

The Future of Telemedicine

Adam W. Darkins, M.D.

Chief Consultant, VHA Telemedicine

VHA TELEMEDICINE

THE TELEMEDICINE NEWS



When talking with people who are developing telemedicine programs in organizations outside VHA the advantages that we have in working VHA telemedicine soon become apparent. Many people in other organizations consider the key to telemedicine is establishing real-time video-conferencing for clinical purposes. When they achieve this goal it soon becomes clear to them that this falls far short of being a safe and effective clinical encounter. What they are doing is unsophisticated because it does not allow the exchange of routine clinical data, images and investigations. In VHA we are fortunate to have the computerized patient record system (CPRS) that allows VHA telemedicine programs to freely exchange clinical information with an ease and comprehensiveness that most other organizations can barely imagine. When the ability to exchange clinical images such as digital retinal photographs and radiology images using Vista Imaging and Vista Rad is added to the functionality of CPRS it gives an important indication of where telemedicine is going in the future. Seen from this viewpoint it is

immediately apparent that the future of telemedicine is intrinsically and inescapably bound to the concept of a multi-media patient record. When the fundamental basis for telemedicine shifts to embrace the concept of a patient record that is freely transferable, within given privacy and confidentiality parameters, the whole field assumes a very different complexion. The importable/exportable patient record then forms the basic building block for all telemedicine activity and a platform on which a range of additional modalities such as e-mail, fax, telephone call and real-time video interaction can be attached.

Our capacity to store patient charts and their associated images on CPRS and share these widely between our various facilities and Community Based Outpatient Clinics (CBOC's) is rapidly growing. Ultimately the same functionality will exist across the wider healthcare system outside VHA, once the relevant privacy and confidentiality issues and technology interface issues

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ATA 2003
Orlando, FL
Apr 27-30

Capitol Hill Telemedicine/Telehealth Educational Sessions

John Peters, M.S.

Since the last newsletter, I have attended the final three lunchtime educational sessions (a total of 10 were held in 2002), sponsored by the Steering Committee on Telehealth and Healthcare Informatics.* Attending these sessions has broadened my VHA Telemedicine perspective by introducing me to the wide array of private and public legal, healthcare and IT advocates who all have a stake in advancing telemedicine through legislative and executive actions. A quick summary of each of three the 90-minute sessions follows:

September 25th Capitol Hill Telehealth Session – Public-Private Partnerships: Using Technology to Protect the Public Health.

Approximately 65 people attended this lunchtime panel presentation session at the Dirksen Senate Office Building to discuss the benefits of an electronic Public Health Information Infrastructure and its role in support of national disasters or emergencies, as well as benefits for common everyday use. J. Marc Overhage, MD from the Indiana University School of Medicine, hosted the panel. Dr. Overhage is Chair of the Foundation for Public Private Sector Collaboration for Public Health as well as Chair of the Data Standard Implementation Committee. The panel presenters included:

- Patrick M. Libbey, Executive Director of the National Association of County and City Health Officials (NACCHO) – spoke of NACCHO's goal for transforming public health information infrastructure for sustained public readiness.

- John Loonsk, MD, Center for Disease Control and Prevention's Associate Director for Informatics – provided a national perspective on the Federal Government's role in Public Health Threat Protection through an Interconnected Electronic Public Health Infrastructure.

- Seth Foley, MD, Commissioner of the Health Department for the City of Milwaukee – provided a 'local' perspective on how his city could use a public health infrastructure not only for bio-terrorism events, but also for everyday events like tuberculosis and sexually transmitted diseases.

- Kenneth Mandl, MD, Harvard Medical School's Assistant Professor of Pediatrics and Children's Hospital Boston's Emergency Medicine and Informatics Program – described how information technology might be used for public health surveillance as well as collaboration of First Responders.

- James M. Wilson, MD, Georgetown University Medical Center and Advisor to the National Oceanic and Atmospheric Administration explained his research using Geographic Information System (GIS) mapping software combines population and environmental data to more effectively search for and respond to epidemics (e.g., West Nile virus transmitted by mosquitoes.)

- Steve Steindel, PhD, a Senior Advisor for Data Standards and Vocabulary at the Centers for Disease Control and Prevention described his agency's efforts to introduce a National Health

Information Infrastructure (NHII) to interconnect an enhanced electronic public health infrastructure.

October 9th Capitol Hill Telehealth Session – Creating an Environment that Rewards Quality and Innovation through Information Technology.

