A Framework for Optimizing Technology-Enabled Diabetes and Cardiometabolic Care and Education

The Role of the Diabetes Care and Education Specialist

Purpose

The purpose of this article is to present a framework for optimizing technology-enabled diabetes and cardiometabolic care and education using a standardized approach. This approach leverages the expertise of the diabetes care and education specialist, the multiplicity of technologies, and integration with the care team. Technology can offer increased opportunity to improve health outcomes while also offering conveniences for people with diabetes and cardiometabolic conditions. The adoption and acceptance of technology is crucial to recognize the full potential for improving care. Understanding and incorporating the perceptions and behaviors associated with technology use can prevent a fragmented health care experience.

Acknowledgments: The authors would like to acknowledge the Association of Diabetes Care & Education Specialists for their support in completing this publication, with particular appreciation for the ongoing support of Leslie L. Kolb, Charles MacFarlane, and Eddie Wantuch; and Andrew Todd, from the University of Central Florida, for his support on the literature review for the article.

Podcast can be found at: www.DiabetesEducator.org/technologyintegration

DOI: 10.1177/0145721720935125

Deborah A. Greenwood, PhD, RN, BC-ADM, CDCES
Fran Howell, MBA, DNP, APRN, CDCES
LaurieAnn Scher, MS, RD, CDCES
Gretchen Yousef, MS, RD, CDCES
Joanne Rinker, MS, RDN, CDCES, LDN
Kirsten Yehl, MS, MLIS
Diana Isaacs, PharmD, BCPS, BCACP, CDCES, BC-ADM
Malinda M. Peeples, MS, RN, CDCES

From School of Nursing, UT Health, San Antonio, Texas, USA (Dr Greenwood); CeQur Corporation, Marlborough, Massachusetts, USA (Dr Howell); Fitscript, New Haven, Connecticut, USA (Ms Scher); MedStar Health Diabetes Institute, Washington, District of Columbia, USA (Ms Yousef); Association of Diabetes Care & Education Specialists, Chicago, Illinois, USA (Mrs Rinker, Ms Yehl); Cleveland Clinic Diabetes Center, Cleveland, Ohio, USA (Dr Isaacs); and Welldoc, Columbia, Maryland, USA (Mrs Peeples).

Correspondence to Kirsten Yehl, MS, MLIS, Research Manager, Association of Diabetes Care & Education Specialists, 125 South Wacker, 6th Floor, Chicago, IL 60606, USA (kyehl@adces.org).

Financial Disclosures: Deborah Greenwood is faculty for Lifescan Diabetes Institute, consultant for Lifescan, Mytonomy, and Silverfern; Digital health advisory board, Novo Nordisk. Fran Howell is an employee of CeQur Corporation. Malinda Peeples is an employee of Welldoc Corporation. Joanne Rinker and Kirsten Yehl are on staff at the Association of Diabetes Care & Education Specialists.

Conclusion

Diabetes care and education specialists (DCES) have a history of utilizing technology and data to deliver care and education when managing chronic conditions. With this unique skill set, DCES are strategically positioned to provide leadership to develop and deliver technology-enabled diabetes and cardiometabolic health services in the rapidly changing healthcare environment.

Diabetes care and education specialists have a history of utilizing technology and data to deliver care and education when managing chronic conditions. With this unique skill set, diabetes care and education specialists are strategically positioned to provide leadership to develop and deliver technology-enabled diabetes and cardiometabolic health services in this rapidly changing health care environment.

Technology is ubiquitous with a proliferation of device types and solutions. Consumers are using technology in new ways to manage their health. This evolution is creating new opportunities in democratizing health care for consumers as well as introducing challenges for health care professionals (HCP). Technology can offer increased opportunity to improve health outcomes while also offering conveniences for people affected by diabetes and cardiometabolic conditions. The adoption and acceptance of technology is crucial to recognize the full potential for improving care.[1] Understanding and incorporating the perceptions and behaviors associated with technology use can prevent a fragmented health care experience.[1] The purpose of this article is to present a framework for optimizing technology-enabled diabetes and cardiometabolic care and education using a standardized approach. This approach leverages the expertise of the diabetes care and education specialist, the multiplicity of technologies, and integration with the care team at the individual and population levels.

