

Appropriate Primary Care Could Save \$2.5 Billion Annually

AHRQ research details the health care costs of diabetes-related complications.

REVIEWED BY ANNE ELIXHAUSER, PHD

Appropriate primary care for diabetes patients could both prevent hospitalizations due to diabetes-related complications and lower health care costs associated with those instances.

A synthesis of clinical studies, conducted by the Department of Health and Human Services' Agency for Healthcare Research and Quality (AHRQ), has estimated that the total savings could reach \$2.5 billion annually if diabetes complications and recurring hospitalizations are minimized. Findings were based on data from its Nationwide Inpatient Sample of the Healthcare Cost and Utilization Project (HCUP), and were summarized in *HCUP Highlight 1: Economic and Health Costs of Diabetes*.

Lead investigator Anne Elixhauser, PhD, and colleagues reported that in order to lower the nearly \$3.8 billion spent in hospital care to combat diabetes complications, or 1.2% of the total cost of inpatient hospital stays in 2001, primary care providers need to establish practices to minimize diabetes complications in their patients. This, in turn, will minimize the number of diabetes-related hospitalizations. Dr. Elixhauser is a senior research scientist for the AHRQ.

TIGHT GLUCOSE CONTROL

"In the case of diabetes, appropriate primary care is [helping your patient] maintain extremely tight glucose control so that the complications of diabetes be avoided," said Dr. Elixhauser, in an interview with *Diabetic Microvascular Complications Today*. In addition, she suggested that primary care providers should offer cardiovascular disease (CVD) interventions that include cholesterol reduction and heart disease and stroke prevention. CVD is the leading cause of death in patients with diabetes.

Another intervention should be to carefully monitor patients with prior diabetes-related admissions to the hospital, investigators wrote. Approximately one-third of all

patients with diabetes were hospitalized two or more times for diabetic complications. Most hospitalizations were as a result of CVD or lower extremity disease (Table 1).

Those patients with multiple hospitalizations – about 30% of all diabetes patients hospitalized within a given year – have three times the health care costs than patients who were hospitalized only once (\$23,100 vs \$8,500). "A person with diabetes who has a prior admission for that condition needs to be monitored most carefully to prevent repeat hospitalizations," Dr. Elixhauser

TABLE 1. KEY FACTS ABOUT DIABETES AND ITS COMPLICATIONS

- In 2001, \$3.8 billion was spent in national inpatient hospital costs for diabetes complications.
- Women with diabetes are two to four times more likely to be hospitalized for CVD versus those without diabetes.
- Amputations occur 28 times more frequently in patients hospitalized with diabetes than those without diabetes.
- Health care costs are three times higher in diabetes patients hospitalized more than one time in a given year versus those who are hospitalized only once.
- Ethnic minorities with diabetes are more likely to be hospitalized multiple times and have higher hospital costs if they are on a public insurance program or live in a low-income area.
- Approximately \$2.5 billion in hospital costs could be saved annually if diabetes patients received appropriate primary care aimed at preventing diabetes complications. A total savings of \$1.3 billion could be obtained in Medicare, and \$386 million in Medicaid.

TABLE 2. ESTIMATES OF THE ECONOMIC COSTS OF DIABETES MELLITUS IN THE UNITED STATES

Study	Year	Method	Design	Total Costs (\$ billion)	Direct \$/%	Indirect \$/%
Statistical Bureau of the Metropolitan Life Insurance Company (SBMLIC)	1969	Top-down	Primary diagnosis data from federal surveys	2.6	1.0/38	1.6/62
SBMLIC	1980	Top-down	Primary diagnosis data from federal surveys	9.7	4.8/49	4.9/51
ADA	1992	Bottom-up	Diagnostic category data	91.8	45.2/49	46.6/51
NIDDK	1995	Bottom-up	Cost projections	137.7	91.1/66	46.6/34
ADA	1997	Bottom-up	Diagnostic category data	98.2	44.1/45	54.1/55

Source: National Center for Chronic Disease Prevention and Health

said. "These patients need additional outpatient follow-up in an attempt to prevent recurrence of problems that would require another hospital stay."

Ethnic minorities, patients with public insurance or those who live in a low-income area are the patients most likely to sustain a recurrent hospitalization for a diabetes complication. For example, patients covered by Medicaid are 55% more likely to be readmitted to a hospital for the same complication than are privately insured patients.

MEDICARE PATIENTS HOSPITALIZED

According to investigators, Medicare could save the most money (\$1.3 billion) if hospital stays for diabetes-related complications were reduced. Medicare patients with diabetes are currently more likely to be hospitalized than those who are covered by private insurance programs. Primarily, Medicare patients are older and have had a longer time to develop a diabetes complication, Dr. Elixhauser explained.

But, diabetic patients should also be held accountable for the economic burden, and they should strive for better self-management through taking medications regularly, managing diet with exercise and maintaining good blood sugar control. "Patients [should] view their role in diabetes control as really critical. With a chronic disease like diabetes, patients have to take responsibility of their day-to-day maintenance. Physicians can help by encouraging that attitude."

Engaging in the interventions mentioned above will help encourage patients. Also, practicing routine follow-ups with patients – especially those who have been or are most likely to be rehospitalized for a diabetic complication – should

have a positive affect on health care costs.

"We will never be able to save the entire \$3.8 billion," Dr. Elixhauser said. "We can't cure diabetes yet, so it will always have some impact [on the costs of health care]. But, we can hopefully reduce the number of amputations that have been done, we can hopefully reduce the number of strokes and heart attacks that happen among diabetes patients and we can hopefully reduce the number of repeat hospitalizations."

The International Diabetes Federation estimated that between 5% and 10% of a country's health care budget is spent on diabetes. The World Health Organization produced statistics that suggest inpatient costs from diabetes complications (including heart disease, stroke, kidney failure and foot disease) account for the largest portion of this cost (Table 2).

"These findings highlight the importance of carefully monitoring people with diabetes who have a prior admission for the disease to prevent repeat hospitalizations, improving the care of diabetic patients who also suffer from [CVD], and enhancing treatment for minorities and low-income patients," said Carolyn M. Clancy, MD, AHRQ director, in a news release from the AHRQ. ■

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Elixhauser A, et al. Economic and Health Costs of Diabetes: HCUP Highlight 1. AHRQ Publication No. 05-0034, January 2005. Agency for Healthcare Research and Quality, Rockville, MD. <http://ahrq.gov/data/hcup/highlight1/high1.htm>. Accessed March 14, 2005.