Testimony Before the Committee on Veterans Affairs Subcommittee on Health Overcoming Rural Health Care Barriers: Use of Innovative Wireless Health Technology Solutions

June 24, 2010

Background

Thank you for the opportunity to testify before the Subcommittee on Health of the House Committee on Veterans Affairs. My name is Dr. Huy Nguyen. I am a Navy veteran who served in Iraq in 2003 as a physician attached to Fleet Hospital Pensacola. During that tumultuous period, I saw up close and personal the cost of war and the utmost sacrifices that our veterans make in service of their county. I have since separated from active duty; however, I continue to serve our military and veteran community presently as a civilian Emergency Department physician at my cherished Naval Hospital Pensacola. In addition to being a military-affiliated provider, I am also the Founder and Chief Executive Officer of Cogon Systems. Our mission at Cogon is to facilitate Connected, Value-Driven Healthcare. We achieve this by facilitating secure web-based health information solutions leveraging 'cloud computing' technology. My personal interest in healthcare mobile technology and clinical information systems dates back to my years as a medical student and was developed further as a naval physician utilizing the military's electronic health record.

This hearing is broadly intended to examine how the Nation can utilize new and innovative wireless technologies to expand access and quality of care for veterans in remote areas. In my testimony today, I will certainly discuss my company's experience with mobile healthcare technology and how it can impact veteran care. However, I would like to begin my testimony by discussing health information exchange and interoperability which complements mobile technology by allowing comprehensive health information available to be accessible to mobile devices. Secure mobile access to comprehensive health information can be particularly helpful to providers and veteran patients in rural communities.

In discussing the potential of health information exchange, I will draw on my company's project in Pensacola which has facilitated the largest instance of secure data sharing between federal and civilian healthcare providers. I believe that this project is in keeping with the spirit and intent of the Obama Administration's Virtual Electronic Health Record (VLER) efforts. Finally, I would like to discuss some innovative ideas that can empower our veterans in rural communities to assume greater ownership of their health.

The Department of Veterans Affairs' Stated Objectives and Mandates

As context to today's testimony, I would like to highlight some significant objectives that guide Cogon's desire to facilitate better care for veterans and in the process be a beacon for the greater civilian healthcare community.

The Department of Defense Military Health System (MHS) and Veterans Administration (VA) are promoting the VLER initiative which represents the first iteration of a new national capability to

securely share electronic health and administrative information. In order to ensure a seamless transition of health services from one agency to another, MHS and the VA are implementing these critical elements:

- a full understanding of medical care capabilities within both agencies by all medical providers involved,
- clear communications of the transition plan between providers in each agency and with the patient and patient's family,
- timely transfer of all pertinent medical records before or at the time of transfer of the patient, and
- ongoing communication after the transfer of the patient between the medical providers in each agency and with the patient and patient's family.

On April 9, 2009, President Obama directed the Department of Defense and the Department of Veterans Affairs to create the Virtual Lifetime Electronic Record:

"… will ultimately contain administrative and medical information from the day an individual enters military service throughout their military career and after they leave the military."

In light of the fact that 3 out of 4 Veterans receive a portion of their care from a civilian private sector provider, President Obama has also stated it is important to:

> *Allow health care providers access to Service members' and Veterans' health records, in a secure and authorized way, regardless of whether care is delivered in the private sector, Department of Defense , or VA*

The MHS and VA have been pioneers in adopting electronic health records well before their civilian providers. Therefore, in my humble opinion, the VLER initiative is an ambitious and natural progression of the investments that the MHS and VA have made in the realm of digital healthcare. Furthermore, the VLER initiative can shed light to the greater healthcare community's efforts to share health information via the Nationwide Health Information Network (NHIN). The question here today then is can the MHS and VA leverage its past and current focus on health information technology to translate into better care for our military personnel and veterans especially in underserved communities.

As an example, the VA has stated that it has decreased unnecessary hospitalizations through a wide-ranging effort to help veterans manage chronic conditions at home. [1] [2] Hospital use

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[1] Jia H, et al. "Long-Term Effect of Home Telehealth Services in Preventable Hospitalization Use," Journal of Rehabilitation Research and Development 46, no. 5 (2008): 557-566.

decreased 25 percent overall and 50 percent for patients in highly rural areas by linking 32,000 chronically ill veterans with health care providers and care managers through video phones, digital cameras, and messaging and tele-monitoring. This is an example of how the VA's investment in an electronic health record can 'springboard' better patient care and cost savings.

