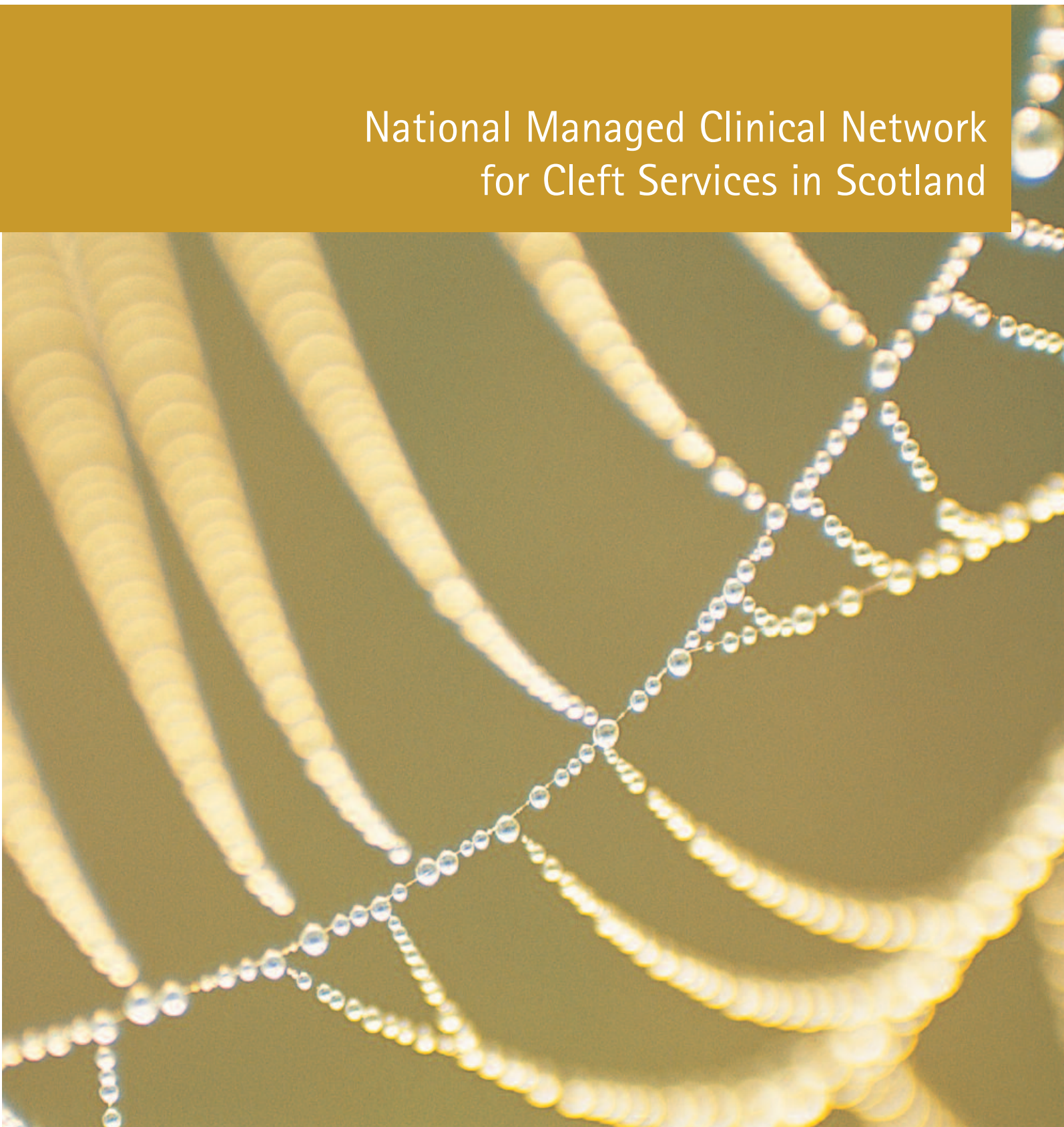




National Managed Clinical Network for Cleft Services in Scotland



Excelicare is a powerful toolset-based application that allows the creation of highly tailored clinical systems to reflect the complex working patterns of clinicians across the healthcare spectrum. It incorporates advanced telecommunication, multi-media and decision support technologies within a clinician-friendly Electronic Patient Record (EPR) framework. Currently in use in several sites across the NHS in Scotland and England, it provides support to clinicians in diverse areas of care.

Implementations span complex cancer care across a region-wide network, remote monitoring of COPD patients living at home, to blood pressure, diabetes and colposcopy clinics, demonstrating its wide and varied scope of use. In December 2005, Excelicare was chosen as the National Generic Clinical System for the NHS in Scotland.



