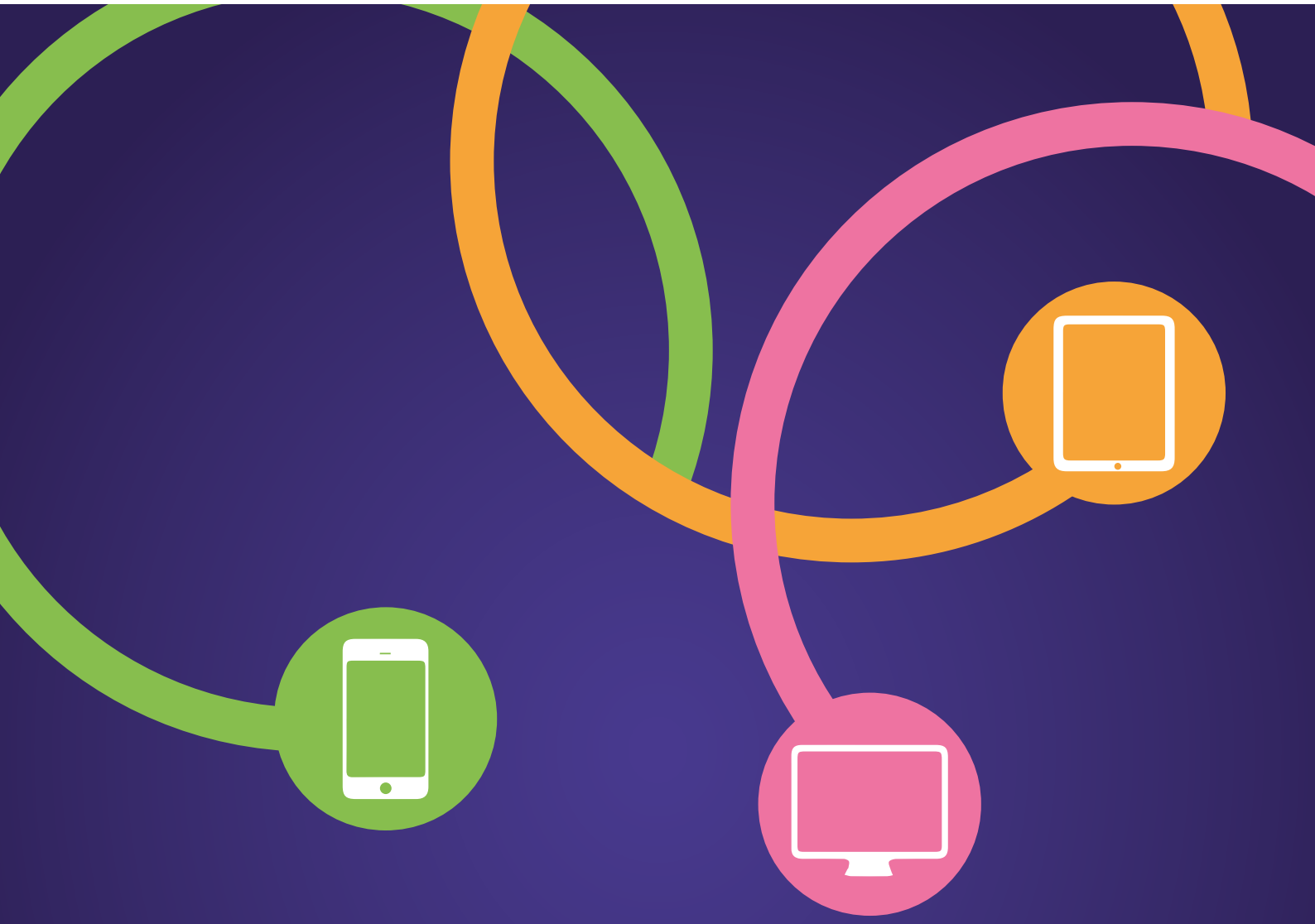
Home & Mobile Health Monitoring

Digital Health & Care Scotland

TEC Technology Enabled Care



SUMMARY REPORT

Towards Scaling Up Home and Mobile Health Monitoring 2015-2018

An evaluation of the outcomes achieved by Year 3 and progress towards scale-up, spread and sustainability

