers through a supply chain has been actively discussed in both the UK and Sweden as a method that achieves both objectives. The model is a mix of individualistic brokering by the commissioning agency to develop a network of service providers, combined with a strong hierarchical influence over the nature and quality of care provided. This particular model has yet to be fully piloted or evaluated so there is no evidence to suggest whether such an approach is feasible.

However, such networks can fail due to the high level of transaction costs and the competition and conflict between agencies that can restrict the capacity and motivation for joint working. In the absence of strong shared values or clearly prescribed roles, everything depends on the ability of powerful individual 'brokers' to persuade or buy the cooperation of others, and when particular individuals move on, the whole structure of the

network changes: succession can therefore present a major challenge to individualistic networks.

Does one type of network work better than another?

The research revealed a range of networks from the highly managed (hierarchical), to those based on procurement and brokering (individualistic), to exclusive professional groups (enclave). There is no single network 'type' that is 'better', though the dominant characteristics of each type have both advantages as well as disadvantages depending on the overall goal the network is trying to fulfil.

- Unregulated network structures such as enclave networks are appropriate where voluntary participation, high commitment and internal equality of status are required. Examples are the development of local partnerships between health and social care to address health promotion or the initial creation of clinical professional networks.
- Where controlled integration of a well-defined set of services is necessary, hierarchical networks are likely to be more effective (for example, ensuring a rapid and co-ordinated response to a local Hepatitis B outbreak or a major industrial accident). Yet such hierarchical networks are often poor in gaining support and commitment from network professionals if it restricts their freedom to practice.
- While individualistic networks appear less good at integrating care, they are often better at supporting creativity and motivation via incentives. For example, they have proven their worth in stimulating locally appropriate health promotion initiatives and in securing the support of the most senior executives for joint working.

The findings suggest that NHS managers might consider employing hybrid approaches to network management in order to offset the risks of each network form with the merits of other types.

For example:

- primary care trusts as procurement agencies might benefit from a directly managed network of core services with a range of competing affiliates for more specialist care
- emerging clinical networks in cancer and diabetes might wish to develop both a flat structure based on information sharing and development of service strategies between professional groups, yet also develop and adopt protocols of best practice that include a high degree of co-ordination, audit and governance.

Networks *Briefing*

Network management



Exercising management across several organisations brings special challenges because a manager cannot readily exercise direct authority. Nevertheless, the literature suggests that success in managing networks requires that:

- effective collective action is secured
- the right assembly of resources is achieved
- shared sense making is created among the people involved.

What are the lessons for successful network management?

Despite the variety of network types that exist, the literature points to a series of key lessons and aspects of good practice that should be adopted by the network manager in order to achieve better outcomes.

Achieving a position of centrality

The ability to secure a central position from which to exert leverage is a key challenge for effective management within and across individualistic and hierarchical networks. From this central position the manager is better able to access resources from others in the network. The central position also provides a base from which to manipulate and/or steer network goals and functions.

To achieve this, the research reported the need for a specific network co-ordination function that is financed, pro-active and in control of the information, knowledge and/or incentives at the centre of a network.

Common activities of network management

A. Initiation

Each network begins with some kind of initiation process involving selection and recruitment.

B. Objective negotiation

Each network recognises a set of cognitive activities, in which aims, objectives, norms, values, worldviews, goals and objectives are worked out.

C. Design

Each network proceeds to identify one or more activities of preparation, negotiation, rule-making, structural design, and conflict management.

D. Environment management

Each network recognises that some work needs to be done outside the confines of the group to secure external resources and legitimacy and acceptance from key stakeholders.

E. Joint production

Almost all networks identify some features of collaboration in the process of producing the services, goods or knowledge that is the shared task.

F. Adjustment

Most network forms recognise a set of activities involved in making changes in the course of the life of the group.

G. Termination, transfer or fundamental change

Finally, many networks recognise a set of activities around fundamental change which might lead either to the:

- termination and dissolution of the network
- transfer of functions elsewhere
- transmogrification and rebirth of the network in a new guise, either with changed members or changed activities.

A highly centralised managerial approach is, however, unlikely to be acceptable in enclave networks where professional autonomy and clinical freedoms are essential. Finding a central position to wield management power in enclave-like networks is problematic. As a review of public sector activities to combat crime and social disorder found, some localities achieved dense networks of the very committed, while others were much less well integrated. Achieving any position of management power in such partnerships is difficult.

