



John D Clark

Managed Clinical Networks: What are They and How do They Work?

Abstract: Managed clinical networks (MCNs) play an increasingly important part in the delivery of effective healthcare. This paper describes what they are and how they work, based on the experience of MCNs in Scotland and, in particular, CleftSiS, the National Managed Clinical Network for Cleft Lip and Palate Services in Scotland.

Clinical Relevance: The basic principles of MCNs described in this paper will assist clinicians in all specialties, with the development of MCNs that modernize and integrate the delivery of effective healthcare.

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There have been two recent reviews of healthcare: one in Scotland¹ and the other in England and Wales.² Both emphasize the centrality of the patient and his/her 'journey' as the focus for improving the delivery of healthcare. As a result, there is a renewed interest in managed clinical networks (MCN), which break down traditional boundaries between organizations, between primary, secondary and tertiary care providers and between specialties.³ Breaking these barriers releases the potential for creativity, innovation and flexibility as different healthcare professionals interact to agree protocols, integrated care pathways and quality assurance programmes. Breaking the link with organizations, which are sometimes obstacles to change, will enhance the potential for innovative change and improve access to care.

Networks can be grouped, for example, according to function (pathology, A&E) or client group (children), disease (cancer, coronary heart disease) or specialty

(vascular surgery, cardiology) and operate at local, regional or national level. An example in dentistry is the NHS Tayside Orthodontic Managed Clinical Network,⁴ which links all clinicians in general, specialist or hospital practice in Tayside. Networks are not necessarily confined to clinical areas and the British Dental Association has suggested that they could help to deliver dental services, for example, in the care of older people and children, as well as helping address issues of poverty and social exclusion.⁵

This paper will use examples from the national managed clinical network for cleft lip and palate services in Scotland (CleftSiS) to illustrate what managed clinical networks are and how they work.

What are managed clinical networks?

The NHSScotland plan,⁶ *Our National Health*, defined managed clinical networks as:

linked groups of health professionals and organisations from primary, secondary and tertiary care working in a co-ordinated manner, unconstrained by existing professional and existing [organisational] boundaries to ensure equitable provision of high quality effective services

The characteristics of networks are very different from the hierarchical structures that have traditionally characterized the NHS. Networks are 'bottom up', encourage all members to participate, and allow high levels of initiative and autonomy. However, they do require a framework to operate effectively. The Scottish Executive Health Department (SEHD) has therefore issued a set of core principles⁷ to avoid the extremes of too much management, which will result in paralysis, and too little management, which will result in chaos.

These core principles and their application to CleftSiS will form a framework to answer the question: *How do they (MCNs) work?*

CleftSiS

The National Services Division (NSD), which has responsibility for ensuring the provision of national screening programmes and specialist services on behalf of NHSScotland, commissioned the Network in April 2000 in response to the UK survey of cleft services undertaken by the Clinical Standards Advisory Group (CSAG) published in 1998.⁸ CleftSiS was built on the foundations laid by the Scottish Association for Cleft Lip and Palate (SCALP), which was formed in 1989 by a multi-disciplinary

John D Clark, FDS, Dip Orth RCS Eng, FDS RCS Edin, Retired Consultant Orthodontist, NHS Tayside, Scotland, and Lead Clinician, CleftSiS.

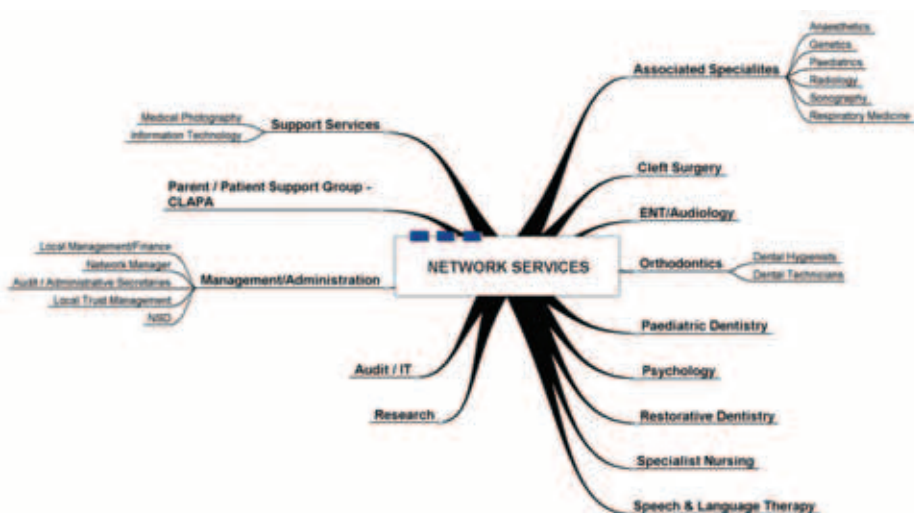


Figure 1. Range of specialties.

