Exploring the impact of a care planning software and app solution on the management of type 2 diabetes

The paper titled "A randomised control trial to explore the impact and efficacy of the Healum collaborative care planning software and app on condition management in the type 2 diabetes mellitus population in NHS primary care" (Heald et al, 2023a) examines the application of a specific supportive digital solution – the Healum Collaborative Care Planning Software and App – in improving health outcomes in individuals with type 2 diabetes through the delivery of personalised plans of care, support and education accessible on a mobile device. It highlights that the increasing number of people living with long-term conditions, such as type 2 diabetes, is one of the biggest challenges facing healthcare systems. With type 2 diabetes prevalence worldwide estimated to increase to 700 million by 2045, associated high costs and the complex lifestyle changes required for effective management, timely and scalable solutions to support its management at a distance are needed.

Diabetes specialist nurses (DSNs) and other healthcare professionals (HCPs) involved in diabetes management play a critical role in the care of people with diabetes by providing education, monitoring and support to aid the long-term management of this condition to prevent complications. However, diabetes teams face several challenges that may impact the quality of care they provide. There is an opportunity for personalised care planning to aid the team to combat these challenges.

1. **Limited time and resources**. DSNs and doctors have limited time and resources to provide care to people. This can be due to high numbers of people seeking treatment, understaffing or a lack of support staff. As a result, HCPs may struggle to provide adequate personalised care. This can lead to poorer outcomes and an increased risk of complications. By tailoring care plans to the most important unique needs of each individual, the diabetes team can ensure that people receive the most appropriate care for their condition, whilst also using their time more effectively.
2. **Education**. Education is critical to diabetes care, as individuals need to understand how to manage their condition to prevent complications. DSNs may struggle to provide optimal education owing to time constraints, language barriers or a lack of individuals' engagement. Engaging people in their own care can be especially challenging, particularly if they are resistant to making changes to their lifestyle or treatment plan. This can result in people not fully understanding their condition or how to manage it. By involving people in their treatment, personalised care planning can help to overcome these challenges and to develop the skills and confidence they need to manage their condition effectively.
3. **Emotional support**. Diabetes can have a significant impact on emotional well-being. It may be difficult to provide emotional support to individuals owing to time constraints or a lack of training in this area. Individuals may feel isolated or unsupported, which can impact their ability to manage their condition effectively. Through a more personalised approach that is built around each individual's aims and ability, personalised care planning can help make individuals feel more supported.
4. **Cultural considerations**. Working with individuals from diverse cultural backgrounds can present unique challenges. Cultural beliefs and practices may impact individuals' understanding and management of their condition, and DSNs may require additional training or resources to provide culturally competent care. The use of personalised care planning incorporates cultural and ethnic needs for each individual, ensuring their care plan is well suited to them and that they are encouraged to engage with it.

Adrian Heald
Consultant Physician, Salford Royal Hospital, Salford

Reena Patel
Specialist Nurse in Diabetes, Spinney Hill Medical Centre, Leicester

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These challenges support the need for a scalable way to provide relevant information, support and self-management tools to individuals within primary care. To address these challenges, Healum developed a Collaborative Care Planning Software and App whereby HCPs in primary care can create personalised digital plans of care and support that are shared directly through a mobile app. These plans are personalised through a collaborative conversation whereby the HCP and the individual concerned can discuss their specific health objectives, goals and actions, and what barriers they currently, or are likely to, experience in achieving these. The HCP can select resources that are personalised based on the individual's medical, cultural and socioeconomic needs, meaning they are more relevant and are more likely to be engaged with.

The care planning software has been designed to enable multidisciplinary primary care teams to work collaboratively with individuals in empowering them to identify their health concerns and objectives. The care plan format was designed to follow national guidelines, and includes a time-saving feature where goals, actions and resources auto-populate based on the goal category and preselected goals chosen. Through an integrated care and support plan, individuals are presented with a set of personally relevant, medically and socially prescribed choices that they can access anywhere and at any time, and that is tailored to their unique needs. The software is designed to be fast and easy to use to save HCP time by speeding up the process of care planning and sharing educational content to individuals. In this way, it assists the recommended standard care, without increasing the workload. Staff can, therefore, help individuals feel supported in between their appointments, without feeling an additional burden themselves.

The mobile app has been designed to improve health outcomes, quality of life (QoL) and experience of care for people with type 2 diabetes. To achieve this, individuals are supported to manage their health by providing relevant information and self-management tools that are proven to improve understanding, self-management capability, health and QoL, such as healthy behaviour change advice and the means to set goals, plan actions and track health metrics (Heald et al, 2023b).

