Digital Health & Care Innovation Centre

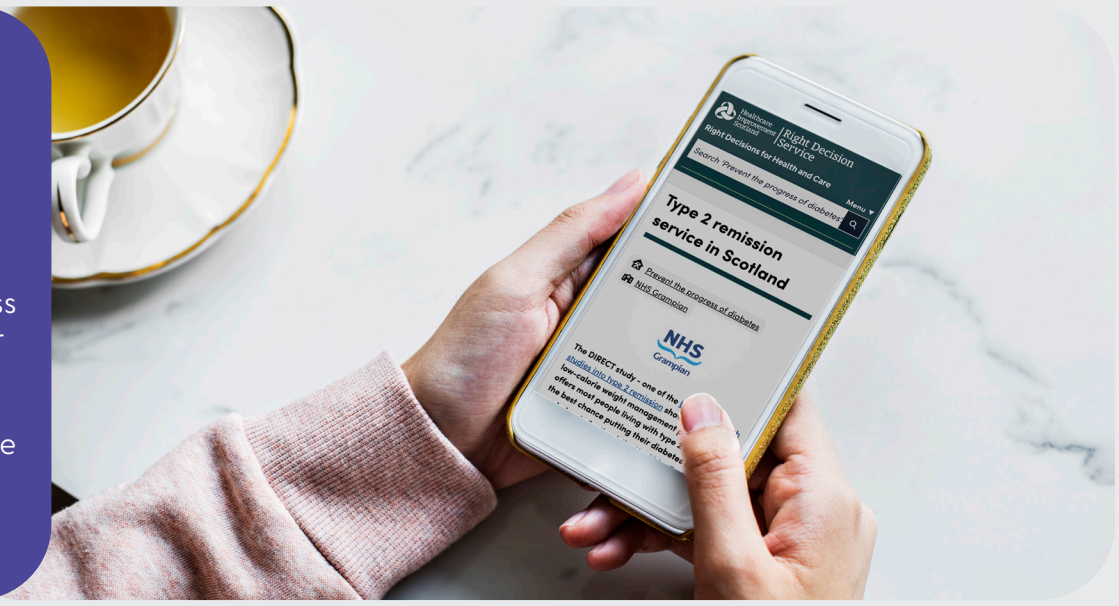
Developing a Digitally Enabled Universal Service Model to Reduce Type 2 Diabetes Risk

Introduction

Type 2 diabetes is a significant and growing public health challenge, driven by ageing populations, obesity, and social inequalities. In Scotland, prevalence continues to increase, with many cases preventable or reversible through lifestyle change.

However, many individuals remain unaware of their risk, do not access available services, or face barriers such as limited time, motivation, or digital access.

Digital innovation offers an opportunity to increase reach, personalise support, and reduce pressure on healthcare services through scalable, low-cost interventions.



Aims and Objectives

This project funded by DHI RCE, Living Lab 2b aimed to design a new Diabetes Prevention Information App and evaluate its use as scalable, digitally-enabled service model for diabetes prevention integrated within primary care. The objectives were to improve patient knowledge and understanding of diabetes risk, increase confidence and motivation for lifestyle change, support readiness for behaviour change, and explore the impacts of brief professional support.

Service Model

The proposed model is a segmented, person-centred approach based on levels of digital self-efficacy. Individuals with high digital confidence can use the app independently, while those with medium confidence benefit from a combination of app use and brief professional support. Those with low digital confidence may require assisted access or face-to-face care. The model integrates digital tools, primary care engagement, and referral pathways to provide a flexible, scalable "service bundle" aligned with different patient needs.

Results

After 8 weeks use, the intervention demonstrated strong engagement and usability, with 63% of participants using the app and 92% rating it as easy to use. Significant improvements were observed in readiness for change, with 94% reporting increased knowledge and 88% improved confidence and motivation, alongside a statistically significant increase in knowledge. Most participants (88%) reported making or planning lifestyle changes, particularly improving diet and increasing physical activity.

Dietitian support was valued, with 79% opting for a call and 87% finding it helpful, resulting in multiple referrals to support services. The findings highlight that digital tools can improve knowledge and motivate behaviour change, while brief professional input enhances engagement and access to services.

Conclusions

A digitally enabled intervention combining self-management tools with brief professional support can significantly improve readiness for lifestyle change and reduce diabetes risk. The app provides a strong foundation for a universal prevention model, with flexible delivery enabling wider system adoption. Next steps include scaling the model across NHS settings, enhancing app functionality and integration, expanding evaluation with larger and more diverse populations, and strengthening support for individuals with low digital literacy.

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Implications for Practice

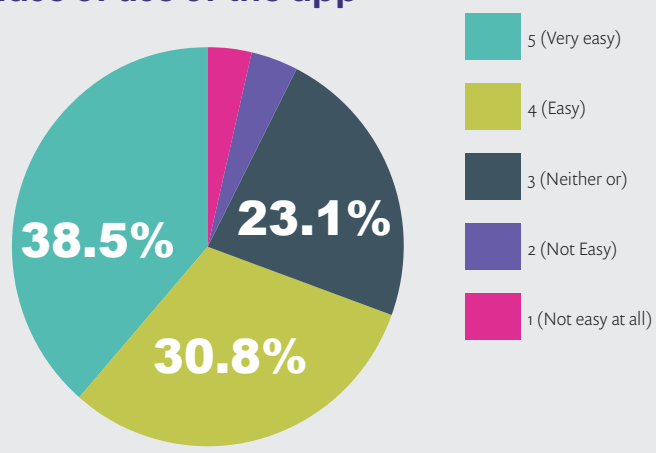
The model demonstrates the potential for a scalable, low-cost digital approach to diabetes prevention that can be delivered within existing NHS resources. It supports population-level prevention, promotes self-management and early intervention, and reduces demand on specialist services. Importantly, it enables a more equitable approach by tailoring support according to patients' digital capabilities and needs. The app has been built on to a national recognised digital platfrom which is familiar to Primary Care - Right Decision Service.

https://www.rightdecisions.scot.nhs.uk/prevent-the-progress-of-diabetes

Barriers

Key barriers identified included lack of awareness of the app, limited access to digital technology or skills, competing life priorities, and a preference among some patients for face-to-face interaction with healthcare professionals. These findings highlight the importance of supporting digital inclusion and offering flexible delivery models.

Ease of use of the app



Method

The App Content was co-designed using workshops and developed on the Right Decision Service platform. Once tested the App was made available to a selected GP practice within Moray. Patients in high-risk groups were identified through electronic health record searches and invited to participate. The evaluation used pre- and post-intervention questionnaires, Likert-scale measures, and qualitative feedback. Outcomes assessed included knowledge, confidence, motivation, and intention to change behaviour.

Further Information

Connect with DHI - scan the QR code to visit: linktr.ee/dhiscotland

The full report can be accessed here: https://strathprints.strath.ac.uk/91677/