

Blue Cross Blue Shield of North Dakota's Medication Adherence Study

Blue Cross Blue Shield of North Dakota's (BCBSND) quality management initiatives are designed to monitor the quality and appropriateness of care provided to our members. To meet this objective, BCBSND frequently participates in health care initiatives and programs. BCBSND has teamed up with the North Dakota Department of Health's Diabetes Prevention and Control Program to conduct a medication adherence study, using interactive voice response telephone surveys.

BACKGROUND

Patients with diabetes can incur health care costs that may be four times as high as those of the general population. Many of these costs are associated with the management of diabetes complications such as myocardial infarction, ischemic stroke, or end-stage renal disease.¹ Angiotensin-converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs) and HMG co-enzyme A reductase inhibitors (statins) have been shown to reduce these complications and the costs associated with them.

Hypertension and diabetes mellitus are common co-morbidities that together result in an increased risk for cardiovascular and renal complications. Hypertension is diagnosed in more than 50 percent of patients with diabetes mellitus, and diabetes mellitus is almost 2.5 times as likely to develop in people with hypertension as in normotensive individuals. Not only is each of these diseases a major risk factor for target organ disease, but they also work synergistically to increase morbidity and mortality. Recent epidemiologic data indicate that the risk of death due to cardiovascular disease is two to four times higher in patients with diabetes mellitus. Up to 75 percent of cardiovascular and renal complications in patients with diabetes mellitus can be attributed to hypertension.²

Diabetic nephropathy occurs in 20 percent to 40 percent of patients with diabetes and is the single leading cause of end-stage renal disease (ESRD). Persistent microalbuminuria has been shown to be the earliest stage of diabetic nephropathy in type 1 diabetes and a marker for development of nephropathy in type 2 diabetes. Microalbuminuria is also a well-established marker of increased CVD risk. Patients with microalbuminuria who progress to macroalbuminuria are likely to progress to ESRD over a period of years.³

Lipid abnormalities have an increased prevalence in patients with type 2 diabetes, which contribute to higher rates of CVD. Lipid management aimed at lowering LDL cholesterol, raising HDL cholesterol and lowering triglycerides has been shown to reduce macrovascular disease and mortality in patients with type 2 diabetes, particularly those who have had prior cardiovascular events. In studies using statins, patients with diabetes achieved significant reductions in coronary and cerebrovascular events. Relatively little data are available on lipid-lowering therapy in subjects with type 1 diabetes. Although the data are not definitive, consideration should be given to statin therapy in patients with type 1 diabetes, particularly if they have other cardiovascular risk factors or features of the metabolic syndrome.³

A consensus has emerged that aggressive treatment of diabetes related co-morbidities increases quality of life and decreases health care costs. The agents blocking the rennin/angiotensin system (ACE inhibitors and ARBs) are among the most effective and safe drugs for lowering blood pressure and for providing renal protection in hypertensive diabetic patients. Many studies also demonstrate that ACE inhibitors and ARBs slow the development and progression of diabetic nephropathy and reduce microvascular and macrovascular complications in hypertensive diabetic patients.² Similarly the statins have shown to be well tolerated while effectively reducing LDL cholesterol, elevating HDL cholesterol, and reducing triglycerides, decreasing the risk of both primary and secondary cardiovascular events.³

POPULATION and METHODOLOGY

The members selected for this project were obtained from the BCBSND diabetes database registry. Members were identified as being 18 or older and having at least two professional visits with a diabetes diagnosis within three years or at least one professional visit and claims for diabetes medication or supplies. The subgroup of members within the diabetes registry eligible for this project includes those with at least three BCBSND pharmacy claims for angiotensin modulators (ACEis / ARBS) and/or statins (HMG CoAse reductase inhibitors) or a combination of these medications. Adherence calculations were designed to allow for switching drugs within the respective classes. Members with Medicare, federal employees, BCBSND as secondary payer, inactive members, and/or members who were out of state (surrounding areas of ND - included) were excluded from study selection due to incomplete claim histories. To obtain pharmacy data, members without drug coverage and those had been enrolled less than 18 months were also excluded in eligibility criteria.

INTERACTIVE VOICE RESPONSE TELEPHONE SURVEYS

This fall, Blue Cross Blue Shield of North Dakota will launch a telephone-based, speech-enabled outreach campaign to support our members with diabetes and encourage adherence to their medication.

The objective of this interactive outreach campaign is to reinforce the importance of members speaking with their physicians about any concerns that they may have about adhering to their medication regimen, including side effects and cost. Calls will also include member-specific feedback on ways they can help control their condition.

Using Eliza Corporation's speech recognition technology, BCBSND will reach out to thousands of members over the phone. The calls are conducted in a warm, friendly voice, and allow people to speak naturally. The system responds dynamically, based on a member's spoken responses. During the course of the call, Eliza may offer education about the member's condition, tips for staying adherent, and explore barriers that may prevent members from getting important screening tests.

Through this personalized outreach, BCBSND hopes to increase members' medication adherence, while learning more about what motivates them to act in healthy ways. Each interaction is captured and call results are analyzed for trends.

Measurable outcomes recognized by independent sources:

- Antidepressant medication support program increases adherence by 7 percentage points over a 90-day period
- Diabetes outreach to low-risk patients yielded a 76 percent increase in the number of patients who had gotten their A1C test following the call, and nearly tripled the number of patients who had seen their doctor, compared to a control group
- A Blues client was approached by the GAO to share examples of how they have used technology to better deliver healthcare. Examples include:
 - Eye Exams increased from 71.3 percent to 92.9 percent over a two-year period
 - LDL Cholesterol screening increased from 77.9 percent to 86.6 percent over a two-year period
 - Hemoglobin A1C testing increased from 85 percent to 89.9 percent over a two-year period
 - The rate of adolescents receiving full vaccinations increased from 29.2 percent to 43 percent over a two-year period
 - The rate of members older than 50 who received a flu shot increased from 45.9 percent to 61.4 percent over a one-year period

CONCLUSION

The goal of the medication adherence study is to evaluate the medication compliance of our members with diabetes. BCBSND will evaluate trends and develop various quality programs around the results of the study. This may include educational materials, programs and other tools. BCBSND looks forward to your participation in this project.

¹ Nau DP, Garber MC, Herman WH. The Intensification of Drug Therapy for Diabetes and Its Complications: Evidence from 2 HMOs. *Am J Manag Care.* 2004;10(part 2):118-123.

² Godley PJ, Maue SK, Farrelly EW, Frech F. The Need for Improved Medical Management of Patients With Concomitant Hypertension and Type 2 Diabetes Mellitus. *Am J Manag Care.* 2005;11:206-210.

³American Diabetes Association: Standards of Medical Care in Diabetes. *Diabetes Care.* 2005;28(Suppl. 1): S4-S36
