Home Health Care
Management & Practice
Volume 21 Number 1
December 2008 39-43

10.1177/1084822308321609
http://hhcmp.sagepub.com
hosted at
http://online.sagepub.com

Reducing Hospitalizations Through the Implementation of a Telehealth Program

Donna Peters, DNP, RNC
Rockingham Visiting Nurse and Hospice

Telehealth in home care has proven to decrease rehospitalization rates across the country. This article describes one home care agency's journey and strategies that have reduced the rehospitalization rate of patients with heart failure. Early identification of high-risk patients, implementation of a dedicated staff person to facilitate referrals and monitor the program, intensive staff education, and clinical collaboration has resulted in measurable outcomes. This northeastern U.S. home care provider, that is, the Rockingham Visiting Nurse and Hospice Association, has demonstrated reduced hospitalizations for heart failure patients by 17%.

Keywords: *telehealth; heart failure; results; outcomes; hospitalizations*

Home health care reimbursement is continuing to challenge the financial viability of agencies across the country. In an effort to meet those fiscal challenges and maintain a commitment to quality patient care, the home care department at Rockingham Visiting Nurse and Hospice Association (RVNA & H) has developed and implemented a disease management program. RVNA & H, located in urban northeastern United States, has initiated a major change in practice standards to meet the demands of one specific chronic disease, heart failure (HF). The program identifies the high-risk patients and utilizes an interdisciplinary disease management approach to care, coupled with telehealth monitoring to improve quality outcomes and support financial viability.

Chronic illness has become increasingly prevalent due to the growth in elderly population as well as the increased life expectance for the home care target population. The specific cardiac and heart failure disease process may last for years and is a major cause of morbidity and mortality (Gorski & Johnson, 2003). Home care agencies are challenged to care for this large population of chronically ill people while operating under increased insurance regulations and standards. The focus of home care has experienced the movement for the care of acutely ill to the care of people with chronic disease to the home care setting.

Heart failure is a leading chronic disease, affecting nearly 5 million people in the United States (American Heart Association, 2006). HF is a common discharge diagnosis associated with a high readmission rate to the hospital setting from community and community care settings. It is widely reported that once a person has been hospitalized with HF, there is a 25% chance that they will be rehospitalized or die within 3 months (Kinsella, 2003). These patients are caught in a revolving-door process that spirals downward and leads to decreased functional ability, thus causing deterioration of health. These findings provide the basic information that serves as one foundation for initiating a disease management program whereby the population is assessed; care is standardized and evaluated for decreased rehospitalization rates and improved functional outcomes. In this organization's disease management approach to care with HF patients, the first step is to identify high-risk patients upon admission to the agency. These patients are then presented in an interdisciplinary conference during which the patient is assessed for telehealth, and throughout the care process the patient is closely monitored. For the patients who have been on telehealth, the organization has demonstrated a reduction in readmission rates throughout their course of care. Included in this care delivery process is daily evaluation of transmitted data, intense patient education, early intervention, and outcome management.

The introduction of Medicare Pay for Performance (P4P) will further challenge home care agencies, as reimbursement will be tied to patient outcomes (Center

Author's Note: Correspondence regarding this program can be addressed to dpeters@ehr.org.

for Medicare and Medicaid, 2002). The remote monitoring intervention plan was developed to facilitate improved quality of care for the HF patient through ongoing assessments and evaluation, thus decreasing their rehospitalization rate and addressing escalating health care costs for patients with chronic disease. Remote monitoring in the patient home affords home care agencies, in collaboration with hospitals, the opportunity to meet the health care challenges utilizing a cost-effective, quality-of-care approach. The HF disease management program at RVNA & H is a stepping stone to strategically prepare for P4P. Daily monitoring of HF, including reporting changes in vital signs, weight, and symptoms, can improve patient quality of life.

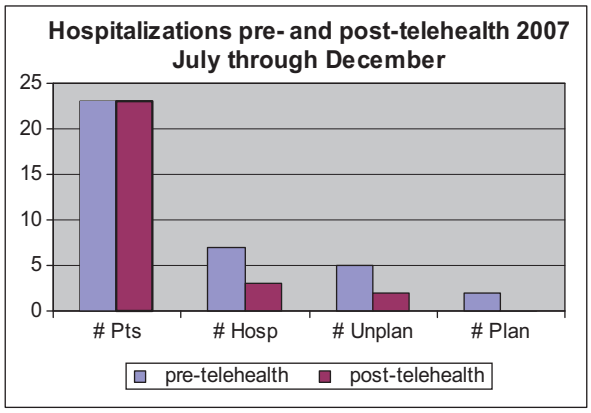
Health care professionals need to maximize resources and introduce the use of technology to improve the care of this population (Schneider, 2004). Health care reimbursement will soon be based on the efficiency and proven quality of care that providers identify to the payer (Remington, 2000). RVNA and Hospice planned and implemented a home care program that combined technology and point of care intervention with the identification of high-risk patients for improved quality care and reduced health care costs.

