Effectiveness of an Integrated Digital Service for Treating and Preventing Chronic Diseases in Primary Care: A Neighbourhood Teams Approach to Cost-Efficiency and Health Outcomes

Authors: Andrew Sheppard, Micheál Ó Cróinín, Dr. Donal Collins, Dr. Niall Colwell.

Summary

Background: Lifestyle therapy is a proven first-line treatment for Type 2 Diabetes (T2D) and Non-Diabetic Hyperglycaemia (NDH), yet access to effective programmes remains limited, with few patients achieving below threshold HbA1c levels. Existing solutions are often fragmented, lack integration with primary care, and their unit treatment economics are high, hindering scalability. This study evaluates the effectiveness of RediCare Control^{Dtx} a digital therapeutic that combines individual and group support. It is delivered through an integrated neighbourhood team model, within the primary care framework across three NHS Primary Care Networks (PCNs), to patients with Type 2 Diabetes and Non-Diabetic Hyperglycaemia (NDH).

Methods: The intervention used an integrated neighbourhood delivery model, fostering collaboration among GPs, nurses, and RediCare staff. Patient identification was conducted via EMIS searches, supplemented in some centres by rolling weekly searches to identify newly diagnosed T2D and NDH patients. A structured patient communication strategy was developed to support activation. This included co-branded, personalised SMS messages and educational videos that featured the branding of both RediCare and participating primary care clinics. The material and content were designed to engage patients, highlight the benefits of the programme, and encourage them to onboard to treatment.

Respondents underwent an initial onboarding consultation and gained access to RediCare Therapeutic Educational Content (RTEC) - an AI-driven suite of video-based education designed to improve health literacy and support self-management. Patients were able to choose their health goals, which could address a range of chronic conditions such as NAFLD, obesity, PCOS, cholesterol, and blood pressure. The programme is adaptable and not limited to Type 2 Diabetes (T2D) or Non-Diabetic Hyperglycaemia (NDH). For the purpose of this study, we are focusing on the outcomes of T2D and NDH patients.

Weekly SMS communications encouraged patients to participate in group webinars or book one-to-one consultations. “Engaged Patients” were defined as those who attended 4 or more sessions, either one to one consultations or group webinars, with one webinar session at least 28 days post start date. The service was designed to fit within usual care with no extra workload from GPs. Clinical outcomes, including HbA1c and Weight were recorded from the EMIS record at onboarding and at follow-up during routine care. This delivery methods allowing the practices to continue business as usual, with no extra workload triggered by the intervention.

Findings: Evidence based lifestyle therapy can be delivered in an integrated way with little extra workload on GP practices. The service showed that well designed, targeted outreach programmes can result in strong patient take up rates. Among patients with Type 2 Diabetic (n=1860) were offered the intervention across three 3 Primary Care Networks, 260 (14%) elected to take up the treatment. Among the patients with Non-Diabetic Hyperglycaemia (NDH)

(n=1110) who were selected and messaged, 195 (17.6%) of these patients elected to take up treatment.

As of 30th of December 2024, follow up data was available for 199 of the patients with Type 2 diabetes. The engaged patients in this cohort n=169(79%) showed a mean HbA1c reduction of 10.15 mmol/mol (–16.1%) a mean weight loss of 4.7 kg (–4.8.3%) and 64 (38%) of these patients HbA1c moved to below the 48 mmol/mol threshold for Type 2 Diabetes.

For the patients with Non-Diabetic Hyperglycaemia (NDH), follow up data was available for 114 patients. The engaged patients in this cohort n= 86(75%) showed a mean HbA1c reduction of -2.06 mmol/mol (–4.7%) and a mean weight loss of 5.24kg (5.1%). 51(59%) of these patients HbA1c levels moved to below the 42 mmol/mol threshold for NDH.

