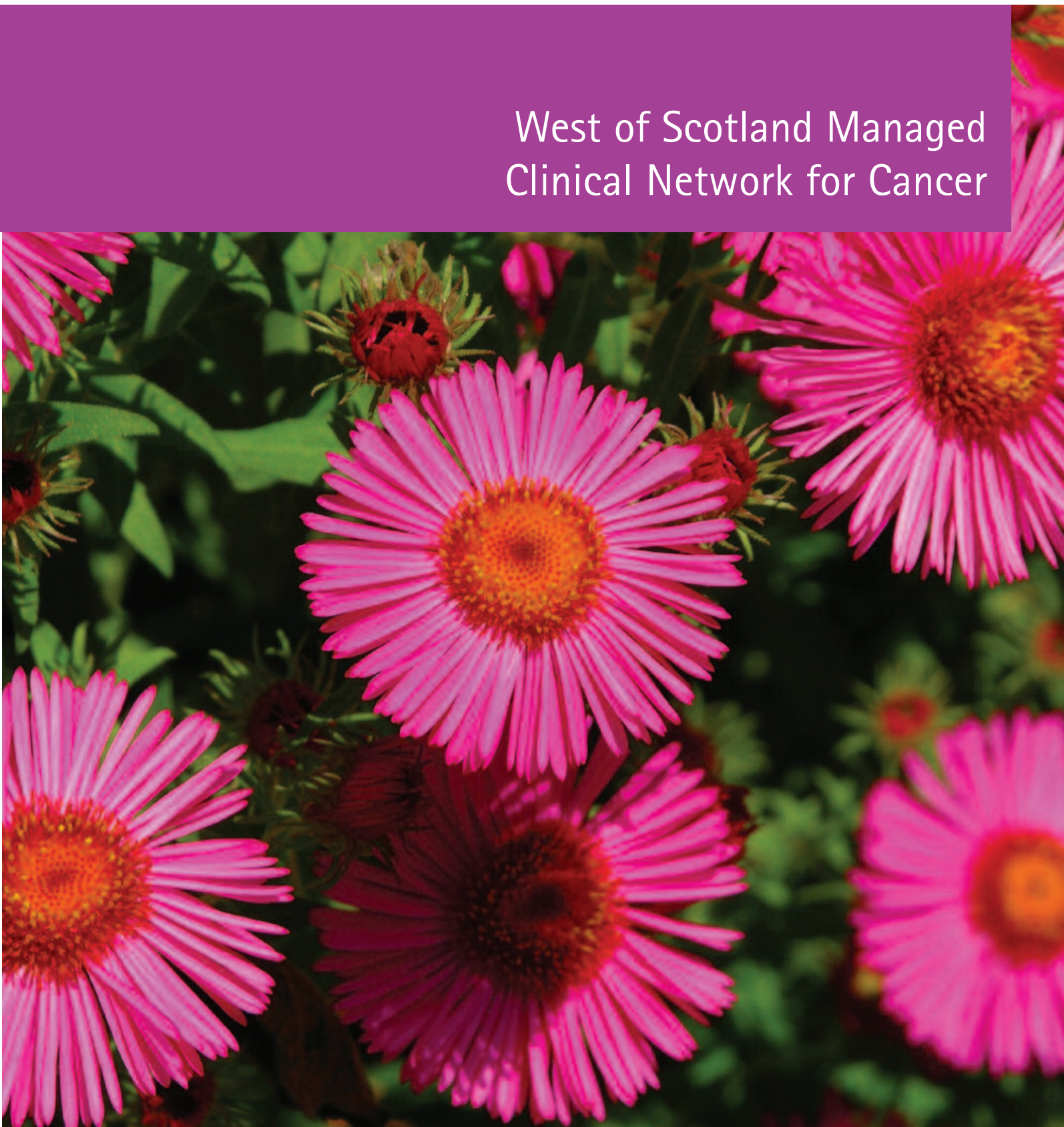




West of Scotland Managed Clinical Network for Cancer



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.