Dr Helen Alexander

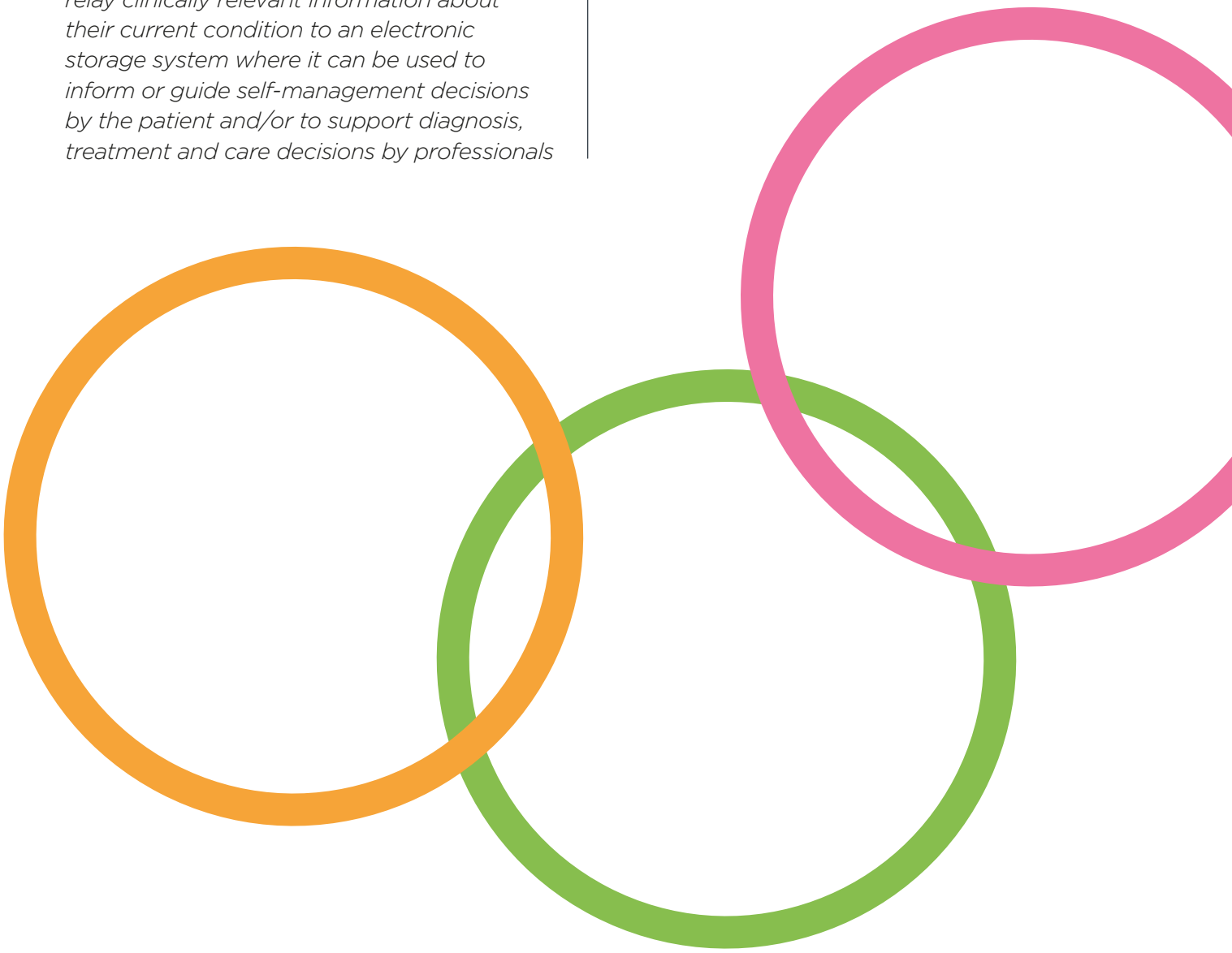
INTRODUCTION

Scotland's *Digital Health and Care Strategy* (Scottish Government, 2018) was published after the Technology Enabled Care Programme had laid the foundations required to embed and expand the application of technology to care delivery. We now have an ambitious vision to improve outcomes by empowering citizens and scaling up towards substantial programmes across Scotland. The Home and Mobile Health Monitoring (HMHM) workstream was commended as an exemplar and the national service model (Scottish Government, 2017) defines HMHM as:

