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DHP RFS
Final Report

Operational TeleCardiology
Proposal Number: 1999000179

Marina N. Vernalis MD

Abstract

Problems

This project suffered numerous problems related to the infrastructure, administration, and technical aspects. All of these shortcomings were encountered during the actual deployment and implementation of the project. Below is an outline of problems listed by category:

INFRASTRUCTURE:

- Acquiring proper equipment for patient care. Patient bed at the remote facility is not the correct type for normal echo procedures. Still coordinating with Dewitt Army Community Hospital on this tasking.

- Exam room at remote facility did not meet requirements for proper reading of echos. Too much sunlight from outside and a lack of ability to block this light made for difficulties in reading echos. The lighting problem was taken care of by remote facility two months after project launch.

- Older ultrasound equipment at remote facility makes it difficult to capture elderly patient's echos due to poor acoustic window. A Harmonics upgrade to the current older HP Sonos 2000 machine would increase the accuracy of the echo.

- Acquiring Network support for Exchange servers. Delay in setting up the two Exchange servers was about four months. This requirement was needed for connectivity between remote site and WRAMC.

- Acquiring staff personnel. Excessive amount of time to hire qualified echo technician.

ADMINISTRATIVE:

- Electronically answering consults from WRAMC to remote facility. The mail database subsystem used for this part of the project and included as part of the software has to be built from scratch and cannot connect into the existing global mail environment, causing manual additions to the mail database and delaying initial consults due to the set up requirements.

- Repetitive capturing of echos at remote facility. Due to the repetitive nature of capturing the echoes (HP Sonos 2000 and Acquisition Station), a single patient took a lot longer than normal and echo technician experienced problems in proper capture techniques, which the normal echo appointment to last from 11/2 to 2 hours.

- Delay in patient scheduling

- Initial delay at remote facility in patient scheduling and providing for adequate time between appointments resulting in overlaps.

TECHNICAL:

Problems related to Vitel Net Med-Vizer application, which is the main program for this project and is installed on the three main systems incorporating it. - Set up of the Med-Vizer application is very labor- intensive and requires the use of advanced computer commands to complete successfully. We are still waiting for the user-friendly version as promised by the vendor. - Set up of the Postmaster application program interface, which runs in conjunction with Med-Vizer on a dedicated Exchange server. - Requires the use of advanced computer commands to complete successfully. - Med-Vizer application relies on and interfaces with windows media player to provide MPEG-1 CODECS. There have been problems related to the registering of code and the proper registering of "winopti.sys" in windows registry database with certain video cards. We encountered problems with the Matrox video cards, which are standard cards included with Gateway computer systems. Acceptable video cards were obtained from Ati Corporation. - Postmaster application will at times cause a system crash on the Exchange server at WRAMC. This has caused problems as it clearly indicates that this program is interfering with the native file system running under Windows NT. Vitel-Net is working on a solution. - Med-Vizer running at the remote facility has run into internal system crashes due to a problem with the application itself. Vitel-Net is working on a solution.

DOIM Support: - Initial set up and connection of Exchange servers to be used as the engine for the main application. - Approval for transmission of data across the most direct route which is a current T1 circuit-switched line running from Dewitt ACH to WRAMC. - Approval and set up of computer equipment at the remote facility. - Improper communication due to the lack of notification from DOIM of the intent to take critical servers off-line in order to conduct testing.

Protocol And Consent Form Approvals: - Lengthy and convoluted clinical protocol approval process. - Human Use - Institute Review Board

Deliverables

MTFs that do not have in-house cardiologist support can acquire and transmit images to the nearest medical center for timely interpretation to optimize patient management and eliminate travel.

MTF with equipment and echo technician can implement this system with hardware with modifications.

Expenditures

	3Q FY 00	4Q FY 00	1Q FY 01	2Q FY 01	
Element of Resource (EOR)	Apr 1 - May 31	Jun 1 - Sep 30	Oct 1 - Dec 31	Jan 1 - Mar 31	TOTALS
Travel 2100	0.00	0.00	500.00	1,000.00	1,500.00
Shipping 2200	0.00	0.00	0.00	0.00	0.00
Rent & Communications 2200	0.00	0.00	0.00	0.00	0.00
Contract for Services 2500	32,971.00	0.00	65,220.36	0.00	98,191.36
Supplies 2600	3,090.00	0.00	0.00	0.00	3,090.00
Equipment 3100	31,719.00	0.00	3,090.00	0.00	34,809.00
GRAND TOTALS	67,780.00	0.00	68,810.36	1,000.00	137,590.36

Financials

The projected exceeded requested budget due to unidentified expenditures for exchange servers and certified echo technologist.

Final Results

In our preliminary assessment, the tele-echo system is noted to be fully capable of acquisition, transmission and retrieval of digital echo studies without compromising the image quality, in an expeditious and confidential fashion.

Projected Costs

See Budget2 Pdf file.

Comments

No additional comments.

TATRC Scientific Review

TATRC Acquisition Review

Supporting Graphs/Charts

See Attached

Projected Estimates	Per Site	Per Region	Total/Site	Total/Region
Personnel				
Cardiologist		0.00		
Registered Echo Technician one day/week	16,000.00			
Full time Registered Echo Technician	65,000.00			
IMO Adminstrator	0.00	0.00		
Equipment/Software				
HP2000 Sonos w S-Video Output				
Harmonic Package	40,000.00			
OR				
HP 9500	100,000.00			
Capture Station	4,500.00			
Rolling Cart	550.00			
Exchange Server		20,000.00		
Viewing Station		3,500.00		
MedVizer	0.00	0.00		
Modified Van (Circuit Runs)*		150,000.00		
Travel		2,000.00		
Total Part-time Echo Tech & HP2000 Upgrade			**61,050.00**	
Total Part time Echo Tech $ HP 9500			**121,050.00**	
Total Full time Echo Tech & HP2000 Upgrade			**110,050.00**	
Total Part time Echo Tech $ HP 9500			**170,050.00**	
Total without Van				**25,500.00**
Total with Van				**175,500.00**
* -The modified van is necessary to provide the echo tech equipment				
A Registered Echo Tech isnot like to be available in many locations.				