

The Role of Telehealth in an Integrated Health Delivery System

How Telehealth Can Provide the Bridge between Patients and Healthcare Providers

Against the changing landscape of healthcare reform, healthcare organizations in the United States are focused on achieving the industry's identified "Triple Aim" goals of improving patient care, and population health while reducing overall healthcare costs. And while experts in the field maintain these objectives aren't mutually exclusive, they also suggest success will require the U.S. healthcare system to change from the current fee-for-service (FFS) model, which revolves around individual patient treatments, to a more all-inclusive approach that measures patients' overall health, wellness and the quality of care.

This shift in healthcare delivery will require better cohesion and coordination among providers, insurers and government agencies, as well as increased levels of accountability among all parties in the care continuum – drivers for the current development of integrated health delivery systems as well as Accountable Care Organization (ACO) models.

Both healthcare delivery models are designed based on a blueprint in which there are considerable financial incentives for healthcare providers to improve overall patient health across a connected continuum of care while also managing their costs more efficiently. This evolution in the healthcare industry is also causing new quality measures to be developed, supported by the more holistic approach to patient care that extends beyond hospital walls, and includes all of the parties involved in a patient's healthcare.

All of which begs a critical eye be turned to the modus operandi of current healthcare delivery, to see where new quality measures can be implemented across the care continuum – to the ultimate realization of improved quality of care and financial benefits.

And onto that field of vision, technology in the form of telehealth is one catalyst changing the landscape of patient healthcare.

An Environment Ripe for Telehealth Adoption

A brief look at the current healthcare model in the U.S. yields statistics most industry practitioners are all-too familiar with:

- Readmissions cost the U.S. approximately **\$600 billion** – or 30 percent of the \$2 trillion spent on healthcare each yearⁱ;
- Approximately **20 percent of Medicare admissions are readmitted to the hospital within 30 days** of dischargeⁱⁱ; and
- More than **75 percent of 30-day readmissions are due to avoidable circumstances**ⁱⁱⁱ, including poor communication across the patient care continuum, poor planning prior to patient discharge from the hospital, and/or a lack of understanding on the part of the patient or family members involved in patient discharge.

In conjunction with increasing healthcare cost trajectories, patients have clearly articulated the desire to incorporate technology into their overall care management. In fact, a recent survey by Accenture^{iv} found that **90 percent of patients** want online access to health information and education to help them manage conditions. The study also found that:

- **83 percent** of patients surveyed want to access personal medical information online;
- **72 percent** of patients surveyed want to book, change or cancel appointments online;



- **72 percent** of patients surveyed want to request prescription refills online; and
- **88 percent** of patients surveyed want to receive email reminders about preventive or follow-up care.

In an environment where the desired end-result from both patients and healthcare providers is increased communication and continued medical oversight with patients after they are discharged from the hospital (or healthcare specialist), one key element of the solution is telehealth.

With complete turn-key telehealth-based technology solutions now available, and so much cost-saving potential unaddressed within the current patient discharge model, it is no wonder the Centers for Medicare and Medicaid Services (CMS) have encouraged ACO's to utilize telehealth in its recent final rule.¹ Included as part of the final ruling, ACO's are required to define a process to "coordinate care, such as through the use of telehealth, remote patient monitoring, and other enabling technologies. Coordination of care involves strategies to promote, improve, and assess integration and consistency of care across primary care physicians, specialists, and acute and post-acute providers and suppliers, including methods to manage care throughout an episode of care and during its transitions, such as discharge from a hospital or transfer of care from a primary care physician to a specialist."

Telehealth solutions are the perfect companion to integrated healthcare delivery networks and ACOs because they have the same overarching goal: making healthcare delivery more efficient (i.e. bringing the right level of care to the patient at the right time) to reduce readmissions while simultaneously increasing quality of patient care.

Case in Point: Lee Memorial Health System

Lee Memorial Health System (LMHS)² is a public health care system which includes four acute care hospital locations (Cape Coral Hospital, Lee Memorial Hospital, HealthPark Medical Center, and Gulf Coast Medical Center) as well as other healthcare facilities and services, including; Lee Memorial Home Health agency, a nursing home, out-patient treatment and diagnostic centers, physician offices, a children's hospital and a rehabilitation hospital.

As an integrated health delivery system, LMHS has fully committed to the goal of reducing readmissions, a goal through which the organization ultimately extends accountability for success to every practitioner in the system.

Recognizing the ability of their newly initiated telehealth program to positively impact this system-wide goal, the Lee Memorial Home Health team obtained system wide support for remote patient monitoring following patient hospital discharge thus facilitating the collaboration between the hospitals, physicians and other care practitioners.

To that end, the Lee Memorial Home Health group utilized Honeywell's LifeStream Solutions, a combination of remote patient monitoring devices and back-end support software, which offered analytical tools to help LMHS healthcare staff track patient outcomes and patient case load, as well as standard reports to measure operational and clinical staff efficiency.

Reducing readmissions at LMHS centered on improving patient care transitions with telehealth because patient biometrics could be regularly monitored with a remote device after hospital discharge. With that infrastructure in place, any changes in the patient's condition could be detected early on and medical interventions could be initiated to prevent potential complications and a hospital readmission.



In addition, LMHS care providers could use telehealth to provide patients and their families with education related to discharge instructions or their diagnosis.

