TELEPROCTORED SURGERY - COL Lawrence Burgess, M.D.

1. Background:

In the future, there will be less specialists and more generalists. Whether it be on the battlefield or in peacetime, real-time expertise from senior level surgeons will be necessary and useful to provide quality and cost-effective care to a generalist operating in a different location. Although real-time intra-operative consultation has not been a mainstay of current telemedicine initiatives (e.g., Bosnia), the technological advances in the next decade will make this more accessible and cost-effective. This study will explore the utilization and human factors issues of this type of teleproctoring and telepresence.

2. Organization:

Otolaryngology: COL Lawrence P.A. Burgess, M.D. - Principal Investigator
CDR Michael R. Holtel, M.D. - Co-Investigator
Mark Syms, M.D. - Co-Investigator
Leslie J. Peters, Ph.D. - Co-Investigator
Deborah P. Birkmire-Peters, Ph.D. - Co-Investigator

General Surgery: LTC Michael A. Sawyer, M.D. - Principal Investigator
LTC Jeffrey P. Kavolius, M.D. - Co-Investigator
Deborah P. Birkmire-Peters, Ph.D. - Co-Investigator
COL Eric A. Johnson, M.D. - Co-Investigator
LTC Paul R. Cordts, M.D. - Co-Investigator
LTC Daniel Robie, M.D. - Co-Investigator
MAJ Paul Cirangle, M.D. - Co-Investigator

Orthopaedic Surgery: COL Gregg Taylor, M.D. - Principal Investigator
CPT Richard C. Rooney, M.D. - Co-Investigator
MAJ David H. Kim, M.D. - Co-Investigator
Deborah P. Birkmire-Peters, Ph.D. - Co-Investigator

Sean Wong - Akamai Project Manager

3. Mission Statement:

To provide the utilization and human factors issues surrounding telepresence and teleproctoring of surgical procedures done in high volume.

4. Goals and Objectives:

Objectives:
1. Develop telemedicine surgical suite with a teleproctoring command room.
2. Initiate ENT study (already approved).
3. Obtain funding and approval for other surgical specialties to perform similar studies.

Goals:

1. Develop the knowledge base to utilize this technology in the future.
2. Once key performance aspects of teleproctoring are known, develop a course to train technicians and physicians on how to deploy the technology.

5. Current Status:

Primary Accomplishments:

Otolaryngology:

1. Collected data for 72 procedures for the teleproctored functional endoscopic sinus surgery study.
2. Paper entitled "Teleproctored Surgery" presented to the Medicine Meets Virtual Reality:7 Annual Meeting, San Francisco, California, January 1999.
3. Paper entitled "Teleproctored Surgery in Otolaryngology" was presented to the 33rd Annual Meeting of the Colorado Otology-Audiology Conference, Breckenridge, Colorado, March 1999
4. Paper entitled " Teleproctored Surgery in Otolaryngology" accepted for presentation to the American Telemedicine Association Annual Meeting, Salt Lake City, Utah, April 1999.
5. Paper entitled "Telemedicine Applications in Otolaryngology" accepted for presentation to the Trilogic Society Annual Meeting, Palm Springs, California, April 1999.
6. Equip surgical suite with capability to teleproctor procedures outside TAMC.

General Surgery:

1. Completed data collection for 10 cases which completes the validation/pilot phase of the study.
2. Paper entitled " Telementored Laparoscopic Cholecystectomy: A Pilot Study" accepted for presentation to the Gary P. Wratten Surgical Symposium, Tacoma, Washington, May 1999.

Orthopaedic Surgery:

1. Surgical equipment acquired.

Project timelines:

1. Completion of data collection for FESS study projected to be September 1999.
2. Initiate data collection for larparoscopic prospective randomized trials in March 1999.
3. Submit paper reporting preliminary results of laparoscopic study to Annual Meeting of Laparascopic Surgeons in March 1999.
4. Establish connectivity with Guam Naval Hospital by May 1999.
5. Establish connectivity with Capital Area by Summer 1999 .

6. Strategic Direction:

After establishing the utility of the technology, future funding will deploy operational units to distant sites. Performing surgery at these sites by generalists with expert telepresence at the telemedicine center will reduce cost by decreasing TDY dollars for patient transfer, while improving quality.

7. Budget/Financial Status and Information:

(See attachments)
Funding Stream -
Spend Plans - see attached budget.
Outyear Funding -
Contract Vehicles, Task Statements
DO's, CDRLs

8. Business Associations:

Corporate Partnerships - none

Government Partnerships - Walter Reed Medical Center
Guam Naval Hospital
US Army Medical Research and Materiel Command
US Army Research Laboratory

TAMC IMD - network assistance, software assistance, hardware assistance

9. Project Security:

System Security - Equipment will be secured in their respective locations. Data will be stored on government computer systems.

Standards compliance measures -

10. Summary:

This study will explore the utilization and human factors issues of telepresence and teleproctoring of surgical procedures. When technological advances over the next decade make this inexpensive, there will be improved quality of care for surgical procedures performed at distance sites, as well as cost savings by not having to transport every patient to a tertiary center. The knowledge base gained by this study will help to develop a course for technicians and physicians, prior to deployment to a combat zone.