The app includes a library of resources, including articles, videos, recipes and local services, which individuals are able to view. They can also view within the app those that have been sent to them from their HCP. To achieve better experience of care, the app was designed to improve the personalisation and quality of care to people with one or more long-term conditions, to enhance the efficiency of care and support delivery, and to improve access to support.

To test this solution, the authors designed a randomised controlled trial to evaluate the effectiveness of the Healum Collaborative Care Planning Software and App in improving health outcomes, QoL measures and engagement levels amongst individuals with type 2 diabetes. The primary outcomes measured were improvements in HbA_{1c} and BMI over a six-month period, while the secondary outcome measured self-rated QoL based on the capability, opportunity and motivation to change behaviour.

The study recruited 197 participants, aged between 22 and 85 years, across 13 surgeries in the UK. Although the study did not code for ethnicity, the populations from which the participants were taken are predominantly White.

The intervention group received a digital care plan created with their HCP as well as the Healum app, whereas the control group received only usual care. Ahead of the recruitment of trial participants, the HCPs involved took part in a one-hour training session conducted either virtually or face-to-face. They were guided through use of the software and how individuals can use the app. Individuals who were provided with app access were guided through its functions by their HCP in the care plan appointment, as well as being provided with a user guide and demonstration videos to learn more.

The study results show that the use of this app led to statistically significant improvements in HbA_{1c} and in QoL measures. Over 6 months, the active treatment group showed a clinically relevant drop in their HbA_{1c} of 5.3 mmol/mol (0.6%) on average. In the control group, however, there was a slight average increase in HbA_{1c} of 0.2 mmol/

mol (0.02%). The average reduction in BMI in the treatment group was –0.7% compared to –0.2% for the control group. Interestingly, improvements in glucose control occurred in many people without reduction in BMI. The authors suggest that the app's personalised care planning feature, which enables individuals to co-create care and support plans with healthcare professionals, contributed to these improvements by increasing individuals' engagement in their care as well as increasing education.

To assess health-related QoL, participants were asked to complete an online survey, which included the NICE-validated EQ-5D-5L questionnaire, at the start of the trial and after 6 months. Surveys from 12 participants in each group were matched. EQ-5D-5L score (a generic measure of health status) in the intervention group increased by an average of 0.0464, whereas it decreased by 0.0086 in the control group. The EQ-VAS score (a self-rated global assessment of health) increased by an average 8.2% in the intervention group, while there was a decrease of 2.79% in the control group. The authors suggest that QoL was improved for the individuals receiving the intervention through increased support, and greater engagement and motivation.

This solution has the potential to aid diabetes nurses and the care they provide by optimising the limited time and resources they have available, increasing education of individuals with type 2 diabetes and providing emotional support, all whilst taking into consideration each individual's cultural background. The key uses of the software and app for HCPs are: creating a care plan after an annual review that is shared through the app on the things that matter to each individual; sharing trusted information about managing health and the services that can help each individual; reviewing how an individual is getting on in between appointments in terms of medical and non-medical markers, resources viewed, services used and overall engagement. The cost of this software and app is priced at roughly £0.25 per patient per year within a practice or PCN after original EMIS set-up costs.

Although there are many self-management and condition-management platforms, Healum is based on behaviour-change science, and promotes lifestyle interventions that are personalised to a person's comorbidities and that are recommended by their multi-disciplinary team of health and social care professionals who know the health challenges and journey of that individual. A key differentiating factor between this solution and other software/apps is the ability to print out the personalised care plans created for individuals to reduce digital inequality.

The authors concluded that the Healum Collaborative Care Planning Software and App can be an effective tool for improving health outcomes amongst individuals with type 2 diabetes through the delivery of personalised plans of care, support and accessible education. In addition, personalised care planning can help diabetes specialist nurses in primary care to address the unique needs of each individual, improve outcomes and facilitate self-management. By doing so, personalised care planning can help to overcome some of the main issues faced by primary care.

This trial demonstrates the potential for digital health solutions to increase access and self-management support for individuals with type 2 diabetes and, potentially, other long-term conditions. Follow-up the participants in relation to their longer-term outcomes continues. ■

Heald AH, Roberts S, Albeda Gimeno L et al (2023a) A randomised control trial to explore the impact and efficacy of the Healum collaborative care planning software and app on condition management in the type 2 diabetes mellitus population in NHS primary care. *Diabetes Ther* **20**: 1–12

Heald AH, Roberts S, Gimeno LA et al (2023b) Enhancing type 2 diabetes treatment through digital plans of care. Patterns of access to a care-planning app over the first 3 months of a digital health intervention. *Cardiovasc Endocrinol Metab* **12**: e0283

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