

How digital solutions are having an impact on the self-management of Type 2 diabetes

Yinka Makinde, Programme Director at DigitalHealth.London tells us exactly how digital solutions are having an impact on the self-management of Type 2 diabetes across London in the UK

Can self-management for Type 2 diabetes be significantly impacted by the use of digital solutions? Three of the UK based diabetes digital therapeutic solutions, [Changing Health](#), [OurPath](#) and [Oviva](#), who are shaping the future of how Type 2 diabetes can be managed, prove that it absolutely can.

Diabetes costs over 10% of the NHS budget, as quoted by NHS England. Supporting more people to learn to self-manage their diabetes could significantly reduce the financial pressures on the NHS and has, therefore, been identified as a key priority in NHS England's Action on Diabetes and the Five Year Forward View. In light of this, new and innovative ways to manage this condition are urgently required to reduce the growing strain on healthcare systems and improve patient outcomes.

The good news is that better treatments are being discovered that can improve patient outcomes. In addition, new technologies are helping people with diabetes to manage their condition better.

There are also positive developments when it comes to growth in clinically validated health apps on the market. The overall body of clinical evidence on app efficacy has grown substantially, spanning to include 571 studies¹, including 234 randomised controlled trials and 20 meta-analysis studies.

Particularly strong evidence now exists for diabetes, depression and anxiety that may be considered by clinical guideline writers for incorporation into the standard of care recommendations. Industry experts say that there are now a handful of conditions with a maturity of digital health efficacy studies, which make them good candidates for adoption and inclusion into clinical guidelines. One of those conditions is Diabetes Prevention, particularly in light of the recent statistic, which showed for the period 2015-2016, only 9% of those eligible for and offered Type 2 diabetes face-to-face group sessions, actually attended them².

Local health communities are beginning to put these recommendations into practice. The North West London Collaboration of Clinical Commissioning Groups (CCGs) is a prime example. In an initiative led by Dr Tony Willis, Diabetes Clinical Lead for the North West London Collaboration of CCGs, in partnership with [Imperial College Health Partners](#), (the Academic Health Science Network for North West London), significant improvements were delivered to the health of more than 400 Type 2 diabetes patients, drawn from across 18 different GP practices in North West London, with the help of three smartphone health apps.

During the four-month digital intervention trial, the results achieved were:

- Patients saw a significant reduction in body mass index (BMI), blood pressure and blood sugar (HbA1c) levels;
- Patients lost on average two to three kilograms of weight and;
- 118 patients participating provided details of their medication, of that 20% were able to stop taking the diabetes medication metformin during the trial.

Personalised interventions

Digital interventions enable health-care providers to deliver impactful structured educational programmes cost-effectively and at scale, giving people with weight management issues a better understanding of how their dietary and exercise habits affect their long-term health. To maximise impact, however, the most effective behavioural interventions must be highly personalised to facilitate substantive, lasting lifestyle change, taking individuals' unique circumstances into account too.

Eight years of academic research by Changing Health's Chief Scientific Officer, Professor Mike Trenell and Head of Health Psychology, Dr Leah Avery, has shown that intentions and actions are determined by a whole host of social, environmental and demographic factors: age, ethnicity, gender, socioeconomic status and educational attainment to name but a few.

The [Changing Health](#) programme, which combines evidence-based digital education on diabetes and lifestyle with one-to-one support from a dedicated behaviour change coach, was built on this foundation from the ground up. Each behaviour change coach is extensively trained in diabetes, health psychology and the latest behavioural science, with the syllabus, reviewed monthly to ensure it is current. A recent RCT of obesity interventions showed combining education with coaching is 60% more effective than education alone.

[Coaches](#) tailor-make a behaviour change programme for each user. Evidence shows three factors – social influences, social role and identity within peer group, and intentions and goals – are the most prominent in shaping our behaviour. These factors are key in determining the most effective intervention for each individual.

As a result, programme users quickly become better engaged with their health and healthcare; and in the North-West London Collaboration of Clinical Commissioning Groups, they saw a 10-point increase in PAM (Patient Activation Measure) scores – equating to 20% fewer hospitalisations and a 20% increase in medication adherence.

Furthermore, there is strong evidence to show that combining expert support from a dietitian, plus high-frequency support, is more effective for helping people improve their health behaviours (Digenio et al. 2009)³.

[Oviva](#) worked with leading NHS experts to develop a new approach, which could be quickly and simply integrated into existing NHS care pathways. This new programme, called Oviva Diabetes Support, has been evaluated across 17

NHS organisations and involving over 2000 people with diabetes. To date this new programme has achieved a 74% attendance rate (compared to 7% in face-to-face programmes) and 26% of people with diabetes were able to put their condition into remission.

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[Oviva](#) was inspired by the scientific evidence that by offering such programmes remotely and supported by digital tools, you can increase accessibility whilst maintaining high-quality health outcomes (Appel et al. 2011).

[OurPath](#) which has implemented cognitive behavioural therapy at every stage of its programme, using the Behaviour Change Wheel, [FOGGS](#) and [EAST](#) principles, found that its unique combination of evidence-based structured education (on nutrition, exercise, sleep, stress management and positive psychology); peer group support; personalised health coaching (from a registered dietitian); and tracking technology (smart weighing scales and a wearable activity tracker) has proved that weight loss from digital programmes can be sustainable, demonstrating an average 7.7% body weight loss, even after nine months.

[DigitalHealth.London](#) lies at the centre of the revolution in healthcare by creating a “global digital health hub”, or a marketplace where the best digital health solutions are nurtured and accelerated for entry and adoption

across the UK healthcare system. We have demonstrated, through our work with the NWL CCGs, how we have been able to source the best solutions for commissioners to consider for adoption, as we did with Changing Health, OurPath and Oviva.

So, what further reasons could there be for NOT accelerating the adoption and spread of these technologies for Diabetes Prevention? There is a growing evidence base to support the efficacy of digital interventions and we have seen that transformational innovations are able to impact the patient journey and disrupt the status quo. However, there remains significant potential to improve these outcomes through further innovation and new digital solutions.

1 https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/the-growing-value-of-digital-health-in-the-united-kingdom.pdf?_=1528124548407

2 https://files.digital.nhs.uk/publication/g/3/national_diabetes_audit_2016-17_short_report_care_processes_and_treatment_targets.pdf

3 <https://www.ncbi.nlm.nih.gov/pubmed/19221377> (Digenio) <https://www.nejm.org/doi/full/10.1056/NEJMoa1108660> (Appel)



Yinka Makinde
Programme Director
 DigitalHealth.London
 Tel: +(0)44 7966 794307
yinka.makinde@digitalhealth.london
www.digitalhealth.london
 @DHealthLDN
 @YMakinde1