

Health technologies: are older people interested?

Discussion Paper
Kathy Mason

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Introduction

That we are living longer healthier lives is a fact and a cause for celebration! The over 65s made up 17% of the population in 2010, up from 15% in 1985, with projections indicating a rise to 23% by 2035.

Exponential growth of our aging population does however highlight a challenge: we know that the highest users of health services are the over 75s and that average NHS spending for retired households is nearly double that for non-retired households. As life spans increase, society needs to ensure that those lives are active and fulfilling, supporting and encouraging older people to stay as healthy and independent as possible for as long as possible.

Digital technology, already pervasive in our everyday lives, is increasingly a central factor in rising to this challenge. The received wisdom is that older people and their baby-boomer children, themselves over 55 years of age, are resistant to embracing technology in this context. This research paper examines whether this is actually true.

Background and context

It is critical to ensure that older people can participate independently and actively in their communities and access the services that will help them to do so. Digital communication channels are increasingly common in helping the 1.45 million over 65s who find it ‘quite difficult’ or ‘very difficult’ to travel to a hospital, and 630,000 over 65s who find it ‘difficult’ or ‘very difficult’ to travel to their GP.¹ Teleconsultation and e-triage enables the assessment of patients and provision of advice and support without the patient leaving their home. Many GP practices already provide telephone consultations to patients and increasing numbers offer video consultations. For example, the eConsult service developed by the Hurley Group in London now covers over one million patients.²

Social isolation and loneliness are public health issues shown to have significant effects on older people’s health. Technology can help bring activities and people in to the home. In Liverpool, the “My House of Memories”³ is a digital memory app designed specifically for people with dementia to access a wide range of content from the 1920s–1980s, to stimulate memory and conversation. The service has been designed to make reference and connections to life experiences, dreams and shared histories. Technology can also provide digital companions to dementia sufferers; PARO is an advanced interactive robot, in use in Japan, that responds to the human voice and to movement, enabling the benefits of animal therapy in environments such as hospitals and extended care facilities where live animals present treatment or logistical difficulties.

1. http://www.ilcuk.org.uk/files/Opportunity_Knocks_-_Designing_Solutions_for_an_Ageing_Society.pdf

2. <http://webgp.com/>

3. <http://www.liverpoolmuseums.org.uk/learning/projects/house-of-memories/my-house-of-memories-app.aspx>

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Assistive technologies that help compensate for lost or failing physical skills are another way in which technology is enabling older people to maintain independence and active lives. These technologies can range from a simple device to help an arthritic hand turn on a tap, to a robotic machine that is able to spoon-feed an older person. Finalists in AXA PPP sponsored Health Tech & You Awards in April 2016 included: the GyroGear Steady Glove,⁴ which assists people by counteracting hand tremors; Dermaspray,⁵ a devise that sprays precise doses of medication for those with limited dexterity; and the category winner, Walk With Path, with their Path Finder aid to improve gait in patients with Parkinson's and similar conditions.⁶

Further examples from Japan include a robot that can wash people's hair using 24 robotic fingers to 'knead' the scalp, and which claims to be a more relaxing experience than a wash from another human. The above mentioned spoon-feeding machine, designed to help elderly and disabled users, sits on the patient's lap like a tray while a robotic arm clutching a spoon feeds the patient; a relatively simple eye-tracking solution enables the user to guide it to the food they want. For problems of dehydration (a common issue among older people) there is a 'smart' water bottle that monitors how much water an individual had consumed against an estimate of how much they should be drinking.