The West of Scotland Managed Clinical Network for Cancer was established in 2000. It was born out of the desire to create a dedicated network of oncology professionals to ensure that patients received the highest standards of care through expert investigation and treatment no matter where they lived within the region. The Gynaecological Cancer Network was the first Network to be created by the West of Scotland Health Boards covering cancer groups across Ayrshire and Arran, Lanarkshire, Argyll and Clyde, Forth Valley and Greater Glasgow, servicing a population of 2.7 million.

An initial aim of the network was to enhance the referral system for specialist opinion and treatment encouraging a multidisciplinary approach to decision making. It was developed to encourage clinicians to discuss and debate the care and treatment of patients through creation of a multidisciplinary diagnostic and treatment team.

The objectives of the Managed Clinical Network (MCN) project were:

- > To integrate all cancer settings across the West of Scotland
- > To have the patient at the core of the system
- > To implement care pathway protocols in conjunction with National datasets
- > To incorporate multidisciplinary team (MDT) meetings within the care pathway.

To facilitate the creation of the Network a Clinical Information and Image Management System (CIIMS) was required and the Excelicare solution from AxSys Technology was chosen as the software platform to be installed at various hospital sites throughout the West of Scotland.

The Beginnings of the Network

The initial Gynaecological Cancer Network project was driven by lead clinician and Consultant Gynaecological Surgeon Dr Jonathan Davis and Consultant Clinical Oncologist Dr Nick Reed. The concept of MDT meetings was not new as clinicians from the region had already been meeting on an informal basis once a week at one of the hospital sites. This had been set up on an ad hoc basis with no formal protocols or standardisation and was not inclusive of all patients.

Later the MDT meetings later became more formalised and the Beatson Oncology Centre was established as the official site. More participants were encouraged to take part and work from a single database. However, the current IT network could not support the volume of data and as the network covered such a wide region it was impossible for many clinicians to attend.

"Although we had useful clinical discussions what we did not have was an efficient means of recording what was agreed and decided about the patient treatment plan nor the subsequent action to be taken," commented Dr Jonathan Davis.

The Pilot Programme

To overcome these issues the Gynaecological Managed Clinical Network Telemedicine Project Group was set up with the objectives to:

- > Establish a clinical meeting using video conferencing
- > Provide a secure clinical information system to record the patient history and store clinical information and medical images
- > Establish robust data sets to facilitate audit processes
- > Provide means of informing primary, secondary and tertiary care teams of ongoing cancer care.

The project started in August 2000 and was funded by the Scottish Telemedicine Action Forum. It was a three year programme in which the Gynaecological MCN was chosen to implement the concept of the Managed Clinical Network and pilot the application of modern information technology and networked information systems. A project team was selected to drive the programme and develop a systematic approach to finding a solution and regular meetings were held to look at the IT hardware requirements of each of the regional health boards and to advise on the software support. The project phasing consisted of implementation of video conferencing facilities to establish a virtual MDT meeting room and the selection and implementation of the CIIMS.

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 Solution

The Excelicare solution was chosen as the CIIMS to support the West of Scotland MCN for Gynaecological Cancer only after rigorous evaluation of the competitive tenders. The plan was for Excelicare to initially provide a clinical information system for the Gynaecological Network with the longer term objective to incorporate other cancer networks.

The Gynaecology Oncology MDT meeting was set up at The Beatson Oncology Centre. To provide a link to the Centre and give clinicians access to a single database, the Excelicare platform was installed at the following sites:

- > The Beatson Oncology Centre Glasgow
- > Crosshouse Hospital, Kilmarnock
- > Inverclyde Royal Hospital, Greenock
- > Initially at Falkirk Royal Infirmary, but recently transferred to Stirling Royal Infirmary
- > Hairmyres Hospital, East Kilbride
- > And more recently at the Royal Alexandra Hospital, Paisley.

"AxSys was the favoured choice as Excelicare could provide the functionality that we required and the fact that they understood our needs was key. I think this is a reflection of the fact that the developers of Excelicare have clinical backgrounds which was a

fundamental advantage during the consultation period. Excelicare offered us a highly tailored solution and AxSys were responsive and dealt with problems as they arose. It was refreshing to work with a technology company that could provide such an approach," commented Dr Jonathan Davis.