Technology Summit

The Association of Diabetes Care and Education Specialists (ADCES) held an inaugural Diabetes Technology Summit in October 2019 in partnership with the American Medical Group Association and the American Academy of Family Physicians. The summit convened approximately 30 multidisciplinary health care leaders in clinical practice, academia, professional associations, industry, and foundations. The purpose of the summit was to identify expert consensus opinion regarding the complexity of technology and the evolving health care landscape in an effort to determine how technology is incorporated into the care plan of an individual with diabetes and how clinicians leverage technology-enabled solutions to optimize treatment and population outcomes. The insights and content generated from these discussions were used to establish a foundation and inform the writing of 2 publications concerning the role of the diabetes care and education specialist: this article focused on a framework for optimizing technology-enabled care and education using a standardized approach and a second article focused on integrating technology into practice incorporating this framework.[2]

Chronic Care Model

Evidence to support the integration of technology into practice is documented in the chronic care model (CCM).[3] This framework introduced the role of technology in transitioning from an acute care model to the CCM by integrating clinical decision support, delivery system design, and clinical information systems.[3] In addition, the CCM includes the community along with the health care system, specifically distinguishing the importance of ongoing self-management support.[3] The CCM has been widely studied in organizations at both the individual and population levels.[4] In 2015, the e-Health Enhanced Chronic Care Model (eCCM) expanded on the original CCM to more explicitly define how technology can support self-management and the need for ongoing e-health education for consumers of health care.[5] The eCCM defines the data requirements necessary to engage in productive interactions to improve health outcomes. For example, it is essential to have access to patient-generated health data (PGHD) through technology tools. These data become information derived from pattern analysis and/or artificial intelligence, leading to the generation of knowledge and ultimately wisdom to understand both the individual and the condition.[6] These practices are ongoing and create a feedback loop to facilitate decision-making. Thus, the informed, activated individual becomes an "e-patient" who is using technological tools in partnership with the health care team to improve outcomes.[5]

Technology-Enabled Care and Education

A 2017 systematic review evaluating technology-enabled diabetes self-management education and support found a significant reduction in A1C compared to interventions without technology.[6] The most effective interventions incorporated 4 key features: (1) communication between the person with diabetes (PWD) and the health care team, (2) use and analysis of PGHD, (3) application of the data to tailor education, and (4) individualization of feedback.[6] The 4 key features create a technology-enabled self-management (TES) feedback loop allowing the diabetes care and education specialist to identify productive actions to engage PWD in their care[5,6] (Figure 1, TES model). In essence, the TES framework is an "engine" that facilitates productive interactions in the eCCM.[5] The TES framework can also be used by diabetes care and education specialists to review and evaluate digital health solutions to ensure the key features are incorporated. Since the publication of this review article, 9 systematic reviews were published focusing on connected health (eg, mobile health, digital health) that continue to support the TES feedback loop and the inclusion of technologies to improve outcomes.[7-15]

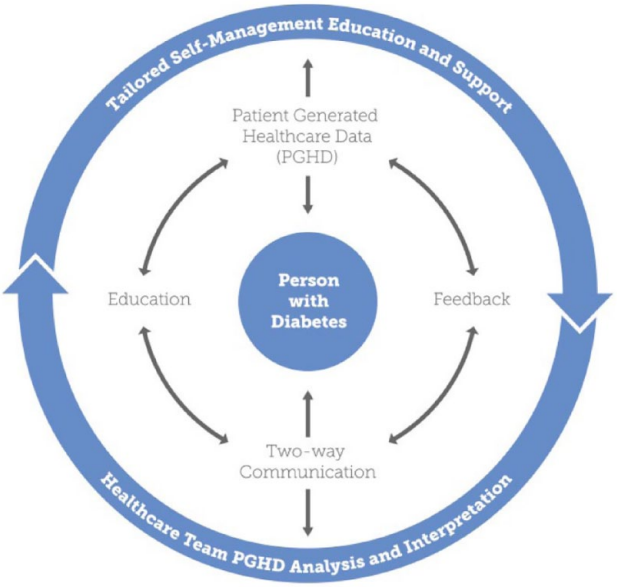

Figure 1. Technology-enabled self-management (TES) feedback loop.