Interpretation: This study demonstrates that Type 2 Diabetes and NDH treatment and prevention programmes can be delivered at scale and cost-effectively through an integrated neighbourhood teams' collaborative approach in primary care. Targeted, well-structured outreach using high quality patient activation media results in patient understanding the benefits of these interventions and high patient take up levels. Over a three-year period, this approach could potentially onboard 50–60% of a T2D or NDH populations into treatment, with c. 75% achieving clinically significant outcomes. These findings align with broader NHS goals of promoting cost-effective, scalable interventions to reduce the burden of chronic disease and improve population health outcomes.

Introduction The most comprehensive analysis to date concludes that the cost of diabetes to the NHS is £10.7bn in direct costs in 2022 (Hex, 2024) Approximately 60 percent is spent on complications. (www.diabetes.org.uk, 2023) Until recently Type 2 diabetes had been considered a progressive lifelong condition with little hope of remission. All major medical associations recommend lifestyle therapy as a first-line treatment for many chronic diseases (Saklayen, 2018) (Ley, 2007) (Terranova, 2016) and many studies have now shown that well-structured lifestyle interventions using a low carbohydrate approach with the right support can result in quickly normalised HbA1c or even remission. (Snorgaard, 2017) (Gregg EW, 2024)

Notwithstanding this, our health system is not currently organised to provide comprehensive lifestyle therapy at the scale or the cost effectiveness needed. To date, the mechanisms of integrated care delivery to provide lifestyle therapy within primary care setting have not been developed or tested.

The following is a description and analysis of a Type 2 Diabetes and Non-Diabetic Hyperglycaemia (NDH) treatment and prevention programme targeting to achieve HbA1c levels below 48/mmol/mol and 42/mmol/mol respectively. The intervention was delivered across 3 Primary Care Networks (PCN's) using an integrated neighbourhood team's delivery approach with multiparty collaboration.

Methods - Objective/Challenge

Shifting from Reactive to Proactive Diagnosis and Care through Data Stratification

A core of objective of the service design was to develop a service delivery model that was integrated and optimised to scale the delivery of lifestyle therapy to patients with Type 2 Diabetes and NDH. The service needed to be designed and delivered in a manner so that it did not add additional workload to the medical team and demonstrate that large populations could be reached, onboarded and treated cost effectively and show bankable saving in terms of return on investment. The following are the three core components and a description of the service:

Patient Selection and Referral Processes.

(1) Patient Recruitment and Onboarding Processes.
(2) The Treatment Delivery Process and Reporting.

(1) Patient Selection and Referral Processes.

To meet the needs of patients with different duration of diagnosis and clinical needs, there were 2 patient selection and referral processes developed and used in the service:

A. **Large Population Cohort Selection**: This involved searching for and clinically approving large cohorts of patients with Type 2 Diabetes or NDH from EMIS. Exclusion criteria included those under 18 years old, patients with Type 2 Diabetes who are prescribed insulin, SGLT2 or Sulfonylurea's, patients diagnosed with glycogen storage disorders, those with a diagnosis of advanced CKD or severe mental health conditions. The patients outside of this exclusion criteria were deemed lower risk and could be onboarded without a doctor's consultation or medication adjustment. A typical search could identify c.1000 patients in a GP practice.

B. **Weekly EMIS Searches for Newly Diagnosed Type 2 Diabetic and NDH Patients:** This involved developing and running searches of newly diagnosed Type 2 Diabetic or NHD patients with the same exclusion criteria as the large population cohort selection process.

