

# MedTech Europe's Diabetes Sector Group contribution to the 'Healthier Together – EU Non-Communicable Diseases Initiative# 2022

April 2022

**The MedTech Europe Diabetes Sector Group welcomes the EU NCD Initiative to help Member States address the growing challenge of diabetes and other NCDs in Europe.**

## A silent pandemic

Diabetes is a 'silent pandemic' and one of the major health challenges of our generation. Sixty million people are living with diabetes in Europe – equivalent to the population of Italy<sup>1</sup> – and the number is set to rise to 66 million people by 2030<sup>2</sup>, with profound human and economic costs.

Diabetes is a life-long and chronic condition. If not effectively controlled, it leads to serious life-threatening health complications, including cardiovascular events, blindness, amputations, and kidney failure<sup>3</sup>. For those living with diabetes, effective self-management is a 24/7 task with hundreds of decisions per day to keep glucose levels safely within range and avoid acute health emergencies (like low blood sugar), as well as long-term complications. Caring for diabetes and its comorbidities also places enormous demands on families and carers, as well as healthcare professionals, health systems and the wider economy and social structures.<sup>4 5</sup>

The Covid-19 pandemic has further underscored the need for our health systems to take a more strategic approach to treating chronic conditions like diabetes, as people living with diabetes were more than twice as likely to become hospitalised with Covid-19.<sup>6</sup>

There is currently no cure for diabetes. Addressing the challenges of this condition in Europe will require a multipronged approach that addresses primary prevention, secondary prevention, and the wider needs of millions of Europeans already living with the condition and the health systems that support them.

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<sup>1</sup> Istituto Nazionale di Statistica. *Population and Households*. Available at: <https://www.istat.it/en/population-and-households>. (Accessed on 07/09/2021).

<sup>2</sup> International Diabetes Federation (2019). *IDF Diabetes Atlas*. Available at: <https://www.diabetesatlas.org/data/en/region/3/eur.html>. (Accessed on 07/09/2021).

<sup>3</sup> World Health Organization (2021). *Diabetes*. Available at: <https://www.who.int/news-room/fact-sheets/detail/diabetes>. (Accessed on 07/09/2021).

<sup>4</sup> The Global Diabetes Community (2019). *Emotional Impact on Families*. Available at: <https://www.diabetes.co.uk/emotional-impact-on-families.html> (Accessed on 07/09/2021).

<sup>5</sup> Rosella et al. (2016). *Impact of Diabetes on Healthcare Costs in a Population-Based Cohort: A Cost Analysis*. *Diabetes Medicine*, 33(3). Available at: <https://doi.org/10.1111/dme.12858>

<sup>6</sup> Choudhary et al. (2021). *The Challenge of Sustainable Access to Telemonitoring Tools for People with Diabetes in Europe: Lessons from COVID-19 and Beyond*. *Diabetes Ther*, p. 2. Available on: <https://dx.doi.org/10.1007%2Fs13300-021-01132-9>. (Accessed 08/09/2021).

## Digitally enabled care as part of the solution

Diabetes management depends on significant amounts of data, including blood glucose levels, HBA1c, time in range, and other health and lifestyle variables. As a data-rich condition, diabetes is uniquely situated to benefit from an urgently needed digital transformation in healthcare. By harnessing the power of data and digital connectivity, [the ecosystem of digitally enabled tools and services](#) empower people living with diabetes and their care teams to more effectively manage the condition in a cost-effective manner.<sup>7 8 9</sup> These solutions enable:

**1 - More effective self-management** through digitally connected glucose monitoring systems can track, predict, and alert people living with diabetes and their HCPs to changes in glucose levels and can help patients to learn how to better manage their condition. Smart insulin delivery systems can calculate, track insulin dosage data, and either automatically inject insulin or prompt action via notifications. Medical applications display relevant health trends and provide coaching and education, while the algorithms that underpin these tools (as well as standalone algorithms) work to transform this data into meaningful information.

**2 - Decision support to healthcare professionals for more precise, responsive, and personalised care** for people with diabetes.<sup>10</sup> The data provided by digital tools enables 24/7 remote monitoring, which can prevent emergency situations occurring, as well as patient treatment dashboards to track progress against key indicators such as time in range. It also allows for adaptive and integrated care based on the individual needs of each patient. This connectivity also facilitates **additional applications**, including practical services such as e-prescriptions, wherein algorithms can predict and prompt insulin refills via an automatic service, as well as feeding into broader electronic health records and aggregated datasets for population-level research on diabetes.

