Health technology (eHealth) tools are redesigning clinical care and diabetes self-management education, with the new focal point becoming the patient as the collector of data. Global leaders and policymakers are developing eHealth initiatives and information technology policy to improve health and health care systems. The anytime-anywhere capabilities of digital technology support the delivery of automated, personalized, individualized content and coaching at the right time in the right way at the right place (while living life with diabetes), thus providing a timely nudge encouraging ongoing, informed self-management.

These newly empowered, engaged, and educated patients are being referred to as ePatients, and they are increasingly using technology to obtain health information, log and share lifestyle data (patient-generated health data), and monitor their health status, thus becoming more active participants in their care. In a 2015 survey by the Society for Participatory Medicine, 84% of surveyed individuals with chronic conditions reported a belief that self-tracking their health data and sharing it with their health care providers between visits would help them manage their health.

Role Remodeling

The introduction of eHealth into the clinical workflow opens the doors to expanding, enhancing, and challenging the current roles of all health care providers. Members of the health care team need to recognize this shift in the patient-team dynamic and consider how they can best adapt their workflow and practices to leverage this new reality.

As outcomes-based accountability becomes the norm, there is an increased demand for diabetes care and education services outside traditional programs. Health plan care coordinators, health system population health managers, patient-centered medical homes, and employer-based health coaching programs are increasingly expected to deliver diabetes care and education. With the increasing complexity of diabetes treatment protocols and extensive ongoing self-management support required by patients, health care team members in these settings have a growing interest in the use of digital health technology to support their efforts in providing quality, evidence-based diabetes care and education to improve clinical outcomes and patient engagement. The use of eHealth tools and the resulting patient-generated health data (PGHD) support more informed interactions with the patient at every level of practice.
Integrating Technology Tools Into Practice

Timely review of PGHD can lead to relevant, customized, and contextual adaptations in the care plan versus generic protocol- or curriculum-driven responses. These data enable patient-facilitated care, providing insights for shared decision making and proactive, two-way patient-team communication in a complete feedback loop that engages the patient in their care between visits, sessions, and classes. The key is determining what data are available when and in what format, who views and evaluates the data, and what, when, how, and to whom status and care plan changes are communicated. To be of value, eHealth tools must be integrated into clinical practice, becoming a part of what is done versus merely being added on to it.

Gee et al have proposed an eHealth-enhanced chronic care model in which eHealth education and eHealth (virtual) communities are recognized as critical for self-management and incorporates a closed or complete feedback loop to assure productive technology-enhanced communication between the individual with the chronic condition and their health care team (Figure 1).

The complete feedback loop contains 5 stages:
1. transmission of patient generated health data
2. interpretation of data and information using previously established knowledge and/or wisdom and use of evidence-based standards
3. address the specific needs of the individual consumer
4. timely feedback to the consumer addressing their requirements
5. regular repetition of the feedback loop.

Digital Diabetes Education

With digital health technology reaching a tipping point, it is possible to move beyond the structured, traditional diabetes self-management education and support (DSMES) accredited program model.
to include digitally enhanced diabetes care and education services to support all clinicians in doing their job in caring for their diabetes population at their practice level and within their scope of practice. In fact, Kaufman and Woodley, in a commentary published in the Journal of Diabetes Science and Technology, states, “the current labor-intensive approach to preventing and treating diabetes is no longer feasible and self-management support interventions that are clinically linked and technology enabled are key to modern diabetes care and represent a solution whose time has long since arrived.”

Digital (technology enabled) diabetes care and education can be coordinated by various members of the health care team in the health care system, the community, the home, and the workplace as long as the components address national standards for DSMES (Haas et al). The goal is to connect the health care team and the ePatient through a complete feedback loop to optimize diabetes self-management and treatment, thus enabling efficient, cost-effective outcomes improvement and supporting population health initiatives.

The Emerging Role of the Diabetes Educator

In 2016, the AADE’s Technology Workgroup, an outgrowth of the AADE’s 2016-2018 Strategic Plan, developed the AADE Technology-Enabled Framework (Figure 2), which was shared for the first time at AADE16 in San Diego, California. The taskforce in its ongoing work is looking to position AADE, its members, and people with diabetes to operate successfully within a continuously shifting environment and find ways in which technology can be leveraged to advance diabetes care as well as the role of the diabetes educator.

Digital health technology provides the critical platform for access, reach, and efficiency to help accomplish triple aim goals (improving the patient experience of care and the health of populations while reducing the per capita cost of health care). Digital diabetes education has the potential to transform the role of the diabetes educator to be a leader in the care redesign for value-based services (accountable care). Diabetes educators are the subject matter experts for diabetes care and in the use of patient-generated health data and can work with other health care team members to mentor and support them. The diabetes educator becomes the distribution channel for placing evidence-based technology tools into the hands of patients to ensure optimal use, moving beyond the long underutilized “bricks and mortar” traditional DSMES programs in which, according to Powers et al, only a small fraction of eligible patients participate.

