Can Personalizing Diabetes Care Reduce Costs?

By Chuck Dinerstein, MD, MBA — December 12, 2017

A study published in Annals of Internal Medicine, from the University of Chicago presents a cost analysis of personalized blood sugar goals for diabetic patients. As with most studies of this type, it is a computer model using cost estimates. So while its numerical conclusions may not be as accurate or precise as the numbers would make you believe, it does contain some interesting information.

The American Diabetic Association (ADA) advocates the use of HgA1c as the measure of glucose management. The HgA1c is a measure of how much glucose is stuck on the hemoglobin of our red cells. The higher the blood sugar, the more glucose is attached to hemoglobin so that HgA1c is a very good measure of the long-term blood sugar, over weeks and months. The ADA initially recommended one value, a HgA1c of 7% or less in Type 2 diabetics, who form the majority of patients.

In 2016 in conjunction with their European counterparts, the recommendation was modified to take into account a patient’s age, life expectancy, the duration of their diabetes and whether they had experienced diabetic complications. It was an attempt to personalize care, to more carefully craft treatment and the benefits of lowering the blood sugar against the risks of blood sugar going too low or having such a complicated medical regimens that compliance became difficult.

The model took data from 569 patients who had type 2 diabetes and had participated in the National Health and Nutritional Examination Survey (NHANES) to model age, duration of diabetes and diabetic complications. They used the European HgA1c recommendations as well as the ADA’s initial 7% for everyone standard and ran simulations. Costs came from standard measures found in the literature for both the medical treatment as well as the costs related to complications. The lifetime cost of $118,853 per patient was reduced by $13,564 or 11.4%. And like every good
cost analysis that figure is made more substantial when we calculate the savings for not just one, but all 17.3 million patients with type 2 diabetes in the United States, a 234 billion dollar savings. They also found a small increase in the quality of life years in these patients.

But there is a glaring fun fact in the study. The savings of $14,242 were on medication costs. And the sharp-eyed reader will note that this figure is 678 dollars more than the net savings. So there was a not so hidden cost. Life expectancy decreased by about a month, and there was an increase in complications, albeit small.

Bottom line, personalizing care is better from a cost and health point of view rather than a one size fits all standard. But there is no free lunch and customizing care, even in a computer model, may result in increased variability of complications and life expectancy.

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