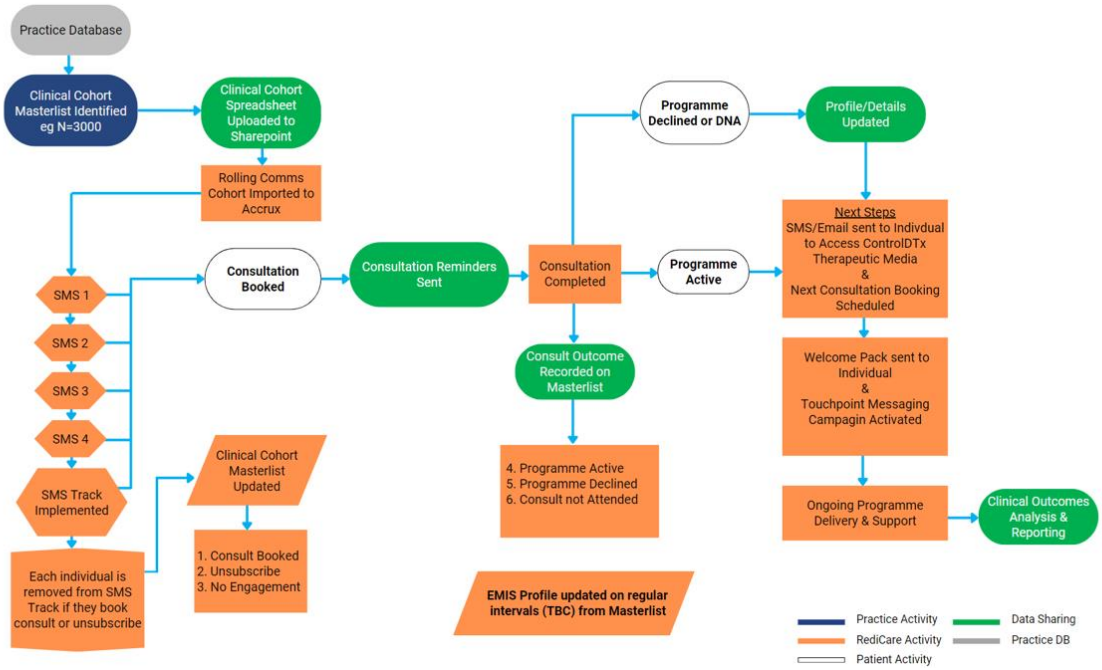
(2) Patient Recruitment and Onboarding Processes

One of the biggest challenges in scaling lifestyle therapy is encouraging patients to commit to the treatment and actively participate. To engage patients effectively, they need to feel confident that the treatment will benefit them, trust the provider delivering it, and believe that accessing the therapy will be convenient. Additionally, the lifestyle changes must be perceived as manageable, easy to implement, and sustainable over time. To solve this challenge, a detailed, structured patient communication strategy was developed. This involved developing 4 short co-branded educational videos which explained the treatment and its benefits. Each video was designed to convey a specific message around how Type 2 Diabetes or NDH could be brought into remission or below threshold with lifestyle therapy. Each message had a call to action to book a one-to-one initial onboarding consultation with a Health Coach. The messages were personalised educational videos that featured the branding of both RediCare and participating primary care clinics.

When a patient scheduled an onboarding consultation in response to the first SMS, they received a follow-up video message. This message reinforced their decision as a positive step, outlined the potential health benefits they could achieve, and provided a confirmation of the date and time for their initial onboarding consultation.

Patients who did not respond to SMS 1 were messaged on a regular basis until the 4th message was sent. No further messages were sent after SMS 4. Patients who booked in for an onboarding consultation or those who unsubscribed from the messaging were automatically excluded from further messages.

Figure 1 Patient Communication, Onboarding and Treatment Delivery Schematic



The following is a summary of patient activation into treatment from the 2 **Patient Selection and Referral Processes.**

Scaling Treatment Delivery with Digital Therapeutics and Integrated Human Support

RediCare uses an integrated combined Digital Therapeutics RediCare Control^{Dtx} and human support approach to scale the delivery of lifestyle therapy to treat Type 2 Diabetes and NDH. Digital Therapeutics (^{Dtx}) are defined as a health software designed to intended to treat or alleviate a disease, disorder, condition, or injury by generating and delivering a medical intervention that has a demonstrable positive therapeutic impact on a patient's health. (https://dtxalliance.org/aboutdtx/, n.d.)

The following describes the components of the RediCare Control^{Dtx} service.