National and International Standards Supporting Technology-Enabled Practice

The 2017 national standards for diabetes self-management education and support (DSMES) identify the opportunity that technology can provide to individualize services, encourage an interactive curriculum, and provide ongoing support.[16] In addition, technology-enabled solutions can increase access to DSMES to improve health and economic outcomes beyond the recommended 4 key times an individual might engage with a diabetes care and education specialist to include client-initiated choice based on convenience.[17] Integrating technology-enabled population health strategies along with person-centered care and delivered in team-based models will improve outcomes for the population. Technology has enabled diabetes care and education specialists to expand the reach of services while incorporating PGHD to stratify populations by level of risk.[18]

In 2019, the American Diabetes Association (ADA) medical standards of care in diabetes introduced a dedicated section to focus on diabetes technology.[19] This new section of the medical standards of care originally focused on devices, and future issues will address medical software, technology-enabled diabetes care and education, and new models of care.[19] The medical standards of care acknowledge that although the incorporation of diabetes technology can improve the lives and health of people living with diabetes and related cardiometabolic conditions, the rapidly evolving landscape can be a barrier for technology uptake for both health care professionals (HCP) and people with diabetes.[20] In 2020, the medical standards of care in diabetes included the potential for nonprofit websites to support HCP and PWD in identifying technology choices.[19]

The 2019 consensus report from the ADA and European Association for the Study of Diabetes (EASD) Technology Working Group focused on digital apps as an opportunity to supplement medical practice and increase accessibility for all consumers.[21] However, the authors acknowledged that it is unreasonable for HCPs to stay up to date with all digital-health technology. The workgroup recommended partnering with other stakeholders in the diabetes community to increase cooperation and collaboration.[21] In addition, they recommended professional organizations assume a role in education, research, and evaluation of digital apps.[21] The diabetes care and

education specialist is the partner, subject matter expert, and key team member who can ensure acceptance and adoption of technology and work in partnership with the PWD, the health care team, and industry to ensure safe and effective use of technology.

Association Leadership for Technology-Enabled Practice

In 2015, the Association of Diabetes Care and Education Specialists (ADCES) introduced a new strategic plan for the association that placed technology and the connected health environment in the forefront, recognizing the changing landscape and new models of care. The following year, ADCES established a technology workgroup in order to identify the needs of the Association, diabetes care and education specialists, and people with diabetes and related cardiometabolic conditions. The workgroup also created and implemented a technology roadmap. The 2016 technology workgroup included HCP skilled with diabetes devices, digital health and data platform technologists, and researchers. In the past decade, the technology ecosystem has expanded from medical devices (ie, continuous glucose monitors, insulin pumps, smart pens) to digital health (ie, smartphones, apps, and digital therapeutics) and consumer devices (ie, activity trackers, wearables, connected scales). As technology has evolved, the practice of the diabetes care and education specialist has expanded from health system services (ie, inpatient, outpatient, case management) to community/employer-based services (ie, weight reduction, peer coaching, health campaign programs) to remote monitoring and telehealth services to fully embrace the chronic care model. The group used the Architecture for Integrated Mobility model (AIM) from the telecommunications industry to develop the roadmap to define and understand this new connected health environment.[20] Application of AIM to the diabetes technology ecosystem assisted the Association in interpreting the evolving environment for members, developing best practices for integrating technology into mainstream management systems, and prioritizing the technology strategy for the Association. The infographic in Figure 2 incorporates the 8 layers of the AIM model with examples relating to the diabetes environment:

- Layer 1: users of technology: people with diabetes, the health care team, caregivers;
- Layer 2: application software: mobile apps, digital health solutions, data platforms;

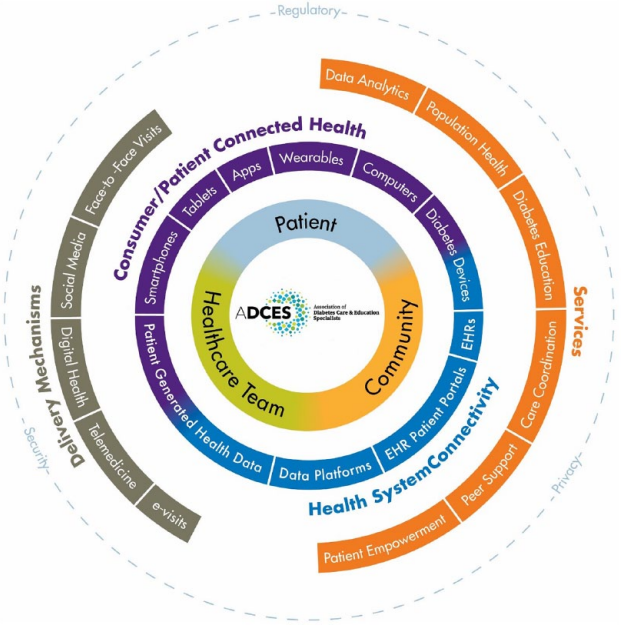

Figure 2. Incorporates the 8 layers of the Architecture for Integrated Mobility model (AIM).

- Layer 3: environment: practice, health system, health plan, employer, community;
- Layer 4: medical devices: diabetes devices that are US Food and Drug Administration regulated, provider prescribed, payer reimbursed (eg, glucose monitoring devices, insulin delivery systems);
- Layer 5: network connectivity: organization technology network, cloud-based;
- Layer 6: supporting services: awareness, training programs and education (eg, Diabetes Advanced Network Access, or Danatech),
- Layer 7: interoperability integration: privacy, security, device-to-device connections;
- Layer 8: business models: DSMES programs/services, private practices, community programs.

The AIM model informed development of Danatech, which was introduced in 2018 to support Association members in the use of technology and in professional development.[22] The Danatech technology site is a resource for information about diabetes devices, digital health solutions, and data platforms that HCP may use in the multiple environments where people with diabetes and diabetes care and education specialists are collaborating to improve outcomes. In this dynamic atmosphere, diabetes care and education specialists must be able to clearly articulate their role in the development

and use of technology to improve health, quality of life, and outcomes.

In 2019, the Association introduced Project Vision, a multiyear effort to reshape the specialty of diabetes and related cardiometabolic conditions and position diabetes care and education specialists for success by elevating their role as integrators of clinical management, education, prevention, and support.[23] Project Vision is a framework and a set of 6 strategies to achieve these outcomes. The leverage technology strategy specifically calls out the importance of the role of the diabetes care and education specialist in "leveraging technology-driven diabetes and related cardiometabolic conditions care, education, and support." In response to Project Vision, the AADE7 Self-Care Behaviors framework was updated in 2020 to reflect the need to integrate technology with clinical management and behavior modification to improve outcomes.[24]

Goals and Principles of Technology-Enabled Care

Goals

An overwhelming majority of self-management decisions occurs outside of the health care setting,[25] and technology can be utilized to improve access, augment care between clinic visits, and prevent or reduce therapeutic inertia.[26] The goals of technology-enabled care are 4-fold:

- People with diabetes are offered access to technology-enabled care and education based on assessed needs, goals, preferences, and resources.[19]
- Technology-enabled solutions support quality care and education by improving health outcomes, quality of life, and satisfaction among PWD and HCP.[6]
- Technology-enabled care facilitates efficient and actionable use of PGHD to support clinical and self-management decisions and care team collaboration.[27]
- Technology enables diabetes care and education specialists to utilize PGHD for effective population health management.[18]