About 30 people attended this session, in the Russell Senate Office Building, to hear how commercial vendors and public health systems are currently using IT to modernize the delivery of healthcare and improve healthcare's business case. The panel presenters included:

- Bill Lynch, Siemens Corporation's Director of eHealth – described various software products and services currently available to the health care industry to improve the way they deliver care and do business. He stated that 'uncollected' annual revenue, due to improper billing, is a major problem for some public health care systems.

- Karen Rheuban, MD, is a pediatrician and is the Medical Director of the University of Virginia Health System's Office of Telemedicine – shared real-life stories to illustrate how the Charlottesville-based University Medical Center has used telemedicine to provide specialty care throughout the state of Virginia.

- Randy Thomas, Executive Vice President of Sun Clinical Data Institute (a division of Eclipsys Corporation) – discussed how new clinical documentation and computer-based physician order entry technology/architecture

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Capitol Hill Telemedicine/Telehealth Educational Sessions

John Peters, M.S.

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affords a higher level of interoperability between the information system and whatever device is used at the point of care.

October 23rd Capitol Hill Telehealth Session – Information Assurance: Processes to Ensure Data Integrity and Reliability of Health Information – HIPAA as a Driver.

About 40 people attended this session, in the Dirksen Senate Office Building, to learn the latest developments around patient information privacy in general and the Health Insurance Portability and Accountability Act (HIPAA). The panel presenters included:

- Peter Adler, Esq., Foley and Lardner, Washington, DC – provided his attorney perspective on HIPAA. Mr. Adler has conducted privacy assessments of about 50 health care systems in order to ensure they are in compliance with HIPAA regulations prior to the April 14th,

2003 deadline.

- Jeff Collmann, PhD, Georgetown University Radiology's Imaging Science and Imaging Systems (ISIS) Center and the Army's Telemedicine

and Advanced Technology Research Center (TATRC) – related that he does not view the HIPAA standards as new or onerous requirements, rather HIPAA is merely asking health care entities to meet good industrial practices. Dr. Collmann also distinguished between prescriptive Privacy Rules and non-prescriptive HIPAA data security requirements.

- Tom Gilligan, the Association for Electronic Health Care Transactions' (AFEHCT) Executive Director – discussed his organization's work on behalf of healthcare industry vendors (services, software, et. al.) to address federal public policies that affect healthcare, including both privacy and data security policies. AFEHCT has a particular interest in the successful implementation of the transactions standards part of HIPAA.

- Melinda Hatton, Esq., American Hospital Association's Washington, DC Counsel – described how her organization continues to monitor HIPAA development

and implementation on behalf of its 5000 healthcare entity and 37,000 healthcare individual members. You can learn how more about AHA's HIPAA efforts at the AHA Web site.

**The Steering Committee on Telehealth and Healthcare Informatics was created in 1993 to inform interested members of Congress and their staffers about issues related to telemedicine and telehealth. The steering committee's current honorary co-chairs are Senator Kent Conrad (D-ND); Senator Michael Crapo (R-ID); Representative Earl Hilliard (D-AL); and Representative Ernie Fletcher (R-KY).*

Due to VA Central Office's proximity to Capitol Hill, I am able to attend these presentations and provide brief summaries to our group. If you would like to learn more or if you will be traveling to Washington soon and have an interest in attending a session please contact me at John.Peters@hq.med.va.gov.

About 40 people attended this session, in the Dirksen Senate Office Building, to learn the latest developments around patient information privacy in general and the Health Insurance Portability and Accountability Act (HIPAA).

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The Future of Telemedicine

Adam W. Darkins, M.D.
Chief Consultant, VHA Telemedicine

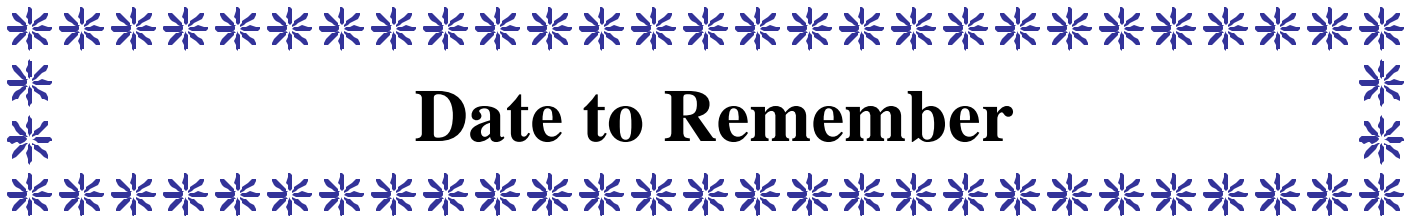
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(between different health information systems) have been resolved. When there is a health care record that is freely exchangeable between different health care providers telemedicine will transform the general healthcare system in the ways that we are beginning to see happen in VHA. In VHA we are about to establish 2 multiple sclerosis (MS) Centers of Excellence. These centers will provide a telemedicine resource that will offer telemedicine consultations throughout the country. Then, for example, a veteran with MS who is seen at a CBOC in rural Utah could have access to world experts in MS diagnosis and care at

