

changing the way healthcare **coN**nects



Medical Centre Leeuwarden

Friesland, the Netherlands

Contacts **Matty Lautenbach**

MCL Cardiology head Cardiac Catheterization
Matty.Lautenbach@znb.nl

Ir. Theodoor de Bruin

MCL Project Manager IT Cardiology
Theodoor.de.Bruin@znb.nl

BENEFITS OF THE PROJECT

Physicians treating patients suffering from cardiac disease in the Friesland region of the Netherlands can rapidly access a full record of the patient's history and consult in real time with specialists at regional medical centers to determine the best treatment. The cardiology network provides the physician with a more complete view of the patient as it includes clinical information, treatment histories and diagnostic-quality images.

The Friesland Regional Cardiology Network speeds up the referral process, improves both diagnosis and the clinical decision process, and on average reduces by one or two days the length-of-stay for patients in hospitals. From their office workstations, cardiologists are able to consult the advanced clinical images provided by any hospital linked to the network. The distributed storage of records eliminates the duplication of records across multiple sites. Once uploaded to the cardiology network, records remain available for consultation at any time so that previous episodes of a patient's care can be consulted in detail no matter where the care was provided in the region.

THE APPROACH

After extensive research the MCL made the choice in principle at the end of 2007 for the Cross-enterprise Document Sharing for Imaging developed by Integrating the Healthcare Enterprise (IHE XDS-I). The project was divided into three phases. The initial stage, successfully completed within six months, was a Proof of Concept calling for an exchange of data between the cardiology systems at MCL and the Nij Smellinghe hospital in Drachten using the XDS-I profile. The second phase, during which technical and functional improvements were made, established a link between the hospitals and clinical practices. The third and final phase, during which other hospitals in the region were linked to the cardiology network for clinical information exchange, was successfully completed during the course of 2009.



THE CHALLENGES

Cardiologists in the region typically refer their patients with an indication for percutaneous coronary intervention or open-heart surgery to the Medical Centre Leeuwarden (MCL). The patient records and images were exchanged by traditional methods, such as on compact discs sent by courier, or as attachments to emails, or by fax. In order to improve the quality and speed of these referrals, the MCL wants to offer the referring cardiologist the possibility to send clinical information digitally to the MCL, without the need for drastic changes in their work methods or the purchase of new equipment.

ABOUT MEDICAL CENTRE LEEUWARDEN

With 990 beds and 2,900 employees, the Medical Centre Leeuwarden is the leading hospital for advanced clinical practice in Friesland and is the largest non-university teaching hospital in the Netherlands. MCL has expertise in neurology, oncology and specialized surgeries. Established as a center of excellence in 2004 the Heart Centre for intervention cardiology and thorax surgery at MCL performs more than 1,450 percutaneous coronary interventions and over 750 open-heart surgeries each year. MCL performs more than 1,450 percutaneous coronary interventions, 750 open-heart surgeries, 2,100 coronary angiographies, and 40 percutaneous aortic valve replacements each year. MCL implements more than 200 pacemakers and 100 ICD's per year.

Adapting legacy systems and image archives to the integration profiles required for IHE XDS-I was achieved using products developed by Forcare B.V. in Zeist.

Patient identification presented a significant challenge to implementation. Hospitals had not yet adopted the Dutch Citizen Service Numbers (BSN), so that a temporary solution was chosen whereby participating hospitals could continue to use their own patient identification numbers. Following the introduction of the BSN in 2009, the hospitals have since successfully made the transition from local patient identifiers to the Dutch national system.

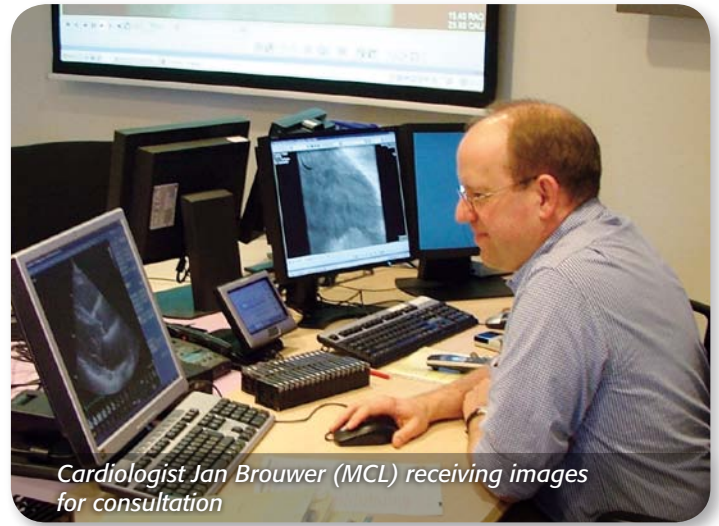
Recognizing the success of the IHE XDS-I implementation, expansion to other IHE domains, for example for radiology, is being considered by the hospitals.