Principles

One of the greatest benefits of technology-enabled care is the ability to increase access to diabetes care and education specialists in-between in-person HCP visits. The opportunity for just-in-time care and education, at a time when the PWD is ready and available to engage, creates a new model of care. Levine et al[28] described technology as "the newest member of the team." Their consensus is that for technology to support virtual care in-between HCP visits, 3 features are needed: (1) diabetes apps, (2) connected devices (eg, glucose monitors, continuous glucose monitoring systems, smart/connected insulin pens, insulin pumps), and (3) coaching, either virtual or in person.

Technology-enabled care and education supports population health management with the focus on improving overall diabetes and cardiometabolic performance measures across a practice, organization, or population through diagnosis, increased access, data analysis, and therapy at a scale and reach necessary to improve outcomes and lower costs. Incorporating technology into the infrastructure supports population goals and provides the methods to improve health at varying degrees.[18] Frequent feedback and the ability to change the intervention based on situational data allow for improved treatment decisions that inform population-level management strategies. Technology also enables population health to be more cost-effective through increased access to data and advanced data analysis across various sites. The inclusion of technology for population health enables risk stratification, identification of appropriate interventions across the population, and collaboration among the health care team.[18]

Diabetes care and education specialists are influencers and decision-makers in their practices, and they are well positioned to identify technology needs, configure solutions, and collaborate with the PWD and the health care team to improve outcomes at individual, practice, system, and population levels. The following principles provide guidance on the leadership role of the diabetes care and education specialist in technology-enabled care. Diabetes care and education specialists:

- interface and advocate with relevant individuals, departments, and systems (ie, regulatory, compliance, security, contracts, payers) to identify and integrate appropriate technology into practice;
- define training, workflow, and data-integration needs for the use of technology to support each member of the care team with minimal impact;
- utilize a shared decision-making approach regarding technology choices and treatment goals for individuals;
- interpret PGHD on individual and population levels and collaborate with PWD and the care team for treatment plan changes as needed;
- provide evidence-based principles and real-world experience into the development of technology.

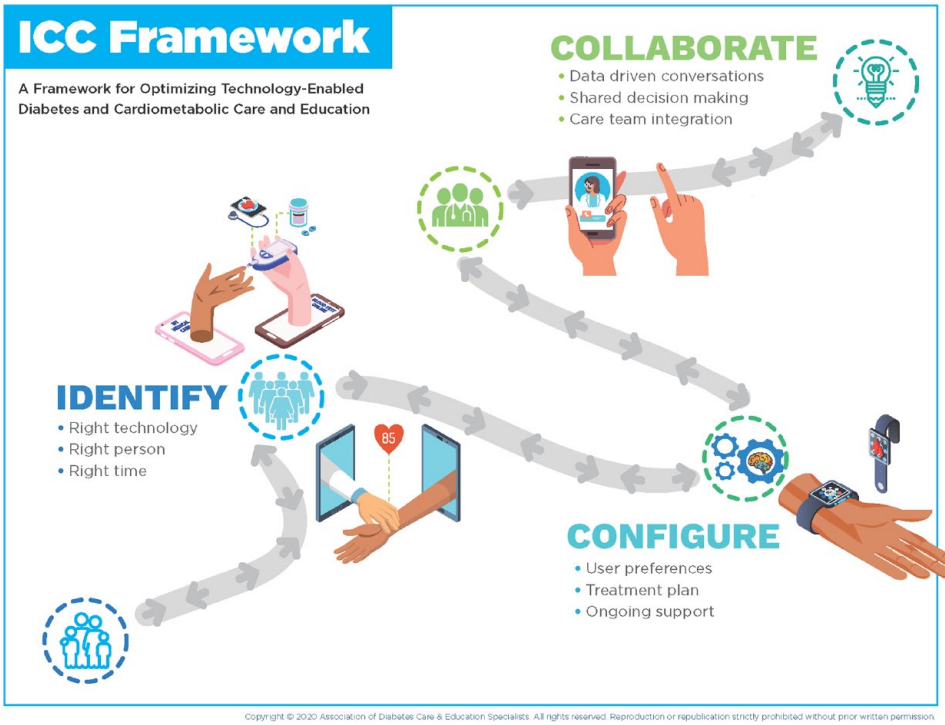

Figure 3. ICC framework: Identify-Configure-Collaborate.

