

# Occupational therapy in a digital age

With an international pandemic situation, the use of digital technology for home visits and consultations has never been more relevant. **Natalie Jones** and **Jennifer Read** describe their ongoing research and development journey to implement home visits using video conferencing technology

**T**he relevance of video conferencing technology for visits and consultations has been steadily growing. Studies suggest that they are safe, shorter than a face-to-face contact and popular with some patients and staff when compared with face-to-face consultations for similar conditions (Greenhalgh et al 2018).

The NHS Long-Term Plan sets out a roadmap to go 'mainstream' with digitally enabled health care, including online consultations. Empowering people by using digital technology instead of face-to-face visits for appointments is advocated, suggesting that video consultations can avoid unnecessary travel, support productive use of time, increase clinical capacity and therefore create efficiencies (NHS England 2019).

With the emergence of the COVID-19 pandemic, the demand for video conferencing to facilitate remote consultations has never been greater. Both the NHS and social care organisations are implementing digital solutions to conduct online tele-mentoring, meetings and clinic consultations.

## A digital approach

The Virtual Visit Approach (ViVA) was conceived when a group of occupational therapists, thinking about how they could become more research active, developed a collaboration with the University of Sheffield called 'Collaboration Aiming to Build OT Research' (CABOT) (Jones 2016).

Occupational therapists explained that home visits were occasionally challenging, due to resources required, geographical location and organisational challenges. An application already developed for emergency response services in Italy (Mazumdar et al 2017) was available to test in a scenario where the occupational therapist was unable to undertake a home visit, but a relative or trusted visitor could access the property.

ViVA works by allowing a hospital based occupational therapist to communicate with a home location capturing images, videos and writing a report in real time. The hospital-based occupational therapist can also

turn on the torch of the smart device in the home to light up dark rooms for visibility.

This application is accessed via a hyperlink that is texted or emailed to a smartphone controlled by a trusted visitor, such as a relative or member of a third sector organisation.

Once opened by the trusted visitor, the hyperlink allows the visitor to communicate with the occupational therapist via a video call. The trusted visitor would then walk around the property showing the hospital-based occupational therapist each room.

They can be instructed to take measurements or discuss the layout of the rooms. While this is happening, the occupational therapist can be with the patient in the hospital discussing the home environment in real time.

## Funding and research and development

There have been three funded projects to develop ViVA. In 2016-17, we started with a small amount of funding to develop the prototype technology and tested out the concept of a 'remote home visit'.

We conducted four simulated home visits, developing a protocol for the assessments. (Read et al 2020).

This project enabled the development of the technology to meet the requirements of health and care services and the development of a protocol for conducting remote home visits.

In 2018, we applied to a health and social care partnership fund, winning the 'Dragon's Den' pitch to get £22,000 to fund the second ViVA project.

The aim of the project was to expand the collaborative partnership and explore the views of healthcare professionals and patients on using digital technology to conduct remote visits/consultations.

We developed collaborations with a second university, a county council, voluntary sector organisations and wider health and social care partners. This wider collaboration allowed us to explore the perceived barriers and facilitators associated with the successful deployment and use of this type of technology within the NHS and social care.

This work was presented in 2019 at the European Advancement of Assistive Technology Conference in Bologna Italy (Global Challenges in Assistive Technology).

This conference provided fantastic opportunities to connect with other researchers and digital innovators working in this field. Following a conversation with a Dutch occupational therapist attending our seminar, we expanded our ViVA collaboration and networks further.

We invited Dutch occupational therapy students to engage with our project team and use our technology in their research projects.

In 2019, we built on this work further. We secured £50,000 of funding for a third project. The aim of this project was to pilot and evaluate the use of this technology in four health and social care settings.

Settings would include speech and language therapy, occupational therapy, physiotherapy, dietetics and a spinal injuries unit. The aim of this project is to build evidence to inform a future bid to scale up this project and develop the evidence base for using digital technology to conduct home assessments and consultations.


Patient and public engagement in all three projects has been critical to our success. There is a perception that digital appointments are more efficient, could save money and importantly reduce the number of times people need to travel to hospital (Read et al 2020).

We have found that ViVA was felt to have potential to be patient centred by involving patients in discharge planning where they might not have been able to participate in an access visit. For example, with ViVA they can be observe the visit from the bedside in real time.

