

A Comparison Study of Digitized Echocardiograms with Videotape” The Gold Standard”

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ABSTRACT

In regards to diagnostic accuracy, how does store-and-forward digital echo images compare to the same 5- 15 minute videotape study? One of the most interesting and difficult questions to answer as technology matures and health care organizations continue to seek ways to reduce health care cost while extending specialty care to those without access. Walter Reed Army Medical Center’s Cardiology department in conjunction with the Telemedicine Directorate have set out to provide an answer to this question.

In the Cardiology clinic at Ft. Belvoir, Va. we will be conducting a pilot study acquiring images directly from a Hewlett- Packard 2500 ultrasound machine by an experienced sonographer. A video of this same study will be produced as well. These images will be digitized and compressed via MPEG-1. The image files will be married to data files, stored locally, and finally transmitted to the Walter Reed Army Medical Center (WRAMC) after hours for reading and comparison to the videotaped study.

We intend to prove that diagnostic quality can be achieved from digitized images that is at a minimum, no worse than the diagnostic “gold standard.” We will be creating cineloops that can be played repeatedly as opposed to single heart beat loop clips, thus providing a way of reviewing echocardiograms that more closely approximates the usual way. Once the data has been collected and evaluated, we hope to have data that supports our theory on value of transmitting tele-echo studies from our clinics to tertiary medical centers. Thus, reducing the cost of unnecessary transport of patients to WRAMC and providing specialized tele-consultation to those outlying clinics that have lost the services of cardiologist. The data collection will start in September 1999.