A Framework for Technology-Enabled Care: Identify, Configure, and Collaborate

Based on the literature, the technology summit, and the experiences of diabetes care and education specialists, a framework was developed for a standardized approach for adoption and integration of technology-enabled diabetes and cardiometabolic health services. The standardized process includes the following 3 steps: (1) Identify appropriate technologies using a shared decision-making process, (2) configure the technology and the required workflow, and (3) collaborate for ongoing interpretation and use of PGHD. The Identify-Configure-Collaborate (ICC) framework provides a standardized approach for the diabetes care and education specialist to leverage the unique skills required to identify, configure, and collaborate with the person with diabetes and care team in the initial and ongoing use of technology to improve outcomes. This process includes the technology ecosystem that incorporates medical devices, medical software, data platforms, and consumer applications for diabetes and related cardiometabolic conditions. These technologies provide a connected health environment to support people with these conditions and provide PGHD to the health care team to enhance communication and shared decision-making to optimize the treatment plan. The process of identify, configure, and collaborate is dynamic with an ongoing opportunity to proceed through the sequence as there are changes in care, technology, resources, preferences, and outcomes. The diabetes care and education specialist may lead, advocate for, and deliver these services at the individual and population levels to improve outcomes for programs, practices, and organizations (Figure 3).

Identify

Assess needs and goals to determine the right technology for the right person/population at the right time to achieve desired outcomes.

Diabetes care and education specialists identify technology options based on individual assessments so PWD can make informed decisions via a shared decision-making process. Individual assessments by diabetes care and

education specialists are crucial to understanding the needs and goals of PWD and provide the foundation for technology identification. Examples of key assessment areas that can be considered when identifying diabetes and related cardiometabolic technology include:

- current use of technology;
- readiness to adopt new technology[1,20,28];
- physical and cognitive conditions that may influence technology selection;
- financial means to access technology now and on a continual basis;
- gaps in knowledge or skills for safe and effective use of technology and PGHD;
- the ability of technology to support lifestyle choices, personal goals, and therapeutic targets;
- effectiveness of technology based on clinical trial outcomes or real-world evidence.

Configure

The configuration process includes setting up technology based on user preferences, the treatment plan, and the need for ongoing support.

The diabetes care and education specialist assumes the primary responsibility of technology configuration, in collaboration with the PWD and the health care team, including (1) setting up the technology or application to reflect glucose target ranges, meal times, insulin-to-carbohydrate ratios, insulin sensitivity factors, insulin dosing, and other individualized settings specific to the technology and (2) training that is face-to-face or virtual to meet the needs of the user and the payment environment. The goals of configuration are to ensure the PWD (1) is prepared to engage successfully with the technology, (2) demonstrates safe and competent use of technology, and (3) understands the goals and actions associated with ongoing use. Diabetes care and education specialists introduce technology to PWD in a staged approach based on technology complexity and individual learning needs and goals. It is the responsibility of the diabetes care and education specialist to communicate and coordinate with the PWD and HCP, incorporating an interprofessional team approach. Key points included during technology configuration include:

- technology features and functions based on user's education and treatment goals
- ongoing support plan for use of technology
- communication with the diabetes care and education specialist for review and discussion of PGHD.

Collaborate

Develop and implement a plan for data-driven conversations, shared decision-making, and care team integration to adopt health behaviors and/or make treatment modifications for individuals and populations.