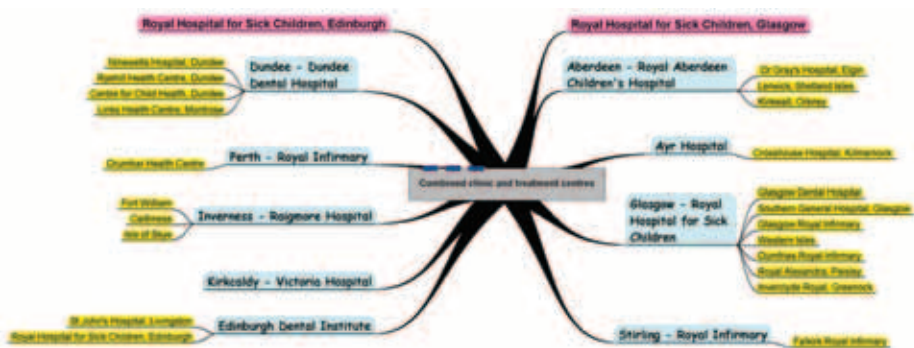


Figure 2. Locations of the combined clinics and treatment centres.

group of clinicians caring for patients with cleft lip and palate.

The Network Manager and the 2.5 WTE cleft surgeons are funded centrally through the NSD. All other personnel are funded by their own Health Boards.

The aims of the network are to co-ordinate and optimize care and outcomes through standard setting and audit for all patients with cleft lip and/or palate in Scotland. Figures 1 and 2 show the range of specialties, and the locations of the surgical sites recommended by the National Services Division Review of Cleft Surgery in Scotland (coloured red), combined clinics (coloured blue) and treatment centres (coloured yellow).

How does a MCN work?

Networks are 'bottom up',

participative, allowing initiative and a degree of autonomy. To avoid anarchy, the SEHD core principles (*shown in italics*) must be the basis for all formal (managed) networks in Scotland. The following paragraphs describe their application to CleftSiS.

Structure

Each Network must be truly multi-disciplinary/multi-professional and there must be clarity about the role of each health professional in the Network.

Figure 1 illustrates the multi-disciplinary/multi-professional nature of CleftSiS. One hundred and twenty one clinicians and professionals complementary to medicine contribute, in some way, and they are all, by definition, members of the network, but are responsible to their own employing authorities.

Management

Each network must have clarity about its management arrangements, including the appointment of a person who is recognized as having overall responsibility for the operation of the Network.

A national network like CleftSiS has a Lead Clinician, a Network Manager and a Lead Chief Executive. The network members nominate the Lead Clinician but the agreement of the Lead Chief Executive and the Director of the National Services Division is required. The Lead Clinician is responsible for the operation of the Network and the service it provides, but has no direct control over Network members other than to bring to the attention of their employing authority any problems which affect the network that cannot be resolved.

Network leaders may have to develop new skills and expertise specific to a particular stage in the network's development.⁹

At the beginning, a leader facilitates the progress of the emergence of the network and supports its overall design. In the early stages of development, the leader connects various individuals and pieces of the network. Once established, the leader enables the monitoring, helping, engaging, learning, and support within and without the network.⁹

Network members meet within specialty groups led by a convenor who is a member of the Executive Group. There are four meetings each year; two for business, one for interdisciplinary education and one for reporting audits. The two business gatherings follow a similar pattern of meetings: specialty group, network members, and Executive Group reflecting the 'bottom up' inclusive character of the network (Figure 3).

Each Network should include patient representation in its management arrangements and must provide suitable support for the patients' representatives involved in the management arrangements.

The Scottish Executive Health Department's document *Patient Focus and Public Involvement* sets out the general approach to this subject.¹⁰ A parent and the Chief Executive of the Cleft Lip and Palate Association (CLAPA) support group attend the network members and Executive Group meetings.

