Volume 10 - Issue 2, 2010 - Cover Story

E-Health in the United Kingdom

The National Programme for IT (NPFIT) was set up in England in 2002. Millions of pounds of ring-fenced money were promised for the delivery of an integrated health record for the NHS (National Health Service). An organisation called "Connecting for Health" (CFH) was created to deliver this promise. The country was divided into five clusters and companies (called Local Service Providers or LSPs) bid for multi- million pound central contracts. There was slow progress on the development of a nationwide Electronic Health Record (EHR). The emphasis shifted to PACS in 2003/4, as PACS was already a tried and tested global technology.

Initial Implementation Stages

NPFIT promised a totally seamless patient-centric image sharing system between NHS organisations. CFH put their faith into the ability of the involved companies (LSPs) to deliver this, without a clear understanding of the underlying technology involved. There was no emphasis put on standards. The programme did succeed in producing a wave of rapid PACS implementations throughout England. By the end of 2007, England was largely covered with local PACS implementations. The PACS was deployed at a higher cost due to LSPs acting as intermediaries rather than sourcing them directly from dedicated PACS suppliers.

The architectural design for PACS was for a short-term local archive with a large central archive, called Central Data Store or CDS. It was thought by the user community that with a central data store, all the exams relevant to a patient would be visible to a doctor sat in any hospital.

However, what was delivered, were local PACS solutions with little connectivity between different hospital Trusts for image sharing. In the eyes of many, the NPFIT and CFH failed in its main manifesto, which was to provide a patientcentric integrated health record that was not bound by NHS organisational boundaries.

Interoperability Proves a Stumbling Block

The two main causative factors for this failure to deliver were:

1. The failure of the programme to deliver a robust English unique identifier known as the "NHS number". Other local unique identifiers continued to exist in secondary care NHS Trusts and GP surgeries. Even today, we do not have a real-time, 100 percent NHS number for everyone.
2. Strategic failure to insist on global interoperability standards within contracts with LSPS.

The contract with LSPS resulted in single-supplier monopolies for PACS, and every element of Electronic Patient Record. Lack of standards for interoperability was a very lucrative business for LSPs as they had monopoly for every clinical system without interoperability. This type of top-down approach from CFH and LSPs created a lot of resentment within the user community and towards the LSPs and CFH.

The situation today is that although digital images and PACS have replaced hard copy film in England, manual processes like CD transfer and DICOM push are required for images to follow patient care between NHS organisations. Furthermore, even today a doctor in Hospital A is unaware of all the radiology investigations that a patient may have had in Hospital B or C. Hence, we are nowhere near the integrated health record that was promised by NPFIT.

Will IHE Solve Interoperability Challenge?

The PACS user community in the UK (The UK PACS and Teleradiology Group, a special interest group of the Royal College of Radiologists) has been lobbying for a change in strategic direction for PACS and clinical IT. They have been suggesting the use of XDS (Cross Enterprise Document Sharing) and XDS-I (Cross Enterprise Document Sharing for Imaging) as the emerging global interoperability standard, which will allow for a patient-centric health record based on a multi-vendor environment.

XDS is a standard defined by IHE (Integrating the Healthcare Enterprise), a global enterprise that sets interoperability standards. XDS adopts an indexing model. All clinical IT systems will index clinical documents and images to a registry. The UK PACS and Teleradiology Group believe that having a multi-vendor market based on interoperability standards will increase competition, increase innovation and reduce prices for PACS and other IT solutions for NHS.

Update From Wales

The approach to PACS in Wales was very different to that implemented in England. In Wales, Trusts have been able to choose their PACS systems. They have local PACS systems that are bought in open competition. Hence, there is a multi-vendor environment for PACS in Wales. Their focus too has moved to an integrated health record. They too rely on manual processes like CDs and DICOM push to transport images from one NHS Trust to another.

However, they are looking at a more automated strategic solution to support seamless image sharing. Currently they are piloting the XDS-I project (using an indexing model rather than pushing data around) in order to provide a proof of concept for an integrated patient-centric imaging

record in a multi-vendor environment.

Update From Scotland

Scotland decided to go for a single PACS solution. Scotland has had some success with image sharing. However, this is not a seamless process, despite having a single PACS vendor and a single central PACS archive. Some of the success of image sharing between NHS organisations in Scotland is due to their Community Health Index (CHI) number functionality and usage being superior to the NHS number used in England and Wales. There is 100 percent CHI number availability within Scotland.

Update From Northern Ireland

Northern Ireland too went for a single supplier PACS, bought directly from the supplier. However, in order to implement Image and Report Sharing with Trusts with an existing PACS solution they are looking at XDS methodology of indexing data with their main supplier. The success of the initiatives in vendor neutral image and report sharing started in Wales and Northern Ireland will influence the strategic direction for the whole of UK.

Published on : Sun, 10 Oct 2010