Community-Based Health Coaches and Care Coordinators Reduce Readmissions Using Information Technology To Identify and Support At-Risk Medicare Patients After Discharge

- Innovation

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Snapshot

Summary

Supported by mobile technology, trained health coaches at Elder Services of Merrimack Valley (an Area Agency on Aging in Northeastern Massachusetts) visit recently discharged Medicare patients in their homes and monitor them via telephone to identify and address declines in health status that increase the risk of readmission. Administered in partnership with area hospitals, the 4-week program begins with an inhospital visit to determine the risk of readmission. Patients at medium or high risk for readmission receive an in-home visit within 48 hours of discharge and a weekly phone call for each of the next 3 weeks. During each encounter, the coach uses a tablet-based application that provides suggested questions written in lay language based on the patient's diagnoses, treatment, and overall risk profile. If the answers indicate a decline in health status, the system sends a real-time alert to a nurse care coordinator, who subsequently uses a different component of the software to help the patient and coach address the issue within 24 hours, including arranging for any needed services. The use of health coaches supported by the tablet-based software significantly reduced readmissions among at-risk Medicare patients, as compared with use of health coaches without the software. This reduction generated substantial cost savings for partner hospitals and the health care system as a whole.

Evidence Rating

Moderate: The evidence consists of comparisons of readmissions data from partner hospitals and associated cost savings during the 18-month period before the health coaches started using the software-based program and the 6-month period after they began using it.

Date First Implemented

2013

Problem Addressed

Preventable readmissions among Medicare beneficiaries occur frequently and exact a heavy toll on both patients and the health system. Even when patients appear healthy enough to be discharged, lack of coordination across care settings, inadequate patient education, and insufficient community support lead many patients to decline in health once they return home. Hospital-based efforts to reduce readmissions often do not have adequate information or staffing to coordinate care effectively in the community setting. Community-based organizations and their staff may be in a position to help, but relatively few have received the training and support necessary to do so.

- **Many costly, preventable readmissions:** More than one in five Medicare patients discharged from the hospital end up being readmitted within 30 days, at a cost of $15 billion annually.[1] Up to three-quarters of these readmissions could potentially be prevented through better patient education (e.g., discharge instructions), coordination of community-based services, and monitoring of at-risk patients.[2] (Readmissions are considered preventable if they occur for any of the following reasons: a recurrence of the original reason for hospitalization, a chronic condition present at the time of admission, or a complication related to care during the hospitalization.[3])
- **Inadequacy of hospital-based efforts:** Many hospitals are addressing the issue by changing discharge procedures and improving transitions across care settings. However, these efforts generally focus on making changes within the institutional setting and may not adequately address community factors, such as access to primary care or lack of support at home, that may influence readmissions.[4]
- **Unrealized potential of community-based approaches:** Staff within community-based organizations that serve the elderly can potentially be trained and supported in identifying the early warning signs of declining health status and alerting those with clinical expertise of the need to intervene. Yet relatively few staff in such organizations play this role today.[4]

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Description of the Innovative Activity

Supported by mobile technology, trained health coaches visit recently discharged Medicare patients in their homes and monitor them via telephone to identify and address declines in health status that increase the risk of readmission. Administered in partnership with area hospitals, the 4-week program begins with an inhospital visit to determine the risk for readmission. Patients at medium or high risk receive an in-home visit within 48 hours of discharge and a weekly phone call. During each encounter, the coach uses a tablet-based application that provides suggested questions written in lay language based on the patient's diagnoses, treatment, and risk profile. If the answers indicate a decline in health status, the system sends a real-time alert to a nurse care coordinator who uses a different part of the system to help the patient and coach address the issue within 24 hours. Key program components are described below:

- **Inhospital screening and enrollment of at-risk patients:** Health coaches meet with discharge planning staff at partner hospitals and/or skilled nursing facilities to identify Medicare fee-for-service (FFS) patients about to be discharged to their home. The health coach administers an evidence-based risk screening and stratification tool [developed by EQ-Health, the Medicare quality improvement organization (QIO) for Louisiana] to identify and enroll those at moderate or high risk of readmission. Factors used to identify those at risk include diagnoses, level of available in-home and community support, complexity of the medication regimen, risk of falling, and level of cognitive function.
- **Warm handoff to health coach:** Before discharge, a health coach meets with the enrolled patient, family members or other caregiver (as appropriate), and discharge nurse to review postdischarge instructions and explain how the coach will support the patient over the next several weeks.
- **Technology-supported home visit and telephone monitoring over 4-week period:** Aided by tablet-based software known as Care at Hand, the health coach conducts an in-home visit and checks in on a weekly basis by telephone for a period of 3 weeks to monitor the patient's health status. During each encounter, the coach uses the software application to ask questions designed to detect a decline in health status and increased risk for readmission. Based on the initial screening and diagnosis and the patient's living situation and answers to previous questions, the software suggests 10 to 15 questions written in lay language appropriate for the health coach and patient. If the patient has more than one diagnosis, the software prioritizes the questions to ask about the most recent diagnosis and/or those conditions most likely to lead to readmission. For example, the software will encourage the health coach to ask a patient with congestive heart failure about weight gain or shortness of breath, both significant risk factors for readmission. The system also lists important questions not associated with a particular condition, such as questions to gauge the patient's ability to access appropriate food and medications.
- **Automatic alerts to nurse care coordinator for those at risk:** After asking the questions, the health coach enters the patient's responses into the application and submits them to the system via a secure connection. If the patient's answers during any encounter indicate a decline in health status, the system automatically generates an alert that is immediately sent to a nurse care coordinator. The alerts are categorized (mild, moderate, and high) depending on the urgency and severity of the situation. During the first 6 months of the program, 22 percent of the 1,902 surveys administered to patients triggered an alert.[5]
- **Nurse care coordinator intervention to address problems:** After receiving the alert, the nurse care coordinator accesses the system with a computer or smart phone through a separate portal that uses higher level clinical language and features additional support related to patient followup and monitoring. The care coordinator reviews the situation and then, as appropriate, pushes a button on his or her smart phone to contact the health coach, patient, family member, and/or caregiver to discuss the problem and come up with a plan to resolve it within 24 hours. As

appropriate, the care coordinator facilitates the provision of needed services, such as primary care, specialty care, a change to the medication regimen, a home visit from a nurse, and/or an emergency department visit. During the first 6 months of the program, the vast majority (98 percent) of alerts led to a telephone followup with the patient, health coach, or primary care physician. Less than 1 in 10 necessitated a home visit by a nurse, and 3 percent required an urgent, unscheduled visit with a primary care provider or specialist.[5] Once the episode has been resolved, the care coordinator clicks "no further action" and the alert is archived.

- **System-supported documentation, patient prioritization, and staff evaluation/training:** The software-based system documents all care coordination activities, including surveys administered, alerts triggered, and responses to the alerts. The system uses these data to identify patients in need of more frequent telephone check-ins or additional home visits. The system also monitors and reports on staff performance, such as whether health coaches visit patients within 48 hours of discharge or nurse care coordinators resolve alerts within 24 hours. Care coordinators use information from the system to provide ongoing feedback to the health coaches on various aspects of their performance, such as their skills related to asking patients questions and listening to their answers.

Context of the Innovation

Established in 1977 as an Area Agency on Aging serving Northeastern Massachusetts, Elder Services of Merrimack Valley supports the independence of older people and adults with disabilities living in the community by providing information and referrals to these residents and/or their caregivers. Elder Services of Merrimack Valley also oversees several programs to address behavioral health needs and promote alternatives to nursing home care.

The impetus for this program stemmed from Elder Services of Merrimack Valley's participation in the Community-based Care Transition Program (CCTP), created through Section 3026 of the Affordable Care Act. This program supports promising service delivery models that reduce readmissions.[6]

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Results

The use of health coaches supported by the tablet-based software significantly reduced readmission rates among at-risk Medicare patients, as compared with health coaches who did not have access to the software. This decline generated substantial cost savings for partner hospitals and the health care system as a whole.

- **Significantly fewer readmissions:** Based on hospital-generated admissions data from hospitals involved in the program, the addition of the Care at Hand software to the health coach protocol reduced 30-day readmissions by 39.6 percent among at-risk patients eligible for a health coach, as compared with the previous model in which health coaches did not have access to the software.[5]This translates to a 5.9 percent reduction in all-cause readmissions among Medicare beneficiaries, including low-

risk patients who did not get assigned a coach. In addition, an expected seasonal spike in readmissions during the winter (due to an increase in respiratory illnesses) did not occur.

- **Significant savings:** The net savings generated by the reduction in readmissions averaged $109 per patient per month, with gross savings of roughly $600,000 and net savings of approximately $370,000 during the 6-month trial period involving 561 patients.[5]

Evidence Rating

Moderate: The evidence consists of comparisons of readmissions data from partner hospitals and associated cost savings during the 18-month period before the health coaches started using the software-based program and the 6-month period after they began using it.

