



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. Determine the quantity and quality of evidence available for a technology of interest.
2. Identify any gaps in the evidence/ongoing evidence collection.
3. Inform decisions on topics that warrant fuller assessment by Health Technology Wales.

Topic:	At-home use of tablet computers to assist diagnosis and management of dementia
Topic exploration report number:	TER302

Introduction and aims

Health Technology Wales researchers searched for evidence on at-home use of tablet computers (e.g. iPads) to assist with diagnosis and management of dementia after contact with a memory service. Evidence in this area often refers to videoconferencing using tablets and desktop/laptop computers and relevant information from across these technologies is included here.

Tablets can help to facilitate contacts with health professionals through videoconferencing. During the pandemic they have been used in a number of settings to help address the risks associated with in person consultations. In the longer term, use of tablets could be beneficial and may help to reduce travel to health settings, provide more streamlined appointment scheduling, and reduce waiting times. Tablets may also confer benefits over other types of technology as touchscreen may be easier to manage and attached data packages could address problems with access to the internet. Due to this, there is potential for these approaches to continue to have a role for assisting with diagnosis and management of dementia as the pandemic moves into its next phases. However, there are challenges with the approach that need to be considered.

Summary of evidence

Guidance and Guidelines

No national guidelines or guidance relating to use of tablet computers to assist diagnosis and management of dementia were identified. However, several guidelines including the National Institute of Health and Care Excellence (NICE) guidance (NG97) on dementia recommend that services should be designed to be as accessible as possible. Use of technology at home may play a role in facilitating access, particularly for groups highlighted in the NICE guidance who do not have support from carers, are not able to access transport, and have other work or caring responsibilities.

Guidance from the British Psychological Society Division of Neuropsychology and from NHS London Clinical Networks (BPS, 2020; NHSLCN, 2020) on remote working for memory services were identified. Both documents highlight a range of considerations for use of teleconferencing for patients and provide practical suggestions for managing remote consultations. The guidance also discusses the appropriateness and practicalities of conducting cognitive and neuropsychological tests remotely. The NHS London Clinical Networks guidance highlights that for populations where in person attendance presents risk (e.g. for frail older patients) or inconvenience, the advantages of teleconferencing are likely to outweigh its limitations.

The only specific reference for tablets is that a minimum screen size of 9” is recommended, specifically if tasks with visual stimuli are used (NHSLCN, 2020).

Secondary Evidence

Murphy et al. (2020) conducted a rapid review of evidence on using technology to deliver virtual geriatric clinics prior to the onset of the pandemic. They identified nine observational studies with 975 patients and included outcomes on use of tablet computers. These were mostly conducted in the USA, along with studies in Canada, Australia, and Hong Kong.

They report that in all studies, both patients and clinicians had high levels of satisfaction with the model of care. Seven of the studies reported on resource use or productivity. Studies reported differing outcomes with some finding cost-savings for health services or patients, and shortened waiting times, and reductions in cancellations or no-shows. Seven of the studies reported clinical benefits and variously found reduction in hospitalisations and emergency department use, and improved medication rationalisation.

Eight of the studies reported challenges and highlighted technical difficulties, concerns about confidentiality, hearing and cognitive impairment impacting consultation, and hesitancy of patients to use technology. From the patient’s perspective, there were concerns about the impersonal nature of using technology and clinicians noted that they had limited ability to assess patients as a whole.

Gosse et al. (2021) reviewed literature more recently and provide recommendations for virtual care, including with tablets, during and beyond the COVID-19 era. These are categorised into barriers and solutions for the following topics: technological access, literacy and interference, The physician-patient therapeutic alliance, diagnostic challenges, diagnostic challenges, the COVID-19 pandemic. In some areas, they suggested that the reduction in pandemic restrictions may reduce barriers. The recommendations broadly align with the themes discussed in the British Psychological Society and NHS London Clinical Networks guidance.

A further narrative review on implementing remote memory clinics during and after the pandemic discussed similar themes and presents software that might support this (Owens et al. 2020).

No identified evidence discussed the relative benefits of tablets compared to other types of technology for facilitating videoconferencing or other activities.

Areas of uncertainty

Research on use of teleconferencing with tablet or other computers is in its infancy and there are a number of areas of uncertainty that could be addressed by further research. Information is needed on whether groups who are likely to particularly benefit or are particularly unlikely to be able to manage technology can be identified may be useful for triage. The case for wider

scale rollout may also be improved if evidence could demonstrate that use of tablets led to improvement clinical outcomes and quality of life. Identified research discussed challenges for delivery but evaluations of how often these challenges are encountered and what impact they have is needed. Additional uncertainties could also be targeted.

Conclusions

At-home use of tablet computers to assist diagnosis and management of dementia has the potential to provide benefits for patients and the health system. At present, there is some evidence suggesting patient and clinician acceptability is high and that the approach can deliver benefits. However, barriers and challenges with the approach are also identified in studies. More evidence is needed to address uncertainties and develop a stronger case for ongoing adoption.

Brief literature search results

Resource	Results
HTA organisations	
Healthcare Improvement Scotland	We did not identify any relevant guidance or advice from this source
Health Technology Assessment Group	We did not identify any relevant guidance or advice from this source
Health Information and Quality Authority	We did not identify any relevant guidance or advice from this source
EUnetHTA	We did not identify any relevant guidance or advice from this source
International HTA Database	We did not identify any relevant guidance or advice from this source
UK guidelines and guidance	
SIGN	We did not identify any relevant guidance or advice from this source
NICE	NICE guideline [NG97] Dementia: assessment, management and support for people living with dementia and their carers. Published date: 20 June 2018. https://www.nice.org.uk/guidance/ng97
Professional Bodies and Clinical Networks	British Psychological Society (2020). Division of Neuropsychology Professional Standards Unit Guidelines to colleagues on the use of Tele-neuropsychology . London, England. NHS London Clinical Networks (2021). Guidance on remote working for memory services during COVID-19 . London, England.
Secondary literature and economic evaluations	
Medline	Owens et al. (2020). Implementing Remote Memory Clinics to Enhance Clinical Care During and After COVID-19. <i>Frontiers in Psychiatry</i> , 11,579934. https://doi.org/10.3389/fpsy.2020.579934 Murphy et al. (2020). Virtual geriatric clinics and the COVID-19 catalyst: a rapid review. <i>Age and Ageing</i> , published online. https://dx.doi.org/10.1093%2Fageing%2Fafaa191 Gosse et al. (2021). Virtual care for patients with Alzheimer disease and related dementias during the COVID-19 era and beyond. <i>Canadian Medical Association Journal</i> , 193, E371-E377. https://doi.org/10.1503/cmaj.201938
Primary studies	
Medline	We did not search for primary studies due to presence of recent reviews

Date of search:	June 2021
Concepts used:	dementia; memory; diagnosis; assessment; management; iPad; tablet; remote; virtual