**Taken together, the ecosystem of digitally enabled diabetes care brings significant value for people living with diabetes, their families and carers, healthcare professionals, health systems and wider society:**

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<sup>7</sup> Kebede, M.M. & Pischke, C.R. (2019). *Popular Diabetes Apps and the Impact of Diabetes App Use on Self-Care Behaviour: A Survey Among the Digital Community of Persons with Diabetes on Social Media*. *Frontiers in Endocrinology*, 10(135). Available at: <https://dx.doi.org/10.3389%2Ffendo.2019.00135>. (Accessed on 07/09/2021).

<sup>8</sup> Whaley, C. M., Bollyky, J. B., Lu, W., Painter, S., Schneider, J., Zhao, Z., He, X., Johnson, J. & Meadows, E. S. (2019) Reduced medical spending associated with increased use of a remote diabetes management program and lower mean blood glucose values, *Journal of Medical Economics*, 22:9, 869-877, Available at: <https://pubmed.ncbi.nlm.nih.gov/28745578/>

<sup>9</sup> Chaugule S, Graham C. Cost-effectiveness of G5 Mobile continuous glucose monitoring device compared to self-monitoring of blood glucose alone for people with type 1 diabetes from the Canadian societal perspective. *J Med Econ*. 2017 Nov;20(11):1128-1135. Available at: <https://www.tandfonline.com/doi/full/10.1080/13696998.2019.1609483>

<sup>10</sup> Choudhary et al. (2021). *The Challenge of Sustainable Access to Telemonitoring Tools for People with Diabetes in Europe: Lessons from COVID-19 and Beyond*. *Diabetes Ther*, p. 4. Available on: <https://dx.doi.org/10.1007%2Fs13300-021-01132-9>. (Accessed 08/09/2021).

- **Better health outcomes<sup>11</sup> for people with diabetes** from the reduction of both acute health emergencies and long-term progression and comorbidities<sup>12 13 14</sup>.
- **Greater quality of life, peace of mind and autonomy** for people with diabetes and their loved ones.<sup>15 16</sup>
- **Greater secondary prevention and the reduction in the need for hospitalisations<sup>17</sup> or emergency services<sup>18</sup>** more effective management and the prevention of comorbidities.
- **Lower demand for in-person care**, allowing healthcare professionals and care teams to focus time for patients in need (an estimated 80% of routine care could be handled fully via telemedicine<sup>19</sup>).
- **Lower geographical barriers** for people with diabetes to connect with healthcare professionals<sup>20</sup> (although this must be accompanied by an effort to reduce the digital divide<sup>21</sup>).
- **More efficient resource allocation by health systems** by keeping costs<sup>22</sup> (including regular check-ups or management of co-morbidities) under control.<sup>23</sup>
- **Improved knowledge and data sharing**, including via Electronic Health Records and outcome-focused diabetes registries, to coordinate care and support clinical research<sup>24</sup> in order to better understand the diabetes pandemic and foster innovation.
- **Improved outcomes for society** as people with diabetes and their care teams (including family members) are less encumbered by the demands of day-to-day diabetes management, and likely

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<sup>11</sup> Richard M. Bergenstal, Jennifer E. Layne, Howard Zisser, et. al (2021). *Remote Application and Use of Real-Time Continuous Glucose Monitoring by Adults with Type 2 Diabetes in a Virtual Diabetes Clinic* Diabetes Technology & Therapeutics. 128-132 <http://doi.org/10.1089/dia.2020.0396> (Accessed 15/03/2022)

<sup>12</sup> Polonsky, W. H., Layne, J. E., Parkin, C. G., et al. (2020) Impact of participation in a virtual diabetes clinic on diabetes related distress in individuals with type 2 diabetes. *Clin Diabetes*. 38(4):357–62. Available at: <https://pubmed.ncbi.nlm.nih.gov/33132505/>

<sup>13</sup> Charpentier, G., Benhamou, P-Y, Dardari, D., et al. (2011) The diabeo software enabling individualized insulin dose adjustments combined with telemedicine support improves HbA1c in poorly controlled type 1 diabetic patients. *Diabetes Care*. 34(3): 533–9. Available at: <https://pubmed.ncbi.nlm.nih.gov/21266648/>

<sup>14</sup> Dixon, R. F., Zisser, H., Layne, J. E., et al. (2020) A virtual type 2 diabetes clinic using continuous glucose monitoring and endocrinology visits. *J Diabetes Sci Technol*. 14(5):908–1. Available at: <https://pubmed.ncbi.nlm.nih.gov/31762302/>