In FY 2006 an estimated 8.3% of the populations are Veterans. The Veteran enrollee population was about 7.8 million. About 38% of such enrollees live in rural or highly rural areas.[3] In these rural communities, access to a VA care facility is logistically and often financially challenging for most of these veterans. As I see it, our veterans have often gone to isolated places to serve us, so now it is imperative that we find means to serve them wherever they may reside. I believe that technology coupled with the internet and increasing digital broadband will allow for innovative means such as the example above to provide care in the rural communities.

Health Information Exchange as the System behind Access to Information to Help Veterans Care and Drive Mobile Technology

Cogon's health information exchange is designed to 1) ensure first and foremost electronic security; 2) facilitate data interoperability from disparate systems; 3) handle network scalability as required by the Nationwide Health Information Network (NHIN); and to facilitate other applications and innovations. The **VIRTUAL HEALTH NETWORK**® (VHN) is Cogon Systems, Inc. (Cogon) underlying software platform. The platform integrates with providers such as hospital's existing information systems. The VHN is agnostic toward specific types of electronic health records software. The VHN is not meant to replace electronic health records but as an augmenting data broker that will find, compile, and present this data to caregivers in a manner that will allow them to make the best decisions possible at the moment of care.

Furthermore, the VHN was designed to leverage 'cloud computing' so that providers do not have to make any capital investment such as buying unnecessary hardware and incurring significant software licensing. It is Cogon's focus to utilize the internet coupled to a utility business model to lay a foundation of flexibility and sustainability that we believe is critical for provider adoption. Health information exchange (HIE) provides for the sharing of clinical and

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[2] Darkins A, et al. "Care Coordination/Home Telehealth" The Systematic Implementation of Health Informatics, Home Telehealth, and Disease Management to Support the Care of Veteran Patients with Chronic Conditions," Telemedicine and e-Health, 14, no. 10 (2008): 1118-1126.

[3] Presentation of Adam Darkins, Veterans Health Administration Presentation at the Second National Rural Health Information Technology Conference, September 12-14, 2007.

administrative data across the boundaries of health care institutions, health data repositories, and States. The full potential is going to take time and multiple-steps to achieve.

Health information exchange includes core fundamentals such as participation, connectivity, data use agreements, privacy and security, record location, basic functionality, and return on investment. Our proposal for a sustainable model starts by focusing on these issues. For the next decade we need systems where institutions at different levels of sophistication may participate, be connected and have sustainable arrangement for sharing data where there is a business advantage. These institutions such as rural hospitals will migrate to more sophisticated systems such as disease management on time frames related to their circumstances and return on investment.   With health information technology (HIT), we should never let perfection be the enemy of good.

Providers have significant HIT issues to consider over at least 5 to 10 years: meaningful use requirements, new privacy and security rules, updating billing and coding standards for transactions, dozens of new reporting and operational requirements, new technologies, changes in practice, new pressure to control costs, changes that flow from health care reform changes to the insurance market, evidence based medicine, personalized medicine, and more. There is a lot of uncertainty over how these issues will roll out.   There are regulations, penalties, and financial risks from any investment. It is important to allow providers to participate at the level in exchange at the level that fits their schedule.   This approach is in keeping with our continued belief that healthcare should adhere to market forces as an impetus to innovation and better care.

The Pensacola Model: Strategic Health Intelligence

The health information exchange (THIE) project in Pensacola to facilitate the sharing of health information between military and civilian providers was a congressionally-funded project. The basis of congressional support for this endeavor is due to the fact that by some estimates, more than 60 percent of health care delivered to DoD beneficiaries is provided by private sector health care providers. Those providers are unable to access information regarding a patient's health status or care episodes from the MHS' electronic health/medical record systems. Similarly, patient visits to private sector health care providers which capture an enormous amount of information regarding care, health and readiness are not available to MHS providers. This is the reality of patient care in MTF communities across the country.

The project is fiscally managed by the MHS' Telemedicine and Advanced Technology Research Center (TATRC) that successfully tested the concept of exchanging protected health information between Naval Hospital Pensacola and private sector health care providers in Pensacola using

DoD/ VHA Bi-Directional Health Information Exchange (BHIE) interfaced to Cogon Systems' Virtual Health Network. The following data set can currently be accessed transiently by military and civilian providers via Web services: C32 Patient Summary, patient demographics, diagnoses/problem list, providers, allergies, medications, laboratory results, radiology results and clinical notes. This is the reality of patient care in Pensacola today. To date, more that 30,000 patient records concerning patients jointly seen by the MHS and Pensacola civilian providers can be shared. This data exchange is in compliance with the Data Use Agreement between our company and the MHS' TRICARE Management Activity office.

