Helping Patients Help Themselves: The Added Benefits of Remote Patient Monitoring to Home Health Care

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ABSTRACT

The Johns Hopkins Home Care Group (JHHCG) developed standard protocols for management of patients with chronic heart failure (CHF) and chronic obstructive pulmonary disorder (COPD) in an effort to improve patient outcomes and reduce preventable hospital readmissions. JHHCG implemented Remote Patient Monitoring (RPM), a telemonitoring program customized for the CHF/COPD patient that provides real-time, daily reporting of qualitative and quantitative data as well as patient education/reinforcement. Patient data is trended on a web-based program and overseen by the Disease Management Nurse. Emerging trends are easily identified, allowing for early and appropriate intervention. This program sets itself apart because of the constant communication and aggressive management of the patient as a team (patient, RPM disease manager, field nurse, and physician). Key to the success of home care and RPM is access to and collaboration with a responsive, managing physician that oversees the patient based on their plan of care.

Keywords: Disease Management, Home Health Care, Information Therapy, Readmissions, Telemonitoring

BACKGROUND

The U.S. health system is not immune to the current fiscal crises because of the urgent need to divert from the existing culture of excess by cutting costs while providing better quality care. In response, policymakers have focused on quality-improvement efforts with the potential of drastically improving a health institution’s bottom line. The U.S. Department of Health and Human Services is responsible for financing the care of people age 65 or older as well as disabled individuals under age 65 through its Medicare health insurance programs (Centers for Medicare and Medicaid Services, 2005). Medicare’s Prospective Payment System (PPS) enacted in 1983 incentivized hospitals to encourage shorter lengths of stay while providing more efficient care (Office of Inspector General, 2001). The consequence of this legislation is currently being felt more than ever with hospital readmissions being an all too common occurrence. The national average for patients readmitted 30 days after discharge is

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currently 20% with some variance across health markets (Epstein, 2009). Therefore, beginning in October 2012, the Department of Health and Human Services Centers for Medicare & Medicaid Services (CMS) will annually reduce payments for patients readmitted for three conditions notorious for excess readmissions: acute myocardial infarction, heart failure and pneumonia (Pecquet, 2011).

In anticipation of the payment cuts by CMS, a pilot program by the Maryland Health Services Cost Review Commission (HSCRC) was initiated to reduce unnecessary readmissions for targeted patient populations. As part of the HSCRC pilot, Johns Hopkins Medicine (JHM) created the Readmissions Pilot Program which developed a bundled strategy approach to reducing readmissions. Mary Myers, COO of JHHCG, implemented Remote Patient Monitoring (RPM) on April 2011 as part of the JHM pilot. RPM is an innovative program used by JHHCG to better address the needs of patients with complex conditions such CHF and COPD. CHF was targeted because it is the most common Medicare Diagnosis Related Group (DRG) for hospital readmissions with a national readmission rate of 21% (e-Reports, 2011). In addition, the total annual direct and indirect costs for patients with CHF amount to $26 billion nationally (e-Reports, 2011). In targeting CHF and COPD patients, JHM has the potential of greatly impacting the readmission rates of some of the health system’s most egregious patients.

The JHHCG model for RPM encourages patient engagement by providing them with the appropriate information to better contribute to their recovery. RPM provides a platform for disease management of chronic conditions while employing more current health strategies such as Telemonitoring and Information Therapy. Web-based assessment tools are currently very relevant in disease management because they provide clinicians with important information required to make treatment decisions. Equally important is that patients have the appropriate information to empower them to be more self-aware to better maintain their care. The JHHCG care model is to provide the right care at the right time. RPM integrates the tenants behind Telemonitoring and Information Therapy by delivering the right information and the right care at the right time.

**THE PROCESS OF REMOTE PATIENT MONITORING**

The RPM program at JHHCG is currently managed solely by the tremendous efforts of the Disease Management nurse (DM nurse). She is a registered nurse with extensive experience in home health. Due to the success of the program, she can be accountable for upwards of 50 patients at once. Her daily routine consists of monitoring patients’ biometrics and symptomatology, conducting follow-up phone calls and constant communication with their primary care physician.

Vital signs are collected from each patient and they include blood pressure, heart rate, weight and oxygen saturation. The RPM tool has the potential to assess other metrics such as peak flow and blood glucose monitoring. The patient data is transmitted to the JHHCG monitoring center using the patient’s home phone line or a wireless connection. Therefore, the DM nurse can access the information from each patient transmission. An image of the various parts of the RPM monitoring tool is seen in Figure 1.

The DM nurse reviews all new JHHCG referrals on a daily basis to determine if any patients have a CHF and/or COPD diagnosis. The set-up process flow upon receipt of the referral is depicted in Figure 2. As a Telemonitoring program, RPM was designed to have a user-friendly interface but it still requires a certain level of independence from the patient. Therefore, before being placed on RPM, each patient must be assessed for feasibility. The feasibility check for RPM determines whether the patient is willing, cognitively able and physically able to use RPM.

Upon clarifying that the patient is correctly diagnosed with CHF and/or COPD and assessed for feasibility, the DM nurse contacts
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