The module set up for the Network was developed using Excelicare's Designer Toolkit. This has resulted in a comprehensive system that enables the gathering of clinical data from various sources including existing laboratory, radiology, patient administration, chemotherapy and radiotherapy and follow-up care systems. Also information on clinical referrals, clinical reviews and courses of treatment can be captured which will result in the delivery of a core patient record which can be shared between all clinicians during MDT meetings. The system also generates summary documents and letters with patient information as well as a range of reports from management processes.

Each Hospital has several access points that can communicate with Excelicare so that clinicians can access MDT meeting records of patients from multiple sites, both within their own hospitals and on remote sites. These access points can be expanded limitlessly.

Dr Jonathan Davis further added: *"As all our treatment decisions are based on evidence based practice, AxSys have fully appreciated the clinical requirements for sharing of images and data. They have provided us with*

insight into the technical requirements, existing NHS IT infrastructure and provide a support team who have encouraged staff to embrace this new exciting method of working. Excelicare forms an essential part of the MDT meeting process."

MDT Meetings – How They Work

Excelicare was developed as a key component of the weekly video conferencing MDT meetings which are held every Wednesday morning. Specialists including oncologists, gynaecological consultants, pathologists, radiologists and nurses participate from the five hospitals and link into the Beatson Oncology Centre. The conference is controlled by a multidisciplinary team manager who ensures that all patient details have been collated and are ready for presentation at the meeting. Excelicare manages the creation of lists of patients to be discussed each week and automates the process of sending these lists to all clinicians. Each patient's details are displayed on a screen enabling the clinician representing the patient to present the case. Participants are then able to review and discuss a treatment plan and agree appointment dates. All patient MDT meeting notes can be updated and recorded real time during the conference and generate and send automated patient summary reports after each MDT meeting. All these notes are then filed securely within Excelicare.

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"Having recorded notes for each patient has removed the chance of any miscommunication. What is agreed at the meeting becomes an official part of the record," comments Dr Jonathan Davis. "Also having the ability to see images, rather than just receiving a written report has enabled opinions to be challenged so the best course of treatment can be decided."

Benefits for the Patient and Clinical Team

The real-time IT support for the MDT meeting process has brought numerous benefits not only to the patient but also to the clinicians and medical staff throughout the region who are now able to collaborate in the care of patients by sharing of information across the network.

The MDT can now discuss individual cases without extensive travelling meaning that patients are referred and seen without delay. Patients are guaranteed that they will receive specialist review regardless of geography and that all clinicians involved in their care participate in establishing and reviewing their care plans. Also the speed of delivery of the treatment plan has improved as all relevant information such as laboratory reports and pathology is recorded and collated through one central system. Clinicians have benefited from the sharing of knowledge through the cross speciality discussions and the meetings also provide an excellent training ground for junior doctors and other clinical staff who attend.

By using Excelicare the quality of data recorded has improved and having patient data in one central source has resulted in an improved audit trail which has introduced standardisation and accountability for the team and for the patient.

"The weekly conference has meant that all clinical staff have had to raise their game. With an enforced weekly deadline it is the responsibility of each member of the MDT to deliver necessary information about the patient so it can be discussed," comments Dr Jonathan Davis. "We also give a guarantee to the patient that their case is discussed by a team of multidisciplinary experts."

The Future

The development of the West of Scotland MCN for Gynaecological Cancer has been successful and the roll out of the MDT process across the region represents potential steps towards a Scottish Cancer Electronic Patient Record.

Dr Jonathan Davis states: *"Now that the MDT meeting and its audit systems have been running for five years the data stored within Excelicare contains clinical details on several thousand patients. We are now starting to interrogate this information and use it for research into the consistency and effectiveness of patient treatment plans and the incidences of different types of cancers. It will help us to look at ways to improve cancer treatment outcomes and implement care pathways within national datasets."*

"Working towards a cancer EPR is the exciting factor of this project and its continuing success will be down to the continued support and ingenuity of individuals who are driving such projects within the Scottish NHS and the implementation of innovative technology such as that provided by AxSys."