

Digital Assistive Technology

(UK)

July 2019

Older people should be able to choose well designed digital care and support which helps them better manage their independence, dignity and wellbeing



“My Amazon Echo has allowed me to be more independent and not to have staff to remind me about things”

Sam, older service user on Hampshire County Council Trial – see below

What is Digital Assistive Technology?

‘Assistive technology’ helps people stay independent and manage their health and can be something as simple as a tipping kettle. This policy position focuses on new forms of assistive technology that have been made possible by developments in information technology, including telehealth, telecare and robotics.

Telehealth includes: equipment to monitor health in the home such as blood oxygen levels and blood sugar levels; devices for communication with health professionals; wearable technology that can monitor and monitor heart beat and exercise.

Telecare includes: sensors to alert carers to a fall; personal alarms to call for help; location trackers, enabling freedom and security for people with memory

Key statistics

Up to 40%

of Assistive Technology is never used

More than half

of people aged 75+ have never used the internet.

6.6 million

People owned a smart speaker in 2018

Cited in Hampshire CC and NIHR publications

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problems There is currently research going on to evaluate whether smart devices could be developed to listen for sounds that indicate that someone is having a heart attack.ⁱ

Robotics can help people to do things for themselves. This can be especially transformative for people with difficulties with mobility, dexterity or strength. For example some devices can connect with the Internet of Things and be programmed and voice activated to do things like: controlling heating and ventilation; answering the door, opening and relocking the door; reminding about medication, making video calls - including emergency calls, turning on music, audio books, the television, etc.

Devices can help with day to day activities requiring movement, for example one which a carer sets to the level of the person's mouth and then the person can choose food and bring it to their own mouth using a single hand control. Others help people get themselves up out of a seat or bed and move around, or help move things, such as a mechanised trolley to move food and drink around from the kitchen to the sitting or dining area.



There are robotics which aim to engage with the user and prompt experiences of caring, such as a robotic doll in development which can walk, is cuddly and warm, simulates emotions through its eyes, arms and sound, and will giggle when tickled, fall asleep when cradled.

Current experience

There is a growing body of evidence that these devices can be helpful in enabling older people to retain their independence and manage their health conditions. But to be effective there needs to be a substantial investment in support systems around the device to ensure it is usable, helps the user and their carers achieve desired outcomes, and gives the user and their carers sufficient preliminary and ongoing support. For example, knowing if someone is having a heart attack is pointless if there is no follow-up medical care. They are not a substitute for most personal care, or for human interaction.

“I realised the importance of relatively small items, such as cups with spill-proof lids and non-slip mats. (Digital) technology is only part of the solution” NIHR

“Alexa, can you support people with care needs”

A trial carried out in Hampshire County Councilⁱⁱ used Amazon Echo smart speakers equipped with additional customised voice control and skills. These were put into the homes of 50 people with care needs, alongside other Internet of Things gadgets, such as those provide through Hive, Nest and Philips.

The pilot began with an intensive discussion of the potential opportunities and the outcomes that each service user and their cares wanted to achieve. The range of possibilities included: setting reminders for visits, taking medication, eating and drinking; controlling the environment through activating lights and fans, adjusting thermostats, and opening and closing windows; turning on music, podcasts, the radio etc, and communicating with family, friends and carers.

The evaluation of the pilot demonstrated benefits to users, with 68 per cent agreeing that it helped them maintain their independence, and with more than two-thirds saying that they were able to regain some independence. Feedback from carers also suggested that it can reduce carer burnout, enabling carers to take breaks and thus delay or avoid the need for residential care. To this extent it could be truly transformative in improving the quality of everyday life for vulnerable older people and their carers.

It would not suit everyone however, and it does not substitute for the need for personal care. Risk assessments are also needed to deal with data governance and privacy issues, and the impact of failure of the wifi-network and power outages.

Mainstream versus specialist devices

The great advantage of using or adapting a device designed for a mainstream market is that the design will aim to be appealing, and the much greater market is likely to drive the price down. For example, an increasing number of the general public are choosing to buy smart speakers, which could potentially then provide support if they developed care needs. In 2018 Ofcom found that 13 per cent of the population owned a smart speaker (although this was lower for older people, at 7 per cent for people aged 55+ⁱⁱⁱ) - and the market appears to be expanding rapidly. Similarly smart phones and tablets can be used as voice activated devices, for example using a search engine to access information, and in combination with other devices, such as lights and kettles.

From ‘Internet Users in the UK’, ONS May 2018

- In 2018 less than half (44 per cent of people) aged 75+ were recent internet users
- Between 2011 and 2018 the percentage of people aged 65+ who had never used the internet declined by 27 percentage points



“As a patient I consider that getting user views is crucial in order to find out what the user really want or needs, and hence what problems the technology is designed to solve” NIHR report

However not all telecare and telehealth functions are yet available through mainstream devices, and not all people are able or willing to use the internet or internet dependent devices. Digital assistive technology is not a panacea and the full range of options should be considered by professionals aiming to help people to retain as much independence and dignity as possible.

