LEADING ARTICLE

Paediatric services

Managed clinical networks
S Cropper, A Hopper, S A Spencer

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

The NHS plan 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.

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. Specialisation of function and concentration of activity tend, together, to indicate a centralisation of services, but the scale at which it becomes viable to make less sure because of a lack of data. The surgeons are keen on centralisation of services, but the trusts; changes in commissioning arrangements, or by formal means, such as contracts, service agreements, care pathways, and protocols. The survey of Ferlie and Pettigrew 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”;

MANAGED CLINICAL NETWORKS: WHAT ARE THEY AND WHAT IS THEIR RATIONALE?
Baker and Lorimer 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. 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 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.11

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

The reorganisation of cancer services,12 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.13,14 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.15

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 Pettigrew12 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—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.12 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 PEDIATRICS: 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

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

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 formally constituted with a steering committee, officers, a business plan, and a working group for each project identified in the plan. PIP also has a budget, raised by subscription paid by member trusts. Table 4 shows an overview of achievements, three years on.

Table 2 Partners in Paediatrics: Statement of Purpose and Objectives

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

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 |
| 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. |
| 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” 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. 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 “...to develop health services around the patient” as an integrated package of care unconstrained by organisational boundary.

ACKNOWLEDGEMENTS
We thank all the trusts who are members of PiP members of the steering group, project leaders, and all those who have contributed to PiP events over the past four years. Without the cooperation of a huge number of people, this article could not have been written.

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COMMENTARY
Managed clinical networks are not only topical, but of special relevance to paediatrics and its sub-specialities, 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.
with the 3 principal tertiary centres to which their geographical area relates. PiPs has developed as a framework of collaborative service planning, and has sensibly started by listing the service review priorities, and then proceeding to develop care pathways and guidelines which are essential pre-requisites of a clinical network. They have moved on to prepare a full business case for paediatric gastroenterology, replacing 2 existing consultant posts with joint appointments of 2 gastroenterology sub-specialists in spite of a lack of financial support. It is not clear whether the development in gastroenterology is part of a wider network with the regional centre(s). Paediatric surgery and anaesthesia have also been reviewed as part of a contribution to a wider regional review of children's surgery.

PiPs now includes the 3 tertiary centres, and one of the primary care trusts. The authors do not state whether other primary care trusts will participate, or if a lead commissioner for children's services is to be located in one of the primary care trusts. PiPs will need the support of the lead commissioning body/bodies if it is to set up effective managed clinical networks. Unfortunately in England the future arrangements for commissioning specialised services are at present unclear. The Department of Health document “Shifting the Balance of Power” describes a major change in commissioning arrangements in England with the abolition of the 95 District Health Authorities and their replacement by 28 Strategic Health Authorities, and delegation of the great majority of commissioning to primary care trusts. The 8 NHS regional offices will also be abolished. Most of the paediatric sub-specialities are relatively small, and need to be planned and commissioned for populations greater than those of an average Strategic Health Authority (1.5 million). The Department of Health has not so far indicated who will be responsible for commissioning such services, which will be too large for primary care trusts to commission, but too numerous to be commissioned through national specialised commissioning arrangements.

The development of a range of managed clinical networks, covering a range of paediatric sub-specialities presently appears to offer a solution to this problem.

However it will require the establishment of clear commissioning arrangements, and the appointment of strong, authoritative, but respected leaders for each managed clinical network, as well as the goodwill and sense of common purpose which presently drives the collaborative arrangements of PiPs.

I see the development of managed clinical networks as an exciting opportunity for clinicians to work together with other health professionals and the public to improve the quality and accessibility of services for children. However it must not be seen as a panacea or as a replacement for the current inadequate specialised commissioning arrangements. If an increasing number of specialised services are provided through managed clinical networks, a mechanism will be needed to ensure the development of sensible inter-relationships between networks, for example between Maternity Services and Neonatal Intensive Care, between Children's services and Surgical and A & E services, and between individual paediatric sub-specialities and their corresponding adult specialties. In Scotland, Wales, and Northern Ireland there are separate arrangements for planning and commissioning specialised services, but in England it is presently not clear who will take responsibility for co-ordinating the complex inter-relationships required of specialised services.

Perhaps regional authorities would fit the bill?

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