Employing a neutral individual or agency appears to be a key mechanism to engender commitment, trust and reliability, help stabilise memberships and broker across competing professions.

Achieving centrality

The Belgian-Dutch Clinical Pathway Network

Launched in 1999 as a network of hospital providers interested in developing integrated care pathways, the network was facilitated by an academic centre (Leuven University) and had grown to 17 acute hospitals covering 10 700 beds by the end of 2001. Hospitals participated in the network to help reduce in-patient lengths of stay, but also to share and cross-evaluate the implementation of new care pathways. Each hospital voluntarily paid a fee to the University network facilitator who controlled the flow of information between members, encouraged the development and uptake of innovations, and provided a degree of regulation through a certification process when hospitals reached an agreed standard of care. Evaluation of the network suggested that its success was based on perceived added value from its members aided by the presence of a reliable, pro-active and independent facilitator.

Vanhaect & Sermeus, 2003

Clarity of goals

Having a clear mission statement and unambiguous rules of engagement is commonly seen as a pre-requisite to effective networks. This is particularly important in enclave networks and between agencies in hierarchical networks with different cultural outlooks such as health and social care professionals.

Clarity of purpose and defined boundaries within a network are important. A number of international evaluations of hospital networks designed to reduce costs and risks reported the effective use of protocols to differentiate provider roles. An example is a cardiac care network established in Emilia Romagna in Italy that enabled the quicker and more appropriate transfer of patients from peripheral to central units based on a detailed threshold protocol of case complexity.

Similar clarity of tasks was reported to be a key factor in the success of a cardiac care network in the USA and palliative care networks in Australia. In each case, risks and responsibilities of hospitals were clearly defined, allowing them to provide a mandate to a co-ordinating management team to undertake effective decision taking.

Clarity of goals

The Ontario Cardiac Care Network

The Cardiac Care Network of Ontario is a partnership of health professionals, hospitals and government that focuses on timely access to adult cardiac services for patients and their physicians. The network aims to reduce waiting times for cardiac surgery and improve access. The network shapes the activities of its network of members by developing strategies, promoting best practice, monitoring progress, and employing a range of guidelines. The network has reduced the isolation of practitioners by sharing knowledge on innovative care, clinical practice, research findings and advising on policy developments. Evaluation of the network revealed the importance of a shared mission statement and clarity of purpose to establish the boundaries of commitment. Clear priorities with a strong clinical focus and clinical leadership were reported as critical to network cohesion and sustainability.

Cardiac Care Network of Ontario, 2002

Inclusiveness in design and development

Hierarchical and enclave networks need to take an inclusive approach to network development so that all agencies and individuals gain ownership. Emerging evidence from managed clinical networks in Scotland reported the need for active involvement of professionals to achieve agreements on service priorities, policy-based protocols and use of audit tools before progress could be made on implementation.

"If you cannot get collectivism between professionals from care protocols and pathways to provide the same things, then there is no point to a network."

Smart & Daws, 2003

Avoiding large networks and inertia

Very large networks of all types tend to incur high administrative costs and lead to inertia. Studies of integrated health networks in the USA found that the broader the network the harder it was to centralise management arrangements leading to a moderate level of integration overall, especially in the areas of financial planning, organisational culture and physician-system integration. Benefits to patients of integration were 'not compensated' by additional costs leading to the conclusion that larger procurement networks did not improve either cost-efficiencies or clinical integration.

Overly bureaucratic hierarchical networks also appeared to inhibit innovation. Inertia in some health and social care partnerships due to excessive membership size suggests that one management strategy in such cases would be to abandon the ideology of full participation and stick to key participants who would contribute and gain most benefit from the network. Much of the evidence from the USA concluded that the most effective model for managing large, closely coupled, resource-intensive systems, such as hospitals or major estates and infrastructure projects, might be to have a hierarchical or managed hospital network for core services co-existing with a loose network of affiliates.

Developing cohesion: the roles of the ‘boundary spanner’ and of IT

Strategies for network cohesion should be developed to overcome the potential for network fragmentation. A number of mechanisms are reported, within enclaved and hierarchical networks: the potential use of joint finance arrangements and pooled budgets, the use of agreed care protocols and common targets. Such measures help to provide ‘lock-in’ and stability though do not guarantee compliance.

A further strategy to consider for network cohesion is the physical removal of geographical and jurisdictional boundaries.