- ***Structured Patient Outreach Process to Recruit Patients onto Treatment:*** *Described earlier in this document*
- ***A Personalised Curriculum*** *The extent to which patients are educated about their health conditions is considered one of the most important aspects of chronic disease management.* (Patrick, 2017) (Nutbeam, 2008) *Education informs the patient on their*

condition, its complications, and enables patients to build health literacy and understand the root cause of their condition, which is often lifestyle-related (Kvedar, 2016) (Wills, 2009) *RediCare Control*[Dtx] *includes a comprehensive suite of AI powered, clinically verified educational content on the chronic conditions we treat. This binge worthy educational content quickly informs the participant on how making simple lifestyle changes in diet, exercise, sleep patterns, and motivation can treat and reverse chronic conditions. This content is delivered via easy-to-understand short video format designed for a reading age of 12, enabling participants to learn anytime, anywhere on a mobile device. The therapeutic content is algorithmically served to the patient based on their health goals.*

- ***A Dietary Protocol Optimised for G*lycaemic Control and Weight Loss:** RediCare Control[Dtx] *supports a whole food dietary protocol which is* lower in processed carbohydrates and higher in healthy fats (LCHF). Numerous RCTs and observational studies using similar whole-food dietary interventions, lower in processed carbohydrates and higher in healthy fats (LCHF), have shown promising improvements in glycaemic control and weight loss, often reducing the number and/or doses of antidiabetic medications (Krebs, 2009) (Davis, 2009) (Tay, 2018) (Hawkins, 2023) (Jayedi, 2022) The American Diabetes Association (ADA) now recommend carbohydrate-restricted diets as part of their nutritional therapy guidelines for the management of Type 2 Diabetes (T2D) and Obesity, citing robust evidence for their role in enhancing glycaemic control and reducing dependency on medications. (Evert, 2018)
- ***Resources to* Implement the Learning and Dietary Protocol:** Supporting educational content and an optimised dietary protocol, are all the necessary resources and collateral to enable participants to easily implement the newly acquired health knowledge and literacy. These resources include visual food rating guides, easy-to-cook recipes, shopping lists, meal plans, and exercise guidance.
- **1-to-1 Video Support Consultations:** These include an initial onboarding and unlimited further consultations as needed by the patient. Despite all patients been offered unlimited 1 to 1 health coaching sessions, these results were achieved with an average of only 4 x 1 to 1 consultation per engaged patients, The reason for this low level of 1 to 1 health coaching sessions is likely because patients are well supported in a multi modal fashion. Patients build health literacy by watching their personalised educational curriculum, they have access to weekly live webinars, where they can get a query answered, they feel reassured that support is available any time.

- **Group Peer to Peer Support via weekly Webinars:** There is strong evidence showing peer support where patients can connect with patients with similar health conditions, has been shown to improve patient adherence and improve outcomes (Munce, 2017). RediCare run weekly group support webinars, moderated by a health care professional. These are very popular, well attended and reduce the drawdown on 1 to 1 Video support consultation.
- **Ongoing Monitoring and Support:** All patients are monitored and supported in perpetuity while RediCare is in contract with each PCN. All participants are messaged on a weekly basis to attend webinars and seek support if needed. Patients' records are monitored, if a patient's weight or HbA1c has increased, these patients will be reached out to with an offer of support. Furthermore, patients who completed 6 months of

support are also offered further 1 to 1 support, if the patients feel they can benefit, this creates a feeling of reassurance to the patient.

- **Simple, Barrier-Free Access:** RediCare's platform is designed to be easily accessible for everyone. There's no app to download, no verifications and no logins required. This removes friction, supports inclusivity, tackles inequalities and enables delivery at scale across diverse populations.
- **Clinical Outcomes and KPI Reporting:** As the service is integrated within primary care and RediCare has access to the patients' health records, RediCare reports on all clinical outcomes and service KPI's on a regular basis. This facilities return on investment and unit economics analysis and identifies patient that have relapsed and need further support.

Clinical Outcomes and Statistical Analysis of Treatment Impact

As of 30th Dec, 260 patients with Type 2 diabetes had onboarded onto the programme of which 199 (76.5%) had a follow up data recorded in EMIS, 195 *Non-Diabetic Hyperglycemia* (NDH) Patient had onboarded of which 114(58%) had a follow up data recorded. The base line weight and HbA1c used was the last measure prior to the patient starting the programme and follow up measurement was their annual usual care visit post treatment. Engaged patients were defined as those who attended at a total of at least 4 one to one consultations or group webinar sessions with at least one group webinar attendance recorded greater than 28 days post start date. We analysed the data using R, statistical significance was defined as a p value of less than 0.05 and set C.I's at 95%.

