Paediatric services

Managed clinical networks

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Multilateral collaboration as a basis for the future organisation of paediatric services?

The NHS plan[1] opened by affirming the value placed on the NHS, while also casting a warning shadow: "The NHS is the public service most valued by British people . . . In an age when our lives and jobs are undergoing constant change, it is reassuring to know that the NHS is there and will take care of us in times of need . . . Yet, despite its many achievements, the NHS has failed to keep pace with changes in our society . . ."

Recent experience in the NHS has been of radical organisational change: acute trust mergers; the formation of primary care groups and primary care trusts; changes in commissioning arrangements. As policies set out in the NHS plan are translated into practical effect, changes to the structure and functions of NHS organisations are continuing apace. But the organisation of health service delivery is also changing, with improved access to care, clinical outcome, and patient experience of care as primary objectives.[2]

Within secondary health care in particular, one powerful tendency has been a movement toward subspecialisation in medicine, backed up by evidence that access to specialist opinion and skills improves quality of clinical outcome.[3 4] Specialisation of function and concentration of activity tend, together, to indicate a centralisation of services, but the scale at which it becomes viable to provide specialist services varies. The redesign of organisations and services is made less sure because of a lack of relevant evidence[5] or because evidence is inconclusive.[6 7] As Smith[8] reports " . . .it doesn't make sense for hospitals serving 150,000 to try to provide all acute services . . . The surgeons are keen on hospitals that serve 500,000 . . . But such hospitals cannot make sense everywhere . . . Although there are no solutions, there are principles that can be agreed. Firstly, the whole exercise is about trading access, quality and cost. Each will have its own geography, existing services, problems, trade offs and values, making a universal solution impossible. Local decision makers must be free to create their own solutions, . . . and . . .to think differently."

Although merger of acute hospitals and of community health services has continued despite warnings that the intended benefits may not accrue,[9 10] alternative approaches to service organisation are also being pursued. In Scotland, a review of acute services[11] provided a strong vision and mandate to promote the development of what it termed "managed clinical networks". "The Review sees the development of managed clinical networks as the most important strategic issue for acute services in the NHS in Scotland. Such distributed networks offer the best basis for equitable, rational and sustainable acute services, are flexible and capable of evolution, and allow greater emphasis to be placed on service performance and effectiveness. The concept is . . . presented here as an extension of a process of organisational change which has already begun."

The purpose of this paper is to examine whether the concept of managed networks may be of value in planning the future development and organisation of paediatric services. The paper briefly reviews the concept and then draws on the experience of Partners in Paediatrics (PiPs), a group of paediatric service providers serving the area between the tertiary centres of Birmingham, Manchester, Liverpool, and Nottingham, to explore what is required to take the idea into practice.

MANAGED CLINICAL NETWORKS: WHAT ARE THEY AND WHAT IS THEIR RATIONALE?

Baker and Lorimer[12] define a managed clinical network as "A linked group of health professionals and organisations from primary, secondary, and tertiary care, working in a coordinated way that is not constrained by existing organisational or professional boundaries to ensure equitable provision of high quality, clinically effective care . . . The emphasis . . .shifts from buildings and organisations towards services and patients."

Networks may be focused on:

- a specific disease—for example, cancer or peripheral vascular disease;
- a specialty—for example, cardiology, vascular surgery, neurology;
- a specific function—for example, medical receiving or pathology.

In practice, the term is seen as permitting a variety of arrangements, operating at different possible scales: within a primary care trust, across primary, community, and acute care within a health district, across a number of health districts, or larger geographical area. The exact nature of a network depends on its rationale and purpose.[13] However, networks are fundamentally a means of enabling services to be formed, or linked, across organisational boundaries, where those boundaries would otherwise have restricted the coordination of resources.

Coordination of resources may be secured by informal agreements based on personal acquaintance, trust, and cooperation, or by formal means, such as contracts, service agreements, care pathways, and protocols. The survey of Ferlie and Pettigrew[14] showed that informally governed networks were commonplace, if difficult to map out systematically: within paediatrics, informal links for cystic fibrosis would be one example. The policy of investment in managed clinical networks has inevitably put a much greater emphasis on issues of the transparency of networks and on the establishment of formal arrangements for resourcing, governance, and accountability. Although they are not intended to be organisations in their own right, managed networks may have a dedicated management function, joint recruitment, and appointment of clinical staff, shared rotation of staff in training, common protocols, and policies. They may also have shared rights of access to beds, information systems, and patient records on all sites, and joint training, continuing education, and audit programmes. Indeed, the managed network may be defined specifically as "a means of mobilising and coordinating those clinical and service resources required to implement one or more care pathways designed to meet the needs of a given population, appropriately defined; and as a point of accountability for the performance of those resources".

