

# Telemedicine Works

## Quality, Access, and Cost Impacts Cited

By Kauthar Umar, MA

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Today, the use of electronic information and communications technologies routinely provide and support health care, even when considerable distances separate patient and provider. Technology has made clinical care, distance education, medical research, and administration possible in parts of the world traditionally unexposed to such advancement.

“When you call the doctor and say, ‘Doc this is the problem? Should I take a couple of aspirin, should I come in? What should I do?’ That’s telemedicine,” said Michael Ackerman PhD, assistant director for High Performance Computing and Communications at the National Library of Medicine (NLM), National Institutes of Health. “There’s no magic here. We’ve been using it all along. We’ve been characterizing it in another way, but we’ve been using it [telemedicine] all along.”

However, Dr. Ackerman argues, telemedicine extends far beyond this definition. It isn’t simply a venue for long distance communication, but actually serves as the platform for introducing the latest research and technology.

### Making Global Connections

The NLM began experimenting with telemedicine as early as the 1970, and Dr. Ackerman believes that this format of health care is having a resurgence. The Internet, video conferencing, and electronic text have replaced equipment that took days to operate. Telemedicine supports medical decision-making in ways unheard of just ten years ago. For example, the emergency room at Umtata General Hospital/University of Transkei School of Medicine (UNITRA) in South Africa, which serves a large rural population, partnered with Washington, D.C.’s Howard University Hospital to develop the Emergency Medical Internet Technology Tool (EMITT).

The project, funded by the United States Agency for International Development (USAID), teaches emergency medical practices and principles to physicians and nurses in South African health care facilities, through self instruction modules, live teaching conferences from Howard University in emergency medicine, case consultations that allow physicians to collaborate in real time between the two institutions on difficult to manage emergency and trauma cases, and access to databases for medical information for health care professionals.

“Our goal is to help educate them in emergency room procedures from our experts at Howard. We get a lot of information from them on how to do emergency medicine, as well,” said Ernest Carter, MD, PhD, director of the Howard University Telehealth Sciences and Advanced Technology Center (HUTSATC) and executive assistant to the Dean, College of Medicine. “We found that with the solution that

we put together, they are able to share in some of our emergency room conferences as well as our difficult diagnoses. Telemedicine really helped to move that forward.”

Under the center, the EMITT project has expanded, and in 2001, Howard was the first university to partner with the Global Development Learning Network of the World Bank. As a one of the network’s 80 program partners, the center has created new links with Ghana, Senegal, Uganda, and Benin to provide distance learning programs.

Despite the advantages, telemedicine has not gone without criticisms. “Telemedicine does not reimburse,” said Dr. Ackerman. “There is no reimbursement because the people that make these decisions say that in order to have a relationship with a physician or health care provider, there has to be a one-on-one, eyeball to eyeball, touchy-feely, relationship. You can’t do that across television or on the phone.”

### Finances and the Indigenous Worker

Medical finances have been drastically altered due to telemedicine. In many places, it has provided a way for the medical community to cut costs without jeopardizing health care. In the U.S. Flag Territories (American Samoa, Guam, Commonwealth of the Northern Mariana Islands) and the Freely Associated States (Republic of Palau, Federated States of Micronesia, Republic of the Marshall Islands), telemedicine has literally changed the cost of medical care, access to it, and how medical care is administered.

Before the Internet was introduced in the mid-1990s, Pohnpei, like the other US-Pacific jurisdictions, spent 25 percent of all health care dollars on off-island medical referral costs for the fewer than one percent of patients who had to be transferred off the island. “The medical referral problem was the same throughout all the jurisdictions, with a large proportion of health care budgets being spent on just a few people to be sent off island,” said Dr. Gregory J. Dever, MD, director of the Bureau of Hospital and Clinical Services in the Ministry of Health, Republic of Palau.

“In Palau the referral process was conducted by the governor and not by the physicians, so if you were related to the governor or part of the family then you got referrals for free,” said Dever. “If you weren’t politically or culturally elite then you weren’t in. It’s different now.”

The Republic of Palau has a population of nearly 20,000 people that are highly vulnerable to communicable and non-communicable diseases, have high infant mortality rates and until recently, a medical community with little power to make change. The Pacific Island Health Care Program (PIHCP) and the Akamai Project, two programs at the Telemedicine Clinic at Tripler Army Medical Center (TAMC) in Honolulu, Hawaii, standardized the medical consult/referral process and dramatically improved organized and equitable access to the PIHCP for Palau and the participating US-Pacific jurisdictions.

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*Telemedicine Works—Quality, Access, and Cost Impacts Cited is based on the Summit workshop Health Professionals and the Use of Telemedicine Technology, Wednesday, July 10, 2002.*



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In 1994, TAMC introduced to Palau the Picasso Still-Image Phone. Manufactured by AT&T, the Picasso, the size of a small briefcase, was a still-image capture system that transmitted over regular phone lines and operated like a full color, paperless, fax machine. Freeze-frame images captured at the sending end by a camcorder were transmitted to a remote receiver unit where they were displayed and stored.

“The problem with the Picasso phone was who pays for the long distance phone call? The program at TAMC has replaced the Picasso phone,” said Dr. Dever. “However, telephone lectures with the use of previously downloaded Power Point presentations are still very effective. The Picasso set the stage for what’s in place today. The Akamai Project, in particular, is TAMC’s telemedicine effort to provide distance medical consulting through an Internet-based web site. It is now an integral part of the PIHCP process, and all medical consult/referral requests to the PIHCP must go through the Akamai Internet system,” said Dr. Dever.

Similarly, the University of Hawaii runs the PeaceSat system, a public interest communications system providing video teleconferencing capacity. The PeaceSat system increased the number and efficiency of distance medical consultations and referrals particularly to the TAMC Pacific Islands Health Care Programs. Today, specialists and physicians can request and provide medical consultation from their home or work computer with response times of 1-2 days. In

addition CAT scans and echocardiograms can be read by TAMC radiologist through the Akamai/PIHCP website.

“These forms of telemedicine have decreased politically-based medical referrals and drastically changed many people’s lives,” said Dr. Dever. These have since been used for patient consultations, for delivering medical lectures throughout the Pacific Basin, and for case conferences. This form of telemedicine has assisted with physician recruitment and retention, increased regional medical self-reliance, reduced professional isolation, and greatly reduced medical costs.

“It’s getting easier and easier and more user friendly and it’s working,” said Dr. Dever. I’ve been a critic in the past, but finally it’s showing real results.”

*For more information on telemedicine programs, contact President of the Pacific Basin Medical Association, Dr. Victor Yano, at [bmc@palaunet.com](mailto:bmc@palaunet.com) ❖*

*For more information on the National Library of Medicine’s High Performance Computing and Communications division, contact Dr. Michael J. Ackerman, at [ackerman@nlm.nih.gov](mailto:ackerman@nlm.nih.gov) ❖*

*For more information on the collaboration of Howard University and the University of Transkei, South Africa, in Emergency Medicine visit <http://www.emitt.howard.edu> ❖*

*For more information on the Global Development Learning Network partnership with HUTSATC, go to <http://www.gdln.org/help.html> ❖*