“Telecare does not perform care on its own”^{iv}

The evaluation of the Hampshire County Council Alexa trial stressed the investment in the device was a relatively small part of the total package of successful introduction. The time required to set up the system for the user could be considerable, and some users required a lot of ongoing support. The device will often need the user or carer to activate it, and emergency devices need a service that responds. More generally the National Institute of Health Research review of the evidence cited 2016 research that as much as 40 per cent of technology installed in the home is never used^v. This review identified the following human factors that needed to be addressed:

- The timing of introducing the new technology, often too late, at the point of crisis or advanced illness. The health of older people is often unpredictable and additional demands to learn how to use technology may be too much at times of increased stress
- Accommodating the real way in which people use devices and services, including workarounds and adaptations
- Adequate investment in training, and ongoing support to help people continue to use them when they encounter difficulties, or explore and supply different support if the device is no longer helpful.
- Inform front line staff – district nurses, occupational therapists, GPs etc – of the potential benefits and where they can refer people to get up to date and professional support and advice.
- Ensure that the technical advice and support is available to all, together with mechanical forms of assistive technology. This could be through an expansion of the functions and scale of Home Improvement Agencies

Improving assistive technology

Assistive technology – digital and mechanical - needs to fit with the users’ needs, their life style and other elements of their care. There needs to be more research in devising more appropriate forms of assistive technology, with a greater focus on what older people need and how they will use it. According to the National Institute for Health Research ‘Much of the research to date has focused on developing prototypes and systems. There is little real life testing or evaluations showing impact on fall, hospital admissions or quality of life’.^{vi} It is difficult to demonstrate what might have happened (for example a fall) had a device or system not been available without some form of randomised control trial with a control group and this kind of study is expensive and time consuming. In a fast moving field of development such as digital assistive technology there will always be the risk that

the devices being investigated have become outdated by the time the research has reached its findings.

This however should not prevent devices being introduced if a common sense judgement by or with the user and/or their carer suggests that the device will be useful and the cost is proportionate. Independence, the ability to do things for oneself and consequent wellbeing and peace of mind are as important as direct impacts on the use of health and care services.

Cost savings to health and care services

Digital assistive technology is frequently marketed as a way of saving on health and care costs. Whilst savings through service efficiencies and being better able to manage health conditions and avoid accidents are to be welcomed, cost considerations should not drive quality and the needs of the individual should be paramount. It is especially important that technology enabled devices are not seen as a substitute for human contact.

Public Policy Proposals

- Digital systems should work with other services and appliances to minimise the number of devices required, and form a coherent package with other, mechanical devices and the overall care package. Devices should fit into the lifestyle and environment of the user and be safe, well-designed, attractive and easy to use.
- When professionals are advising service users and their carers about the ways Digital Assistive Technology could help them they should consider mainstream as well as specialist devices, taking into account products such as smart phones, tablets, smart speakers and the Internet of Things and maybe in the future driverless cars.
- Designers of new technology should consider how their products can benefit everyone, including people with cognitive, sensory and dexterity impairments and those with care and support needs.
- No-one should be compelled to use any device if they don't want to. There should be alternative ways of getting help, having appointments etc. for those uncomfortable using IT.
- Some IT enabled assistive technology impacts upon the privacy of the older person and raises data protection issues. If the service users don't have the capacity to consent, those making decisions on their behalf must weigh up intrusion of their privacy and liberty versus the benefits that the system might bring, as well as addressing data protection issues.
- Local Authorities and Clinical Commissioning Groups, GPs and organisations providing supported housing to older people should consider providing digitally enabled assistive technology devices to all older people who would benefit from them and want them, as this will make it much more likely that the devices will be useful in a time of crisis.

- Local Authorities and GPs should consider how they can support older people with personal budgets for care and/or health to get the best out of assistive technology, especially if it has a large up-front cost.
- Time and resources need to be invested in informing older people, carers and professionals about the potential of digital assistive technology and where to get expert advice. Expert advice should be available to everyone, possibly through Home Improvement Agencies.
- Digital assistive technology should not be seen just as a way to cut costs – the needs of the user, and their carer when relevant, must come first.
- Any analysis of the costs and benefits of telehealth, telecare and robotics need to include the impact upon health and wellbeing of the user as well as issues such impact on hospital appointments and admission.
- Research into IT enabled assistive technology should involve users at all stages

Want to find out more?

Age UK has policy positions on a wide range of issues, including money matters, health and wellbeing, care and support, housing and communities. There are also some crosscutting themes, such as age equality and human rights, age-friendly government and information and advice

Further information

You can read our policy positions here;
www.ageuk.org.uk/our-impact/policy-research/policypositions/
Individuals can contact us for information or advice here;
www.ageuk.org.uk/informationadvice/ or call us on 0800 169 8787

Other relevant policy positions: Aids, adaptations and equipment (forthcoming 2019) and Digital Inclusion, July 2018

ⁱ 'Alexa I'm having a heart attack' Bloomberg report 19th June 2019 www.bloomberg.com/news/articles/2019-06-19/amazon-amzn-echo-alexa-may-soon-detect-heart-attack-victims

ⁱⁱ 'Alexa, can you support people with care needs?' a partnership between Hampshire County Council, Argenti and the Local Government Association http://www2.paconsulting.com/trialling-consumer-devices-in-adult-social-care.html?_ga=2.103180803.2066979003.1542277666-1049122240.1529502019 Also slides on the programme at <https://www.local.gov.uk/sites/default/files/documents/W2.%20Assistive%20technology%20in%20supported%20living%20and%20community%20-%20Mark%20Allen.pdf>

ⁱⁱⁱ Communications Ofcom market report 2018 https://www.ofcom.org.uk/_data/assets/pdf_file/0022/117256/CMR-2018-narrative-report.pdf

^{iv} From National Institute for Health Research, December 2018, Help at Home: Use of assistive technology for older people. Themed Review <https://www.dc.nihr.ac.uk/themed-reviews/research-on-assistive-technology.htm>

^v ibid

^{vi} ibid