Type 2 Diabetes Patient Results

As of 30th December 2024, 260 patients with Type 2 Diabetes had started the intervention, of which 199 had follow-up blood readings. Of the 199 patients with follow up reading, 168 (79%) of Type 2 Diabetes patients were deemed engaged, with these participants achieving a mean HbA1c reduction of 10.15 mmol/mol (–16.42%) and a mean weight loss of 4.74kg (–4.81). 64 (38%) of engaged patients achieved a HbA1c levels below 48 mmol/mol. Clinically significant reductions in Total Cholesterol, LDL and Triglycerides were observed as per table 1

Table 0 Age Profile of participants

	18-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	
Male	0	0	0	3	3	9	9	21	37	28	17	2	0	**129**
Female	0	0	3	3	7	12	14	28	23	25	13	3	0	**131**
Total	**0**	**0**	**0**	**3**	**3**	**9**	**9**	**21**	**37**	**28**	**17**	**2**	**0**	**260**

The mean age of male participants was 61.3 and females was 58.3, table 0 shows the age profiles of participants

Table 1: Engaged Patients

Measure	N	T0	T1	Change	% Change
HbA1c	168	61.8	51.7	-10.15	-16.4%
Weight	156	98.6	93.8	-4.74	-4.8%
BMI	147	33.8	32.6	-1.22	-3.6%
Systolic	141	131.8	131.9	0.07	0.1%
Diastolic	157	78.9	78.6	-0.33	-0.4%
TC	126	4.3	4.1	-0.19	-4.4%
HDL	144	1.6	1.5	-0.12	-7.5%
LDL	41	2.3	2.2	-0.08	-3.5%
Trigs	115	2.2	2.1	-0.19	-8.5%

64 (38%) of engaged patients saw their HbA1c move to below 48 mmol/mol

Table 2 HbA1c Ranges and Movements

HbA1c	N	TO	T1	Change	% Change
48 to <53	62	49.71	46.45	-3.26	-7%
53 to <64	50	57.56	50.12	-7.44	-13%
64 to <75	29	68.45	54.55	-13.9	-20%
75 to <87	12	80	58.75	-21.25	-27%
>=87	15	98.53	67	-31.53	-32%

Table 2 show the ranges of HbA1c and Movements in each category, patients with very high HbA1c > 87 saw large movements downward.

Table 3 Analysis of Patient Between The ages of 18 and 40

Measure	N	TO	T1	Change	% Change
HbA1c	7	63.29	51.57	-11.72	-18.5%

There were 7 Young Adults (aged Between 18 and 40) with Type 2 Diabetes treated. The average movement was -11.72 (18.5%) with 3 (43%) of these patients achieving a HbA1c reading below 48 mmol/mol.

Table 4 Less Engaged Patients

Measure	N	TO	T1	Change	% Change
HbA1c	31	60.23	64.77	4.54	7.54%
Weight	29	105.5	104.54	-0.96	-0.91%
BMI	30	37.48	37.12	-0.36	-0.96%
Systolic	26	129.73	127.19	-2.54	-1.96%
Diastolic	30	77.57	76.7	-0.87	-1.12%
TC	27	4.66	4.41	-0.25	-5.36%
HDL	28	1.67	1.24	-0.43	-25.75%
LDL	13	2.69	2.35	-0.34	-12.64%
Trigs	24	2.56	2.51	-0.05	-1.95%

Less-engaged patients n=31 (15.0%) saw some benefit with an average weight loss of .95kg or 0.9% and movements downward in Total Cholesterol, LDL and Triglyceride. Interestingly 4 (13%) of these patients saw their HbA1c move below 48 mmol/mol indicating that small amounts of very targeted health education and health literacy can be very beneficial.

Table 5 Analysis of All Type 2 Diabetic Patients Who Started.