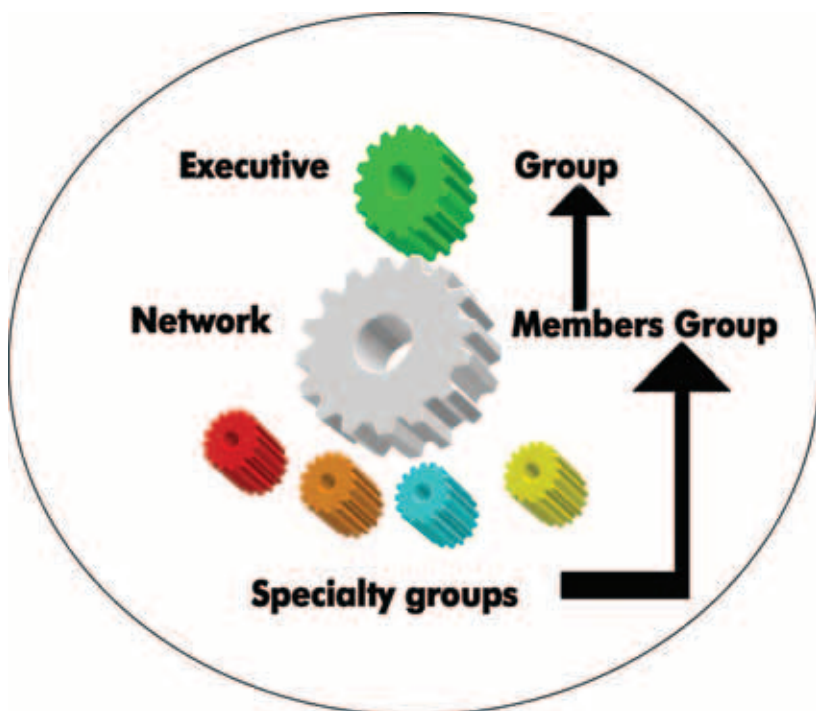


Figure 3. 'Bottom up' structure of CleftSIS.

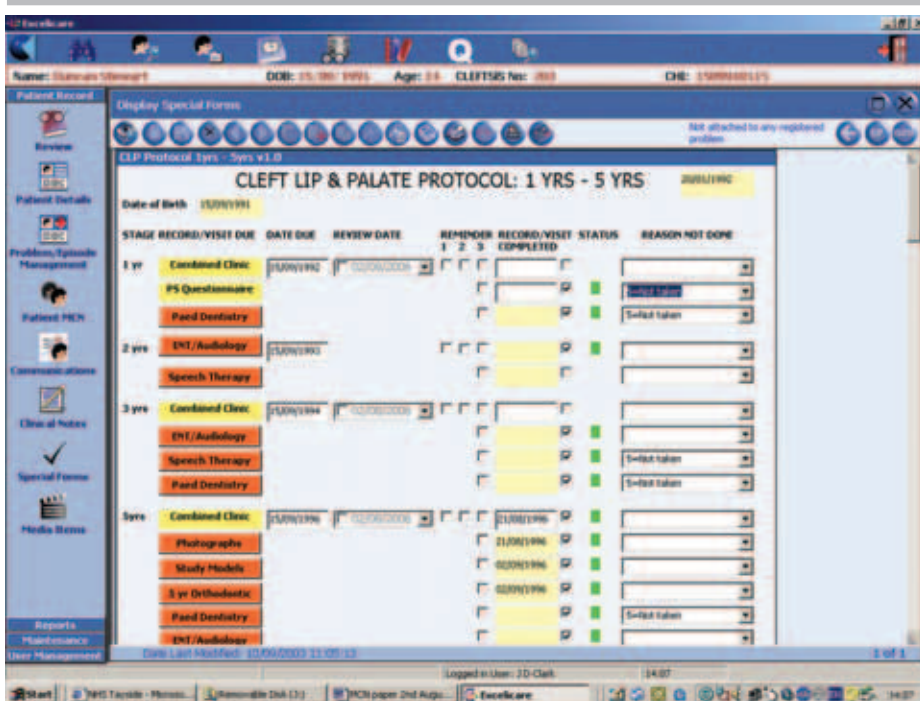


Figure 4. Screen shot from CleftSIS EPR showing care pathway from one to five years.

Service delivery

Each Network must have a defined structure that sets out the points at which the service is to be delivered, and the connections between them.

