



Chapter 12

Mobile Computing at the Department of Defense

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This chapter is designed to relate the rationale used by the Department of Defense, to utilize Telemedicine, to meet increasing global crises, and for the U.S. military to find ways to more effectively manage manpower and time. A mobile Telemedicine package has been developed by the Department of Defense (DOD) to collect and transmit near-real-time, far-forward medical data and to assess how this improved capability enhances medical management of the battlespace. Telemedicine has been successful in resolving uncertain organizational and technological military deficiencies and in improving medical communications and information management. The deployable, mobile Teams are the centerpieces of this Telemedicine package. These teams have the capability of inserting essential networking and communications capabilities into austere theaters and establishing an immediate means for enhancing health protection, collaborative planning, situational awareness, and strategic decision-making.

INTRODUCTION

Telemedicine is an approach of providing care for patients that are geographically separated from a doctor. Telemedicine allows a doctor and a patient to interact with each other using computer networks. Telemedicine, when used in military, has a potential to heal patients in the war zone where doctors may not be

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readily available. The U.S. national strategy for military pre-eminence is based on technological superiority. Through new discoveries in advanced science and technology, the goal of the Department of Defense (DoD) under Joint Vision 2010 (JV 2010) is to develop the ability to directly and decisively influence events ashore and at sea—anytime, anywhere—to meet current and future challenges.

To successfully counter these challenges, the DoD must continue to move forward in its effort to incorporate telemedicine into its prime mission—to keep every service member healthy and on the job, anywhere in the world, to support combat operations, as well as humanitarian, peacekeeping, and disaster relief missions.

Telemedicine supports the DoD's goal by electronically bringing the specialist to the primary provider who directly cares for service members in austere, remote, and isolated environments (Floro, Nelson, and Garshnek, 1998). Telemedicine also creates an opportunity to provide rapid, accurate diagnosis and therapeutic recommendations (Garshnek and Burkle, 1998). The end result is that telemedicine helps to maintain the health of service personnel and their ability to quickly return to duty, minimizing logistically burdensome, inconvenient, and expensive transportation to distant specialty care (Bangert, Doktor, and Warren, 1998).

For telemedicine methods to be successful, however, their operational effectiveness, suitability, and importance to the warfighters' mission must continuously be tested, evaluated, and proven (Oliver, Sheng, Paul and Chih, 1999). In 1997, the U.S. Army, in partnership with the Navy and Air Force, was tasked to develop exercises to explore the integration of advanced technologies with existing systems and architectures to meet the requirements established under JV2010.

These technologies are all aligned with the Joint Vision 2010 concepts of Dominant Maneuver, Precision Engagement, Focused Logistics and Full Dimensional Protection. The technology initiatives utilize dedicated, small mobile teams, with a sophisticated IT infrastructure, to provide telemedicine capabilities wherever they are needed in the medical battlespace (Mann, 1997). This IT Infrastructure includes novel Medical Equipment Sets (MES) with digital capture devices such as digital cameras, digital scopes, digital blood and urine laboratories, physiological monitors, advanced digital radiography, and digital ultrasound (Perednia and Allen, 1995). Other, associated items of equipment include novel software, such as the Pacific Virtual Health Care System. This package offers electronic medical record archiving capability that enables automated, standardized teleconsultation by forward medics to higher echelon physicians (Rodger and Pendharkar, 2000).

This ACTD has charged itself with operating within the concept of Focused Logistics and Full Dimensional Protection. It is, therefore, pertinent to understand

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