one of these 2 centers. With the freely available multi-media patient record and the ability to videoconference using Internet Protocol (IP) it becomes possible to envisage a health care system where patients can get access to specialist health care advice from remote locations. In addition to the MS Centers of Excellence, the VHA has 6 Parkinson's Disease Research, Education and Clinical Centers (PADRECCS). These centers are exploring how to link together and provide a comprehensive network of care across VHA using telemedicine. In a healthcare environment in which more and

more people have chronic conditions, the emphasis is inexorably shifting away from our past preoccupation with the immediate treatment of acute medical and surgical conditions. We now have to take a more balanced approach in making health care decisions for chronic conditions. Decisions such as whether to treat, how to treat, when to treat and where to treat are assuming ever-greater importance. This change of emphasis presents new challenges, ones in which the quality of health care services correlates with making appropriate, effective and cost-effective health care decisions.

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Date to Remember

VHA Telemedicine Exhibit

at the 2003 American Telemedicine Association Expo

Deadline for Exhibit Proposals

Wednesday, November 27th

Email to : john.peters@hq.med.va.gov

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Telemedicine has a unique capacity to improve healthcare decision-making and to do so must be based on evidence of clinical effectiveness. There is an understandable impatience on the part of telemedicine advocates to see technologies they believe in implemented. In the current healthcare climate I believe that it is important that we prove the benefit of telemedicine up-front and in advance. VHA Research & Development programs are playing a vital role in gathering this evidence.

The health care decisions that need to be made for patients with chronic conditions are now less often strictly “medical” decisions and increasingly involve a wide range of health care professionals. In this environment the name *telemedicine* is already under pressure to change to the more interdisciplinary and egalitarian term *telehealth* instead. As people live longer with chronic conditions, the trend for the place of care to move from hospitals to ambulatory care is giving way to the emerging trend for care to move into the home where it can be supported by home-telehealth. Here again we can see how leading edge VHA projects are pointing the way to the future.

The “my health eVet” project involves the creation of a medical record that the veteran can access and use to negotiate what they want from their healthcare system. Coupling this innovation with the ability to provide Web-based information to patients about health care interventions and their outcomes creates the opportunity to put patients in the driving seat of the healthcare system

of the future. Making these changes possible involves a major reengineering of the healthcare system. In VHA we are at the forefront of working through the clinical, technical and business processes that will enable a radical metamorphosis of the healthcare system to take place. We are in the fortunate position that today we can take for granted health informatics and a health technology infrastructure in VHA that other organizations will wait years to develop. In VHA we can get a glimpse of a future healthcare system in which home can become the preferred place of care and where a multimedia patient record with the telehealth technologies and decision support system to supplement it can offer undreamed of excellence in providing healthcare services. Therefore, the future of telemedicine is in our hands. VHA telemedicine programs are taking exciting new possibilities forward and mapping out the future; we need to continue to work with a wide range of other colleagues as we do so.

Working in telemedicine within VHA gives us all unique and different perspectives on what may be the future of telemedicine. In this article I am giving my own personal thoughts on where I see telemedicine going in the future; what is written should not therefore be construed as VHA policy in relation to telemedicine.

The health care decisions that need to be made for patients with chronic conditions are now less often strictly “medical” decisions and increasingly involve a wide range of health care professionals.



Showcase your creative talents!

Enter the VHA Telemedicine

LOGO CONTEST

Deadline for entries: January 1st, 2003

Preferred Format: JPEG File

Email to: "VHA Tele medicine Newsletter" group on Outlook

The winning entry* will be used for VHA Telemedicine

- **Conference banners/materials**
- **Satellite Broadcasts**
- **Newsletters + More**

*may be modified slightly from original design

HUMOR

*WOULD YOU LIKE TO TRY YOUR HAND AT A
CARTOON, OR HAVE A HUMOROUS
STORY YOU WOULD LIKE TO SHARE?*

Email: mary.skinner2@med.va.gov

HIGH TECH MEDICAL CLINIC



Alas...Some things change quicker than others!