The boundary spanner

Boundary spanners are individuals who work in the middle ground between different agencies holding an authorised role in managing inter-organisational relations. The role of the boundary spanner in co-ordinating activities and facilitating and building consensus is a widely reported factor in providing network cohesion particularly within individualistic network structures. The perceived neutral position of the boundary spanner – the network and its collective goals take priority over any self-interest – is important for developing legitimacy. The boundary spanner’s role is not dependent on status, but on their skill as committed, reliable, and trusted facilitators.

Information technology

Information technology has also been used as a management strategy to support a wide variety of network strategies, whether or not they require network cohesion. It has been found to be a key enabler in the creation of networks of geographically-dispersed professional specialists to enhance learning and innovation. In the NHS, the literature suggests that the capacity to manage networks effectively is

Developing cohesion

A managed clinical network for home parenteral nutrition

Home parenteral nutrition is required by patients with intestinal disease such that they are unable to maintain nutritional status of fluid volume without this treatment. A managed clinical network in Scotland involving a multiprofessional group has been established to ensure equity of access and care management according to nationally-agreed evidence-based procedures and protocols. The network is hosted by Tayside University Hospital NHS Trust that employed a lead clinician to act as network co-ordinator using a network-developed audit tool to monitor practice against agreed standards. The collection of audit data was reported to be fundamental to the success of the network in developing multiprofessional nutrition teams and best practice. However, high variation has been observed in the use of protocols, with a lack of adequate resources reported as a barrier to the effective creation of nutrition support teams across the network.

Tait & Baxter, 2002

related to the ability to gather reliable intelligence and information for effective case management and/or performance management. For example, the South East Scotland Cancer Network (SCAN) has facilitated a regional approach to the provision of chemotherapy services conforming to agreed standards and shared protocols for a range of common cancers. However, developing a regional service across a network of 600 clinicians needs considerable information technology and management support that has yet to materialise. The lack of connectivity between professional views has been regarded as the ‘biggest obstacle’ to the network leading to a lack of ‘corporate discipline’ (Gregor, 2003).

Good examples of how information technology has been used to co-ordinate professional expertise and enhance performance are the use of telemedicine and videoconferencing amongst Boston health care professionals and for gynecological oncology in Scotland (see the case example on page 10). In both cases the use of telemedicine reduced duplication of services, aided the development of common treatment protocols, and led to better co-ordination of care between hospitals. Consultant physicians were happy to be a part of the system because they gained access to medical expertise and to peers with high professional

reputations. Hence, this IT-based informational network enabled professional networks to co-exist within a managed system seeking to improve quality and control rising medical costs.

The power of information

Videoconferencing to support a managed clinical network

In West Scotland, videoconferencing facilities have been developed and used to support a gynaecological oncology managed clinical network. Videoconferencing was implemented simultaneously across five sites in 2001 allowing multidisciplinary teams to discuss individual cancer diagnoses without the extensive travelling previously required. High quality management support was required during and after the implementation of videoconferencing to achieve acceptance and sustainability since local professional ownership was regarded as crucial.

Barry *et al.*, 2003

Avoiding over-regulation and mandation

Clear and established operational procedures can lead to trust and understanding, so it follows that ownership *may* be facilitated by formalised contracts and agreements. However, the literature suggests that, unless there is no alternative, tight regulation of hierarchical networks should not be imposed, because this risks disharmony and demotivation. The lessons from the geriatric networks in the Netherlands (see the case example on this page) are particularly relevant to the policy of centrally-led managed clinical networks both in Scotland and England. Early reports from Scottish managed clinical networks reveal that centrally-defined objectives have been hard to operationalise and implement as no single agency 'owned' the network. 'Top-down' imposition of networks and network activities was seen as risking disharmony and network failure since social ties between professionals within the networks remained weak.

Networks in health care need to be continuously reviewed for usefulness if they are to endure. Managers may need to employ a flexible or 'living' design that allows networks to adapt over time.

Avoiding mandated networks

The case of geriatric networks in the Netherlands

From 1996–1999 the Dutch government initiated and evaluated a pilot system of geriatric networks in four locations. These pilots aimed to provide insight into the added value of clinical networks and had to address:

- the development of preventative services
- the diffusion of specialist expertise via training and consultation activities
- the development of geriatric services in hospitals without geriatric wards, and to develop and optimise the clients' care pathways through the various services.

Each network attempted to be inclusive of all agencies and professionals that had some relationship with the target group. A project team and manager were centrally financed for each pilot to oversee the development of the network as well as to monitor progress.