Program Description

RVNA is a not-for-profit community home care agency that is a subsidiary of Exeter Health Resources in Exeter, New Hampshire. Our average daily home care census is between 380 and 400 patients. Our service area covers Rockingham County, which includes 25 townships. Seventy percent of our patients are Medicare beneficiaries. It is imperative that we strategically plan for the future and implement programs that will place us as the agency of choice within our catchment area. In doing this, we align ourselves with our vision: "As a preferred provider, Rockingham VNA & Hospice will be a leader in home care and hospice services. This leadership position will be derived from the excellence of our health services and the capabilities and commitment of our staff."

The purpose of our program is to educate patients, change health care behavior to improve or maintain functionality, and decrease hospitalizations. Hospitalizations among HF patients in home care have seen a rise nationally, as well as locally. This rate is one of the key foci of home care outcome measurements and quality indicators. Home care goals are enhanced by facilitating the patient's transition from acute care to self-care while fostering independence (Frantz, 2004). The program teaches and monitors the patient to identify and report early signs of exacerbation or decompensation. Once identified and reported, early intervention is provided. The point of care intervention has reduced hospitalizations and improved patient care outcomes (see Figure 1).

Figure 1
Hospitalization Date Pre- and Post-Telehealth Comparing the Same Patients, July Through December 2007



RVNA & H started the planning for this intensive project in June 2006. The agency, as part of the Quality Improvement initiative, participating in the Reducing Acute Care Hospitalizations (REACH) collaborative to reduce rehospitalization rates, began to collect information and review patient data from those readmitted to the hospital. The rehospitalization rate at that time for RVNA & H was 29.7%. The national benchmark goal is 23%. This organization's 2007 monthly rehospitalization rate has gone from 38.6% in January to 22.7% as of December 2007.

Program Components

- Risk assessment tool
- Disease management RN dedicated to the program full-time
- Physician collaboration
- Outcome management

Program planning started by reviewing patient data and implementing a system that would identify high-risk patients. After three revisions of the high-risk tool, the team agreed on the following document (see Figure 2).

In the current process, at the admission and the resumption of care visit, the risk assessment is completed by the clinician and forwarded to the Disease Management (DM) RN. Based on the scoring of the clinical measure, and/or the clinician's professional assessment, a high-risk plan is

Figure 2
Risk Assessment Tool Completed at the Time of Admission and the Resumption of Care to the Agency

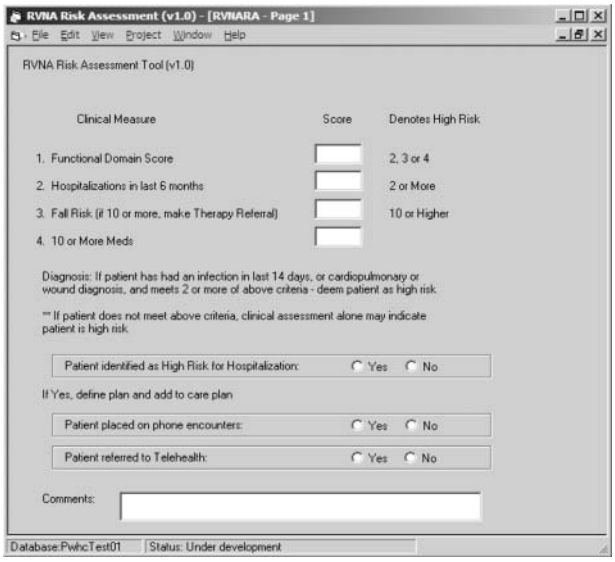


Figure 3
Telehealth Parameters Obtained From Physician Once Monitor Is Set Up

Health Buddy Remote Monitoring System

Patients Name: _____

DOB: _____

Use telemonitoring system in patient's home

Parameters for BP and HR readings

Call if SBP greater/less than : _____
Call if DBP greater/less than : _____
Call if HR greater/less than: _____

Printed report of weight, BP and HR:
Fax results to my office – please check one
- o Weekly
- o Every two weeks
- o Only with abnormal readings as above
- o Do not fax – call abnormal readings per above parameters

Diuretic orders

If weight is up _____ lb/day - diurese with _____
(med including mg)
for _____ days *OR* _____ doses

