

Engaging Patients in Care Lowers Cardiovascular Disease Risk Factors

Introduction

Cardiovascular disease (CVD) is the number one killer in the United States for both men and women. More than 800,000 Americans die each year from a heart attack or stroke. CVD caused about one of every six deaths in the United States in 2006. More than 81 million people in the United States today have one or more cardiovascular diseases (defined as coronary heart disease, stroke, hypertension (HTN), diabetes, and heart failure). Risk factors for CVD include hypertension, hyperlipidemia and tobacco use. Only one third of patients with hyperlipidemia have adequate treatment and less than a quarter of the smokers who try to quit get counseling or medications. Obesity, use of tobacco products, and inactivity all contribute to the magnitude of this health problem. At Naval Medical Center San Diego (NMCS), we have over 6,000 patients with diabetes, over 1,200 with heart failure, over 11,450 patients with hypertension, and over 14,575 patients with dyslipidemia.

An editorial commenting on the Health and Human Services' recently announced "Million Hearts Initiative – preventing Heart Attacks and Strokes" suggests that a 10 % increase in treatment of elevated cholesterol could prevent 8,000 premature deaths each year in adults younger than 80 years of age and a 10% increase in the treatment of HTN could prevent 14,000 premature deaths each year in the same age group.

We embarked on a patient education campaign through letters to patients that provided health information on how to lower their cholesterol and cardiovascular risks, and information about self-care management support classes at our command. We then assessed if this information produced actual changes in patient's risk factors.

Methods

Our Cardiovascular Clinical Quality Team (CCQT) wanted to examine how we could impact patients in a powerful way to take actions to change their lifestyle, lead healthier lives, and reduce their cardiovascular risks. Our CCQT consists of three cardiologists, one cardiology fellow, one internist, a Registered Dietitian, a PharmD, a Cardiac Rehabilitation Registered Nurse, and a Registered Nurse who serves as program coordinator. Our first intervention targeted diabetic patients who were not at goal LDL (≤ 100 mg/dL) based on lipid testing completed in the previous 6 months. Data was pulled from the MHS Population Health Navigator database. We drafted the letter and routed it by the Medical Directors for the Internal Medicine Clinic and the Directorate for the Branch Medical Clinics. It was then approved by the Public Affairs Officer (PAO). In February 2011, we sent letters to 564 patients. In the letter we reviewed a number of patient education topics on cholesterol reduction and dyslipidemia and selected a well written, easy-to-read, copyright free CDC/NIH/HHS publication titled "How to reduce

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Your Cholesterol.” We encouraged the patients to contact staff in their Medical Home Port Teams and their Primary Care Providers if they had any questions.

In August 2011, six months after the letters were mailed, we pulled the information from CarePoint 2.0 data base and compared lipid levels at that time to the previous set of data.

Our second intervention consisted of sending a Heart Health newsletter to over 700 patients with chronic kidney disease (who are at increased risk for cardiovascular disease) and to forty-five patients with poorly-controlled HTN. These patients had had seen their primary care providers three or more times in the past year, were evaluated for HTN (based on coding in AHLTA), and were still not at goal ($\leq 140/90$ mm/Hg). The newsletter included information on how to improve hyperlipidemia, hypertension and heart disease in women, and also provided excellent information about the benefits of dietary sodium restriction and increasing exercise. The Program Coordinator wrote and designed the Heart Healthy newsletter. It was reviewed by several cardiologists, and approved by the PAO. 1,500 newsletters were printed and those in excess of our mailing were distributed to the Primary Care Clinics, Cardiology Clinic, Nutrition Clinic, Coumadin Clinic, medical-surgical inpatient nursing unit, Cardiac Rehabilitation clinic, and the Laboratory. Unfortunately in the intervening time, the Command Data Mart was decommissioned and we lost the ability to follow-up using an electronic data base to evaluate and compare blood pressure control.

This quality improvement project was specifically limited in scope to determine the feasibility and effectiveness of this intervention. The CCQT determined diabetics not at target goal for LDL were high risk patients for which defined interventions are available. We also targeted the hypertensive patients who were not at goal despite multiple visits to their provider. Our results are therefore limited to the population we targeted.

Results

Enclosed is a graph of results. 265/564 (46.98%) diabetic patients who received letters had improved LDL levels and 148/564 (26.24%) of patients had their LDL levels decrease to less than 100 mg/dl. The largest magnitude of changes was seen in the high volume clinics, such as the Internal Medicine Clinic (IMC) which has over 65% of their population over the age of 65 years of age. Forty-one were excluded from the analysis because a second lipid level was not available by the end of the evaluation period.

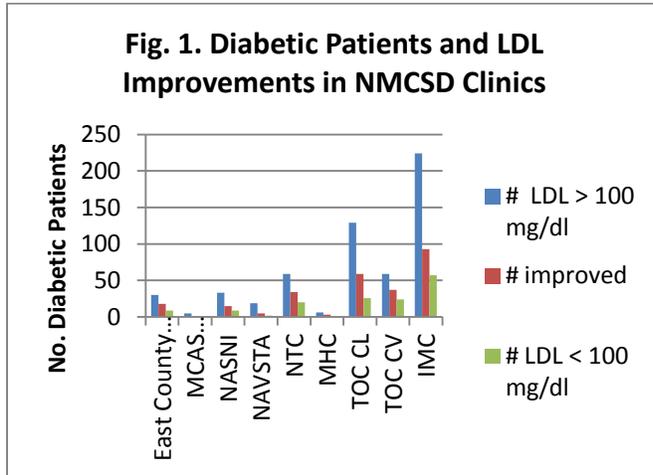
Our cholesterol screening and control improved from over the HEDIS 75th percentile for cholesterol control to over the HEDIS 90th percentile during this timeframe.

We know that patients reported to their providers that they had received letters since some of the patients brought the letters into their providers. This may have provided an impetus for the patients to become more involved in their care. It also may have provoked further review by the providers of both lab results and medications used for treatment of hyperlipidemia. Some patients reported to their primary care providers that they had received a letter stating that they had “bad blood!” The mystery of what this meant was solved when patients brought in the letters to their providers. This serves as another reminder of the need for extensive and repeated communication at many levels when

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undertaking an endeavor of this nature. There were 166 patients whose LDL levels were unchanged. Possible reasons for this include no follow-up visits or no modifications made to their medication. There also were 86 patients whose LDL levels were slightly worse than the previously reported lab results. It is important to note that the initiation of these letters also took place during the implementation of Medical Home Port Teams.



Conclusion

The intervention of education and motivation through patient specific letters suggests that this format can improve risk factor management. With the apparent effectiveness of this limited intervention, we are planning on targeting another high risk group - patients with newly diagnosed CAD (defined by myocardial infarction, CABG, and/or percutaneous cardiovascular interventions in the last 12 months). We plan on reviewing how many of these patients are followed in our Cardiology clinic, evaluating their treatment, the evaluating the effects of these interventions. In the future when we are able to obtain electronic information in a database about patients' current blood pressure readings, we will identify strategies to achieve improved blood pressure control and reduce the risk of kidney and cardiovascular disease.

Consistent with the Million Hearts campaign goal to use evidence-based strategies to prevent 1 million heart attacks and strokes over the next five years, we have an opportunity to change our patient's lives through self-care management, patient empowerment, and self-care management support. A low-tech intervention such as sending letters directly to patients with results of their lipid levels and with corresponding educational information seems to motivate both patients and providers to achieve desired goals. This resulted in improvements in LDL levels. Involving all health care team members on the Medical Home Port team with the patient facilitates the patient making heart healthy choices one day at a time.

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