Recent adjustments to the technology have explored the possibility of having more than one person on the call at once, which opens up the opportunity to do a call with multiple professionals, such as an occupational therapist at the hospital and a local authority occupational therapist, as well as the trusted operator in the home.

During the projects we have also offered opportunities for clinical occupational therapists to have research experience by offering secondments, which supports our research capacity building strategy.

We have found that exposure to digital research has motivated occupational therapists to seek involvement in other research projects. We have developed our networks in digital research and raised the profile of occupational therapy in this field.



**EVIDENCE LINK**

Read et al (2020) conducted a three month service development within an NHS acute hospital setting to explore the concept of using the video conferencing technology the Virtual Visit Approach (ViVA) to undertake remote occupational therapy home assessments. The project, which involved occupational therapists and patient and public representatives, consisted of: simulated real-world testing; user consultations; collection of narrative case studies; and exploration of resource utilisation. Findings are presented in terms of feasibility, acceptability, barriers and potential benefits of the ViVA. The authors identify that applying digital technology to home assessments appears feasible and acceptable within a specific context, and the technology has the potential to enhance personalisation and improve resource utilisation.

#### Reference

Read J, Jones N, Fegan C, Cudd P, Simpson E, Mazumdar S, Ciravegna F (2020) Remote home visit: exploring the feasibility, acceptability and potential benefits of using digital technology to undertake occupational therapy home assessments. *British Journal of Occupational Therapy*, May 22. [Epub ahead of print].

### Overcoming the challenges

Throughout these projects we have developed our own research skills and expanded our knowledge on deployment of digital innovation in the NHS, we have started new collaborations nationally and internationally, written bids for research funding and had the opportunity to develop this technology, which we feel would enhance occupational therapy practice in the future.

We have experienced some challenges along the way and here are four examples of how we have overcome these obstacles.

**Overcoming professional language barriers:** we all speak different professional languages and when you work together in a team you need to ensure everyone is 'on the same page'.

We have overcome this by having regular project meetings to myth bust, clarify understandings and learn about each other's work world. We have also found that ensuring research and academic occupational therapists are part of the project team assists in this.

**Time:** getting funding for projects takes time. Be resilient and persevere, in the times of low activity think about what you can do to be keeping the momentum going on a project.

**Data governance:** data protection, ethics and information governance issues are time consuming, but key to success. We added a workstream to our projects to ensure issues are highlighted early on and technology resilience testing is of paramount importance to give others confidence in the product. Engaging with IT leads for problem solving and support is essential.

**Concerns:** it is important to understand stakeholders' views and build mechanisms for evaluating the impacts on clinical practice.

This project started with a problem to solve from clinical practice; we have learnt a lot and had some fun along the way, it has been a team effort and at times we have had to dig deep. Our story has not finished, we are currently thinking about funding to aim for project four.

We have developed the following five key principles, which we believe fundamentally underpin our work and we hope this will be helpful for anyone else embarking on a digital research and innovation journey.

**Keep it real:** each project is grounded in 'the real world', this is achieved by strong clinical leadership, seconding clinicians into the project.

**Patient and public engagement:** multiple user consultations so we can understand the needs of users and collect their ideas about how the technology can be used to improve their experience.

**Teamwork:** multi-system collaborations have strengthened our projects; cross organisational working can enhance projects by drawing on diverse skills and expertise.

**NIHR Research Design Services:** get advice from others on the design of your study ([www.nihr.ac.uk/explore-nihr/support/research-design-service.htm](http://www.nihr.ac.uk/explore-nihr/support/research-design-service.htm)). Develop a strategy to build the project and always be focused on the next funding opportunity. The key to success is getting funding.

**Think strategically:** how does what you are developing fit with the local place plan, Integrated Care Systems Strategy and the Long-Term Plan? Being able to link your work to current policy and context is critical for funders.

With an international pandemic situation, the use of digital technology for home visits and consultations will never be more relevant.

### References

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**Natalie Jones**, clinical academic occupational therapist, Sheffield Teaching Hospitals NHS Foundation Trust, and **Jennifer Read**, acting programme lead and CPD clinical research, research and teaching associate, occupational therapist, School of Health and Related Research University of Sheffield. Email: [Natalie.jones56@nhs.net](mailto:Natalie.jones56@nhs.net) or [J.read@sheffield.ac.uk](mailto:J.read@sheffield.ac.uk). For more information about CABOT visit: [www.catch.org.uk/current-project/cabot/](http://www.catch.org.uk/current-project/cabot/)