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Catalan Medical Image Repository for Physicians and Citizens

The Catalan Healthcare System

The Health Department (HD) has responsibility to draw up the health policies, ensure the system's sustainability and oversee the quality of services. It has the legal authority to authorise, inspect and also close down activities and centres, both from the public and the private system. Furthermore, it has the functions of planning health and services policies.

One of the challenges for the HD was the existence for most healthcare suppliers of a fragmented Information System (IS) due to healthcare system diversification (56 providers, each with different IS). A system that could process multiple sources of information efficiently and effectively was urgently required.

As a result, ICT became an strategic component of the Catalan healthcare system.

Digitalisation of Medical Imaging Plan

The main objective of the digitalisation of medical imaging plan is to provide access from any point of the network to any medical image anywhere at any time.

It enables health centres to have a secure backup system of medical images (Bi), while it storages all the radiological images in the same database.

Technological Functionality:

- Servers and disks booths at 150 TB per year for radiological images;
- To facilitate the backup of medical imaging for health centres of the public system;
- Independent supplier of PACS;
- The centre needs network connectivity: Anella TicSalut, and
- No cost for health centres.

Current Situation:

- A 200 TB storage infrastructure is available;
- Went into production November 1, 2009;
- Currently there are 20 production centres with approximately 40 TB storage and two milions studies available, and
- By the end of 2011, an expected 100 percent of health centres will have the technology available.

Integration of Digital Imaging with the Shared Medical Record

It allows the distribution of citizen's medical images through the HC3 and for sharing medical images between health centres.

Healthcare Functionality:

- SW Platform to integrate backup images with the Shared Medical Record of Catalonia - HC3;
- CDA radiology report is improved;
- Independent manufacturer of PACS and RIS, and
- Access to images is available through the HC3.

Current Situation:

This phase of deployment is moving forward after functioning for two months:

- Two centres publishing medical images at HC3,
- 5,000 studies published monthly.

Importance of Technology

A unique model of proven interoperability and standards rather than a unique information system allows interconnection among the developed systems and initiatives, even when they are promoted by different stakeholders. This also allows the RCIM system to easily connect with other information systems developed in Catalonia, based on the same principles:

- HL7 standard for medical data exchange;
- DICOM standard for medical images exchange, and
- IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical needs in support of optimal patient care.

Benefits of RCIM

RCIM enables health centres to have a secure backup system of medical images (Bi), while it stores all the radiological images in the same database. It also allows the integration of the digitalised image in the Shared Medical Record of Catalonia (i-HC3), which will serve as the basis for distributing citizen's medical images through the HC3 and for sharing medical images between health centres. Further, the Catalan Medical Image Repository facilitates the creation of advanced telemedicine services networks (PAi) and the RCIM images integrated in the Shared Electronic Medical Record of Catalonia will provide a centralised computer- aided diagnosis (CAD).

Conclusion

Despite some challenges in ensuring that all projects for medical digitisation satisfy interoperability requirements, and as such, receive HD funds; by August 2010, 95 percent of radiological images have been digitalised, with most area facilities participating. The HD is continuing to work towards the provision of funds to all centres that require network connectivity to the "Anella TICSalut".

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