Figure 2 shows the locations of the surgical sites, combined clinics and treatment centres. The blurring of geographic and specialty boundaries demand that clinically useful information

technology, such as an electronic patient record (EPR), is required to support integrated care pathways (Figure 4), service delivery, and outcome measures (Figure 5). The CleftSIS EPR, based on *Excelicare*TM 11 (Figure 4), provides this support by assigning specific clinicians from each specialty to an individual patient and reminding him/her by an email when a particular action along the care pathway is required and recording when it has been completed. The EPR also allows authorized clinicians to access the records that they are entitled to look at from all the sites shown in Figure 2.

Clinical practice

Evidence base

All the health professionals who make up the Network must indicate their willingness to practice in accordance with the evidence base and with the general principles governing Networks.

Each Network must use a documented evidence base, such as SIGN guidelines where these are available, and must be committed to the expansion of the evidence base through appropriate research and development.

In the absence of a strong evidence base, contemporary UK practice and the best available evidence form the basis of the specialty protocols to guide clinical practice.

Where available, the protocols incorporate guidelines, such as the Scottish Intercollegiate Guidelines Network (SIGN), guideline 47 'Preventing caries in children at high risk'.¹²

Quality assurance

An integral part of each Network must be a quality assurance programme acceptable to NHS Quality Improvement Scotland (QIS).¹³

A Quality Assurance Framework forms the basis of a quality assurance programme to assess the performance of CleftSIS for the Scottish NHS Boards Clinical Governance Committees and the UK Cleft Development Group. The Quality Assurance Framework approved by NHS Quality Improvement Scotland covers seven areas, the first five of which link directly to SEHD core principles. These are:

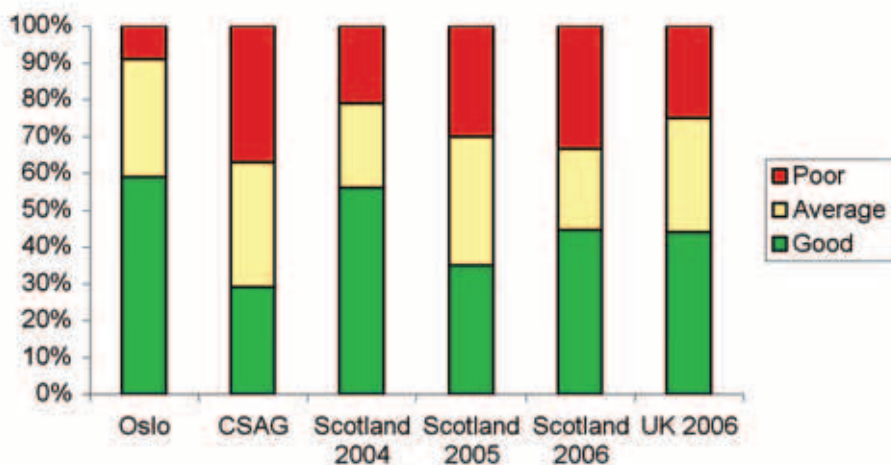


Figure 5. Outcomes at five years of age.

- Management arrangements and accountability;
- Patient and parent/carer information and education;
- Multidisciplinary working;
- Staff education and training;
- Audit, monitoring and research;
- Information management and technology, clinical systems, audit and monitoring;
- The patient's journey.

Each standard has a statement, the rationale for the statement and the criteria used to assess whether CleftSiS meets the standard. For example, Standard 5 'Audit, monitoring and research' there is: A statement:

'Network members must participate in the review of audit results'

The rationale for the statement:

'Audit of the process and outcome of care safeguards standards and provides opportunity to improve on any areas highlighted to be of concern'

The criteria for assessment:

'Agreed core outcome assessments, including those listed in the Clinical Standards Advisory Group (CSAG) report, must be ongoing, reviewed annually and reported. The outcomes of treatment for patients with unilateral cleft lip and palate (UCLP) should

show an improvement on the CSAG report.

Audit

All health professionals in the Network must participate actively in audit and in open review of results.

CleftSiS has a Record and Audit protocol based on the recommendations of the Craniofacial Society of Great Britain and Ireland. All the records are available on the EPR in addition to the study casts and speech tapes, which are stored in a central archive.

Assessments of the surgical outcome of primary surgery and secondary alveolar bone grafting, facial profile, skeletal pattern, and speech for 5- and 10-year-old patients with UCLP form the core audit. This allows comparison with the CSAG baseline and other cleft services in the United Kingdom and beyond, for example Oslo, which is the recognized gold standard in the literature. An annual audit day provides a forum for presenting these results and other audits and provides a good opportunity for interdisciplinary discussion and learning.

