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**The Combination of Stress Echocardiography, Stress ECG and Echocardiography Into One Open Architecture Digital Database Can Be Clinically Useful Yet Financially Viable In The Canadian Cardiologist's Office**

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**Background:**

Data and images generated by each test in cardiology today should be available in one common open architecture digital database which adheres to required legal , regulatory and security guidelines. Rouge Valley Cardiology (RVC) felt such a database could be clinically useful yet financially viable in the Ontario cardiologist's office and reports its experience working with two commercial vendors and an in house computer programmer to develop it. Our database initially was used for echocardiography, stress testing and stress echocardiography leading to same day standardized reports, more efficient use of technologists, support staff and physicians time yet improving patient flow and reducing operating costs.

**Methods**

Three ATL 5000 cardiac ultrasound machines, three lantronic boxes and two Quinton PC stress machines were connected to a standard network with T1 internet access. Prosolv software was chosen for our reporting and storage software. It was specially configured to display the report, stress ECG files and stress echo images on one screen. Echo techs use our modifiable automatic interpreter to analyze all data and generate the preliminary standardized report that the cardiologist finalizes with a few key strokes. Our Linux software made remote almost as fast as in office reporting further reducing operating costs and making better use of physician time.

**Results:**

RVC has used this technology in over 2000 stress echocardiograms, 1000 regular stress tests and 1600 regular echocardiograms. Computerized reports are compliant with CCS, ASE, and ACC guidelines yet customizable by the user. Studies are readily accessible either locally or remotely. RVC no longer uses ECG Paper, VCR tapes, CD ROMs, transcription or filing staff, thereby saving \$38,465 dollars in the first year. This cost is offset by annual software maintenance of \$15,000 yearly plus cost of the initial software and installation hardware .All database fields are searchable using an SQL engine so one can perform clinical research and outcome analysis. Individual studies can be copied to CD and sent with a reader that any computer can read.

**Conclusion:**

RVC developed an integrated low cost digital reporting, data management and online

image storage system using commercially available products for echocardiography and stress testing linked to our own Linux software to facilitate transfer of large data files making remote and office reporting times almost identical when high-speed internet is available. The addition of other DICOM images with measurements or not does not disturb the integrity of this open architecture database.