Measure	N	TO	T1	Change	% Change
HbA1c	199	61.56	53.7	-7.86	-12.77%
Weight	185	99.65	95.5	-4.15	-4.16%
BMI	177	34.41	33.34	-1.07	-3.11%
Systolic	167	131.51	131.18	-0.33	-0.25%
Diastolic	187	78.67	78.25	-0.42	-0.53%
TC	153	4.39	4.18	-0.21	-4.78%
HDL	172	1.62	1.45	-0.17	-10.49%
LDL	54	2.38	2.24	-0.14	-5.88%
Trigs	139	2.3	2.13	-0.17	-7.39%

As this is a clinical service delivered in real world settings, we are reporting outcome data on all patients (n=199) as of the 30thDec 2024 who had started the intervention. Of the 199 patient that started, mean HbA1c reduced 7.86 mmol/mol (13%) with of 68 (34%) of all patients on boarded onto the intervention were below 48 mmol/mol at follow up. Weight loss was 4.15kg (-4%) and clinically significant reductions in Total Cholesterol, LDL and Triglycerides were observed.

Non-Diabetic Hyperglycemia (NDH) Patient Results

195 patients had started the intervention as of 31 Dec 2024, of which 114 of these had follow up blood reading. 86 (75%) of these patients were deemed engaged, showing a mean HbA1c reduction of -2.06 mmol/mol (–4.7% and a mean weight loss of 5.24kg (5.1%).

51 (59%) of engaged patients achieved a HbA1c levels below 42 mmol/mol. Clinically significant reductions in Total Cholesterol, and Triglycerides were observed as per table 6

Table 6: Engaged Patients

Measure	N	TO	T1	Change	% Change
HbA1c	86	43.5	41.5	-2.06	-4.7%
Weight (Kg)	70	103.7	98.4	-5.24	-5.1%
BMI	67	36.3	35.0	-1.31	-3.6%
Systolic	67	132.1	134.2	2.09	1.6%
Diastolic	66	79.1	81.0	1.86	2.4%
TC	60	4.6	4.4	-0.24	-5.2%
HDL	64	1.4	1.5	0.07	5.1%
LDL	25	2.5	2.6	0.06	2.4%
Trigs	59	2.0	1.6	-0.41	-21.0%

Age Profile

Age	18-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	Total
Male	0	0	0	0	5	7	9	12	19	15	11	2	2	82
Female	0	1	2	3	6	14	14	26	21	14	3	6	3	113
Total	**0**	**1**	**2**	**3**	**11**	**21**	**23**	**38**	**40**	**29**	**14**	**8**	**5**	195

Table 7: Less Engaged Patients

Measure	N	TO	T1	Change	% Change
HbA1c	28	43.36	42.68	-0.68	-1.57%
Weight	16	95.2	93.5	-1.7	-1.79%
BMI	16	35.15	34.14	-1.01	-2.87%
Systolic	26	134.23	127.96	-6.27	-4.67%
Diastolic	25	80.88	77.92	-2.96	-3.66%
TC	26	4.39	4.21	-0.18	-4.10%
HDL	25	1.45	1.47	0.02	1.38%
LDL	14	2.28	2.37	0.09	3.95%
Trigs	25	1.7	1.8	0.1	5.88%

Interestingly, less engaged patients n=28 (25.0%) saw some benefit with an HbA1c Reduction of 0.68 (-1.57%) average weight loss of 1.7kg (1.79%)9% and movements downward in Systolic, Diastolic Blood Pressure and Total Cholesterol, consistent with the Type 2 Diabetic Cohort. 3 (11%) of these patients saw their HbA1c move below 42 mmol/mol which supports the concept that even small amounts of health education and health literacy can be very beneficial to patients who are less engaged.

Table 8 Analysis of All *Non-Diabetic Hyperglycemia* (NDH) Who Started the Intervention.

