

Health Policy Newsletter

Volume 17 Number 4

December, 2004

Article 12

Diabetes Care: Is Quality Care in Sight?

Arthur Chernoff, MD, FACE*

* Albert Einstein Medical Center

Copyright ©2004, by the author. *Health Policy Newsletter* is a quarterly publication of Thomas Jefferson University, Jefferson Medical College and the Department of Health Policy, 1015 Walnut Street, Suite 115, Philadelphia, PA 19107.

Suggested Citation:

Chernoff A. Diabetes care: Is quality care in sight? *Health Policy Newsletter* 2004; 17(4): Article 12. Retrieved [date] from <http://jdc.jefferson.edu/hpn/vol17/iss4/12>.

Diabetes Care: Is Quality Care in Sight?

Diabetes care provides a concrete model for the analysis of the relationship between quality care and economic outcomes. There is now a significant body of research on the factors that can produce positive clinical outcomes and the economic costs of failing to meet specific treatment goals.¹ A particularly productive approach is to look at the clinical consequences and costs related to the loss of blood sugar control. A lack of insulin or insulin effect leads to higher than normal levels of blood sugar creating a state of glucose toxicity. It is the glucose toxicity that over a period of time causes organ damage. It is glucose toxicity that makes diabetes the number one cause of blindness, kidney failure and non-traumatic loss of limbs in the U.S. Diabetes is a major factor in the development of heart attack and stroke. A diagnosis of diabetes confers the same cardiac risk to a patient as does having a heart attack. Simply put, a diagnosis of diabetes is the same as having a heart attack. Landmark studies such as the DCCT (Diabetes Control and Complications Trial) and UKDPS (UK Prospective Diabetes Study) have shown that controlling glucose toxicity mitigates the complications of diabetes.

Hemoglobin A1C (HgbA1C) is a convenient measure of glucose toxicity. It measures the amount of glucose that "sticks" to the pigment (hemoglobin) that makes blood red. It correlates with the average blood sugar level that has been present during the previous two to three months. The higher the hemoglobin A1C is the greater the glucose toxicity and the greater the risk for diabetic complications.^{2,3} For example, patients with HgbA1C of 9% have a five-fold increase in the risk for retinopathy (damage to the light sensing portion of the eye) when compared to HgbA1C of 6%. Lowering levels of blood sugar reduces this risk. Similarly, lowering the HgbA1C by 1% confers a 43% reduction in the risk of amputation or death from peripheral vascular disease. These are valuable outcomes. Just how valuable is shown in Table 1 (adapted from Caro JJ et al).⁴

There are recognized benchmarks for diabetes care.⁵ How many patients with diabetes achieve the recommended goals? NHANES (National Health and Nutrition Examination Survey) data collected from 1999-2000 shows that 63% of patients have not achieved a HgbA1C < 7% and that only 7% of patients in this national survey had achieved a combination of HgbA1C < 7%, blood pressure <130/80 mm Hg and total cholesterol <200 mg/dl.⁶

Table 1. The costs over 30 years from the complications of uncontrolled type 2 diabetes		
Hemoglobin A1C (%)	Average Blood Glucose (mg/dl)	30 Year Cost (\$)
7.5	165	40,801
8	180	44,145
8.5	195	47,943
9	210	51,554

Clearly this is a problem for patients, physicians and payers. The tools to achieve positive outcomes in diabetes care exist; the problem is underutilization. Diabetes education, patient self-management and promoting lifestyle changes are important tools in the battle against glucose toxicity. However, the use of these tools in daily practice is labor intensive.

The next critical step in diabetes care is to create the incentives that foster enhanced utilization of these tools. But, are payers ready to recognize the value of diabetes care? Are payers ready to take a long-term view of their mission and recognize the value of preventing diabetic complications? Are payers ready to establish reimbursement levels that are commensurate with the value of prevention? Is it unreasonable to insist on incentives that recognize the long-term value of quality care?

References

1. The CDC Diabetes Cost-effectiveness Group. Cost-effectiveness of intensive glycemic control, intensified hypertension control, and serum cholesterol level reduction for type 2 diabetes. *JAMA* 2002; 287:2542-2550.
2. The Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med* 1993;329:683-9.
3. Skyler JS. Diabetic complications. The importance of glucose control. *Endocrinol Metab Clin North Am* 1996;25:243-54.
4. Caro JJ, Ward AJ, O'Brien JA. Lifetime costs of complications resulting from type 2 diabetes in the US. *Diabetes Care* 2002;25:476-481.
5. Standards of medical care for patients with diabetes mellitus. *Diabetes Care* 2003;26:S33-50.
6. Saydah SH, Fradkin J, Cowie CC. Poor control of risk factors for vascular disease among adults with previously diagnosed diabetes. *JAMA* 2004; 291:335-342.

About the Author

Arthur Chernoff, MD, FACE, is Chair of the Division of Endocrinology at Albert Einstein Medical Center. Please address questions and comments to chernoffa@einstein.edu.