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DIABETES CLOSE UP

Know Your A1C

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Online Technology Holds Promise to Connect Patient and Provider and to Empower Patients to Become Healthier

Flying solo is difficult with diabetes.

Research studies have shown – and common sense would confirm – that patients with diabetes are more motivated when they are encouraged by a doctor, nurse, or educator; but our health care system doesn't adequately pay for sustained professional guidance or encouragement.

Dr. Neal Kaufman, CEO of the Diabetes Prevention Source, believes that technology can help solve this problem by allowing patients to interact with health care providers in a useful, seamless – and economically viable – fashion. In his scenario, the bulk of the communication is done online – which is not quite as powerful as a real-life smile or an empathetic hug – but patients can now receive timely information and support at a moment's notice and connect with kindred spirits from all over the world. Even a virtual shoulder to cry on is better than none at all.

Dr. Kaufman, who spent the bulk of his career in academic general pediatrics at Cedars-Sinai Medical Center and UCLA School of Medicine, says a diabetes nurse educator or dietician is like a coach whose job is to help patients adopt and sustain healthy lifestyles. "They are there to help a person over time implement healthy behaviors," he said, "and then, most importantly, make it into a habit."

The problem is that an individual educator or dietician can only see so many patients. Online technology, however, "has the capacity to mimic, though not duplicate, that human interaction," Dr. Kaufman said. That would allow a single "coach" to serve far more patients, which in turn would save money and eventually generate revenue so that these online visits would be more feasible financially.

Dr. Kaufman has enough faith in this idea that in 2004 he left his 26-year career in pediatrics to found the Diabetes Prevention Source (DPS). Its co-founder is even better known than he: Dr. Francine Kaufman, Neal's wife, is the past president of the American Diabetes Association and director of the Comprehensive Childhood Diabetes Center at Childrens Hospital Los Angeles.

Neal Kaufman describes the company's online products as a "technology platform married to a research-proven curriculum or protocol to create an intervention." The University of Pittsburgh's Diabetes Institute worked with DPS to develop and evaluate a product called "VLM," or "Virtual Lifestyle Manager."

Starting in November, it enrolled 50 subjects supported by 0.4FTE nurses, and after one face-to-face meeting, all other interaction was done online. The patients use the VLM which has streaming audio, interactive workbooks, quizzes, and journals, and communicate with their nurse – what they ate, how much they exercised, etc., -- through the program. The nurses, in turn, would evaluate every week the patient's understanding and performance and send back an email.

Does a "Virtual Lifestyle Manager" actually get people to change their lifestyles? The results of this study will not be presented until next year, but Dr. Linda Siminerio, the director of the Pittsburgh Diabetes Institute, said, "So far, we have very encouraging results. It's a good support tool, though there still needs to be some human contact."

Dr. Kaufman said all he and the Diabetes Institute are doing is applying to the Internet the same principles that worked in the Diabetes Prevention Program, which ended in 2002. In the DPP, which had 3,200 subjects, regular face-to-face meetings with providers (once a week for 16 weeks and periodically thereafter) decreased the progression from pre-diabetes to diabetes by 58 percent.

Direct intervention helps patients maintain healthy lifestyles; so, according to Dr. Kaufman, the biggest benefit of the Internet is that the intervention is much less costly. He believes that the VLM will soon have a provider-to-patient ratio of 1:200 or 1:300 making his product "affordable and scalable." DPS's other product—its Physical Activity Prescription - is an on-line coaching intervention that helps sedentary adults become more active and needs less than 90 minutes of human coaching over 6 months. Technology is not usually associated with the "softer" side of diabetes care, such as motivation and behavior. It is usually used for such things as improving how insulin is delivered or how blood sugars are measured. But Dr. Kaufman recognized that unhealthy lifestyles are overwhelming conventional therapies – a topic deftly explored in his wife's book, *Diabesity* – and that appropriate internet intervention can work.

"If you look at the basic physiology of humans, we are addicted to sugar, salt, fat, and inactivity," Neal Kaufman said. "Those four addictions were actually quite essential to the preservation of the human species when we had famine all the time and when we ran around trying to capture our food or to gather it."

But now those addictions have led to the emergence of lifestyle-driven maladies – type 2 diabetes, obesity, and hypertension – that individuals are capable of combating. That is very different than the traditional view of disease, in which the individual has no control. "Most individual behaviors are unimportant in a person's outcome, but the sum of all those behaviors is critical," he said. "That is a very different paradigm, because the patient really is in control of their micro-behaviors. So the question becomes, 'How do you help individuals take adopt and sustain healthy habits?'"

He recognizes that technology will not solve all our problems, that it's only one piece of the puzzle. But what's exciting about technology is that it's only going to get better – cell phones that can test blood sugars, deliver insulin, measure physical activity, provide counseling for example, or even an artificial pancreas.

Or if Dr. Kaufman has his way, a nurse who will text-message a far-away patient with some quick reminder, some whimsical nudge, helping him to know that he is not flying solo.

—by James S. Hirsch and Kelly Close