

Mobile Solutions Improve Quality of Care, Quality of Life for Visiting Nurse Association of Northern New Jersey

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Introduction

At the Visiting Nurse Association of Northern New Jersey (VNANNJ), we take tremendous pride in our history and traditions; we started out more than 100 years ago as a pioneering mobile workforce. We developed effective management and supervision for our organization before widespread use of telephones or motor vehicles. Today, we are using state-of-the-art communications technology to continue to refine our mission.

The Business of Mobile Healthcare

Our services are structured around a detailed plan of care for each of our patients. Typically, we begin to formulate this plan of care when primary-care providers or hospitals refer patients to us, often when that patient is still hospitalized. We have found that early planning and close coordination with primary-care providers is essential to developing an effective plan of care and ensuring a seamless transition between relatively intensive hospital care and less intensive home care. The culmination of our initial care planning process occurs with the first visit, when our visiting nurses finalize the plan of care. The visiting nurses work with patients and their families on scheduling and other logistics issues and, of course, complete the paperwork necessary for insurance and liability protection.

On a typical visiting nurse's workday, she will make six visits to patients in their homes. Each visit generates data related to patient care, principally a summary of therapeutic and patient care activities, and a brief report on the patient's medical condition.

Mobile Nursing Service Challenges

We are facing the same organizational challenges as many other health care enterprises. Home care for the aging is increasing in demand as the Baby Boom generation advances into its 60s. Staffing for this increased demand is another challenge. Growing and maintaining a skilled, motivated workforce is clearly integral to VNA's business model. The U.S. job market for qualified nurses is extremely competitive, which has caused us to rethink how we equip our people for success, seeking to ensure that they can focus on the most rewarding part of their job: providing top-quality home medical care. And, as a non-profit organization with limited resources, we must consider our human resource and capital investments very carefully.

A significant challenge for us is to consistently maintain up-to-date data on our nurses' visits. We want our nurses to focus on patient care, not on paperwork. And because our nurses already spend a significant portion of their working day on the road between visits, we also want to keep their time spent visiting our management offices to an absolute minimum or eliminate it all together.

Prior to our pilot projects with Alcatel-Lucent, our nurses relied on the U.S. Postal Service for transmission of their reports and paperwork back to our management offices. Use of the mail introduced time lags into reporting that hampered our management of our nurses and diminished our supervision of individual patient care plans. In addition, primary-care physicians could only access visit data that was a week or so old, degrading their ability to maintain up-to-date care and diagnoses.

Our procedures and policies must visibly add value to the nurses' duties, not add layers of stress and bureaucracy. For example, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) stringently requires all U.S. medical personnel to protect patients' personal and medical information. This requirement presents our mobile medical workforce with a significant logistical challenge: How would our visiting nurses maintain physical control over patient medical information, such as reports and case files, as they move? Fortunately, VNA was able to partner with Alcatel-Lucent to build a solution that not only protected our patients' sensitive data, but also improved the quality of patient care and quality of life of our workforce, and implemented better control over VNA's workflow management and back office business processes.

Remaining Competitive, Efficient and Secure

Improving on-the-job quality of life for our visiting nurse workforce by reducing administrative workloads and improving access to central VNA information and management resources is an area we saw could improve our ability to attract and retain top nursing talent. We also want to improve the accuracy, consistency and security of our recordkeeping – not only to elevate our quality of care, but also to cost-effectively remain in compliance with data privacy laws and cope with the increasingly complex bureaucracies of insurance and government payments on which our patients rely.

Building on the third-generation (3G) mobile high speed data pilot program we initially leveraged to meet some of these challenges, the Visiting Nurse Association again partnered with Alcatel-Lucent to develop a secure, flexible, mobile point-of-care (POC) system for our visiting nurse workforce. The mobile POC hardware – the front line of our system – is a commercial off-the-shelf laptop equipped with the Alcatel-Lucent OmniAccess 3500 Nonstop Laptop Guardian (NLG) solution. The actual NLG device is an always-on Personal Computer Memory Card International Association card that combines 3G wireless Internet connectivity with a variety of data encryption, communications encryption, global positioning system (GPS) and remote administration functions. For productivity, our mobile POC laptops are loaded with an e-mail client, web browser and VNA's patient management client, which securely communicates with VNA's 20,000-patient database server, as well as with VNA's management intranet.

VNA considered other security solutions, but chose NLG because it was the best all-around solution, providing robust data encryption, high-speed connectivity and a complete suite of remote access and control features. We decided against using a satellite-based GPS service for laptops; while it might facilitate the recovery of a stolen laptop, it would not necessarily protect patient data. We also rejected a USB dongle solution because experience has shown that users tend to leave dongles in computers and to be recovered, the laptops would have to be connected to the Internet – something an experienced identity thief would not likely do.