MD Signature: _____

developed and communicated to the care team and to the DM specialist. When the DM specialist receives the risk assessment information, if the patient is deemed high risk, she evaluates the patient for telehealth with input form the clinical staff. If the patient meets the criteria for telehealth, the DM RN collaborates with the MD for orders and parameters specific to each patient (see Figure 3). The physician, in collaboration with the DM RN, establishes the specific parameters for the individual patient, which are then recorded onto the Health Buddy Remote Monitoring System (see Figure 3) and signed by the physician. The DM RN then schedules a visit with the patient and or family to set up the telehealth monitor. By having the DM RN complete the telehealth visit, a relationship is established with the patient and family whereby when the DM RN calls the patient regarding the incoming data, the patient is familiar with the nurse and readily communicates. If needed, the DM RN will make an evening visit to the patient for assessment and intervention. Hiring a full-time RN to oversee the HF telehealth program has been a huge asset to the agency. Prior to this position, we had several clinical staff setting up the monitors and reviewing incoming data on a daily basis. That process fragmented care and decreased staff buy-in because there was no one committed to the success of the program.

RVNA & H has developed a communication tool for the physician that sets the stage for continued communication regarding the telehealth data. The physician provides the agency with parameters for blood pressure, pulse, and diuresis according to changes in weight (such as weight gain more than___ lbs. in a day or more than ___ lbs. for ____consecutive days). Obtaining orders for early intervention has been expedited through our collaborative efforts with the physician. The system has the capability for the DM nurse to print reports of vitals signs and weight trends that are sent to the physician as requested. The DM specialist has formed relationships with the physician office practices that has opened the avenues of communication, and has led to an increase in initial referrals directly from physicians at the start of care.

RVNA & H track patient admissions to the hospital and Emergency Department (ED) visits. Our results to date are out of 32 patients being monitored, 7 have gone into the hospital and 5 have needed ED visits. Prior to implementation, the same group of patients, not being monitored, had 10 hospitalizations and 12 ED visit. Based upon internal calculations and OASIS data, telehealth point-of-care intervention has reduced the agency's hospitalization rate for HF patients by 17%.

The Center for Medicare and Medicaid Services (CMS) has been reporting outcomes to home care agencies from the OASIS data collected at time of patient assessment. As P4P continues to unfold over the next few years, agencies will be compensated with a bonus for good outcomes and penalized for poor outcomes. As RVNA & H prepared the outcome evaluation for the HF patients, outcomes were chosen that are included in the CMS reporting. Those tracked include:

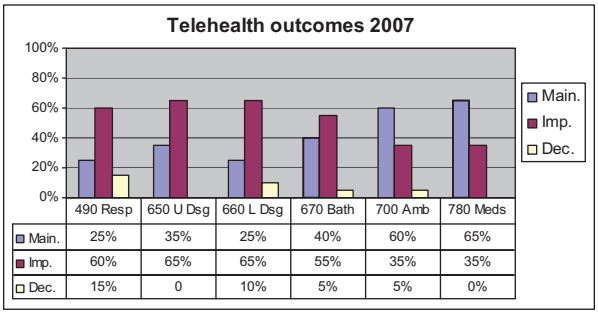
- improvement in respiratory status,
- improvement in upper and lower body dressing,
- improvement in bathing,
- improvement in ambulation, and
- improvement in medication management.

These outcomes look at functionality of patients' ability to independently care for themselves. The results of outcomes for the telehealth patients are displayed in Figure 4. The overall goal is to improve the patient's quality of life and, based on the results to date, the majority of patients have improved in function or maintained their baseline. Due to the natural progression of chronic illness, there will be those patients that may decline. It is at that time that RNVA & H seeks alternate care for the patient, such as palliative care or hospice.

Internal Transformation

Introducing telehealth has been embraced by the staff after many months of education and feedback. Once RVNA & H have the DM RN in place, it is important to make certain that patient data is shared at the team meetings so staff sees how the daily monitoring, as an adjunct to the clinical visits, impacts patient outcomes. The quantifiable goals that were set forth in reducing hospitalization rates and improving functional outcomes provide staff with an area of focus and priority when making patient visits. RVNA & H attribute the success of the telehealth program to its ability to maintain focus on the program, have consistent and intensive communication among staff and managers, development of workable internal processes, and sharing results of the programs success in reducing hospitalizations. Utilizing the DM RN as another staff person available for as-needed visits enhances commitment to point-of-care intervention to prevent complications. Internal networking between field staff and the DM RN is increased through patient care conferencing, voice mail, and documentation. Utilizing the telehealth data in trending patient vital signs and weight with hands-on assessment provides a comprehensive evaluation of the patient. Collaborative practice is becoming a successful strategy in caring for these chronically ill patients. A team relationship has been formed between the DM RN and field staff to achieve effective results from the telehealth program.