Digital technology is increasingly used in early diagnosis and assessment to help ensure older people stay as healthy as possible for as long as possible. In the older age group the identification and early treatment of dementia is of primary concern; it is predicted that by 2025 there will be one million people in the UK living with dementia. Examples of technology being used to tackle this include Cantab Mobile, an iPad-based sensitive screening tool for healthcare professionals to identify in under ten minutes the earliest signs of clinically relevant memory impairment indicative of Alzheimer's disease.⁷ On average 1,000 Cantab Mobile memory assessments are being completed every month in the NHS. The objective touchscreen test takes into consideration the age, gender and education of the patient to provide an instant and accurate report so they can receive timely reassurance or referral in a single visit. Finalists in AXA PPP sponsored Health Tech & You Awards in April also included exciting developments such as Extreme Health, 3D skeletal motion tracking via webcam to support clinically supervised home-based rehabilitation.⁸

Supporting older people to take greater control and be active participants in their care, once they need it, comes next. Examples where digital technology is helping include Coordinate My Care,⁹ a shared health record between patients, carers and statutory health organisations in London. It provides people with life-limiting illnesses an opportunity to create a personalised care and end of life plan in order that they might express their wishes and preferences for how and where they are treated and cared for. Some 25,000 personalised urgent care plans have now been created for patients and can be shared electronically with all legitimate providers

4. www.gyrogear.co

5. www.sivaden.com

6. www.walkwithpath.com

7. <http://www.cambridgecognition.com/healthcare/cantab-mobile>

8. www.xtr3d.com

9. <http://coordinatemycare.co.uk/cmc/wp-content/uploads/2014/06/the-new-palliative-care-gold-standard.pdf>

of urgent care, especially in the emergency situation. AXA PPP Health Tech & You Awards winner Patients Know Best enables patients to own and understand their own health records.¹⁰ Other examples include electronic monitoring systems that help a person keep track of their own medical condition, while SMS reminders for medication adherence and measuring and reporting blood pressure, peak flow, weight and oxygen saturations are routinely used across the NHS to support symptom control and enable prompt reaction to any changes.¹¹ Maintaining a healthy blood pressure can drastically reduce the risk of a cardiovascular event such as a heart attack or stroke. Research has found that individuals regularly monitoring their own blood pressure at home find it easier to reduce their blood pressure. In the future, for example, a kettle that takes a person's blood pressure using sensor pads in the handle, each morning as they make their tea, would provide regular monitoring.

Extending and enhancing the ability to watch over and provide prompt help and support for older people is already a well-established use of technology that is improving and developing at pace. Electronic monitoring systems that automatically alert health care staff when help is required are in common use in residential and domestic settings. Sensors can be fitted into the home that will alert carers if, for example, someone is not in bed when they should be, a sign that something may have gone wrong. Technology is also helping older people avoid trips and falls, one of the most common and profound causes of loss of independence and health. Examples include wearable technology such as Hip Impact Protection,¹² another of the AXA PPP Health Tech and You Award finalists. The University of Manchester has also prototyped a pressure-sensitive carpet underlay that can measure and analyse people's gait, acting as a predictor of falls likelihood so preventative action can be taken.

What is the evidence for interest and adoption?

In AXA PPP's annual Health Tech & You State of the Nation survey,¹³ September 2015, over 20% of those in age groups 55–64 and 65–74 believed that using health technology to regularly monitor and manage their health would have a positive impact. One third of people aged over 55 reported use of health technologies, including blood pressure and sugar level monitors and mole checkers, compared with an average of only 12 per cent for younger people (aged 35–44). The evidence indicates this trend will continue as awareness rises; for example, whereas in 2014 only 5% of respondents were concerned about tackling dementia, in 2015 the figure jumped to 14%, making it the third biggest concern after obesity and heart disease.

A recently completed survey also explored how people might feel about using some of the technology described above in their everyday lives as they begin to need more help in staying fit, healthy and independent. Findings indicated that a majority of the British public aged 55–75

10. www.patientsknowbest.com

11. <http://www.digitalhealthsot.nhs.uk/>

12. www.Hips-protect.com

13. <http://www.2020health.org/dms/2020health/downloads/misc-pdf/151015-State-of-the-Nation-Report-Year-2-Final/151015%20State%20of%20the%20Nation%20Report%20Year%202%20Final.pdf>

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would choose a range of technology to help manage their or their parents' health and wellbeing for any future condition, with the exception of technology to help with dressing (Figure 1). It seems however that women are slightly readier to embrace technology that could help with more personal activities, such as eating and dressing.¹⁴

Figure 1: Com Res Medical Technology Survey: April 2016

Q1. For each of the types of technology listed below, please imagine that it has been offered to help with any future condition you or your parents might have. In that situation, please indicate whether or not you would choose it to help to manage health and wellbeing.

