

BEST PRACTICES

Managing Patients with Multiple Chronic Conditions

NOVANT MEDICAL GROUP CASE STUDY

Organization Profile

Headquartered in Winston-Salem, NC, Novant Medical Group is part of Novant Health, a not-for-profit health care system serving 3.5 million people. With more than 350 physician practices across North Carolina, South Carolina, and Virginia, Novant Medical Group, and its network encompasses more than 1,400 providers. The group's physician specialties include cardiology, endocrinology, orthopedics, ear, nose, throat and sinus, and others. Novant is a national and state leader that has earned recognition from the National Committee for Quality Assurance (NCQA) for treatment of diabetes, heart disease, and stroke. Novant uses the Allscripts electronic health record system.

Project Summary

Safe Med was developed as a medication safety and disease education program for patients in the integrated health care system. The program's goal is to decrease inpatient readmission rates in medically complex patients aged 65 years and older who are followed by a Novant Medical Group primary care provider.

Program Goals and Measures of Success

In 2006, the Clinical Improvement (CI) Department of Novant Health identified a need to review adverse drug events (ADEs) leading to hospital admissions, identify their causes, and evaluate areas for improvement. This review led to a goal: to decrease hospital readmission rates in the medically complex 65-and-over population by identifying patients' potential drug therapy risks and adherence issues related to complicated medication regimes and chronic diseases. By reducing medication errors, the organization aimed to increase patient safety and cut costs.

Provided as an educational resource by Merck



Background

Today, more than 10 years after the pivotal Institute of Medicine report, “To Err Is Human,” improving patient safety and reducing medication errors have become common topics of discussion among health care providers and systems nationally. Scientific evidence demonstrates that many ADEs occurring in transitions across the continuum of care could potentially have been prevented or ameliorated through simple systems intervention. In other words, medication errors are commonly the result of faulty systems and processes, along with lack of patient understanding and/or education. Other risk factors for ADEs include taking 5 or more medications, use of certain medications, and older age.

Medication-related errors come at a significant cost—both human and financial. Pharmacy interventions found to effectively improve medication safety focus on 4 areas: 1) evaluating patients and medication at time of discharge; 2) educating patients about drug therapies, side effects, and what to do if specific problems develop; 3) improved monitoring of drug therapies; and 4) improved monitoring of patients’ overall condition.

The Safe Med Program

The CI Department and Novant Medical Group created a pilot program named Safe Med that was designed to test the efficacy of reconciling discharge medications and providing education on medication safety and chronic disease to recently hospitalized patients. Through Safe Med, clinical pharmacists enhance communication among health care providers and reduce medication-related errors to promote better patient outcomes and help reduce health care costs. Clinical pharmacists are available to evaluate medications and counsel patients on multiple medications in relationship to their chronic diseases.

Data collected by Novant Health’s analytics group from 2006 to late 2008 demonstrated a statistically significant decrease in 30-day hospital readmission rates for Safe Med participants (11.5%) vs control (14.2 %). The control group comprised patients discharged from Novant Health between January 1 and December 31, 2005, who were not followed by a Novant Medical Group provider. Controls and participants were matched according to gender, race, clinical classification system primary diagnosis roll-up, Carlson Comorbidity score, and age quartile. A maximum of 5 controls were randomly matched to each Safe Med patient. A total of 1,624 patients and 7,335 controls were used.

There was less difference in 60-day readmissions for Safe Med participants (18.2%) vs control (20.3%) within the targeted population. The organization speculated that these results might be due to only a single contact by pharmacy staff following discharge, and subsequently added a second phone contact 30 days after the first call.

Population Identification

The Safe Med program focuses on decreasing inpatient readmission rates in medically complex patients with the following characteristics:

- Aged 65 years and older
- Recently discharged from the hospital
- Take 5 or more medications
- Take a high-risk medication
- Followed by a Novant primary care physician

Demographics

- Average age: 68
- Average number of medications: 12
- Most participants have at least 1 chronic disease

Total Safe Med participants to date: 9,359

Total individual participants in 2010: 2,372

Selection process

Each week, the information technology department develops a discharge report for each acute care hospital in the Novant system. The report lists all patients aged 65 years and older who have been in the hospital, are being discharged to a home setting, and are followed by a Novant primary care provider. The number of hospital admissions and emergency department visits in the last 12 months are listed, as well as the next scheduled appointment with the primary care physician.

The hospital pharmacies each have a system that generates a daily report, listing all patients aged 65 years and older who are being administered a high-risk medication or a reversal medication while hospitalized. These include any antihyperglycemic medication other than immediate action regular insulin, antiarrhythmics—amiodarone and digoxin—or reversal agents (digoxin immune fab and sodium polystyrene sulfates). This report is manually linked to the database.

In addition, the hospitals generate an International Normalized Ratio report showing all patients on the anticoagulant warfarin who have had a laboratory result while in the hospital. These reports assist in identifying the highest-risk patients with chronic diseases, such as atrial fibrillation, heart arrhythmias, diabetes mellitus, congestive heart failure, deep vein thrombosis, stroke, and pulmonary embolus.

All patients meeting the Safe Med criteria are included in the program.

The Intervention

A dedicated team of 5 pharmacists counsel newly discharged patients via phone to ensure understanding of medication regimens and disease management. Attention is focused on preventing ADEs related to medication noncompliance, such as forgetting to take a medication, taking too much or too little of a medication, and failing to understand the purpose of the medication. The pharmacists provide education and reinforce safe use.