Experts say the Future is Clearly Nearly Invisible

David Gratz



“Just another day at the golf course”

So, here we are again, another day on the path of telemedicine. My goal in this article is to give you a glimpse of the future of telemedicine. In doing so, I first gave thought to my vision of the future. I wondered if the *real* experts (whom I would soon poll) shared my vision.

Regrettably, I soon realized that my vision grew out of frustration rather than encouragement and optimism. It must be a frustration that you all share—technology and vendor issues. The technology is not as seamless and reliable as it must be and should be. We suffer from having purchased equipment and technology that is soon outdated, has inter-operability issues, or is unreliable. These issues can have grave impact on the initial and continued success of telemedicine programs that usually have limited start-up funding and must quickly prove themselves for survival. One of my hopes and an optimistic prediction for

the future is that vendors and the field of telemedicine will address these pervasive issues. The other thought I have is that telemedicine will become just another way of providing healthcare and not be considered as unique. In fact, “Mobile Telemedicine in a Box” will be a reality. That’s what I think. Now, let’s hear from some outstanding people in our field.

I polled many professionals in telemedicine to get a broad sense of where we might be heading. I received many great responses, but had to trim some down due to lack of space.

In reviewing these responses, it looks like the field of experts shares a vision for a seamless, portable, and nearly invisible quality to provision of services via telemedicine. Here is what they had to share:

Jay H. Sanders, M.D.
President/CEO
The Global Telemedicine
Group

The “examination room” will always be identified as the location where the patient is, not where the healthcare practitioner is. We will be more concerned with the quality of the information being transferred electronically than the speed, bandwidth, or modality by which it is transferred. Distributed and networked medical intelligence will bring the collective science knowledge base and standards of the medical profession to the

bedside, to the operating table, and to the research bench, not just the knowledge base and standards of an individual practitioner, surgeon or investigator. The ready access to quality healthcare information, mixed with a healthy dose of motivation, will allow the patients/consumers to become their own primary care physicians. The words telemedicine/telehealth will finally disappear to be replaced by the more appropriate words - medicine and health.

Stanley Saiki, M.D.
Director of Telehealth and
Clinical Informatics
VA Medical Center Honolulu

In the near term, I look for store and forward telemedicine accelerating its growth. The advantages this format provides in utility, ease of use, scheduling, flexibility, low technical requirements, CME/CEU delivery potential and ability to keep the primary care provider engaged are limited only by reimbursement issues at present. With experience we shall develop evidence-based decision paradigms that will help us better define when store and forward, store and forward augmented with telephony, and real time video are the optimal modalities.

In the long term, telemedicine will be ultimately successful when it disappears. That is, success comes when telemedicine is so seamlessly incorporated into the fabric of medicine that it longer deserves mention as a modality different or distinct in the practice of medicine.

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Experts say the Future is Clearly Nearly Invisible

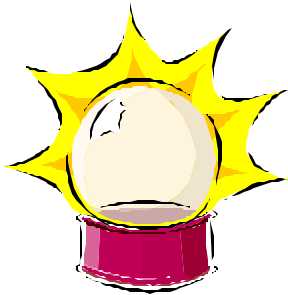
David Gratz

Patricia Ryan, M.S., R.N.
Clinical Program Director
VISN 8 Community Care
Coordination Service

The devices and connections for telemedicine that will be used in the home will become simplified and offer multiple levels of communication. The home-telehealth industry is a necessary growth market due to the need and desire of patients to be cared for at home. VHA is not only at the forefront of the home-telehealth industry but will also author the clinical and technical standards.

Henrik Linderöth, Ph.D.
Assistant Professor
Dept. of Business Administration,
Umeå Business School
Umeå, Sweden

It can be claimed that the great challenge for the management of health care services is to start to put some efforts behind the oral support for the technology. But this support cannot take the form of a top down planning approach. Since the telemedicine



technology is open to its character, meaning that use of the technology has to be developed in the local user setting, the management cannot govern the process in a detailed manner. Instead, they have to rely upon users who act as spokespersons for the technology in local settings where the technology is to be used, and who share the visions of the management. Thus, by taking action through feedback given from users who

develop applications for telemedicine, management will be able to cultivating positive attitudes towards using a technology.