In sum, managed networks may be an appropriate means of:

- promoting a focus on patient access to and experience of care;
- identifying and sharing scarce existing resources—for example, specialist medical and clinical practitioners;
- enabling release of, or joint investments in, scarce or costly resources—for example, giving practitioners the opportunity to focus on the subspecialty;
- reducing barriers to the coordinated provision of services;
- providing a means of accounting for service performance across health care organisations.

The policy commitment to networks as a means of improving service effectiveness has significant implications for organisational behaviour and health

services management, including a less proprietary attachment to organisations, localities, and resources, development of cooperative thinking about service improvement, and a changed focus for performance assessment, a willingness to contribute to network development, and to tolerate uncertainty about precisely when and how investments will mature.[15]

WHERE ARE THEY IN USE AND WHAT DO WE KNOW ABOUT THEIR VALUE?

The reorganisation of cancer services,[16] conceived originally in terms of a hierarchy (of cancer centres, cancer units, and other non-specialist providers), has led to a series of managed networks of provision. Resourced as a priority, the cancer networks have highlighted the need for strong leadership, clear management arrangements, widespread clinical involvement and support, and the formalisation of agreed arrangements for care.[17 18] Key elements include an attempt to balance resources throughout the care route, so that the patients do not experience delay as a result of a shortage of resource at one point in the pathway—for example, imaging. Secondly, there is a major emphasis on using the skills of a wide range of different professionals with much more emphasis on nurse led care. The principle of managed networks has been applied to other services, such as cardiology, diabetes, and vascular surgery, including both acute and continuing care services. In each case, the intention is to ensure appropriate access to the range and level of specialist knowledge and practice required to ensure consistent quality of care. Little is yet known about the value of managed clinical networks as a means of improving care. In the case of cancer networks, the effectiveness of the policy in enabling the integration of multiprofessional inputs and the concentration on care of specialist practitioners by cancer site is currently being evaluated jointly by the Commission for Health Improvement and the Audit Commission.[19]

WHAT IS KNOWN ABOUT THE ESTABLISHMENT OF MANAGED CLINICAL NETWORKS?

Experience of establishing managed clinical networks suggests that, even where there is a strong rationale and mandate, "developing the network is . . .challenging".[12] Ferlie and Pettigrew[14] emphasise the importance of network "animateurs": for managed clinical networks, the lead clinician(s) and those involved in management support are likely to form a core executive group taking responsibility for the network management, including communication, project support, and management, and keeping a critical eye on purpose, action, and performance. For those concerned or charged with establishing a network, there are a number of issues to be considered.

An early, and potentially recurring, decision concerns the point at which boundaries should be drawn around the managed network. For specialist services, it may be appropriate to designate either local and/or regional networks. For complex care requirements, where a variety of health, social, and other care inputs are required, local networks may be most appropriate[20]—for example, Child & Adolescent Mental Health Services (CAMHS). Where care requires strong, vertical links from general paediatric care to subspecialists, then the region may be the only viable scale at which all elements of the service can be included—for example, paediatric intensive care.

The structure of a network derives from definition of points of entry to care, points of care delivery, and the connections between. A key task is to set out the mechanisms and principles governing the relations between points of care, as care pathways and guidelines. All professionals concerned and involved with care delivery are de facto members of the network. A key task for management of the network is to create a sufficient variety of opportunities for involvement in the planning/review of the network and the services it supports so that the network is maintained and developed. Indeed, the network should develop identity and visibility, although no one version of the network will be definitive. Formal arrangements for evaluation and quality management, continuing education and development, and the involvement of patients/parents/carers are important elements of the governance and accountability frameworks required.

The apparent lack of productiveness of networks was a concern noted by Ferlie and Pettigrew.[14] Developing and maintaining networks is time consuming and requires both a long term and a "rounded" view of investment: in turn, this requires different attitudes to productivity from those that are prevalent. For network leaders, definition and achievement of early wins and recognition of network achievements are essential to the development of trust in the network and to the establishment of norms of reciprocity, obligation, and cooperation that characterise a long term relationship. Such norms should be "generous", in the sense that direct benefits cannot be expected to flow to each and every network member in equal measure. Nor will benefits necessarily reflect contributions, except as they are balanced out over time or as generalised benefits. These may be jointly produced resources that are freely available, such as knowledge about good practice, reviews of evidence, etc, which are available to all through the network's cooperative efforts. Another benefit may relate to weight of influence. However, a key task for the network managers will be to maintain awareness of benefits arising and the pattern of distribution of these benefits.

In the following section, we take the work of PiP, a wide area partnership of paediatric service providers, as a means of illustrating the possibilities for collaborative managed clinical networks for paediatrics.