Additionally, they address potentially inappropriate prescribing and medication reconciliation with physicians to prevent ADEs.

Initially, pharmacists only made 1 contact with the patient unless follow-up was needed, and provided Safe Med program contact information for future questions the patient might have. Patients or their caregivers/family frequently call the pharmacist back with additional questions when new medications are added or new disease states are identified.

Novant now makes a second call (termed Safe Med Plus) approximately 30 days after the first contact in an effort to extend the rates of 30-day readmissions to 60-day readmissions, as mentioned above.

The Safe Med team of 5 licensed pharmacists is specially trained for patient-directed consultation with older adults. All 5 hold a doctorate in pharmacy, and 3 of the team have had advanced training in geriatric pharmacy. Additionally, the Safe Med Plus pharmacist manager is certified in medication therapy management, and the other pharmacists had training in medication therapy management. This certification and training is important for engaging and motivating patients.

Patients are contacted by telephone 5 to 19 days after discharge from an acute care facility. The pharmacist reviews all medications with the patient and provides education about these medications in relation to the diseases being treated. Following the consultation, the patient receives a packet of information containing a personalized medication reconciliation list, educational material explaining the purpose of each medication, pharmacist contact information, and a pillbox.

Simultaneously, the primary care physician receives an assessment of the patient, a list of medications, and recommendations from the pharmacist. The recommendations can include avoiding potential drug-drug interactions and possible ADEs, streamlined and more cost-effective medication regimens, and suggesting additional medications, such as a cholesterol medication for certain types of diabetes, as appropriate per disease state according to national clinical practice guidelines.

Clinical collaboration is the heart of this program. The Safe Med pharmacists work closely with participants' physicians. For urgent needs, pharmacists contact physicians to discuss specific concerns. Pharmacists are up-to-date on the latest drug-drug and drug-disease interactions, the Safe Med team develops and disseminates a bimonthly newsletter, *Safe Med Update*, to facilitate communication and inform physician partners.

Pharmacists also consult with Novant disease management nurse navigators to provide additional, individualized disease education and care coordination. These specialists are registered nurses with training in health education whose role is ongoing management of patients and problem identification. Nurse navigators can take classes in medication offered by the pharmacists. This multidisciplinary team approach with diverse health care professionals is designed to provide care to Novant's targeted chronically ill patient population.

Workflow impacts of the Safe Med program include the need for additional pharmacy staff to contact patients by phone, as well as a quiet zone for private conversations with patients regarding their medications.

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Information Technology

Novant created an access database containing information on Safe Med patients and their assessments, medication lists, and physician recommendations.

Leadership Involvement and Support

Novant Health acted on the Institute of Medicine's study that revealed ADEs harm more than 1.5 million individuals, resulting in over 2,000 fatalities annually. Physician leadership in both the ambulatory care practices and acute care facilities were champions for Safe Med. In addition, the senior vice president of CI and senior director of Clinical Resource Services played important roles in the program.

Future Plans

To achieve longer-term success and improve patient outcomes, Novant is augmenting current programming by including another telephonic consultation with participants as well as providing additional educational materials and connecting medically complex participants to nurse navigators. The goal of this expanded program is to demonstrate a significant difference in readmission rates at 60 days post discharge between the participant and control groups, and sustain this difference at 90 days. The program will incorporate 3 distinct components:

1. A second phone consultation with a licensed pharmacist at 30 days following enrollment. With expanded pharmacy consultation, Novant believes patient and caregiver understanding of the prescribed medication regimen will be reinforced, leading to increased patient responsibility for monitoring their own medications.
2. Enhanced low-literacy educational materials. To better address low literacy, Novant is developing tailored printed materials and providing access to educational videos through Medline Plus, a service of the National Library of Medicine and the National Institutes of Health.
3. Referral to a nurse navigator for further individualized disease management education and care coordination. To meet individual health goals for higher-risk patients, a nurse will help the participant navigate the health care system and better coordinate care across the continuum. In collaboration with Novant physicians, the nurse navigator will review health conditions and risk factors, and then tailor education and disease management strategies to help the patient better understand the disease process and achieve control of symptoms. Patients are referred based on diagnosis and condition (uncontrolled condition, newly diagnosed condition, complications, general noncompliance, and request for assistance).

Lessons Learned

- Select clinical pharmacists with ambulatory experience, and preferably long-term-care experience, to successfully match the pharmacist's skill set to the program objectives
- Involve physicians as champions in the ambulatory setting in order to improve continuity of care across the network and manage patients across the continuum of care
- Promote services via marketing to providers, patients, and staff, and continue marketing efforts on an ongoing basis to establish the program as an integral part of the patient experience
- Identifying the appropriate population can be challenging and requires constant evaluation and revision to grow the program
- Identifying populations at the greatest risk for readmission was assisted by evaluating health care dollars spent (illness burden) and using the Carlson Comorbidity Index
- A competent data collection tool is critical for program evaluation and to identify opportunities for improvement
- Educate patients in terms they can understand
- Communicate other benefits of the program, such as the *Safe Med Update* newsletter, to address collateral needs, such as FDA alerts, generics available, and other information that promotes safe medication therapy practices



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