



Sharing Medical Images



Improved imaging devices and adoption of PACS in hospitals has dramatically improved the ability to digitally share medical image studies via portable storage, mobile devices and the Internet. However, many of these systems are proprietary vendor-specific applications. In addition there are still interoperability and deployment issues which reduce the rate of adoption of such technologies, thus leaving many stakeholders, particularly outpatients and referring physicians, with access to only traditional still images with no ability to view or interpret the data in full.

In a paper [published in Health Information Science and Systems](#), researchers from Sydney present a distribution architecture for medical image display across numerous devices and media, which uses a preprocessor and an in-built networking framework to improve compatibility and promote greater accessibility of medical data.

The INVOLVE2 system consists of three main software modules: 1) a preprocessor, which collates and converts imaging studies into a compressed and distributable format; 2) a PACS-compatible workflow for self-managing distribution of medical data, e.g. via CD USB, network etc; 3) support for potential mobile and web-based data access. INVOLVE2 datasets can be quickly loaded, navigated, streamed, distributed and compared, either via a standalone CD or USB key, over a network, or across the Internet. Our TAGIGEN subsystem offers a promising interface for the comparison and staging of medical scans. This interface may prove more intuitive than, and certainly makes a good adjunct to, the image-comparison solutions offered by commercial vendors. Further, most of the INVOLVE2 preprocessing workflow is automated or flows naturally into existing hospital processes, whereas our viewer's interface remains simple for completely non-technical users to operate.

The focus was on cultivating patient-centric care, by allowing outpatient users to comfortably access and interpret their own data. The image viewing software included on the cross-platform CDs was designed with a simple and intuitive user-interface (UI) for use by outpatients and referring physicians. The INVOLVE2 system was evaluated using a pilot deployment in a hospital environment for fitness-for-purpose in terms of its operational requirements, workflow integration, and performance on consumer hardware.

The results showed that INVOLVE2 meets performance targets, supports a wide variety of consumer devices, and runs effectively across the network or from a CD or USB key.

The current implementation of INVOLVE2 is due to undergo clinical trials, whereby automatically generated INVOLVE2 CDs will be distributed to outpatients and referrers for their clinical feedback.

Reference: Liviu Constantinescu¹, Jinman Kim¹, Ashnil Kumar¹, Daiki Haraguchi¹, Lingfeng Wen and Dagan Feng¹. "A patient-centric distribution architecture for medical image sharing" Health Information Science and Systems 2013, 1:3 doi:10.1186/2047-2501-1-3.

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