<sup>15</sup> William H. Polonsky, Jennifer E. Layne, Christopher G. Parkin, Coco M. Kusiak, Nathan A. Barleen, David P. Miller, Howard Zisser, and Ronald F. Dixon (2020). *Impact of Participation in a Virtual Diabetes Clinic on Diabetes-Related Distress in Individuals With Type 2 Diabetes* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7566922/> (Accessed 15/03/2022)

<sup>16</sup> Bergenstal, R. M., Layne, J. E., Zisser, H., et al. Remote application and use of real-time continuous glucose monitoring by adults with type 2 diabetes in a virtual diabetes clinic. *Diabetes Technol Ther*. 2020;23:128–32. Available at: <https://doi.org/10.1089/dia.2020.0396>

<sup>17</sup> *EIU Digital Diabetes Index Report Sponsored by Medtech Europe (2020)*, p. 59 (Accessed on 08/09/2021)

<sup>18</sup> Choudhary et al. (2021). *The Challenge of Sustainable Access to Telemonitoring Tools for People with Diabetes in Europe: Lessons from COVID-19 and Beyond*. *Diabetes Ther*, p. 10. Available on: <https://dx.doi.org/10.1007%2Fs13300-021-01132-9>. (Accessed 08/09/2021).

<sup>19</sup> Medtech Europe (2020). *A Vision for Digitally Enabled Diabetes Care in Europe*, p. 6. Available on: <https://www.medtecheurope.org/wp-content/uploads/2020/08/A-Vision-for-Digitally-Enabled-Diabetes-Care-in-Europe-document.pdf> (Accessed 08/09/2021).

<sup>20</sup> *EIU Digital Diabetes Index Report Sponsored by Medtech Europe (2020)*, p. 4 (Accessed on 08/09/2021)

<sup>21</sup> *Ibid.*, p. 18

<sup>22</sup> *Ibid.*, p.66

<sup>23</sup> WHO. *WHO guideline: recommendations on digital interventions for health system strengthening*. Geneva: World Health Organization, 2019. Available from: <https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1>.

<sup>24</sup> *EIU Digital Diabetes Index Report Sponsored by Medtech Europe (2020)*, p. 13 (Accessed on 08/09/2021)

therefore more active and productive—with fewer sick days, fewer related mental health challenges, higher quality of life and greater productivity.<sup>25</sup>

### What are the barriers to greater implementation of digital solutions?

Digital solutions already exist. Yet health systems – which are still mainly structured around acute rather than chronic care – have not fully unlocked their potential. Several specific challenges hindering the uptake of digitally enabled diabetes care include:

- **A lack of incentives and inadequate reimbursement models** limiting the uptake of digital solutions<sup>26</sup> and the assurance of equal access to these tools and services.<sup>27</sup>
- **Digital hesitancy and lack of training opportunities** among both people with diabetes and healthcare professionals creates a lack of confidence in digital tools.
- **Evidence frameworks are not fit for purpose**, as traditional paradigms focus on patient-level outcomes and may not capture the organisational and system-wide benefits of digital care
- **Limited reference to digital tools in diabetes plans and clinical guidelines** result in incomplete guidance on the benefits of digital diabetes care for all stakeholders

### The way forward

Digitally enabled diabetes care plays a key role in driving a more egalitarian, patient-centric, value-based, and integrated care model, which can help address the growing silent diabetes pandemic.

The MedTech Europe Diabetes Group encourages the “Healthier Together” Initiative to take into account the following recommendations while developing an action plan for diabetes:

- **Engage people with diabetes at the forefront of policy development**, as their unique perspectives and needs are crucial for developing effective solutions.
- **Improve outcomes and quality of life for the millions of Europeans already living with diabetes**, in addition to a focus on primary prevention and promotion.
- **Foster knowledge sharing and provide an inclusive fora** where current situations, key challenges and transfer of best practices can be brought forward by Member State stakeholders.
- **Include concrete policy recommendations that advance digitally enabled diabetes care** in order to achieve better outcomes for people with diabetes, their care teams and health systems.

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<sup>25</sup> G Charpentier (2021). *The Diabeo Software Enabling Individualized Insulin Dose Adjustments Combined With Telemedicine Support Improves HbA1c in Poorly Controlled Type 1 Diabetic Patients* <https://diabetesjournals.org/care/article/34/3/533/38797/The-Diabeo-Software-Enabling-Individualized> (Accessed 15/03/2022)

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

## About MedTech Europe

MedTech Europe is the European trade association for the medical technology industry including diagnostics, medical devices and digital health. Our members are national, European and multinational companies as well as a network of national medical technology associations who research, develop, manufacture, distribute and supply health-related technologies, services and solutions.

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