Those activities that enable patients outside of healthcare settings to acquire, record and relay clinically relevant information about their current condition to an electronic storage system where it can be used to inform or guide self-management decisions by the patient and/or to support diagnosis, treatment and care decisions by professionals

Building on experience with a range of national and international digital health and care projects, and learning from various publications, the evaluation of the HMHM programme at the end of its third year comprised:

- Evidence of HMHM's contribution to key outcomes
- Progress towards HMHM scale-up, spread and sustainability



CONTRIBUTIONS TO HMHM OUTCOME ACHIEVEMENT

Technology Enabled Care (TEC) has increasingly been gaining attention in recent years. When the TEC fund was launched in 2015, the focus was specifically on embedding and expanding the application of technology, because its potential was not widely understood at that time. Home health monitoring was one of the five priority areas identified for investment, with the aim of moving beyond small to medium scale initiatives to create substantial transformational programmes across Scotland.

The HMHM programme created a logic model at an early stage to define the key outcomes to be achieved. Given the difficulty establishing cause and effect within complex systems, it was agreed that Contribution Analysis (CA) would be used to generate credible claims about the links between programme activities and observed results. The logic model, CA method and first four of its six steps are detailed in the Year 2 HMHM evaluation report (Alexander, 2017), leaving steps 5 & 6 to be covered in this report.

Many of the shorter-term outcomes had been achieved by the end of Year 2, so the additional evidence gathered related to four that were likely to take longer to achieve; self-management, condition control, optimised face to face appointments and improved access to services. It comprised a mix of numbers, words, and visual images and was largely gathered at local level. Some of the 12 HMHM-funded partners joined later in the programme and others had less resource to support evaluation (or to appoint external evaluators), but they are all to be congratulated for the data they managed to gather, and for being so willing to share it. Most of them developed HMHM protocols for conditions relating to some of Scotland's health priorities e.g. hypertension, mental health, heart & respiratory disease and diabetes, but many went well beyond these in response to the enthusiasm of their staff.

We now have considerable and robust evidence that, supported by HMHM:

- More people are self-managing their health
- Condition control has increased
- Face to face contacts have been optimised
- Access to services has improved

There is also good evidence for HMHM contributing to resources being used more effectively and efficiently, and a small amount for hospital admissions avoided. There was overwhelming support for HMHM contributing to people having positive experiences of services, with a range of data from case studies, interviews and focus groups. Amongst the feedback gathered, people said that HMHM "provided much-needed support" and "it really reassured me".

In addition, the CA method endeavours to increase the robustness of the causal claims by exploring alternative explanations for the results observed i.e. that the outcome improvements may be due to something else instead of HMHM. The consideration of a number of alternative explanations generally supported the claim that HMHM has contributed to outcome achievement. The only exception was for hospital admissions avoided, where the evidence relied on relatively small numbers, hence the rival explanations could not be entirely discounted.

TOWARDS HMHM SCALE-UP, SPREAD AND SUSTAINABILITY

These terms are defined as:

- **Scale-up** – moving from a local project to one that is 'business as usual'
- **Spread** – transfer to new settings
- **Sustainability** – maintained long-term, adapting as required

SCALE-UP

The 12 partners funded through the HMHM programme achieved a considerable amount in three years. Many started from scratch, yet they had facilitated HMHM use by 15,765 citizens across Scotland by June 2018 and six of them had achieved the degree of scale-up envisaged in the national service model before the expected date.

National HMHM Programme has provided a firm foundation for future developments and much has been learned which offers important insights into how scale up efforts can best be accelerated .