While it was 'quite easy' for network members to reach consensus on objectives and priorities, decisions to implement new projects or services were usually postponed or subject to significant delays. Though information sharing had 'improved professional ties' only a few professionals within the networks were active in applying protocols, joint assessments and new treatment patterns. Evaluations suggested that the conflicting interests and priorities of professional members, allied to an overly broad definition of their target group, were the most significant barriers. Once Government funding was removed, the networks dissolved due to lack of support.

Nies *et al.*, 2003

Engaging professional leadership

A key lesson from the review is the need for managers to actively engage professionals within networks. Respected professional leaders are necessary to promote networks to peers. The literature stresses that these people should be professional or clinical leaders with a level of charisma; less senior or less well respected managers were seen as generally possessing less kudos and leverage.

Leadership styles need to be modified, depending on the nature of the network itself. Inclusive, facilitative and consensus-building approaches would suit enclave-type networks while less-inclusive, more partisan, advocacy styles are more likely to work in individualistic or hierarchical networks.

Engaging professionals

Governance by network in English primary care

A multiple case-study analysis of professional governmentality in English PCTs found that formal organisational structures played little role in the successful development of clinical governance. Clinical governance was managed better through semi-formal networks of professionals relying on medical self-surveillance. Legitimacy and compliance to clinical governance activities was better achieved through discursive procedures in a collegial environment led by GP peers. Professional self-regulation was a stronger force than top-down managerial compliance.

Sheaff *et al.*, 2004

Avoiding network capture

Though professional engagement appears to be a pre-requisite in networks, managers must also avoid the potential for network capture by, for example, a dominant professional elite. If networks remain unregulated, then the likelihood of this happening rises. This is a particular problem for managed networks wishing to lead from an administrative centre.

Another form of capture can arise as a result of corporate strategies of individual organisations within networks. In health care, managerial 'gaming' by large hospitals to secure their own network centrality has been a feature of corporate strategies in the USA and Australia. The needs of large acute trusts in England have often dominated the commissioning strategies adopted by PCTs.

A simulation of a new cancer network in England revealed the likelihood that it might act as a 'provider cabal' forcing PCTs to conform to the acute hospital's version of network requirements.

Maintaining the net worth of the network

Good network management requires the ability to respond to the needs of network members in such a way that the network remains relevant and worthwhile. Networks will survive as long as members feel net worth to being involved.

Evaluations of multi-institutional informational networks in health and social care, such as project CHAIN (see the case example on page 4), stress the need for such networks to demonstrate benefits and added value to institutions that may not necessarily regard the network as part of their core business. The evidence suggests that competing interests *can* co-exist if mutual long-term self-interests are served.

Networks in health care need to be continuously reviewed for usefulness if they are to endure. Managers may need to employ a flexible or 'living' design that allows networks to adapt over time.

Providing the mandate for managers

Finally, it is essential that professionals in networks provide the mandate to allow managers to manage and govern their activities. This vital point is discussed further in the following section on governance, inspection and regulation.

More effective networks are those in which network members, particularly professionals within institutions, provide the mandate to a central agency or manager and agree to be governed by a set of negotiated rules.



Key characteristics, strengths and weaknesses of different network structures

Network type	Structure	Characteristics	Strengths	Weaknesses	Appropriate management styles	Examples
Enclave	A flat structure, no central authority, sustained through common bonds.	<ul style="list-style-type: none"> ● A close-knit group with a high level of social cohesion. ● High level of internal equality between members, less with outsiders. ● Little aptitude to accept central or mandated authority. 	<ul style="list-style-type: none"> ● Shared commitment, trust, egalitarianism. ● Creates bottom-up legitimacy and trust between individuals, organisations. ● Promotes sharing of information, ideas, strategies and new ways of working. 	<ul style="list-style-type: none"> ● May fail when motivation of members is exhausted or schisms occur. ● Can be unstable due to lack of resources. 	<ul style="list-style-type: none"> ● Facilitative and professionally-led. ● Management is administrative to help information sharing, but managers do not direct activities or undertake audit. 	Professional groups, National Pathways Association, integrated care network, policy forums, local implementation teams.
Hierarchical	An organisational core with authority to regulate the work of members.	<ul style="list-style-type: none"> ● Similar characteristics to single organisations. ● Often controlled by steering groups and via direct authorities that may undertake inspection and accreditation. ● Sustained by clear rules and roles, defined status, commonly shared values; members accept joint working agreements/protocols. 	<ul style="list-style-type: none"> ● Most successful in controlling and co-ordinating a pre-defined task such as minimising transaction costs or quality improvements. ● Co-ordinating function has the potential to clarify complex divisions of labour. 	<ul style="list-style-type: none"> ● Over-regulation and over-bureaucratic procedures may limit scope for innovation and demotivate members. ● Members may lack trust in the regulating authority Network may not appear to provide proportional benefits to all members. 	<ul style="list-style-type: none"> ● Co-ordination of defined activities with high degree of professional self-regulation. ● Potential development of clinician-managers. ● Some propensity for central control and direction, but mandated networks should be avoided. 	Often a hub and spoke arrangement; managed clinical networks; collaboratives, integrated care pathways, social health maintenance organisations.
Individualistic	A single individual or organisation develops an association of affiliates in order to achieve a certain task.	<ul style="list-style-type: none"> ● Central control of access to, and distribution of, information and resources. ● Fluid membership. 	<ul style="list-style-type: none"> ● Tend to be innovative, flexible and responsive to change. 	<ul style="list-style-type: none"> ● High level of transaction costs, conflict and competition between agencies can restrict joint working. 	<ul style="list-style-type: none"> ● Brokering and negotiating contracts or agreements between agencies. Setting targets and incentives and monitoring activity. 	The procurement of a network of service providers through negotiation of contracts or service agreements by insurance and funding agencies.