With the emerging demand for diabetes education in the primary care environment, in the workplace, and in the community, the diabetes educator has an opportunity to become what could be called an eEducator, stepping up to serve as the expert consultant in guiding other members of the health care team in providing relevant, contextualized diabetes care and education services leveraging eHealth tools to provide needed data to optimize care plans, thus meeting the patient where they are and in the way they desire to learn and interact with their care team.

An example of an eEducator was highlighted in the 2016 AADE In Practice Change Champion series by 2016 AADE president, Hope Warshaw. In a diabetes population health role for a large health care system in the Mid-Atlantic, this educator leverages a variety of tools, including evidence-based eHealth tools, to help efficiently manage a population of

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diabetes patients in a nontraditional population health diabetes education and management practice. This educator also mentors and serves as a resource to primary care–based care coordinators, leads staff education programs, and guides the team in quality improvement initiatives using technology to document program effectiveness. Her work was shared in a poster presentation at the 77th Scientific Session of the American Diabetes Association in San Diego, California.

In 2017, AADE announced a partnership with WellDoc, a digital health company, to digitally deliver the AADE7 Self-Care Behavior Diabetes Education Curriculum in small “doses” over a 12-week journey customized to the patient based on duration of diabetes, their treatment plan, and their areas of interest. The curriculum is delivered within a Food and Drug Administration (FDA) cleared digital platform, BlueStar.

As part of this partnership, the organizations are exploring new strategies to bring innovative tools to the practice of diabetes education and care.

Digital Therapeutics
A category of eHealth that has come to be called digital therapeutics or “digiceuticals” distinguishes itself from wellness apps by conducting peer-reviewed published research demonstrating clinical efficacy and safety of the digital therapeutic product. Digital therapeutic products are different from simple wellness apps available for phones or tablets in that they can provide medical advice, which wellness apps aren’t allowed to offer.

On its website, the American Diabetes Association recognizes the FDA-cleared BlueStar diabetes coaching app as the first mobile prescription therapy, a new category of therapy that provides guidance for daily diabetes care decisions on smartphones or other devices. Educators and practices seeking to expand their services beyond traditional DSMEs programs can integrate evidence-based digital therapeutic tools as part of their diabetes education and care services, leveraging the data to negotiate timely therapy progression and facilitate needed self-management support for the patient between touchpoints with the health care team.

A recently published systematic review evaluating technology-enabled diabetes self-management education and support reports that technology-enabled diabetes self-management solutions significantly improve A1C with the most effective interventions incorporating all the components of a technology-enabled self-management feedback loop: 2-way communication between the patients and their health care teams, PGHD, tailored education, and individualized feedback.

New Approaches, New Skills
Training for patients, diabetes educators, and other diabetes stakeholders in how to operate successfully within the continuously evolving health care and technology landscape is an ongoing commitment of the AADE and its Technology Workgroup. Educators need training in: identifying evidence-based health technology tools and integrating these tools into practice, how to use the resulting PGHD to optimize individual care plans and how to use the population level data to support quality improvement and population health initiatives.

CRITERIA FOR IDENTIFYING EVIDENCE-BASED eHEALTH TOOLS

› Has the tool been designed to be user friendly and engaging?
› Are the analysis and feedback evidence and theory based?
› Does the platform connect the patient with their own health care team?
› Has the tool demonstrated improvement in clinical outcomes and patient engagement?
› Does it ensure the safety and security of the patient-generated health data?
› Is it FDA cleared?

PRACTICAL STEPS TO BECOMING AN eEDUCATOR

› Consistently identify patients who would benefit from evidence-based eHealth tools as a standard of care.
› Engage identified patients in the use of eHealth tools configured for their treatment plans.
› Use the resulting patient-generated health data in a complete feedback loop to inform timely treatment and care plan optimization through shared decision making to achieve improved metabolic outcomes.
› Facilitate ongoing patient and team engagement through the digital platform.
› Leverage population-level reports to inform quality improvement and population health initiatives.
Conclusion

Technology is transforming health care, including diabetes. Opportunities for enterprising practices, health care systems, diabetes educators, and other members of the health care team to leverage these tools to both improve diabetes outcomes for their patients and build their practices are here. Diabetes educators, with their expertise in diabetes care and education and their extensive experience in the practical use of PGHD, are uniquely positioned to embrace these new approaches.

And so, circling back to this article’s title, in closing, the question is again raised for the reader’s thoughtful consideration: Are you ready to become an eEducator (expert, experienced, engaged in eHealth)? Are you ready to be a leader and mentor in integrating evidence-based technology tools for your patients and programs to build and enhance the value of your diabetes education and care practice? The time is now. 

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REFERENCES