Measure	N	TO	T1	Change	% Change
HbA1c	114	43.48	41.76	-1.72	-3.96%
Weight	86	102.1	97.51	-4.58	-4.49%
BMI	83	36.1	34.85	-1.26	-3.49%
Systolic	93	132.7	132.45	-0.25	-0.19%
Diastolic	91	79.6	80.14	0.54	0.68%
TC	86	4.56	4.34	-0.22	-4.82%
HDL	89	1.4	1.45	0.05	3.57%
LDL	39	2.45	2.51	0.07	2.86%
Trigs	84	1.88	1.62	-0.26	-13.83%

Similar to the Type 2 Diabetic results, as this is a clinical service delivered in real world settings, we are reporting outcome data on all patients (n=114) of the 30th Dec 2024 who had started the intervention. Of the 114 patients that started, mean HbA1c reduced 1.72 mmol/mol (3.96%) with of 54 (48%) of all patients reaching a reading below 48 mmol/mol at follow up, an average weight loss was 4.58kg (-4.49%) significant reductions in total cholesterol and triglycerides were observed.

Driving Patient Engagement and Treatment Uptake: Empowering Education, Choice and Control

One of the biggest challenges in scaling lifestyle therapy is encouraging patients to commit to the treatment and actively participate. This needs to be done at scale to drive a meaningful impact at large population level.

Patient treatment take-up rates ran between 14% – 27% across the 3 PCNs for Type 2 Diabetic patients and 16-17% across 2 PCNs who targeted NDH. In some instances, in smaller cohorts who were messaged a second third and fourth time, take up rates of up to 45% were observed.

This empirically shows that patients desire this type of support and will onboard to treatment at scale when offered. The clinical outcomes show that 75%-80% of all these patients achieve a statistically clinically significant outcome which demonstrates efficacy on the whole process from patient selection, proactive outreach, treatment delivery and sustainability over time by providing continuous monitoring and support where indicated.

Continuous outreach to some small cohorts who after some lapsed time were messaged a second and third showed take up rates up to 45%. This shows that patient need to be constantly messages and offered support, as their willingness and ability to participate will vary based on their current life circumstance.

Extrapolating a 15% take uprate per annum of Type 2 or NDH patient over a 4-5 year period could see 45-60% of patient onboard to this type of treatment.

Transforming Chronic Disease Management at Scale: Tackling Health Inequalities and Enabling Open Access with RediCare Control^{Dtx}

The RediCare Control^{Dtx} study provides robust evidence that a digitally enabled, integrated neighbourhood team therapeutic model can not only manage but often help patients with Type 2 Diabetes (T2D) and Non-Diabetic Hyperglycaemia (NDH) achieve Hba1c levels below the 48 mmol and 42 mmol thresholds respectively at scale within routine primary care. This intervention represents a marked departure from traditional point solutions by embedding itself directly into the clinical workflow. As the intervention was built with an integrated neighbourhood team approach, General practitioners (GPs) received regular updates on their patient's outcomes, allowing the programme to function as an extension of usual care rather than a disconnected referral. Clinicians consistently praised the transparency and ease of integration, with no added workload burden—an essential criterion for sustainable adoption in primary care.

From the patient perspective, the model delivered high levels of engagement and satisfaction across varied demographics. Access to personalised health coaching, structured follow-up, and AI-powered education created a high-touch, easily accessible, low-friction experience that patients valued. Crucially, RediCare was not perceived as a time-limited intervention but as an ongoing, supportive part of their care journey. Unlike legacy models that lack continuity, the structured follow-up available in perpetuity serves to reinforce long-term behaviour change and minimise relapse—addressing a common shortfall in point solutions.

Importantly, this study demonstrates that scalable prevention and normalisation of NDH and T2D progression is possible when care is delivered from within an integrated neighbourhood teams' model, is personalised, and ongoing. Patients with complex needs, including those with more than six years since diagnosis and over 60 years of age can be supported, highlighting the inclusiveness and adaptability of the model. This is particularly relevant considering NHS system reform priorities, as outlined in the Darzi, Fuller Stockdale reviews, which emphasise the need for proactive, preventive care delivered through trusted primary care structures.

