



**ALLEXIAN**  
GLOBAL HEALTH CARE ADVISORS

## **Telemedicine Provides Cheaper Clinical Treatment: Myth or Must Have?**

**The Veterans Health Administration, using telemedicine, led to a 25% reduction in the number of bed days of care and a 19% drop in hospital admissions. At \$1,600 per patient per year, it costs far less than the VHA's home-based primary care services (\$13,121 per year) and nursing home care rates (\$77,745 on average per patient per year). As we move from 'care-in-place' to 'connected care', the answer for telemedicine depends on the disease condition and the application. Providers are faced with the unenviable task of deciding how to use new technology at the expense of cannibalizing existing revenues.**

**Telemedicine is the provision of clinical care from one site to another via electronic media. Telemedicine encompasses specialist referral services (e.g., radiology images read remotely), remote patient consultations and remote patient monitoring. Specialist referral services is a mature industry and we mention it here for completeness.**

**Remote consultations and monitoring are enabled by growth in broadband availability, wide use of smart-phones and new high efficiency monitoring devices enabled by ANT technology (among others). Consensus is that remote applications, for the most part:**

- **Reduce costly visits to the ER**
- **Reduce patients transportation costs**

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*"...neurology, cardiology, dermatology, and pediatrics. In rural areas tele-consultations can bring a higher quality of care by making a specialist available that would not otherwise be available or would require the patient to make a lengthy trip to the nearest large hospital."*

*"...a Mass General stroke specialist activated a video link through which he could see Beverly on a gurney at St. Luke's. He had to determine whether she was having a stroke and, if so, what caused it."*

- Drive down hospital re-admissions through early detection
- Has high acceptance by patients, care givers and physicians
- Improves the quality of care

### ***Remote Rural Tele-Consultations***

Remote tele-consultations provide specialty health services to rural and urban populations using telecommunication. This approach has been expanding for several years and currently covers various specialty areas such as neurology, cardiology, dermatology, and pediatrics. In rural areas tele-consultations can bring a higher quality of care by making a specialist available that would not otherwise be available or would require the patient to make a lengthy trip to the nearest large hospital. With specialist treatment made available earlier, a patient is less likely to have their first treatment in the ER -- the most expensive option! Today the reimbursement rate for many tele-consults is the same as for face-to-face treatment.

At 49 years old, Beverly suffered a stroke. Her friend drove her to St. Luke's Hospital, which has a broadband video link to the stroke center at Massachusetts General Hospital ("Mass General"), 75 miles away. Minutes after her arrival, St. Luke's emergency department staff assessed her symptoms, ordered a brain scan and called Mass General. A Mass General stroke specialist activated a video link through which he could see Beverly on a gurney at St. Luke's. He had to determine whether she was having a stroke and, if so, what caused it. A hemorrhage could require emergency brain surgery, whereas a clot could be treated with tPA, which must be administered within the first three hours of stroke onset. The specialist conducted a neurologic exam over the video link while receiving critical vital signs and lab values. He determined a clot was the cause and when the stroke started by asking her yes/no questions to which she could nod her responses. Beverly received tPA right at the three-hour deadline. The nurse recalled being shocked at Beverly's recovery. It was as if all the symptoms were gone. "Wow! I can talk!" the nurse remembers her saying. Faster, cheaper treatment that possibly saved a patient's life.

### ***Remote Urban Consultations***

In an urban setting, tele-consultations have a different application but the impact is the same. Elderly and frail patients can receive consultations at home or in a long term care facility. These 'connected care' treatments reduce the costs of transportation, deliver faster treatment times and provide a better experience for the patient.

Remote monitoring has good applications in post-acute and chronic disease treatments. Generally, benefits include:

- Reduction in acute hospital admissions and re-hospitalization episodes
- Improvement in patient's quality of life to include reduction in days spent in hospital and travel time associated with appointments for patients
- Reduction of chronic disease complications

*"...connected care' treatments reduce the costs of transportation, deliver faster treatment times and provide a better experience for the patient."*

*"...(telemedicine led to a) 25% reduction in the number of bed days of care and a 19% drop in hospital admissions."*

*"...remote monitoring of diabetic patients glucose levels has not proven to be as cost effective on a widespread basis as CHF and COPD."*

**Allexian delivers operational improvement and strategy focused on bottom line and value creation.**

**As former CEOs we**

- Patient and health professional acceptance and satisfaction with remote tele-monitoring
- Improvement in patient self management and education
- Significant reduction in mortality associated with chronic heart failure

The Veterans Health Administration (VHA) coordinates the care of 32,000 veteran patients with chronic conditions through a national program called Care Coordination/Home Tele-health (CCHT). CCHT involves the systematic use of health informatics and e-care to avoid unnecessary admission to long-term institutional care. Technologies include videophones, messaging devices, biometric monitoring devices, digital cameras and remote monitoring devices.

