

Exploring the unintended consequences of digital health tools in primary care

Andrew Turner¹, Michelle Farr¹, Jon Banks¹, Rebecca Morris², Sarah Blake³, Sue Ziebland⁴, Emma Hyde⁴, Fiona Stevenson⁵, Lorraine McDonagh⁵, Fiona Hamilton⁵, John Powell⁴, Helen Atherton⁶, Gemma Lasseater¹, Sian Jones⁷, Bob Golding³, Gene Feder¹, Lucy Yardley¹, Jeremy Horwood¹

¹University of Bristol, United Kingdom. ²University of Manchester, United Kingdom. ³PPI Collaborator, United Kingdom. ⁴University of Oxford, United Kingdom. ⁵University College London, United Kingdom. ⁶University of Warwick, United Kingdom. ⁷West of England Academic Health Science Network, United Kingdom

Abstract

Introduction: The use of online consultation systems, platforms giving patients online access to medical records, and smartphone apps for managing long term conditions are becoming commonplace, with NHS England advocating their use to improve patient access and care. The rapid development and adoption of digital health in primary care may lead to unintended consequences which alter healthcare processes and outcomes. This study aims to improve the appropriate adoption of these digital health tools in primary care by understanding their unintended consequences.

Methods: Qualitative. Semi-structured individual interviews with patients, general practice staff, commissioners, and industry representatives involved in the use of three types of digital health tool. To date, interviews have been conducted with 17 patients and 12 practice staff. Thematic analysis was used to analyse the data using NVivo 11 software for data management.

Results: Practice staff often anticipated possible negative changes to workload and patient safety from online consultations and online access to medical records, and adopted strategies to minimise the unintended consequences, for example, by 'soft' adoption of new systems. However a range of positive and negative unintended consequences were seen on doctor-patient relationships and staff work practices. Patients frequently approached these systems with curiosity and ambivalent expectations about what they would deliver, but also reported surprise that the magnitude of their positive effects went beyond what they intended.

Discussion: Developing an understanding of the scope and extent of the unintended consequences of digital health tools is vital to aid future successful implementation in primary care.

Patient and Public Involvement (PPI)

The DECODE study has been developed collaboratively with eight public contributors from CLAHRC West's Health Systems Panel, who helped select the technologies DECODE investigates. Two members of the public with experience of digital technology are collaborators on the grant and part of the project team. They have helped develop participant-facing materials and study documents. In 2018, in collaboration with our PPI collaborators we ran a one-day workshop with members of the public, researchers in the field, technology developers, and GPs to help identify potential unintended consequences of technologies and inform qualitative interviews.