At the onset of the project, TATRC made it clear that there was no sustainment budget for this project regardless of its success. In looking at the sustainment of this project, we felt that a utility business model that allowed civilian and federal providers to cost share this project was the most market-based approach. Among civilian providers, we also had to contend with the sensitivity of a highly competitive environment where a common-value proposition may be a tough sell. Therefore, critical to a successful utility was the need for a trusted community broker that could govern and manage the utility. In our community, the Pensacola Bay Chamber of Commerce fit the profile of a neutral entity that could 'cut through the clutter. ' Under the auspices of the Pensacola Bay Chamber of Commerce, an organization called Strategic Health Intelligence has been established to manage the federal-civilian health information utility (HIU).

Pensacola/Escambia County is now one of the advanced digital healthcare communities in America. Pensacola pioneered shared governance involving federal and civilian providers across the entire community for its health information exchange. Furthermore, the Health information utility (HIU) business model is a template for sustaining shared costs between federal and competing civilian providers to effect "game changing" community-wide clinical decision support. The HIU is the first and largest instance of operational data sharing between civilian and federal providers to date. Pensacola/Escambia County also has a high rate of electronic health records (EHR) adoption (>40%).

The Florida Gulf Coast boasts a large contingency of active duty and retired military. Escambia County is fortunate to have not only the Naval Hospital Pensacola, but also a VA Joint Ambulatory Care Clinic. Both facilities are not only supportive of this application, they also play a significant role in the Chamber's HIU and are board members of the Strategic Health Intelligence, LLC.

The Chamber's health information utility (HIU) has a successful track record in connecting and exchanging health data between civilian and federal government networks. Initiated in 2008, the

Chamber's HIU has facilitated the largest instance of data sharing between federal and civilian providers by integrating 300,000+ unique civilian patient records from local hospitals and correlating those records with over 23,000+ unique federal records from the current health information exchange (HIE) between the DoD and VA. With demonstrable market penetration the Chamber is operating one of the largest sustained HIE systems in existence to date. This system is currently the largest operation connecting military data to civilian providers and demonstrating success and lessons learned can directly contribute to business and technologies in the emerging Virtual Lifetime Electronic Record /Nationwide Health Information Network (VLER/NHIN) pilot projects such as Phase 1a. The VA has a highly adopted electronic health record, VistA, and an advanced personal health record (MyHealth-Vet). However, to assure appropriate transitions of care as noted by President Obama, the VA and MHS' electronic health records must be interoperate with civilian providers'.   As I have mentioned we are exchanging data in Pensacola with the MHS under a data use agreement. This exchange is with the Bidirectional Health Information Exchange (BHIE) program that connects MHS and the VA. Though the BHIE is not yet want to include the VA in the exchange so we can help veterans make sure their transitions of care are coordinated.   Right now less than 20% private providers have adopted EHR's. This does not have to be an impediment to all exchange. If we make hospital, VA and DOD information available to providers via the web, this helps transitions of care.

In moving forward, we plan on transitioning to the National Health Information Network (NHIN) and to a sustainment model for health information exchange as a public utility under the auspices of Pensacola Chamber of Commerce. As we embark on health information exchange, we need to remember that the perfect is the enemy of the good. Community-wide health information exchange between civilian and military health care providers is a good place to start. And a market-based approach to cost sharing is the key to long term sustainment of VLER-like communities.

Mobile Technology As a Value-Added Adjunct

In addition to our experience with health information exchange involving federal providers, we are also under contract with TATRC to deploy a next-generation mobile solutions so that military providers at Madigan can access critical health information securely on the latest mobile devices over wide-area cellular network. I absolutely believe that over the next 10 years, mobile technology will undergo the seismic changes that we have experienced over the past 20 years with desktop/laptop computing. With increased mobile bandwidth coupled to greater computing power coupled to pervasive communication media (voice, email, text, video, etc.), the days of Dick Tracy's video watch is not far off. Since healthcare involves inherently a mobile workflow, I am excited as a physician and technologist how mobile technology will

transform the practice of care. Finally, I am also excited about how mobile technology in conjunction with healthcare data interoperability will empower our patients and veterans to assume true ownership of their care and health. I think that mobile technology can send alerts to our patients to make appropriate follow-ups, refill medications, and interface with their providers in virtual manners that will decrease the burden on our emergency rooms and medical practices while potentially keeping them out of expensive hospitalizations.

Transitions of Care for Wounded Warriors and Broadening Health Information Technology Incentives

On the issue utilizing health information and mobile technology to provide better, comprehensive care for our veterans, I would like to highlight an issue of incentives for ancillary providers, who play critical roles in the holistic care of our wounded warriors. In consideration of transitions of care for returning wounded warriors, the 2007 Report of the President's Commission on Care for America's Returning Wounded Warriors notes:

…Injured service members receive clinical care in many settings. It may be provided in military hospital inpatient units and outpatient departments, in the private practices of physicians and mental health care professionals, and in various physical rehabilitation programs connected with the hospital, the nearby community, the VA, or back home in their own communities. They also are eligible for numerous education, training, and employment programs that, although not clinical, depend for their effectiveness on service members' level of physical and mental functioning…..