	Yes %	No %
Communication technology that enables connection with friends and family	82	18
Fall detectors	76	24
Stairlift	71	29
A smartphone app with reminders to take medication	63	37
A smartphone app that provides communication and remote access to personal caregivers	63	37
A smartphone app that assists with memory	63	37
A smartphone app which records health metrics (heart rate, blood sugar) supporting overall health	62	38
Technology to help with personal care (bathing, going to the toilet)	57	43
Technology to assist with eating	51	49
Technology to help with dressing	47	53

14. ComRes: Medical Technology Survey for 2020Health; April 2016

Maintaining one's dignity whilst receiving help and care is an important issue. When asked to consider whether robotic or human assistance would maintain dignity more effectively, the same survey found that robotic assistance is seen to provide greater dignity than human assistance for activities such as getting up stairs and going to the toilet, whereas human assistance was favoured for washing, dressing and eating. This perhaps reflects the importance of human interaction in more social activities.

Reluctance to embrace the digital world is confirmed as a diminishing trend. This is reflected in the increasing adoption of smartphones, which between 2013 and 2014 grew from 62% to 70% of the UK population, with older age groups recording the highest growth. Some 50% of 55–64 year olds now own smartphones; 18% of over 65s.¹⁵

What does this mean for designing and encouraging older people to use health tech solutions?

The recently completed £37m DALLAS (delivering assisted living lifestyles at scale) programme¹⁶ was funded and driven by the UK's innovation agency, Innovate UK. It tasked four consortia to think beyond traditional health and social care to consider how new ideas and technology can be used to improve the way people live, in particular older people, and to create a consumer market for wellbeing products and services.

Early results from the academic evaluation are now being published.¹⁷ An important premise was that traditional evaluation approaches such as randomised control trials were not appropriate to investigate the real underlying issues of mainstreaming and scaling up digital self-care.

The evaluation has concluded that “user-centred design methods should be employed that allow both true community engagement and also rapid prototyping of products in order to get early feedback and buy-in from consumers, patients and health professionals”. It identified a number of barriers that hinder projects, in particular interoperability: “technical interoperability is difficult to achieve in a competitive market. Service interoperability is difficult to achieve across health and social care organisations”. It also identified the importance of engagement and training of health and social care professionals to increase buy-in and endorsement.

15. <http://www.statista.com/statistics/271851/smartphone-owners-in-the-united-kingdom-uk-by-age/>

16. <http://dhaca.org.uk/dallas-welcome/>

17. <http://dhaca.org.uk/wp-content/uploads/2015/12/dallas-Web-Version-10Nov15.pdf>

Conclusion

There is a growing appetite for assistive technologies from both older people and their children. Industry has latched on to this and older people are the biggest target for health technology, which will become even more meaningful as personally generated information can be integrated into a personally held health record. There are those who have not yet used any digital health technology, but the number who have is growing year on year, and one of the challenges to industry is the design: how to make the technology as simple and user friendly as possible. The 'squeezed generation' has a particular vested interest in having tools to help them support and communicate more effectively with their ageing parents, and these tools should make independent living for the older person without dependents more realistic. As our survey found, robotic help and communication aids are top of people's wish lists.

2020health is an independent, social enterprise think tank whose mission is to “Make Health Personal”. Giving people the information, understanding and confidence to take a meaningful role in their health and wellbeing, and creating the conditions for a healthy society.

2020health.org

1st Floor, Devon House
171-177 Great Portland Street
London W1W 5PQ

T 077 2020 6910

E admin@2020health.org

T [@2020health](https://twitter.com/2020health)

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