Population outreach was central to RediCare's success. SMS-based campaigns generated uptake rates between 14% and 17.6% with some smaller cohort achieving up to 45%—demonstrating strong patient appetite for accessible, credible support. Weekly webinars, one-to-one consultations, and responsive digital tools contributed to sustained engagement across cohorts, including those historically considered hard to reach.

Economically, the model is highly efficient. Unit costs of £33 per mmol/mol reduction in HbA1c and £63 per kilogram of weight loss are well within cost-effectiveness thresholds and offer a compelling case for scale. In contrast to more fragmented digital health services, RediCare's integrated neighbourhood teams' approach which allows access to the electronic health records to actively manage and treat approved cohorts of patients enables the delivery of large population health impact without introducing operational complexity or extra workload for practices.

In summary, RediCare delivers a new paradigm for diabetes prevention and management—one that is clinically effective, economically sustainable, and operationally viable and scalable. It meets patients where they are, supports them continuously, and equips primary care teams with tools that enhance rather than burden routine care. Its performance across clinical, behavioural, and economic domains makes it a strong candidate for NHS-wide adoption.

Acknowledgements...

References

Davis, N. J. (2009). Comparative study of the effects of a 1-year dietary intervention of a low-carbohydrate diet versus a low-fat diet on weight and glycemic control in type 2 diabetes. . *Diabetes Care*, 32(6), 1147–52.

Evert, A. B. (2018). Nutrition Therapy for Adults With Diabetes or Prediabetes: A Consensus Report. *Diabetes Care*, 42(5), 731–754.

Gregg EW, C. H. (2024). Impact of remission from type 2 diabetes on long-term health outcomes: findings from the Look AHEAD study. *Diabetologia*, 67(3):459-469.

Hawkins, e. a. (2023). Impact of Carbohydrate Reduction in a Primary Care Setting. Journal of Metabolic Health. *Journal of Metabolic Health*.

Hex, N. M. (2024). Estimation of the direct health and indirect societal costs of diabetes in the UK using a cost of illness model. *Diabetic Medicine*.

https://dtxalliance.org/aboutdtx/. (n.d.).

Jayedi, A. e. (2022). Dose-Response Meta-Analysis of Carbohydrate Restriction and Glycemic Control. *Journal of Clinical Nutrition*.

Krebs, J. D. (2009). Improvements in glucose metabolism and insulin sensitivity with a low-carbohydrate diet in obese patients with type 2 diabetes. . *Diabetes Care*, 32(6), 1147–52.

Kvedar, J. F. (2016). Digital medicine's march on chronic disease. *Nature Biotechnology*, 34(3), 239–246.

Ley, S. H. (2007). Prevention and management of type 2 diabetes: dietary components and nutritional strategies. . *Lancet,* , 383.

Munce, S. S. (2017). Online peer support interventions for chronic conditions: a scoping review protocol. *BMJ Open,* , 7(9).

Nutbeam, D. (2008). The evolving concept of health literacy. (2008). *Social science & medicine*, 67(12), 2072–2078.

Patrick, T. E. (2017). Improving health outcomes through patient education and partnerships with patients. *Baylor University Medical*, 30(1), 112–113.

Saklayen, M. G. (2018). The Global epidemic of the metabolic syndrome. *Current Hypertension Reports*.

Snorgaard, O. P. (2017). Systematic review and meta-analysis of dietary carbohydrate restriction in patients with type 2 diabetes. . *Nutrients*, 384.

Tay, J. T.-M. (2018). Effects of an energy-restricted low-carbohydrate, high unsaturated fat/low saturated fat diet versus a high-carbohydrate, low-fat diet in type 2 diabetes: a 2-year randomized clinical trial. *Diabetes Obes Metab*, 20(8), 858–71.

Terranova, C. O. (2016). Effectiveness of lifestyle-based weight loss interventions for adults with type 2 diabetes: a systematic review and meta-analysis. *Diabetes Obes Metab*, 71–8.

Wills, J. (2009). Health literacy: new packaging for health education or radical movement? *Int J Public Health*, 54(1), 3-4.

www.diabetes.org.uk. (2023). *The cost of diabetes*. diabetes.org.uk.