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This article originally posted 22 May, 2010 and appeared in [Issue 522](#)

Engaging Patients with Technology for Sustained Behavior Change

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Today, more than at any other time in our history, the general population of the U.S. is addicted to sugar, salt, fat, and inactivity. While these addictions are dangerous for the general public, they can be deadly for those with diabetes. Patients with diabetes, or pre-diabetes, must not only be educated on new, health-promoting behaviors, they must learn to adopt these behaviors for the rest of their lives. To accomplish this, ongoing clinical support is required. That being said, given the significant time constraints of a busy medical practice, healthcare providers often do not have the time to adequately support all aspects of a successful behavior change intervention. To be successful, patients must not only understand their condition, but also obtain the skills to set goals, solve problems, monitor outcomes, and overcome barriers to action.

With widespread, low-cost internet and cell phone access erasing geographic, economic, and demographic barriers, clinicians can now support significant patient behavior changes in an economical, practical, and profitable manner by incorporating information technology into patient care and support.

Technology Supported Patient Self-management

Patient self-management enabled by information technology is becoming an important factor in the way clinicians deliver healthcare and lifestyle support, particularly since the current paradigm cannot efficiently or effectively deliver what patients with diabetes need. Through this new modality, clinicians are able to collaborate with, and provide robust support to, patients who want to take the necessary steps to change their unhealthy behaviors for the long-term.

The best self-management education and support programs are rich in pertinent content, provide engaging interactive elements, and offer a tailored, personalized learning experience. They contain self-assessment and goal-setting tools, and ways for the patient to monitor his or her performance as well as changes in biologic measurements such as weight, blood pressure, and blood sugar. They also allow patients to easily access their information, input their data, and receive support in real-time, as needed.

Of course, technology-enabled behavior change is a complex undertaking. To be successful, internet-based programs designed to help patients adopt and sustain healthy behaviors must be evidence-based, research-proven, and solidly grounded in behavior change theory and clinical expertise. They should also be integrated into the very fabric of healthcare delivery, use data from biometric devices when appropriate, and be frequently evaluated and improved to ensure they are able to produce effective, long-term behavior change.

Today, online tools can extend a medical practice through cost-effective programs that automate much of the educating and monitoring, and guide patients to better manage their conditions. With web-based learning programs, patients can go online any time that works best for their schedule to gain knowledge, obtain support, and track their behaviors, so they remain engaged in the behavior-change process. Clinicians have the benefit of acting as a "virtual coach," whenever it is most convenient, to provide individualized guidance and support to the patient based on readily available analyses.

Online Diabetes Prevention Program

For example, to create an approach that could serve large numbers of overweight and sedentary patients, researchers from the University of Pittsburgh translated the Diabetes Prevention Program (DPP) into an online intervention called Virtual Lifestyle Management (VLM) service (McTigue, et al., "Using the Internet to Translate an Evidence-Based Lifestyle Intervention into Practice," *Telemedicine and e-Health*, VOL. 15 NO. 9, November 2009). The DPP, a weight management approach developed by the University of Pittsburgh under a federal research grant from the National Institutes of Health (NIH), proved that overweight and sedentary adults could be counseled to eat better, be more active, and lose weight to improve their long-term health. The challenge was bringing the benefits of the DPP to enough patients at an affordable cost.

To create the VLM service, the University of Pittsburgh, along with DPS Health, took the principles of the DPP and used them to develop a year-long, engaging, web-based learning, goal setting, tracking, and motivation program. Through VLM, patients improve their physical activity and nutrition habits and sustain these new behaviors to live longer, healthier lives. VLM increases clinician efficiency by automating patient learning, planning, self-monitoring and encouragement, and provides support through limited personalized electronic coaching.

By incorporating information technology into patient care, clinicians today have the opportunity to provide their patients with the ongoing support they need. In addition to reducing patient travel and scheduling conflicts, web-based learning and support can extend the clinician's reach as they engage and support patients in healthy behaviors over the long term. Online programs can also improve monitoring, tracking and reporting, so population-based risk assessments can be better managed.

The use of internet technology to support patient self-management is becoming an integral part of delivering healthcare and lifestyle support, and enabling patients to better manage their own health by adopting and sustaining new health-promoting behaviors. Today, clinicians can use web-based learning, coupled with traditional treatment approaches, to support large numbers of patients with diabetes in an economical and practical manner.

Neal is an experienced clinician, educator, and leader in local, state and national efforts to improve the health of vulnerable individuals and communities. He is an innovator in internet and cell phone solutions that enable clinicians to help patients to adopt and sustain health-promoting behaviors and improve long-term health outcomes. Additionally, Neal is an expert in a range of areas including educating patients and healthcare providers, improving the provision of health and social services, and creating innovative solutions to complex problems. In 2004, after his 27-year career in academic general pediatrics, Neal co-founded DPS Health to help at risk individuals by creating technological solutions to prevent or treat chronic disease. He is co-founder of the UCLA Center for Healthier Children, Families and Communities, and is a Professor of Pediatrics and Public Health at the UCLA Schools of Medicine and Public Health.