IHE-EUROPE aisbl

Diamant Building, Bd A. Reyerslaan 80, 1030 Brussels - Belgium / Tel.: +32 (0)2 706 89 60 / Fax: +32 (0)2 706 89 69
www.ihe-europe.net / office@ihe-europe.net / ING 375-1009171-62 / VAT BE 0898.675.997 RLP Brussels



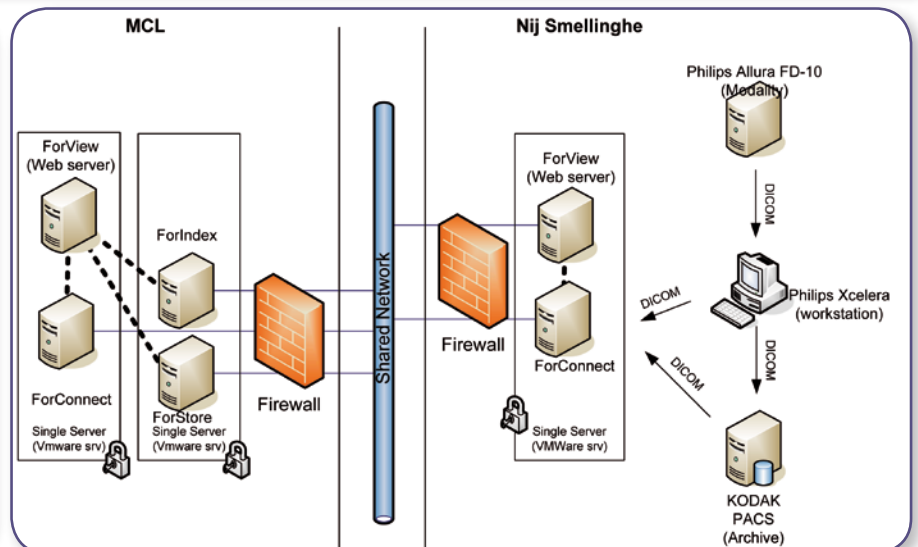
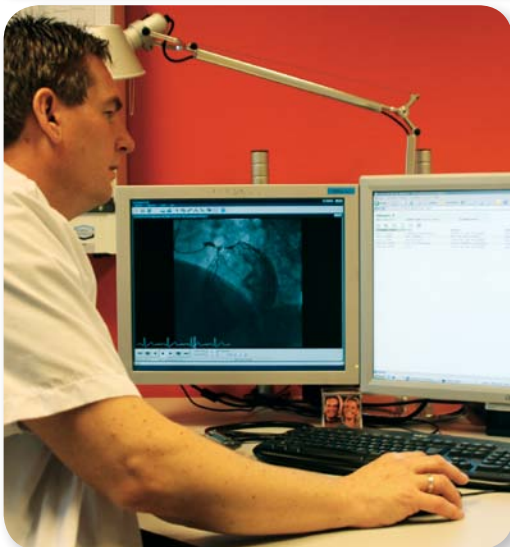
Cardiologist Marcel van der Linde (Nij Smellinghe hospital, Drachten) sending images for consultation or «publishing»



Cardiologist Jan Brouwer (MCL) receiving images for consultation

IHE Transaction Table, Cardiology Network Friesland

Integration Profile	System / vendor	IHE Actor	IHE Transaction	New or Upgrade
XDS(-I), XUA, PDQ	forIndex /Forcare	XDS document registry PDQ supplier X-Service Provider	Register Document Set Query Documents Provide X-user assertion	New
XDS(-I), XUA	forStore/Forcare	XDS document repository X-Service User/Provider	Register Document Set Retrieve Documents Provide X-user assertion	New
XDS(-I), XUA, PDQ	forView/Forcare	XDS document consumer PDQ/PIX consumer X-Service User	Query Documents Retrieve Documents Provide X-user assertion	New
XDS(-I) , XUA	EasyAccess/Philips Xcelera/Philips Impax 5.x/Agfa CareStream PACS Centricity Archive/GE Healthcare -> XDS enabled through forConnect/Forcare	XDS document Source/Consumer X-Service User	Provide and Register Document Set Query Documents Retrieve Documents Provide X-user assertion PIX Query	Upgrade
PIX	Rhapsody/Orion Health	PIX Server	PIX Query Provide X-user assertion	Upgrade
PIX	Comez/Chipsoft	PIX Server	PIX Query Provide X-user assertion	Upgrade



IHE-EUROPE MEMBERS:

IHE-Europe National Initiatives:	IHE-Austria / IHE-France / IHE-Germany / IHE-Italy / IHE-Netherlands / IHE-Spain / IHE-United Kingdom
IHE-Europe User Members:	EAHP / ESR / SFR
IHE-Europe Vendor Members:	Agfa Healthcare / COCIR / ETIAM / GE Healthcare / Siemens AG Healthcare Sector
IHE-Europe Scientific Organisation:	INRIA