In April 2000 the National Managed Clinical Network for Cleft Lip and Palate was set up to bring together all the different health professionals in Scotland who are involved in providing care for patients between 0 and 20 years of age who have cleft lip and/or palate (CLP). The network became known as CleftSiS (Cleft Service in Scotland) and its objective was to provide interdisciplinary care for patients with CLP, as far as possible within their own locality, whilst adhering to nationally agreed standards and guidelines and to monitor standards of care against established international norms.

Tayside University Hospitals NHS Trust was set up as the lead Trust with the responsibility to coordinate and support the work of CleftSiS across Scotland. Its remit was to ensure that information about the care and treatment of CLP patients was drawn together from all regions including details about surgery, speech and hearing management and feedback from patients, parents and carers.

To support this function and improve the collation and monitoring of patient information the need for the development and implementation of a user-friendly Electronic Patient Record (EPR) became apparent and in 2000 the AxSys Technology Excelicare product was chosen as the solution on which the CleftSiS EPR would be based.

Background to CleftSiS

The treatment of CLP patients was characterised by the fact that there were many surgeons and other specialists dealing with a relatively small number of patients. The problems associated with this were identified by the Clinical Standards Advisory Group and subsequent Scottish Needs Assessment (SNAP) Report, which made

recommendations for change. As a result the National Managed Clinical Network (NMCN) for Cleft Lip and Palate was established.

CleftSiS comprises many clinical disciplines and other associated healthcare professionals working in primary and secondary care organisations across Scotland. As care of CLP patients extends from birth until 20 years, throughout this time there must be close co-operation between many clinicians in order to integrate treatment and ensure the best possible outcome.

At the time when CleftSiS was set up the communication within the network was unsatisfactory and could not support the communication required to maintain the standard of care that had become obligatory. Also, adherence to internationally agreed clinical standards, embodied in clinical governance could not be achieved under the existing fragmented record system.

"Before the development of the EPR, with over 90 clinicians working across Scotland, it was a slow and laborious task to collate records for audit and to have a cohesive record of care

accessible at all sites. We needed a solution that would overcome all of these difficulties and let clinicians access clinical notes from wherever they were working," commented John Clark, Consultant Orthodontist and CleftSiS EPR Project Team Leader.

The Pilot for CleftSiS Electronic Patient Record CleftSiS needed a solution that would deliver an EPR which could:

- > Provide a single record for a patient
- > Accommodate media items including 2 and 3D images, radiographs, video and sound
- > Generate email and letter alerts to remind clinicians of their particular responsibility at specific times during a patients care pathway
- > Support and facilitate audit and outcome assessment.

A pilot project was set up and funded by the Scottish Telemedicine Action Forum and was driven by Lead Clinician John Clark and Network Manager Trudie McDonald. AxSys Technology was selected to provide Excelicare as the EPR and collaborative care system.

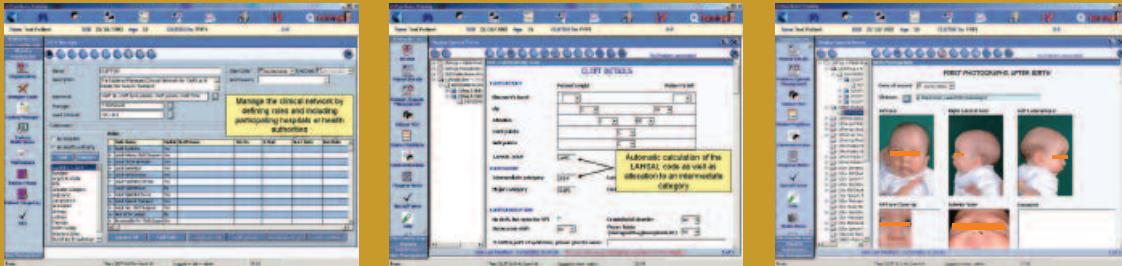
"AxSys was clearly the front runner. With many of their staff having worked at the 'coal face' of clinical care they were aware of our needs, understood the concept of clinical records, what they should include and what they should look like," stated John Clark.

A fundamental aspect of improving the delivery of patient care is the facilitation of multidisciplinary collaboration and the effective sharing of information. The Collaborative Care model, which also involves patients in their own self-care, is widely recognised as a method of delivering consistent, high quality healthcare resulting in improved outcomes for patients.

AxSys Technology, the organisation behind Excelicare, was set up by experienced doctors who recognised the benefits of the Collaborative Care model in their own clinical practice and realised that a flexible communication oriented clinical information system

would be a key element in its successful delivery. The provision of smart tools to deliver the right information at the right time and place to the right people was felt to be as important as the face-to-face encounter in the traditional healthcare model.

Excelicare was conceived as a solution for Collaborative Care and its underlying architecture has been designed to support this new mode of healthcare delivery. It is also underpinned by standards in data management and has the ability to integrate effectively with existing healthcare IT systems.