Steve Normandin, Vice President
AMD Telemedicine

My feeling on where telemedicine is heading is to the basics. You often read telemedicine articles about remote assisted surgery and all of the cutting edge areas; I feel that the growth of the industry is in primary care. The majority of the increase in our business has been in supplying basic healthcare products to the medically underserved communities. Many people have been selling the "sizzle" part of telemedicine, but what we are asked for is a tool to make medicine more convenient to people in remote areas. [An example is] basic medical examinations the same as if you went to your primary care doctor for a checkup—they want to look in your eyes and ears, listen to your heart and find out if you need to be moved to a higher-level care provider—just basics. We see this trend in the U.S. but also in the international market that is growing at a surprising rate.

Pamela Clark, Ph.D.
Director, INTEGRIS Jim Thorpe
Rehabilitation Center
Clinical Research and
Development Department
Oklahoma City, Oklahoma

Telemedicine will be integrated into mainstream health care and not be labeled as "an alternative" approach. It will be deemed to be "as effective" as other medical modalities. It will be the modality of

choice for provision of specialty services to rural America. The "House Call" will be reinstated in rural America with consumers receiving specialty medical interventions within the comfort and security of their own home environments. The consumers with chronic health conditions will be more proactive in managing their own treatments and will collaborate with their teletherapy specialists through out the continuum of care. Eventually, telemedicine will be available to any individual in rural America, even those who don't have telephones, as the technology evolves from analog to wireless.

David C. Balch
Director, Telemedicine Center
Brody School of Medicine
East Carolina University,
Greenville, NC

The future of telemedicine may be invisible. If we do this right, telemedicine will begin to integrate into a seamless part of the health care delivery system. From the ability to remotely monitor patients to trend analysis and instant alerts, technologies associated with telemedicine will continue to evolve and become integrated as efficiency tools in the practice of medicine. Escalating costs for medical services will create new opportunities for these niche tools. For the moment, some reimbursement is still tied to video presence. These restrictive payment guidelines will continue to dissolve as the proof of cost savings for new technologies emerge. We are already seeing early signs of this

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Experts say the Future is Clearly Nearly Invisible

David Gratz

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with monitoring devices (like glucometers, etc.) being integrated into long-term care plans using regular phone lines from patient homes. Along with this trend there will likely be a new development surge as the funding for homeland security begins to trickle into the research labs. There is a lot of natural synergy (common technology) between real-time monitoring of environmental sensors and monitoring of human physiology. My feeling is that it may take 3~5 years for the new homeland security funding to impact personal healthcare, but the positive impact will be significant.

Kent M. Perryman, Ph.D.
Neurophysiologist and Acting Telemedicine Coordinator
VA Greater Los Angeles Health Care System

Currently, telemedicine has the distinction of being able to provide geographic accessibility to health care for individuals in rural areas of the world. Within the next decade we will witness an economically driven revolution in telemedicine's accessibility in providing not only specialized, but also primary care services, to individuals in the suburbs and inner city. I believe telemedicine will provide the needed healthcare bridge to span the increasing gap between medical costs and patient needs not only in rural regions, but also in the inner cities and suburbs as well. I foresee more community-based clinics within local neighborhoods that can be telemedically linked to a few remaining private and university medical centers for primary and specialized care. With further advances in wireless technology, patients with chronic medical conditions will no longer need to be tethered to electronic monitoring devices. I believe that telehome care will be paramount in case and medication management and therefore obviate the need for many patients to leave not only their neighborhood but also their homes.

Cynthia Scheideman-Miller
Director, INTEGRIS Rural Telemedicine Project
Oklahoma City, OK

Easy access to technology, as well as ease of use of that technology, have been pivotal points for our program. Once both patients and providers realized that the equipment was becoming less threatening and easier to use, there was a much greater acceptance of it. In addition to equipment continuing to become even more user friendly, people who use technology in their daily lives are getting older and will be the ones needing services. I believe that these factors will someday tip the scales and we'll see a much higher percentage of services being delivered to patients/clients in their home and work settings than will be delivered in outpatient settings.

Affordable wireless technologies that deliver high quality video in valleys as well as on hills may seem like a dream at the present time, but I think it will soon become not only a viable option, but also the mode of choice. Just like rural schools share teachers, I envision increased sharing of rare skilled personnel—like enterostomal therapists or diabetes educators—between rural health care facilities. I believe the question one day will be not be "Why use telemedicine?", but rather "Why NOT use telemedicine?"

“The future of telemedicine may be invisible. If we do this right, telemedicine will begin to integrate into a seamless part of the health care delivery system.”

—David C. Blach



The mission of this newsletter is to serve as a conduit to share information, strengthen resources, and promote community for telemedicine within the VHA and with the goal to provide the best quality of care to our patients despite the barriers that distance may impose.

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