Gaining Employee Support

In our pilot project, our test group of visiting nurses began to enjoy the benefits of the POC devices after overcoming initial misgivings about the learning curve and perceived pitfalls of the new systems. Employees were concerned about accountability for an expensive piece of gear that would be in constant transit between their vehicles and patients' homes. They were also worried that

patient information – which they feel a professional duty to protect in compliance with HIPAA – would not be completely secure while POC machines were communicating via 3G wireless or if a POC machine were stolen. Misgivings about losing control of patient data were allayed after the IT department demonstrated how swiftly – and completely – the POC laptops could be disabled via NLG’s remote administration.

In a short time, nurses saw the benefit of instant access to the most up-to-date patient data. Primary-care physicians and other care providers also learned the value of up-to-date patient data. Web surfing has turned out to be an unexpectedly valuable tool for our nurses, who can use it to help shut-in patients get information they need for their treatment or well-being. Our nurses also appreciated the virtual elimination of time-consuming paperwork and mailing chores, as well as less frequent visits to VNA’s main office. The NLG technology also enables secure Internet access for our visiting nurses. Secure e-mail communication among VNA employees, as well as online access to VNA intranet information and services such as employee benefits enrollment, have saved time and enhanced the quality of life of our professional staff.

Registered Nurse using a laptop equipped with the Alcatel-Lucent OmniAccess 3500 Nonstop Laptop Guardian



Streamlined Remote Administration

From the IT management standpoint, the NLG/laptop solution has saved countless man-hours and has enabled VNA to keep its full-time IT support staff relatively lean. In particular, the remote administration and maintenance capabilities of the NLG technology have allowed the VNA IT staff to effectively maintain a complex, wide-area network with minimal additional manpower and capital investment. In addition to facilitating real-time, remote tech support to POC machine users, maintenance and patching of both the overall system and individual POC machines, the NLG’s remote administration capabilities also give VNA’s non-IT managers important new tools for supervising and managing the visiting nurse workforce. For example, a nurse who has not been compliant with our requirement to periodically synchronize visit data with the main VNA patient database can be prompted, via the remote-shutoff feature, to report back to the main office to update data in person and report to supervisors. Also, by using the system’s GPS capabilities, we can pinpoint

the location of each laptop in the field, which has proven beneficial in tracking the progress of our traveling professionals and in disablement and recovery measures in the event of a security breach.

The automation of patient visit reporting has also given VNA managers new ways to gauge individual nurse performance and fine-tune assignments to improve productivity of visits. In that vein, VNA has also begun to chart improvements in standards of care. For example, the accessibility of near-real-time visit reports to other visiting nurses and attending physicians has reduced medical mistakes and redundancies.

Mitigating Risk in a Mobile Environment

The general data management processes of VNA have realized measurable benefits from the VNA/Alcatel-Lucent POC deployment. The system has improved VNA's compliance with HIPAA by applying state-of-the-art protection to patient data. The remotely controlled management of encryption keys exceeds current requirements under the HIPAA privacy rules.

It has also provided VNA managers with much-needed peace of mind. When you consider the estimated cost to monitor and protect one individual from loss of personal data is approximately \$50 and the loss of a single VNA laptop could compromise up to 20,000 patient records, that's a \$1 million exposure if not properly secured.

So far, VNA has not had the misfortune of having a POC laptop stolen, although we believe it is only a matter of time and scale before we suffer such a loss – thefts have already occurred at other home care provider enterprises around the United States. The NLG solution also provides an audit trail in the event of a data security lapse. The application of NLG encryption to internal VNA e-mail offers further assurance that VNA employees can share information about individual patient care without risking an inadvertent disclosure.

Key Learnings Along the Way

- Anywhere and Anytime PC upgrades and data retrieval is more efficient for a highly mobile workforce who can remain in the field performing their duties while the IT professionals achieve their goals remotely.
- Administrative tasks can be easily automated and executed remotely, increasing efficiency and productivity.
- GPS enabled laptops identify a computer's location, which helps track the progress of our mobile workforce and helps with asset disablement and recovery in a security breach condition.
- Truly securing patient data in a mobile environment is a competitive differentiator for our visiting nurse business and a comfort to our clients.

Conclusion

The Northern New Jersey VNA's joint effort with Alcatel-Lucent has been a success, not only from the IT management perspective, but also because it has helped us forge a vision of how our proud tradition can carry on into the 21st century as a modern, competitive health care enterprise. Improved connectivity and data processing are helping us refine quality of care and better focus increasingly scarce resources. State-of-the-art security technology allows VNA and its visiting nurses to use and transmit patient information confidently in the field, while giving it all the protection our patients deserve. For the long-term viability of VNA, we are using technology investments to leverage our most valuable investment: our people, without whom we couldn't serve our patients. ☒

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