Figure 4
Functional Outcomes Based on Data From OASIS MO Questions, Showing Improvement (Imp), Maintenance (Main), or Decline (Dec) in Function



	490 Resp	650 U Dsg	660 L Dsg	670 Bath	700 Amb	780 Meds
Main.	25%	35%	25%	40%	60%	65%
Imp.	60%	65%	65%	55%	35%	35%
Dec.	15%	0	10%	5%	5%	0%

Critical Elements

In the time that it took RVNA & H to develop and implement our program, there are some key areas that we deemed as important components for the success of the program.

1. Clinician education and observation of agency data and projected goals. RVNA & H has committed to agency-wide education regarding the care of the HF patient. Case studies were reviewed by the medical director and shared with staff as opportunities for improved patient care.
2. Recruitment and hiring of a DM specialist RN. This has been a key component in the success of the program. The DM RN attends all care team interdisciplinary meetings on a regular basis to educate staff, provide patient updates, and evaluate new referrals to the program. Having one point person for patients to call and talk with regarding their telehealth monitor has established continuity and collaborative practice with physician offices.
3. Established protocol forms for MD offices to order parameters and establish timelines for data transmission regarding patient findings. Physicians have provided feedback relative to the positive affect that the daily monitoring and early intervention has had on patient care.
4. Administrative and IT support was critical for us for education and trouble-shooting of monitors in

the patient's home. The commitment of the senior management team to the program has been very beneficial to the program. To effectuate a major practice change such as this program, you need to have dedication and commitment agency-wide.

5. Patient satisfaction with the telehealth device has been reported as excellent by patients and families in conversation or discussion regarding the telehealth program. In an effort to obtain additional and more specific satisfaction data, in the first quarter of 2008, surveys were sent to patients that are discharged from the monitor. To date, there is a 68% rate of return on the satisfaction surveys. Responses have been favorable; 100% of the surveyed patients agreed that the Health Buddy worked well for their health care; 91% stated promptness in reaching the telehealth nurse; 92% agreed that the device was easy to use. Accolades to the agency: "It is an excellent tool for home monitoring." "We appreciate the calls from the nurse checking in. The monitor allows us to monitor closely and keep track of any fluctuations in vital numbers that help us manage in advance of potential dangers."

Future Endeavors

RVNA & H is looking to expand its in-home monitors beyond its HF population into other disease management opportunities. Funding has been obtained to purchase additional monitors that will expand the program. Currently, there are 15 monitors that are being utilized for all patients throughout the county. In the next 3 months, an additional 25 units will be obtained that will be specifically dedicated to a larger geographic areas. Each week during the past 2 months there has been a waiting list of patients in need of telehealth.

RVNA & H are exploring the use of care paths that will work in concert with its telehealth program and further standardize patient care. As care paths are incorporated into the current documentation system, RNVA & H will be able to capture variances and initiate patient care practice standards based on those variances.

RVNA & H has begun preliminary discussions to develop an improved "transition to home" program with our community hospital to improve continuity of care for patients as they are discharged from the hospital. The handoff period for patients with chronic disease takes on great importance with respect to our ability to reduce complications and readmissions to the hospital. The transitions team will be evaluating patient discharge needs early, enhance patient education, improve communication, and evaluate collaboratively postacute follow-up.

Summary

The potential for telehealth disease management program opportunities continues to be explored not just within this organization, but on a national basis. As additional data and information become available, there will be ongoing opportunities for cost-effective care outcomes via the use of telehealth.

References

American Heart Association. (2006). *Learning and living with heart failure*. Retrieved from http://www.americanheartassociation

Center for Medicare and Medicaid. (2002). Retrieved from http://www.cms.hhs.gov/HomeHealthQualityInits/12_HHQIOASISDataSet.asp

Frantz, A. (2004). Matching telehealth application to the patient, clinician, and agency's needs. *Home Healthcare Nurse, 22*(10), 672-675.

Gorski, L., & Johnson, K. (2003). A disease management program for heart failure. *Home Healthcare Nurse, 21*(11), 734-744.

Kinsella, A. (2003). Telehealth opportunities for home care patients. *Home Healthcare Nurse, 21*, 661-665.

Remington, L. (2000, September/October). Negotiating the PPS maze: Can telehomecare help? *The Remington Report*, *8*(5), 2-3.

Schneider, N. (2004). Managing congestive heart failure using home telehealth. *Home Healthcare Nurse*, *22*(10), 710-722.

Donna Peters, DNP, RNC, is the director of Home Care Services at Rockingham Visiting Nurse and Hospice, Exeter, New Hampshire.