If we accept that scale-up is about moving to 'business as usual' then Scotland has not yet had long enough to achieve this at a population level. The total proportion of citizens that we know had the opportunity to use HMHM (others may have, but are not counted in this programme) was only 1.4%. The biggest group of people to have used HMHM had high blood pressure, but only 1.6% of them have had this chance to date. In the absence of an agreed target level of scale-up, and appropriate timescales for achieving this, it appears that more time and resources are required to achieve scale-up at a population level.

SPREAD

The national HMHM service model aspired to spread across 2 to 8 pathways of care and 1 to 3 different media channels (e.g. text messaging, tablets, web sites) by 2018/19. Using this definition, eight of the 12 partners have already achieved spread. But spread should encompass a greater proportion of the Scottish population and more NHS boards/health and social care partnerships if the full potential of HMHM is to be realised.

SUSTAINABILITY

Although not originally an aim of the three year HMHM Programme, some of the learning to date provides important considerations for sustainability. Although national programme funding is ending, a wealth of expertise has been developed by the 12 partners and it would be a great loss if this resource did not continue to be available, both locally and for others wishing to adopt any of the technologies. But long-term maintenance also requires ongoing national support and local ownership of HMHM (and other aspects of Technology Enabled Care) by our NHS boards and health & social care partnerships.

SCALING UP HMHM IS COMPLEX AND COMPLICATED

The experience of the 12 HMHM-funded partners over the past three years was used to rate the programme's complexity across seven dimensions (Greenhalgh et al, 2017). This suggested that adoption and integrated use of HMHM was complicated, with a number of more complex aspects. This initial evaluation needs to be more widely discussed, and the resulting debate may help to identify where complexity could be reduced. Indeed , national work within the TEC Programme is already underway. Complicated programmes like HMHM in Scotland can be difficult, slow and challenging to implement, but not impossible (Greenhalgh et al, 2018). These authors created eight principles that may improve scale up success, and a start has been made in reviewing Scotland's progress against them.

RECOMMENDATIONS

- ☑ Set an agreed target level for HMHM scale-up at national level, and preferably for different populations to drive forward implementation
- ☑ Review the initial 'complicated' rating assigned to HMHM with a view to identifying how to further reduce elements of complexity and accelerate scale
- ☑ Consider the initial review of Scotland's progress against the eight principles for increased success (Greenhalgh et al, 2018) to inform plans for the way forward with HMHM
- ☑ Continue to ensure that the further evolution of HMHM benefits from detailed and continuous evaluation

REFERENCES

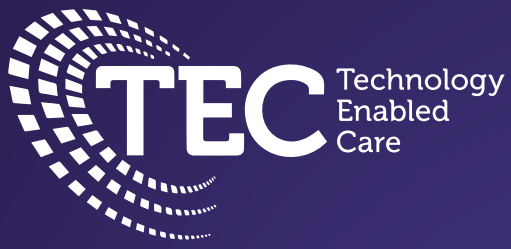
Alexander, H. (2017) Home and Mobile Health Monitoring National Evaluation, First Contribution Story. https://sctt.org.uk/wp-content/uploads/2018/11/HMHMEvaluation-Appendix-B-First-Contribution-Story_July-2017.pdf.

Greenhalgh, T., Wherton, J., Papoutsi, C. et al (2018) Analysing the role of complexity in in explaining the fortunes of technology programmes: empirical application of the NASSS framework. BMC Medicine 16, 66, https://doi.org/10.1186/s12916-018-1050-6

Greenhalgh, T., Wherton, J., Papoutsi, C. et al (2017) Beyond adoption: a new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. J Med Internet Res 19(11), e367, doi:10.2196/jmir.8775, https://www.jmir.org/2017/11/e367

Scottish Government (2018) Scotland's Digital Health and Care Strategy. http://www.parliament.scot/S5_HealthandSportCommittee/Reports/Scotlands_Digital_Health_and_Care_Strategy.pdf

Scottish Government (2017) A National Service Model for Home and Mobile Health Monitoring https://sctt.org.uk/wp- content/uploads/2017/05/A-National-Service-Model-for-HMHM-v1.1.pdf



CONNECT WITH US @TECSCOTLAND
CONTACT US VIA NSS.TEC@NHS.NET

Published by Scottish Government, November 2018.