For patients, this experience provided them with a basis for ownership in the management of their diagnosis, the result of which was increased compliance and patient engagement. This impacted the quality of care, resulting in improved clinical outcomes.

The care model created by LMHS was team-based in approach, involving physicians, nurse practitioners, telehealth nurses, trained technicians, pharmacists and specialists (principally cardiologists). This approach accomplished system-wide buy-in for the program's success, and also ensured all care providers in the patient care continuum were aware of how patient oversight following discharge would occur. In addition, Lee Memorial Home Health established key metrics around readmission rates, which they could then track and communicate to raise system-wide awareness for the program and its effectiveness in impacting the ultimate goal of reduced admission rates.

The Nuts and Bolts: How LMHS Achieved Success

Launched in 2010, the LMHS telehealth program began with 50 remote patient monitors, and has since grown to more than 250, with more than 6,000 patients monitored to date.

To ensure success, LMHS researched other health systems and benchmarked against other documented programs provided by Honeywell, while also collaborating with a broad-based team of LMHS staff (including physicians, discharge planners, case managers and clinicians) as well as the community of patients they serve.

As a result, the program was launched with a strategic plan and triple-pronged approach to continual improvement:

- Collect data from the inception of the program – and reported their metrics within the system;
- Analyze data for trends to improve the program and its methodology; and
- Calculate readmissions rates on a monthly basis, and track results against previous months.

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The strategic launch gave the Lee Memorial Home Health group the ability to develop and implement techniques for improving overall communication across the care continuum. For example, they created a way to interact with physicians based on the level of patient urgency/emergency using protocols to address common patient symptoms that present in remote monitoring data.

In order to capture the level of program success in addressing the principal goal, Lee Memorial telehealth staff members document interventions that prevent a patient readmission and these interventions are tracked and analyzed and then documented as a “save” for the system. A typical “save” might include the notification of a physician that a patient’s vital signs had fallen out of the established telehealth parameters, for which the physician might provide additional orders. An immediate intervention such as this one resulted in a positive outcome for the patient who could then remain in their home, while also avoiding a trip to the emergency room, which may have also been followed by a hospital admission.

And in true six sigma format, the Lee Memorial Home Health staff is also committed to the ongoing improvement of the program, through the collection and analysis of a series of metrics designed to measure not only initial results, but provide a deeper insight into potential areas of improvement. Standard metrics currently utilized include:

- Readmission rates;
- Discharges from acute care for resumption of care by the agency;
- The total number of patient home visits for per episode; and
- Feedback from LMHS readmission group.

Clinical outcome data would then be shared with all applicable practitioners across the full care continuum at LMHS readmission team meetings. Additionally, the same outcome metrics would be analyzed along with the financial data to validate system cost savings and reported regularly to the Lee Memorial physician group and senior leadership.

Return on Investment

Since its inception in 2010, the LMHS Telehealth program has allowed the system to avoid 1,282 readmissions to the hospital, resulting in an estimated savings of more than \$7.1 million, based on average LMHS hospital costs of \$5,600/hospital admission or readmission (a figure much lower than the national average of \$9,600, according to CMSvii).

LMHS 30-day readmission statistics for telehealth patients:

FY	2011	2012	2013 through February 13
All Telehealth readmissions	13%	10%	9%
Telehealth MCR*	12%	10%	8%

*MCR is an acronym for Medicare

In Conclusion

Through the examination of the rate of success in reducing readmissions in one healthcare system, telehealth can clearly impact the efficacy of healthcare delivery at every point in the care continuum, providing the opportunity to reduce readmissions and improve the quality of patient care coordination.

As healthcare organizations work to form integrated delivery networks or become ACOs in order to leverage a more streamlined healthcare model, the system-wide embrace of telehealth solutions as a communication bridge for the patient discharge process can (quite literally) be the missing link.

Lee Memorial Health System is an award-winning health care system with more than 9,500 employees, 4,500 volunteers, and more than a million patient contacts each year. The medical staff totals nearly 1,130 physicians. As part of Lee Memorial Health System, Lee Memorial Home Health provides professional health care to patients in their own homes, and is accredited by The Community Health Accreditation Program.

References

i Fazzi R, Agoglia R, Mazza G, et al. The Briggs National Quality Improvement/Hospitalization Reduction Study. *Caring* 2006 Feb;25(2):70-5

ii Alliance for Health Reform. Covering health issues 2006-2007 [online]. 2007 Feb 21 [cited 2009 Jul 17]. Available from Internet: <http://www.allhealth.org/sourcebooktoc.asp?SBID=1>.

iii Jiang HJ , Russo CA, Barrett ML. Nationwide frequency and costs of potentially preventable hospitalizations, 2006. HCUP Statistical Brief #72. 2009 Apr [cited 2009 Nov 16]. Available from Internet: <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb72.pdf>.

iv Accenture full study available at: <http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Is-Healthcare-Self-Service-Online-Enough-to-Satisfy-Patients.pdf>

v Federal Register, Vol. 76, No. 87, pps. 26, 29

vi Please see <http://www.leememorial.org/> for more information on the Lee Memorial Health System

vii Barrett, DL, et al. The Gatekeeper Program. Proactive identification and case management of at-risk older adults prevents nursing home placement, saving healthcare dollars a program evaluation. *Home Healthcare Nurse*. March 2010;28(3):191-197.