Figure 5 shows the outcomes since CleftSiS started in 2000, using the 5-year-old index.¹⁴ This index is a widely accepted reliable outcome measure that systematizes subjective perception and is sensitive to differences between treatment

centres. Trained and calibrated examiners examine anonymized models, and assign a score of 1 (excellent), 2 (good), 3 (fair), 4 (poor), or 5 (very poor). The scores are combined to make three categories; Good (1 and 2), Average (3) and Poor (4 and 5). The results for CleftSiS are better than the CSAG baseline but not as good as those reported by Oslo.

Education

The educational and training potential for Networks should be used to the full, through exchanges between those working in the community and primary care and those working in hospitals or specialist centres.

Each Network should have in place an appropriate programme of continuous professional development for every member of the Network, as well as a mechanism for ensuring the programme is followed.

The programme of continuous professional development is 'network specific' and additional to the continuous professional development in the context of a network member's own specialty. In addition to the annual audit day, an annual education day provides a forum for interdisciplinary education through research presentations, literature reviews and case presentations.

Accountability

Each Network should produce a written annual report to the NHS Board or Boards to which it relates, and that annual report must be available to the public.

Each Network must have a clear policy on the dissemination of information to patients, and the nature of that information.

An annual report is available on the CleftSiS website.¹⁵

Information to patients and their carers is available through a patient information booklet given to parents of every new baby born with a cleft and there is more information on the website.

Movement of staff

All Networks must include arrangements for the movement of staff in ways which improve patient access, and

enable professional skills to be maintained.

This has not been straightforward. The structure and function of CleftSiS extends beyond NHS geographic and organizational boundaries and there is, sometimes, a conflict between the priorities of the network and the operational units that contribute the personnel.

Service improvements and value for money

Each Network must have a clear statement of the specific clinical and service improvements, which patients can expect as a result of the establishment of the Network.

Although it is not possible, as yet, to identify improvements objectively as a result of the establishment of CleftSiS, there is evidence that the EPR and the central archive of study casts has improved record collection and the availability of records for outcome assessments. There is also evidence that the outcomes at 5 years of age are better than the CSAG average.

There must be evidence that the potential for Networks to generate better value for money has been explored.

To do this is easier than to say it! The emergent and unexpected effects of Networks will require managers to develop new skills and new ways of performance management which focus less on activity-based measures, such as waiting times, and more on processes, such as communication between care providers, access to care, transition between healthcare professionals contributing to care, and also outcomes and quality of information.

Summary

If clinical networks are to improve patient care, they have to be more than a loose alliance of disparate parts, and there must be a process in place to formalize informal networks. The SEHD core principles provide an example. However, success also depends on the collective mind-set of the members. Distrustful attitudes that devalue others and force individual agendas to remain hidden will quickly destroy the benefits that a Network can bring to patient care. For this reason, there also needs to be a shared vision of how and where services are to develop; a history of strong (and good) relationships and a high level of trust between participants; a reasonable balance of power between members and a leadership style based on nurturing relationships.

Acknowledgements

I acknowledge, with appreciation, the input of all members of CleftSiS who have made their own unique contribution to the development and ongoing evolution of the network. In particular, I would like to thank Trudie McDonald, the Network Manager, who has played an important part in the success of CleftSiS by way of her hard work and ongoing support for all network members.

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Abstract

DO YOU REALLY BELIEVE IN PREVENTIVE DENTISTRY? Remineralization of primary root caries lesions using an amine fluoride rinse and dentifrice twice a day. LG Petersson, U Hakestam, A Baigi, E Lynch. *American Journal of Dentistry* 2007; **20**: 93–96.

This work examined the clinical effect of daily use of a toothpaste and a mouthrinse containing amine fluoride on primary root caries lesions (PRCL) in an adult caries risk

group. Both groups of 50 subjects used a standard fluoride toothpaste but only one used the amine fluoride mouthrinse, the others using a placebo. At the start of the project 420 PRCL were recorded as either soft or leathery using an electric caries monitor. The lesions were monitored every three months.

After twelve months there was a statistically significant difference between the two groups, both in caries reduction and decrease in sensitivity. In the experimental

group the number of 'soft' PRCL decreased from 74% at baseline to 11%, compared with 74% to 46% in the other group. After 12 months, 67% of the PRCL had become hard in the experimental group compared to only 7% in the other.

Dramatic proof that proper preventive measures drastically reduce the need for operative intervention.

Peter Carrotte
Glasgow Dental School