….With our proposed comprehensive Recovery Plan, patient records would need to be electronically available to the Recovery Coordinator, health care professionals, and program staff across the continuum—from acute care, to rehabilitation, to long-term support, education, and employment programs, if needed. The system must be secure and designed so that various professionals have access to the information germane to their work…..

This means groups that provide orthotics and prosthetics, physical therapists, psychologists and more need to be part of the continuum of care with respect to electronic records and exchange. By leaving key groups out of incentives we are not only failing the recommendations of the Commission but delaying the day when full coordination across the continuum of care will apply.

Unfortunately, the ARRA funding for health information technology adoption left these critical groups out. The exclusion of these groups from the HIT puts care coordination and exchange

even further behind. Cogon and Pensacola are focusing on the transitions of care between military and civilian providers. Wounded warriors are a particularly important use case to promote and we look to Congress to assist with this effort. Again, by leaving key groups out of the incentives programs, we are undermining this vision and ignoring critical stakeholders in VLER communities.

Challenges for Rural Communities

According to the National Rural Health Policy Institute challenges for rural communities include[4]:

- Patients may be isolated, must travel long distances or are homebound; Access is a major problem
- Rural residents and minorities may be older, and often with certain chronic conditions
- Cultural and Language Barriers
- Low patient volume
- Longer wait times for Care
- Disjointed care; Lower quality of care
- Lower income, and less private insurance
- Many are Less Likely to Own or Use Computers
- Limited (but growing) Use of Internet
- Underserved Healthcare Providers may have no IT support let alone an IT Department; HIT Worker Shortages
- Hard to find M.D. or Admin. leaders / Change agents
- Other business priorities i.e. "surviving"
- No business case for connectivity / linkages to other institutions
- No aggregate buying power (hence pooled vendor selection processes & need for Networking)
- Need to address critical referral pattern issues, disruptions, patient flows etc.

These are all very significant that I believe highlights the need for web-based health information technology and mobile technology to help mitigate issues. Obviously, web-based exchange needs broad-band access, and I believe that the Federal Communications Commission is making significant investments to address rural broad-band. It must be noted that in Pensacola, the Chamber is also the lead agency in rolling out the Lambda Rail, which provides large bandwidth via a fiberoptic cable. Web-based software as a service in conjunction with broadband access

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[4] Presentation of Neal Neuberger, Executive Director, National Rural Health Association, Rural Health Policy Institute before the Institute for eHealth Policy, January 25, 2010.

will allow for 'cloud computing' offerings that will lower the barriers for rural communities to implement leading-edge approaches to better physical and mental health care. Below are some approaches that I believe could be championed by the VA in rural communities:

1) Social Networking – Modern healthcare is an inherent social network with the patient/veteran at its core. So some of the concept of Facebook™ and other social sites can be adopted to bring a level of transparency that will allow for multiple providers to better coordinate the complex, remote care of veterans in rural communities. Furthermore, I believe that social networking can be a means for veterans to support themselves as 'brothers in arms' in their transition to civilian life.

2) Interactive Mobile Personal Health Records – Personal Health Records (PHR) including My HealtheVet have had challenges of adoption by patients. At Cogon, we are working toward a mobile approach to PHR that will interact with patients via cell phones. We believe that health information needs to be available to the patients wherever and whenever they may be. And the same mobile mechanism can be utilized to reinforce specific care goals such as medication compliance via alerts and text messaging.

3) Care and Referral Management – The sustained care of wounded warriors often entails a coordinated complex care management scheme involving military, VA, and civilian providers. The coordination of care can be better automated and tracked,

4) Tele-medicine – Access to the cumulative record of veterans in rural communities will facilitate for veterans to make more 'virtual' visits to providers such as specialists.

5) Disease Management – As more health information becomes integrated and standardized, it will allow for the greater use of sophistical analytics tools to maximize patient care.

Summation

As a physician and a veteran, I would like to thank this committee for allowing me the opportunity to testify on a subject that is personally dear to me – the care of veterans. I believe that VA in conjunction with the MHS has an enormous opportunity and responsibility to maximize its leadership in health information technology in order to take care of our veterans. We hope the Subommittee will support efforts to add exchange with the VA to our current civilian-DOD exchange efforts in Pensacola to improve veterans care.