PARTNERS IN PAEDIATRICS: A FRAMEWORK FOR COLLABORATIVE SERVICE DEVELOPMENT

PiP covers the area bounded by the regional centres of Birmingham, Manchester, Liverpool, and Nottingham, and a total population of about 2 million (about 400 000 child population). Eighteen NHS trusts are subscribing members

Table 1 Participating NHS Trusts

1.	Birmingham Children's Hospitals NHS Trust
2.	Burton Hospitals NHS Trust
3.	Cheshire Community Health Services NHS Trust
4.	East Cheshire Hospitals NHS Trust
5.	Manchester Children's Hospitals NHS Trust
6.	Mid Cheshire Hospitals NHS Trust
7.	Mid Staffs Hospitals NHS Trust
8.	North Staffs Combined Health Care NHS Trust
9.	North Staffs Hospital NHS Trust
10.	Princess Royal Hospital, Telford NHS Trust
11.	Robert Jones & Agnes Hunt Orthopaedic Hospital NHS Trust
12.	Royal Liverpool Children's Hospitals NHS Trust, Alder Hey
13.	Royal Shrewsbury Hospitals NHS Trust
14.	Royal Wolverhampton Hospitals NHS Trust
15.	Shropshire Community & Mental Health Services NHS Trust
16.	Stoke North Primary Care Trust
17.	Walsall Hospitals NHS Trust
18.	Wolverhampton Health Care NHS Trust

Table 2 Partners in Paediatrics: Statement of Purpose and Objectives

Purpose
"The driving purpose of the partnership is to improve the quality and accessibility of services for children across the area served by the participating Trusts"

Objectives
- to ensure the balance between general and specialist and local and centralised services is appropriate (service by service)
- to increase the likelihood of attracting and retaining high calibre clinical staff.
- to develop a strategic, coordinated approach to commissioning and providing high quality children's services

(table 1) with both acute and community child health services involved.

The partnership was initiated in 1997 out of frustration with a health policy that encouraged competition between providers, and with the lack of service oversight. Regional planning had been very limited, local commissioners had had little time for, or understanding of, specialist paediatric services, and there had been few opportunities for involvement of paediatricians in the strategic planning of services. This remains the case[21]—for example, the coding of specialist care as general paediatrics makes it difficult for purchasers to grasp the complexity of the services they are purchasing. Within this context, NHS trusts have maintained and developed services as they can. Service planning and development has been fragmented: for example, appointments to specialist posts, mainly in teaching hospitals, have tended to be made without asking what the effect would be on the delivery of local services. Even formal shared care arrangements, using a hub and spoke model such as in paediatric oncology, has often resulted in developments driven by the hub, leading to funding difficulties for the spokes.

Table 3 "Top six" service review priorities

1. Neonatal intensive care
2. Child protection
3. Child & adolescent mental health
4. Paediatric neurology, including epilepsy
5. Children's surgery & anaesthesia
6. Paediatric gastroenterology

Shortly after inception, PiP developed a statement of purpose and more detailed aims (table 2). Pooling information about the state of services provided within the partnership area led to identification of a short list of services that were shared priorities for improvement and which might be susceptible to joint action (table 3). After a year of informal working, PiP was more formally constituted with a steering committee, officers, a business plan, and a working group for each project identified in the plan.[22] PiP also has a budget, raised by subscription paid by member trusts. Table 4 shows an overview of achievements, three years on.

PiP is not a managed clinical network, but rather a strategic partnership of trusts providing child health care, which has undertaken some of the service planning and development work that managed networks will also have to address. Substantially formed by paediatricians in its early days, PiP now has a multiprofessional steering group and involves staff from across the professions and agencies in its work streams and planning events.[23]

As its agenda essentially concerns the strategic development of services, PiP has sought commissioner involvement from an early stage. Although commissioners have shown a keen interest in the development of PiP current planning, mechanisms for commitment of resources—Health Improvement Programme & Service and Financial Framework—relate almost exclusively to service priorities and expected benefits to the populations served within districts. Mechanisms for funding service developments for managed clinical care across wider areas, especially when developed bottom up rather than top down have not yet been clarified. The further devolution of purchasing budgets to primary care trusts[24] may mean it is still more problematic for wide-area initiatives, although the change in organisational arrangements indicated in *Shifting the balance of power*[25] may provide an opportunity for PiP to have greater influence over the commissioning of specialist services.

