



Topic Exploration Report

Topic explorations are designed to provide a high-level briefing on new topics submitted for consideration by Health Technology Wales. The main objectives of this report are to:

1. Inform discussions on new topics received by HTW.
2. Determine the quantity and type of evidence available on a topic.
3. Assess the topic against HTW selection criteria.

Topic:	OurPath App - Type 2 Diabetes
Topic exploration report number	TER013
Referrer:	Michael Whitman
Topic exploration undertaken by:	Health Technology Wales

Aim of Search

Health Technology Wales researchers searched for evidence on whether the use of lifestyle/weight-loss management mobile applications provide a clinical and cost effective alternative to GP referral to weight-loss programmes in people deemed to be at 'high-risk' of type 2 diabetes.

Summary of Findings

There are a number of guidelines on the topic of type 2 diabetes prevention. Both SIGN and NICE have produced comprehensive guidelines on both prevention of type 2 diabetes and management of obesity. Both the SIGN and NICE guidelines mention computer-assisted or Internet-based programmes to help with weight and/or lifestyle management. However, neither specifically mention OurPath or any other programme in particular.

A search of the secondary literature identified 12 systematic reviews that considered the use of mobile applications in management (and prevention) of diabetes. None of these considered OurPath although some considered other weight or lifestyle management apps. A very brief search of the primary literature identified a few papers which evaluate an app, but only one was relevant to diabetes (management of type 1, not prevention of type 2).

An article provided by the topic referrer indicates that OurPath is efficacious, but it is not clear how this compares to other weight-loss programmes (e.g. groups such as Slimming World). According to OurPath's website, the application has already been adopted by Humber, Bristol, North Somerset and South Gloucestershire.

Conclusions

There are several evidence based guidelines published in the UK which recommend computer-assisted or Internet-based programmes to help manage weight loss or lifestyle changes with a view to preventing type 2 diabetes (among other conditions for which poor lifestyle or being over-weight are risk factors).

The only evidence which referred to this particular technology was from a service evaluation study. The evidence is insufficient in quality and quantity to enable an appraisal by Health Technology Wales at this time. It is suggested that data are collected on the comparative effectiveness of this application with similar products, ideally within the context of a randomised clinical trial.

Areas of Uncertainty

No specific areas of uncertainty were identified.

Feasibility of Technology Assessment

The evidence is insufficient in quality and quantity to enable an appraisal by Health Technology Wales at this time. HTW's Assessment Group concluded not to progress this topic further.

Brief literature search results

Resource	Results
HTA organisations	
Healthcare Improvement Scotland:	We did not find any relevant studies.
Health Technology Assessment Group	We did not find any relevant studies.
Health Information and Quality Authority	We did not find any relevant studies.
UK guidelines and guidance	
SIGN	<p>There are two relevant guidelines:</p> <p>SIGN 116 - Management of Diabetes The following is from the section on lifestyle interventions (3.1.1):</p> <ul style="list-style-type: none"> Intensive interventions which include frequent contact with health professionals - including telephone contact, multiple injections of insulin and self monitoring of blood glucose have led to improvements in self-management Computer-assisted programmes which provide education and trigger self-management have a proven benefit in terms of both metabolic and psychosocial outcomes. <p>Also, in Healthy Eating (3.7):</p> <ul style="list-style-type: none"> Overweight individuals and those at high risk of developing diabetes should be encouraged to reduce this risk by lifestyle changes including weight management and physical activity. The use of a behavioural approach to dietary interventions in patients with diabetes shows clinically significant benefit in terms of weight loss, HbA1c, lipids, and self care behaviour for up to two years after the initial intervention. However, it is not always possible to identify if the benefit is wholly attributable to the intervention, or dependent on how or where the care is delivered. <p>SIGN 115 - Management of Obesity The following is from the section on weight management programmes and support (9.4):</p> <ul style="list-style-type: none"> Weight management programmes should include physical activity, dietary change and behavioural components. <p>Internet based weight management programmes (9.5)</p> <ul style="list-style-type: none"> Delivery of evidence based weight management programmes through the internet should be considered as part of a range of options for patients with obesity. <p>Annex 7- Criteria for evaluating self-help, commercial and community weight management programmes for weight management for adults</p>
NICE	<p>There are numerous NICE publications relevant to both Type 2 Diabetes and Obesity management. Some are clinical guidelines, some NICE guidelines and others Public Health Guidelines.</p> <p>PH38 - Type 2 diabetes: prevention in people at high risk - provides advice on identifying at-risk populations and recommendations for life-style change programmes (including suggested content).</p>