Networks *Briefing*Network
governance

How are networks best regulated?

An agency located outside the network is less able to secure governance of the network. This is a problem faced by all regulators, but is a tougher challenge in respect of individualistic and enclaved networks than hierarchical ones. To govern a network, managers need to use any central authority they possess, perhaps through the enforcement of voluntarily agreed and negotiated terms and conditions. However, it is also clear that mandated networks appear to work badly because network members have not provided the implicit authority for them to be governed. The researchers conclude that any kind of managed network needs to be *combined* with the use of professional incentives on an ongoing basis.

Partnership working and networks in the public sector suffer when national priorities, targets and audits incumbent on individual organisations become prioritised to the detriment of their involvement in networks. The development of health care networks in the NHS may be at risk if central targets, such as waiting list reductions, lead to priorities that make effective networking problematic. The paradox is that joined-up inter-agency collaboration is exactly what may be required to achieve the targets. If policy-makers wish to see improvements in service quality in the medium term through the use of networks, then the targets of individual institutions need to be harmonised.

Network governance and regulation Cancer networks in England

An analysis of cancer networks in England suggested that PCTs and/or Strategic Health Authorities had little potential leverage to exercise power as system regulators though such power was seen as crucial for the potential of networks to be realised. The analysis concluded that robust commissioning and performance management arrangements were necessary to control the network system.

Office for Public Management, 2002

Inspection and regulation activities are constrained by the nature of the network:

- **Enclave type networks** may often use self regulation by a trade or professional association. There is, however, a threat in the form of 'organisational capture' by a professional elite with the resources, power and understanding to gain control of the process.
- Within **hierarchical networks**, the potential gain is the ability to develop common standards, goals and quality assurance – but the key fear is that over-regulation will lead to excessive bureaucracy, paperwork, perverse incentives, and constraints on clinical freedom to practice.
- In **individualistic networks**, regulation and inspection is likely to be inconsistent depending on the nature of contracts and ties formed.

Providing the right incentives to members so that they agree to, or own, the system of regulation and governance that will bind them together, may be the solution to closing the apparent governance gap in networks.

An effectively crafted network can provide the basis on which to achieve successful partnership working between organisations. Such crafting requires significant network management skill in articulating strategies and ties between organisations that are robust enough to endure, legitimate enough to become accepted, yet flexible enough to tackle the inherent weakness to which all inter-organisational arrangements are subject. The best chance of pursuing these goals effectively is to seek to cultivate hybrid forms that allow some element of all three types of network.

Further information

The research findings provided in this paper are based on two longer reports:

6 P, Goodwin N, Peck E, Freeman T, Posaner R (2004) *Managing across diverse networks of care: lessons from other sectors*. Final Report to the NHS SDO R&D Programme, Health Services Management Centre, University of Birmingham.

Goodwin N, 6 P, Peck E, Freeman T, Posaner R (2004) *Managing across diverse networks of care: lessons from other sectors*. Policy Report to the NHS SDO R&D Programme, Health Services Management Centre, University of Birmingham.

The full reports, including detailed references for all sources cited in this briefing paper, can be downloaded at www.sdo.lshtm.ac.uk/studyinghealthcare.htm



About the SDO Programme

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