Collaboration enables the ongoing use of technology and PGHD to support behavior changes and/or medication adjustments to halt the cycle of therapeutic inertia and improve health outcomes.[26] Technology enables access to contextual data that are required for ongoing care. The TES framework is employed during collaboration to ensure a complete cycle of actions transpires.[6] Collaboration requires engaging in 2-way communication with the individual, facilitating access to PGHD, engaging in pattern management, or reviewing analyzed PGHD to tailor DSMES and customize feedback to improve health outcomes[26] (see Figure 1). The diabetes care and education specialist leads the discussion of technology adoption beyond the health system into the community, impacting health policy and the technology industry through a collaborative relationship based on proficiency and experience. Examples of collaboration approaches include:

- interprets PGHD at individual and population levels;
- collaborates with the PWD and health care team to use PGHD to tailor education and provide feedback to optimize treatment plans;
- evaluates user engagement and ongoing use of technology;
- addresses therapeutic inertia in diabetes and cardiometabolic conditions as part of the team approach to improve cardiometabolic outcomes and quality of life;
- evaluates the potential for data overload, burnout, and disengagement of individuals and teams;
- determines value of current and new technology in clinical practice for population health and in industry;
- advocates for use of technology to inform policy development.

Conclusion

The Identify-Configure-Collaborate framework guides the diabetes care and education specialist to implement and optimize technology-enabled services in a standardized way. The diabetes care and education specialist is positioned to advocate for technology integration, adoption, and use of the ICC framework in practice, within organizations, and for populations.