CCHT led to a 25% reduction in the number of bed days of care and a 19% drop in hospital admissions. At \$1,600 per patient per year, it costs far less than the VHA's home-based primary care services (\$13,121 per year) and nursing home care rates (\$77,745 on average per patient per year). Based on the VHA's experience, e-care is an appropriate and cost-effective way to manage chronic care patients in urban and rural settings. Most importantly, it enables patients to live independently at home.

Today there are over 1 billion smart-phones globally, with over 200 million in the US. A newly released smart-phone application offers a glimpse of the potential when consumers enter even a small amount of data. AsthmaMD helps patients manage their asthma by inputting a number of parameters, including current medications, and attack timing and severity. Users can opt to share their data anonymously with the service. The data is aggregated and analyzed with the aim of better understanding the disease, as well as providing specific personalized solutions for the consumer. For example, the application can help users better understand the effectiveness of different medications for asthma management and offer insights into specific triggers for that individual's attacks (e.g., pollen, dust, exercise). The application also can track the consumer's precise location and the timing of their asthma activity, which can be correlated with local pollutant count, adverse weather changes and different types of pollutants. In addition, it can alert users with higher risks of an attack in real time if it detects users with a similar asthma history reporting asthma issues. Ultimately it could send live Twitter streams showing geographic areas with asthma flare-ups in real time.

There have been many studies of remote monitoring of other chronic conditions specifically the most pervasive and costly to treat: diabetes, congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD). Remote monitoring of these diseases generally involves measuring vital sign parameters like pulse, blood pressure, oxygen saturation and blood glucose levels. Remote monitoring for CHF and COPD patients improves the quality of care because it provides frequent monitoring of clinical indices that signal changes in cardiac and pulmonary status. These systems permit a medical professional to detect changes and intervene when appropriate. Early

assist health care companies with planning and execution.

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**detection likely leads to cost savings by reducing inpatient admissions and ER visits.**

**However, remote monitoring of diabetic patients glucose levels has not proven to be as cost effective on a widespread basis as CHF and COPD. The reasons are not clearly understood.**

**In conclusion, telemedicine applications are expanding daily and generally the impact is positive for providers and patients alike with a few notable disease exceptions. Telemedicine generally lowers the costs of treatment if the ER and hospital admissions can be avoided, improves patient care and is creating new business models that shift clinical service from care-in-place to connected care. Telemedicine...when done right, is a must have!**

**This shift to new business models is very relevant to incumbent providers and presents a big business problem. There is a saying in Washington DC, if you're not writing the menu you're on the menu. Smart providers need to adopt lower unit cost telemedicine solutions. No doubt there will be some cannibalization for these providers but better that you cannibalize your own business than someone else takes it away from you.**

#### ***Afterword***

**On Oct 13, 2010, A&D Medical announced new monitoring devices using ANT wireless technology for wellness coaching and health tracking. ANT is a very efficient wireless technology with low power usage, meaning a device can last for years on a coin sized battery. Suitable for Web-based employee health programs, disease management, prevention programs and consumer wellness solutions, A&D Medical's ANT devices enable a richer, more data-driven experience for both program administrators and end users.**

**The four A&D Medical products include a Wireless Activity Monitor, Wireless Automatic Blood Pressure Monitor, Wireless Precision Scale, and ActiLink™ USB Transceiver. Through daily tracking of blood pressure, weight, and physical activity, individuals can become aware of their personal progress and take a proactive approach to caring for their health.**

***Allexian thanks Carol Rizzo for the insight that she provided in this month's newsletter. Carol has had a long career in technology, spanning Citigroup, Fidelity and most recently as CTO at Kaiser Permanente. Today she is consulting on health care exchanges.***

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