One example of a PiP project is a review of the problems facing paediatric general surgery and anaesthetics within the PiP area.[26] Clinical governance and lack of surgical training in paediatric surgery mean that children are increasingly referred from district general hospitals to regional centres[27] where there is limited capacity to cope. Having examined the local situation, PiP was able to make a number of recommendations, including a managed approach across a large population. Subsequently the tertiary centres became actively involved in PiP and now there is joint ownership of the problem across secondary and tertiary care providers. A business case is under development to develop a model for the future of this service. Possible options under discussion include the possibility of appointing a specialist surgeon to a regional centre in order to develop outreach day case surgical lists.

It is in paediatric gastroenterology that PiP's work is most advanced. The Royal College of Paediatrics and Child Health recommends a minimum of 2.00wte paediatric gastroenterologists for a population of the PiP area (over 2 million).[28] At the outset, PiP had one specialist gastroenterologist, with very limited time available for the subspeciality and facing a very high demand for service.

Having canvassed commitment to shared use of a specialist paediatric gastroenterology service across trust and

Table 4 Partners in Paediatrics: main achievements 1998–2000

1.	Paediatric gastroenterology:	Preparation of full business case for paediatric gastroenterology specialist centre. Implementation in process.
2.	Paediatric surgery:	Review of current and future provision of paediatric general and urological surgery & anaesthetics; discussion paper and conference to explore issues and options; contribution to West Midlands regional review of children's surgery.
3.	Integrated service and workforce planning:	Innovative service and workforce planning workshop funded by local education and training consortium and preparation of medical workforce strategy.
4.	Paediatric diabetes:	Development of common standards for diabetes services and diabetic database
5.	Clinical guidelines:	Website holding existing clinical guidelines from PiP members; programme of guideline development supported by West Mercia Guidelines Group
6.	Web based education:	Website with educational programmes and learning resources.
7.	Credibility:	A partnership of equals; support from acute and community health trusts; secondary and tertiary providers; interest from primary care and purchasers; strategic view of children's services informed by critical mass of clinicians, from all health care professions; problem-oriented service review and design; planning and delivery facilitated by trust managers and by advisors.

district boundaries, PiP's working group produced a business case for development of a "specialist paediatric gastroenterology centre"[29] split between two trusts. With a survey of service users indicating willingness to travel for specialist investigations, but a preference for local access, a model of service was developed in which specialist services (providing centralised endoscopy and specialist outreach clinics) would overlay existing (but strengthened and specifically earmarked) general service provision in each locality. The business case was circulated to trusts and health authorities in the PiP area: responses were positive, although no financial support was forthcoming. An agreement between two member trusts to jointly host the specialist activity led to the use of existing resources to replace two consultant posts with joint appointments, each with specialist gastroenterology as a substantial component of the post. These posts include responsibility for the development of the service across the partnership area in the job plans.

Good, local access to endoscopy is a key feature of the proposed gastroenterology service and was the rationale for collaborative development of a business case. The business plan also argued that an appropriate mix of expertise in specialist nursing, dietetics, and psychology was a requirement within each local service. In a multidisciplinary conference to launch the network, staff from these groups had no difficulty in cataloguing problems with the existing service provision and in giving suggestions for improvement. Existing and future pathways of care for a number of common gastroenterological problems, such as constipation, abdominal pain, and failure to thrive, were taken as examples of the way local work may be developed. The workshop marks the beginning of this initiative. Each locality has been invited to elect lead professionals to interface with the new consultants. The idea is to create a more visible local network, or extended team of professionals, providing input to the specification of care pathways and guidelines. These must be appropriate to local circumstances. Unfortunately there is still a shortage of therapists in most localities to support the initiative. Showing where therapists are needed as part of managed care, and the consequences of not providing this, will help to argue the case for funding of these resources. Involvement of primary care trusts and primary care teams will be attempted at a local level.

CONCLUSION

PiP is developing into an organisation that can support the development of managed clinical networks. Balancing resources, multiprofessional working, crossing organisational boundaries, and developing appropriate guidelines and auditing practice are all central to current thinking about managed clinical networks.[13] PiP has been able to champion such developments, but funding is still a real difficulty. Using gastroenterology as a worked example, PiP is moving towards the aspiration stated in the NHS plan[1] " . . .to develop health services around the patient" as an integrated package of care unconstrained by organisational boundary.

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COMMENTARY

Managed clinical networks are not only topical, but of special relevance to paediatrics and its sub-specialties, as they provide a means of tackling the difficult and conflicting issues of service configuration, and of service quality. To date, managed clinical networks have been established principally in acute services for adults, and there is little experience of such networks in paediatrics. As the authors point out Partners in Paediatrics (PiPs) is not an example of a managed clinical network, although it may in time lead to the development of a range of networks.

Partners in Paediatrics appears to have developed to fill a vacuum left by inadequate regional commissioning, confounded by an uneasy relationship