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Planning and Development Process

Key steps included the following:

- **Application to test modified version of Care Transitions Program using lay coaches:** Elder Services of Merrimack Valley adapted the Care Transition Program developed by Eric Coleman, MD, MPH.[7] While Dr. Coleman's original model was built around health coaches with nursing or social work degrees, program leaders proposed to use lay health coaches in the field supervised by a nurse care coordinator working out of the central office, creating a "hub and spoke" care coordination model. Elder Services of Merrimack Valley applied and received funding from CCTP, an initiative of the Center for Medicare & Medicaid Innovation (CMMI) to test whether this approach to care transitions could reduce 30-day readmissions for Medicare FFS patients.
- **Selection of risk-stratification tool:** Program leaders decided to use the Discharge Risk Assessment adapted by eQHealth Solutions, the Medicare QIO in Louisiana, based on the "8 Ps" identified by Project BOOST. The 8 Ps are Problems with medications, Psychological, Principal diagnosis, Physical limitations, Poor health literacy, Patient support, Prior hospitalizations, and Palliative care.[8]
- **Development, implementation of training program:** The organization developed a training program for the health coaches based on the Care Transitions Intervention. Staff also developed a binder of scripted questions for health coaches to ask patients during in-home visits and telephone check-ins based on their health condition and/or risk profile. Health coaches received 4 weeks of initial training that focused on medication management, understanding the medical record, appropriate followup, and red flags that signal increased risk of readmission (the "four pillars" of Coleman's model). Training methods included classroom learning, role playing, and shadowing more experienced staff.
- **Assessment of results:** The initial version of the program generated some improvement in readmission rates, but not to the level expected by program leaders.

- **Addition of software component:** Staff at Elder Services of Merrimack Valley started to look at ways to improve the program, including technology that might help increase its effectiveness. Their search led them to the Care at Hand software program, which helps health coaches capture and relay information about health status and track care coordination activities and staff performance. After implementation of the software, the coaches and care coordinators received training on how to use it. Training on the software is now part of the initial training for new hires.

Resources Used and Skills Needed

- **Staff:** Staffing varies depending on the size of the program. Each health coach can serve approximately 20 patients at a time, and each nurse care coordinator can oversee about 20 health coaches. Health coaches have college degrees but, as noted, tend to have little or no clinical experience.
- **Costs:** The costs of the program during the 6-month evaluation period totaled roughly $205,000, including salaries and other expenses related to program services. The technology part of the program, which was not included in the original CCTP application and therefore not included in the funding, cost $30,500, including software, tablets, data connection, and training.

Funding Sources

The CCTP funding currently covers program costs only. Elder Services of Merrimack paid for the Care at Hand technology, tablets, data connection, and staff technology training from their general operating budget. In addition, several area payers reimburse Elder Services of Merrimack Valley for care coordination services provided to patients who are dually eligible for Medicare and Medicaid.

Tools and Resources

More information about the software used in this program can be found at:http://www.careathand.com(link is external).

More information on the eQHealth Solutions Discharge Risk Assessment tool is available athttp://louisianaqio.eqhs.org/PDF/Care%20Transitions/DxRiskAssessment_Rev5_12.pdf(link is external).

More information on Dr. Coleman's Care Transitions Program is available at:http://www.caretransitions.org/(link is external).

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Sustaining This Innovation

- **Consider expanding to all Medicare patients:** The program initially focused on patients with three or more admissions in the previous year. While this approach ensured that the program focused on those at greatest risk, program leaders found that readmission rates fell faster when they expanded the program to serve all

Medicare FFS patients enrolled in Elderly Services of Merrimack Valley's Care Transitions Program.

- **Work closely with software developer:** Staff at Elder Services of Merrimack Valley work closely with the developers at Care at Hand to improve the effectiveness of the software, including support and tracking capabilities for those in the field and at the central office. For example, in consultation with staff, the software developers are now adapting and integrating the initial risk screening assessment into the software application, allowing for more effective screening by lay health coaches as well as better tracking and faster home visits for those at highest risk (who now often receive home visits within 12 hours of discharge).
- **Seek alternative payment sources:** As noted, the CCTP funding currently covers program-related expenses, and consequently the program is offered at no cost to area hospitals and patients. However, once CCTP funding ends, Elder Services of Merrimack Valley must find another way to finance the cost of the services. Although hospitals face penalties for readmissions, third-party payers also have a significant financial incentive (and available resources) to support the program, since they stand to gain from its cost-savings potential.
- **Consider adding features to track population health:** The software developers are now adding features that track the risk level of patients by alerting nurse case managers if someone who has been triggering alerts does not have a visit planned.

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Innovator Disclosures

Andrey Ostrovsky, founder and chief executive officer of Care at Hand, is creator of the software-based technology used by the health coaches at Elder Services of Merrimack Valley; in addition, information on funders is available in the Funding Sources section.

References/Related Articles

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Footnotes

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Contact the Innovator

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Funding Sources

Center for Medicare and Medicaid Innovation

Developers

Elder Services of Merrimack Valley

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Original Publication: 07/30/14
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