

## **The Power of Goal Setting**

Claresa Levetan, MD, FACE  
Main Line Endocrinology

Diseases like diabetes and heart disease are largely preventable. An NIH study in this country followed those conducted in China and Finland; all found that lifestyle changes will prevent diabetes by 60 percent among those at highest risk for the disease. All three studies demonstrated that education not medication was the key to success.<sup>1-3</sup>

Two recent randomized studies published in peer-reviewed journals demonstrated that productivity concepts learned during the Industrial Revolution continue to have value when used to optimize care among patients with diabetes and heart disease.<sup>4,5</sup> Factory assembly line workers who were given feedback on their performance were much more likely to achieve their goals than workers who were given no feedback. In these two recent studies of patients with diabetes and heart disease, a similar association was observed. Patients who were given feedback regarding cholesterol and hemoglobin A1c levels were more likely to achieve goals than those who were not.

The heart disease study randomized 80 patients who were hospitalized for cardiac symptoms and who had a definitive diagnosis of heart disease. In the diabetes study, 150 patients who had recently completed an American Diabetes Association (ADA)-recognized diabetes education program were randomized to one of two groups. In each of these studies, half of the patients (the intervention group) received:

- 1) a colorful, computer-generated personalized report of their cholesterol status and goals in the format of an 11 by 17 inch laminated poster with magnets on the back of the poster, designed to be placed on the refrigerator,
- 2) a monthly postcard emphasizing their hemoglobin A1c goal, and
- 3) a personalized wallet card to track their blood sugars, blood pressure and weight.

The other half of the patients received no intervention. Both groups received a fasting cholesterol profile and their physicians received traditional laboratory reports of their patients' cholesterol status without knowing which patients received the intervention.

Six months after enrollment, patients were asked to return to the hospital for a follow-up cholesterol profile. Across the two studies a total of 191 patients completed the trial (79 percent and 84 percent of participants, respectively). For patients in the heart disease study who had not met the National Cholesterol Education Program (NCEP) goals at baseline, those in the intervention group had a statistically significant fall in LDL cholesterol of 21.5 mg/dL ( $P < 0.001$ ), as compared to no change in the LDL levels in the control group. Those who received posters were three times less likely to be readmitted for cardiac procedures within the 6-month study period (7.6 percent vs. 21.6 percent). Seventy-three percent of patients reported having the posters on their refrigerators 6 months following their hospital stay.

In the larger diabetes study, hemoglobin A1C levels decreased beyond predicted levels in the 6 month period.<sup>4</sup> Those patients who received posters, and whose baseline hemoglobin A1c was  $\geq 7.0\%$  had an absolute drop in hemoglobin A1c of 2.26%, which exceeds the 1% reduction generally seen among the most effective diabetes medications.<sup>4,5</sup> Note that the physicians of patients in this group also received a chart-sized version of the poster.

As health care evolves, the question of where and when to provide preventive care is raised. These studies demonstrate that patients can benefit from individual feedback and appropriately-packaged information as well as their medications. The combination has a very powerful proven effect, but like many other preventive intervention studies, these findings have yet to be translated into practice.

As healthcare costs soar, who pays for prevention—even proven prevention strategies—remains a serious and seemingly unanswerable question. The good news is that science continues to demonstrate what we have known for centuries—patients' attitudes and participation in their own health care improves outcomes. An ounce of prevention is worth a pound of cure, and can begin anywhere—even on the refrigerator door.

#### References

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