	<p>PH35 - Type 2 diabetes prevention: population and community-level interventions - aimed at the population and community level. Should be read in conjunction with PH38 above.</p> <p>NG28 - Type 2 diabetes in adults: management - focuses on management of type 2 diabetes rather than prevention. Lifestyle is mentioned, but not in as much detail as PH38.</p> <p>PH53 - Weight management: lifestyle services for overweight or obese adults - no specific guidance about using an app to lose weight: weight management lifestyle services are covered, but only in general terms.</p> <p>PH6 - Behaviour change: general approaches</p> <p>CG189 - Obesity: identification, assessment and management - Section 1.4 (p18) has recommendations on lifestyle interventions and section 1.5 (p20) discusses behavioural interventions. There is no specific mention of lifestyle change programmes.</p> <p>CG43 - Obesity prevention - this guideline is partially replaced by PH53, CG189 and NG7.</p>
Secondary literature and economic evaluations	
ECRI	We did not find any relevant secondary studies.
Medline	<ul style="list-style-type: none"> • Connelly, J., A. Kirk, J. Masthoff and S. MacRury (2013). "The use of technology to promote physical activity in Type 2 diabetes management: a systematic review." <i>Diabetic Medicine</i> 30(12): 1420-1432. • Fijacko, N., P. P. Brzan and G. Stiglic (2015). "Mobile Applications for Type 2 Diabetes Risk Estimation: a Systematic Review." <i>Journal of Medical Systems</i> 39(10): 124. • Fu, H., S. K. McMahon, C. R. Gross, T. J. Adam and J. F. Wyman (2017). "Usability and clinical efficacy of diabetes mobile applications for adults with type 2 diabetes: A systematic review." <i>Diabetes Research & Clinical Practice</i> 131: 70-81. • Hou, C., B. Carter, J. Hewitt, T. Francisa and S. Mayor (2016). "Do Mobile Phone Applications Improve Glycemic Control (HbA1c) in the Self-management of Diabetes? A Systematic Review, Meta-analysis, and GRADE of 14 Randomized Trials." <i>Diabetes Care</i> 39(11): 2089-2095. • Joiner, K. L., S. Nam and R. Whittemore (2017). "Lifestyle interventions based on the diabetes prevention program delivered via eHealth: A systematic review and meta-analysis." <i>Preventive Medicine</i> 100: 194-207. • O'Neil, A., F. Cocker, P. Rarau, S. Baptista, M. Cassimatis, C. Barr Taylor, A. Y. S. Lau, N. Kanuri and B. Oldenburg (2017). "Using digital interventions to improve the cardiometabolic health of populations: a meta-review of reporting quality." <i>Journal of the American Medical Informatics Association</i> 24(4): 867-879. • Porter, J., C. E. Huggins, H. Truby and J. Collins (2016). "The Effect of Using Mobile Technology-Based Methods That Record Food or Nutrient Intake on Diabetes Control and Nutrition Outcomes: A Systematic Review." <i>Nutrients</i> 8(12): 17.

	<ul style="list-style-type: none"> • Russell-Minda, E., J. Jutai, M. Speechley, K. Bradley, A. Chudyk and R. Petrella (2009). "Health technologies for monitoring and managing diabetes: a systematic review." <i>Journal of Diabetes Science & Technology</i> 3(6): 1460-1471. • Saffari, M., G. Ghanizadeh and H. G. Koenig (2014). "Health education via mobile text messaging for glycemic control in adults with type 2 diabetes: a systematic review and meta-analysis." <i>Primary care diabetes</i> 8(4): 275-285. • Theng, Y. L., J. W. Lee, P. V. Patinadan and S. S. Foo (2015). "The Use of Videogames, Gamification, and Virtual Environments in the Self-Management of Diabetes: A Systematic Review of Evidence." <i>Games for Health Journal</i> 4(5): 352-361. • Wang, Y., H. Xue, Y. Huang, L. Huang and D. Zhang (2017). "A Systematic Review of Application and Effectiveness of mHealth Interventions for Obesity and Diabetes Treatment and Self-Management." <i>Advances in Nutrition</i> 8(3): 449-462. • Whitehead, L. and P. Seaton (2016). "The Effectiveness of Self-Management Mobile Phone and Tablet Apps in Long-term Condition Management: A Systematic Review." <i>Journal of Medical Internet Research</i> 18(5): e97.
Primary studies	
Medline	<ul style="list-style-type: none"> • Trawley, S., et al. (2016). "The Use of Mobile Applications Among Adolescents with Type 1 Diabetes: Results from Diabetes MILES Youth-Australia." <i>Diabetes Technology & Therapeutics</i> 18(12): 813-819. • Batch, B. C., et al. (2014). "Weight loss intervention for young adults using mobile technology: design and rationale of a randomized controlled trial - Cell Phone Intervention for You (CITY).[Erratum appears in <i>Contemp Clin Trials</i>. 2014 Nov;39(2):351]." <i>Contemporary Clinical Trials</i> 37(2): 333-341. • Daly, L. M., et al. (2017). "The effect of mobile application interventions on influencing healthy maternal behaviour and improving perinatal health outcomes: a systematic review protocol." <i>Systematic Reviews</i> 6(1): 26. • Ubhi, H. K., et al. (2016). "Characterising smoking cessation smartphone applications in terms of behaviour change techniques, engagement and ease-of-use features." <i>Translational Behavioral Medicine</i> 6(3): 410-417.
Other	
Evidence identified by topic proposer	<ul style="list-style-type: none"> • Hampton, J., Allen, E., Edson, C. (2017). "Service evaluation of a digital behavioural change programme." <i>Future Healthcare Journal</i> 2017 4(3): 173-7

Date of search:	August 2018
Concepts used:	diabetes, weight loss/management, lifestyle management, prevention, mobile applications,