

Telemedicine Evaluation –Elizabeth E. Hill, LTC, AN, USA (PI) V. Garshnek, Ph.D. (Project Manager)

Project start date: 9/1/96

This report dated: 3/19/99

1. Background -- Since the 1960s, there have been numerous attempts to advance telecommunications technology to augment health care delivery. Yet, despite the simplicity and apparent logic of the concept and three decades of experience, we are unable to show that telemedicine improves access, reduces cost, or affects the quality of health care. There are few well- designed studies and generalizing the findings to the military health care system and patient populations may not be valid. Consequently, there is clearly a need for well designed research in this area. The current evaluation research program consists of four projects that address the following domains: Clinical Outcomes; Patient/Provider Satisfaction; Organizational Impact; and Cost/Effectiveness. The protocol employs a randomized design to compare patient and process outcomes of two methods of consultation (telemedicine and usual care) in the areas of dermatology and orthopedics. The sample population for this study is active duty and retired military and their dependents requiring consultation from a primary care to a tertiary care facility and their health care providers. The study uses store and forward technology in a Web-based paradigm.

2. Organization

Management:

Elizabeth E. Hill, LTC, AN, USA – Principal Investigator

Victoria Garshnek, Ph.D. -- Project Manager

Co-Principal Investigators:

Clinical Outcomes

L. Harrison Hassell, COL, MC, USA (Co-PI); Victoria Garshnek, Ph.D. (Co-I); George Underwood, M.D. (Co-I); Donald Person, COL, MC, USA (Co-I); John Shero, LTC, USA (Co-I)

Patient/Provider Satisfaction

Elizabeth Hill, LTC, AN, USA (Co-PI); Sharon DeRuvo, LTC, AN, USA (Co-I)

Organizational Impact: Robert Doktor, Ph.D. (Co-PI); David C. Bangert, Ph.D. (Consultant)

Cost/Effectiveness: Eric L. Mais, Ph.D. (Co-PI)

3. Mission Statement

Before telemedicine consultations are used as a substitute for usual care in which the patient and consultant meet in a clinical encounter, we must demonstrate through objective and measurable outcomes the equivalency of both methods of consultation in providing health care.

4. Objectives

The objective of the overall project is to provide a scientific evaluation of outcomes resulting from insertion of telemedicine into a primary care clinic that routinely refers patients to a tertiary medical care center. Objectives of the four individual research domains are: 1) to investigate if telemedicine consultation between medical treatment facilities: (a) impacts the clinical outcome of patients compared to usual care; (b) affects patient and provider satisfaction compared to usual care and (c) reduces cost in relation to benefits compared to usual care; 2) to investigate the organizational changes that occur when telemedicine is implemented in a medical treatment facility.

5. Military Significance

Successful completion of the AKAMAI evaluation effort will (1) provide health care policy-makers with scientific information to assist them in the decision to augment DoD medical treatment facilities in the Pacific Basin with telemedicine technology; (2) provide a methodology and tools for comprehensive evaluation of future DoD deployed telemedicine systems.

6. Current Status

A. Primary Accomplishments

Project #1: Clinical Outcomes: Significant progress has been made in solidifying the statement of work for research database construction, defining the necessary fields, location of server, and timing of events leading to

its completion. Contractors and Government databases are to be used. A Research Consult Manager (RCM) has been hired and has begun preliminary work at Schofield. A low-fidelity Experiment Verification Test (EVT) has been performed by the RCM. A high-fidelity EVT and Command/provider brief are planned for May 1999 with data collection to commence in the late May – early June 1999 timeframe. The RCM, Principal Project Director, and Project Manager/Co-I attended a medical coding training seminar in preparation for chart abstraction activities. The PI of Project #1 will also attend such a seminar at a later date.

Project #2: Patient/Provider Satisfaction: A baseline focus group will be conducted in March of 1999. Once the systems for telemedicine consultation are operational for at least 1 to 2 months, additional focus groups evaluating patient and provider satisfaction will be conducted and survey construction commencing. Arrangements are currently underway to conduct the baseline focus groups and an updated contract with the Picker Institute has been completed.

Project #3: Organizational Impact: A low-fidelity EVT has been conducted in early March and evaluation instruments are being refined as a result. The team also participated in defining research database construction needs during a week-long working group meeting in January, 1999.

Project #4: Cost-Effectiveness: Refinement of an initial cost/benefit model continues based on a high-level process flow diagram for the telemedicine consults. The cost/benefit model will continue refinement through the high-fidelity EVT phase and be made available (with a users manual) by the data collection period. The PI also participated in the research database construction working group in January, 1999.

B. Project Timelines – Research database teleconferences and meetings will continue throughout April - July with initial testing in the July/August timeframe and installation in September. A high-fidelity EVT will take place at Schofield in late May with a briefing to the Medical Command and Providers during that timeframe. Randomization of consults and actual data collection are to commence in the May/June timeframe. For survey development, baseline focus group activity will be completed by 1 April followed by 6 more focus groups to be completed by the end of June.

7. Strategic Direction -- This project will pilot evaluation methodology and tools in dermatology and orthopedics. Successful completion will enable additional specialties to be brought on-line and thus expand the scope, value, and application of the basic study methodology. The study also seeks to answer research questions of interest to policy makers.

8. Business Associations

Corporate Partnerships -- ISS - Dr. Victoria Garshnek (Project Manager); Dr. Sharon Sims, and Dr. Lonnie Lai (Research Consult Manager); Picker Institute (consultant services);

Government/University Partnerships -- University of Hawaii (Dr. Robert Doktor, Dr. David Bangert, Dr. Eric Mais, two UH students)

9. Project Security – For Research Database (currently being worked by PRPO)

10. Summary – T2P2 installation at Schofield will enable the evaluation research team to commence data gathering in May/June of 1999. High-fidelity EVT activity is planned to commence in May of 1999. The research database will be in place in late summer of 1999 for testing.