ORCID iDs

Deborah A. Greenwood https://orcid.org/0000-0002-7603-4624

Joanne Rinker https://orcid.org/0000-0001-7381-9576

Kirsten Yehl https://orcid.org/0000-0002-5763-4464

Diana Isaacs https://orcid.org/0000-0002-5743-9458

References

1. Rahimi B, Nadri H, Afshar HL, Timpka T. A systematic review of the technology acceptance model in health informatics. *Appl Clin Inform*. 2018;9(3):604-634.
2. Isaacs D, Cox C, Schwab K, et al. Technology integration: The role of the diabetes care and education specialist in practice. *Diabetes Educ*. 2020;46(4):323-334.
3. Wagner EH. Chronic disease management: what will it take to improve care for chronic illness? *Eff Clin Pract*. 1998;1(1):2-4.
4. Ouwens M, Wollersheim H, Hermens R, Hulscher M, Grol R. Integrated care programmes for chronically ill patients: a review of systematic reviews. *Int J Qual Health Care*. 2005;17(2):141-146.
5. Gee PM, Greenwood DA, Paterniti DA, Ward D, Miller LM. The eHealth enhanced chronic care model: a theory derivation approach. *J Med Internet Res*. 2015;17(4):e86. doi:10.2196/jmir.4067
6. Greenwood DA, Gee PM, Fatkin KJ, Peeples M. A systematic review of reviews evaluating technology-enabled diabetes self-management education and support. *J Diabetes Sci Technol*. 2017;11(5):1015-1027.
7. Hanlon P, Daines L, Campbell C, McKinstry B, Weller D, Pinnock H. Telehealth interventions to support self-management of long-term conditions: a systematic metareview of diabetes, heart failure, asthma, chronic obstructive pulmonary disease, and cancer. *J Med Internet Res*. 2017;19(5):e172. doi:10.2196/jmir.6688
8. Shen Y, Wang F, Zhang X, et al. Effectiveness of internet-based interventions on glycemic control in patients with type 2 diabetes: meta-analysis of randomized controlled trials. *J Med Internet Res*. 2018;20(5):e172. doi:10.2196/jmir.9133
9. Heitkemper EM, Mamykina L, Travers J, Smaldone A. Do health information technology self-management interventions improve glycemic control in medically underserved adults with diabetes? a systematic review and meta-analysis. *J Am Med Inform Assn*. 2017;24(5):1024-1035.
10. Woolley AK, Hadjiconstantinou M, Davies M, Khunti K, Seidu S. Online patient education interventions in type 2 diabetes or cardiovascular disease: a systematic review of systematic reviews. *Prim Care Diabetes*. 2019;13(1):16-27.
11. Gabarron E, Årsand E, Wynn R. Social media use in interventions for diabetes: rapid evidence-based review. *J Med Internet Res*. 2018;20(8):e10303. doi:10.2196/10303
12. Bellei EA, Biduski D, Cechetti NP, De Marchi ACB. Diabetes mellitus m-health applications: a systematic review of features and fundamentals. *Telemed J E Health*. 2018;24(11):839-852.
13. Yang S, Jiang Q, Li H. The role of telenursing in the management of diabetes: a systematic review and meta-analysis. *Public Health Nurs*. 2019;36(4):575-586.
14. McLendon SF. Interactive video telehealth models to improve access to diabetes specialty care and education in the rural setting: a systematic review. *Diabetes Spectr*. 2017;30(2):124-136.
15. Rush KL, Hatt L, Janke R, Burton L, Ferrier M, Tetrault M. The efficacy of telehealth delivered educational approaches for patients with chronic diseases: a systematic review. *Patient Educ Couns*. 2018;101(8):1310-1321.
16. Beck J, Greenwood DA, Blanton L, et al. 2017 National standards for diabetes self-management education and support. *Diabetes Educ*. 2017;43(5):449-464.
17. Powers MA, Bardsley J, Cypress M, et al. Diabetes self-management education and support in type 2 diabetes: a consensus report of the American Diabetes Association, the Association of Diabetes Care & Education Specialists, the Academy of Nutrition and Dietetics, the American Academy of Family Physicians, the American Academy of PAs, the American Association of Nurse Practitioners, and the American Pharmacists Association. *Diabetes Educ*. 2020;46(4):350-369.
18. Pearson TL, Bardsley J, Weiner S, Kolb L. Population health: the diabetes educator's evolving role. *Diabetes Educ*. 2019;45(4):333-348.
19. American Diabetes Association. 7. Diabetes technology: standards of medical care in diabetes-2020. *Diabetes Care*. 2020;43(suppl 1):S77-S88.
20. Peeples MM, Iyer AK, Cohen JL. Integration of a mobile-integrated therapy with electronic health records: lessons learned. *J Diabetes Sci Technol*. 2013:7(3):602-611.
21. Fleming GA, Petrie JR, Bergenstal RM, Holl RW, Peters AL, Heinemann L. Diabetes digital app technology: benefits, challenges, and recommendations. A consensus report by the European Association for the Study of Diabetes (EASD) and the American Diabetes Association (ADA) Diabetes Technology Working Group. *Diabetes Care*. 2020;43(1):250-260.
22. Association of Diabetes Care & Education Specialists. Danatech powered by ADCES. Accessed February 2, 2020. https://www.danatech.org/
23. Association of Diabetes Care & Education Specialists. Project vision. 2019. Accessed February 2, 2020. https://www.diabeteseducator.org/about-aade/project-vision
24. Association of Diabetes Care & Education Specialists. An effective model of diabetes care and education: revising the AADE7 self-care behaviors®. *Diabetes Educ*. 2020;46(2):139-160.
25. Chen LM, Farwell WR, Jha AK. Primary care visit duration and quality: does good care take longer? *Arch Intern Med*. 2009;169(20):1866-1872.
26. American Diabetes Association. Overcoming therapeutic inertia. 2020. Accessed February 2, 2020. https://professional.diabetes.org/meeting/other/overcoming-therapeutic-inertia
27. Peeples M. Patient-generated health data: an overview and the opportunity for diabetes educators. *On the Diabetes Care and Education Cutting Edge*. 2016;37(6):13-17.
28. Levine BJ, Close KL, Gabbay RA. Reviewing U.S. connected diabetes care: the newest member of the team. *Diabetes Technol Ther*. 2020;22(1):1-9.