The aims of the pilot project were to develop with AxSys an audit tool for the MCN including an EPR, which would link 5 sites, Perth (the Administrative Centre), Aberdeen, Edinburgh, Glasgow and Inverness.

"We had to crawl before we could walk," commented John Clark. "This was revolutionary stuff for the NHS. You have to remember that technology has come a long way. Something that seems relatively easy to implement today, 5 years ago it was more difficult so we had to adopt a piecemeal approach to introducing the EPR and MCN management module. AxSys worked with us though. They understood the problems, issues and complexities of introducing new technology into the NHS. Before implementation we undertook a period of detailed consultation to enable AxSys to incorporate the necessary CLP care pathway details."

It took over a year for the development and testing of the EPR and installation into the five sites then a further two years for the training, piloting, evaluation and modification of the system. To date the EPR is now networked across nine combined cleft clinical sites and 22 other clinic/treatment sites and contains records on over 1400 patients.

How the Solution is Working

The Excelicare server was set up at Perth Royal Infirmary, the national centre for CleftSiS and provides the platform for the

CleftSiS MCN. All external sites are linked to the Perth Centre providing clinical and administrative staff access to a single database containing patient records. Currently patients from all over Scotland refer into the main surgical sites of Aberdeen, Glasgow and Edinburgh for their surgery, but they attend multidisciplinary clinics and treatment centres as near to their home as possible.

Covering such a wide diversity of disciplines over such a dispersed region, the Excelicare multidisciplinary care record has been developed specifically to accommodate the special requirements of the CleftSiS MCN. In particular, Excelicare has been developed to incorporate a system of user friendly and clinically familiar folders for the storage and review of all clinical documents and multimedia items, including X-rays, DICOM 3D images, audio and video. The extensive Form, Chart and Document Designer Toolkits and the Form Library provide comprehensive EPR functionality with the ability to capture, store, send, receive and merge clinical data into patient folders. Excelicare was developed with a clinician friendly interface that is consistent and easy to use and was designed to retain the familiar organisation of paper records.

Now there are over 100 users of the system from all clinical specialities. The system is also used by management and administrative staff, IT and other support services such as medical photographers. In the future,

it should be possible for patients to access their own record.

"The beauty of Excelicare is that it contains an access control feature which allows authorised clinical users to set privileges regarding who can see an individuals' patient record. This allows clinicians to restrict access," comments Trudie McDonald. "This provides an added protection for patient confidentiality and control for me as Network Manger in terms of monitoring who uses the system, when it is used and which records have been accessed."

Results and Benefits

Communication between clinicians has improved significantly and has helped reduce delays in treatment. As part of Clinical Governance procedures, the monitoring of Standards of Care against established UK and European standards has become easier and now that clinical notes and records are collated in one central record analysis and assessment of patient outcome can be made.

Excelicare has also helped to overcome many of the complexities previously involved in maintaining a cohesive and agreed record of care by embedding the treatment and record protocol for each cleft type and alerting specific clinicians by email when certain actions and records must be completed.



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"We now have a robust and useful tool which is improving the interdisciplinary treatment planning and care which we give to CLP patients. Use of the EPR has resulted in a more effective use of clinicians' time as well as the patients and their parents and carers. The improvement in the organisation of clinics and coordination with the various specialities involved has led to a reduction in the burden of care for the patient," commented John Clark.

Trudie McDonald added: *"CleftSiS now has a secure, patient-centred EPR that delivers seamlessly integrated technology hidden from clinical users. It has minimised the risk of data fragmentation over multiple sites, reduced cost, time and effort incurred by offline data entry and replication, and provides clinicians access to the relevant data anytime and anywhere they need it. Having a clinical audit trail has made a big difference. Patients cleft records are now accessible in one place and we can now produce facts, figures, and data analysis for each clinical speciality and for our Annual Report."*

The Future

"CleftSiS has come a long way in the six years it has been in operation. The original aim of the Network was to co-ordinate and optimise care and outcomes through standard setting and audit for all patients with cleft lip and/or palate in Scotland. There is no doubt that the establishment of an EPR has provided the foundation upon which these objectives can be achieved. The availability of accurate clinical records has acted as a driver for change, but this development is only the tip of the iceberg," stated John Clark.

"There is still so much more functionality to Excelicare that is yet to be exploited and it will take a further two to three years to realise. AxSys are committed to helping us achieve this. We are no longer crawling but now are walking and our rate of progress is getting faster. There is still much to be done in terms of education of users and we still need to develop closer integration between the core specialities that exist within the 14 health boards."

"Our goal is to deliver a joined up service and the continued development of the CleftSiS MCN is a fundamental part of achieving this objective."