

An early implementation study of digital technology: Virtual Engagement Rehabilitation Assistant (VERA)

Kathryn Jarvis¹, Nicola Branscombe², Julie Cook³, Jo Haworth⁴, Clare Thetford⁵, Andrew Rose⁶, Rachel Stockley⁵

The Background to VERA

Digital technology offers innovative ways to:

- address unmet rehabilitation needs (Trinh et al., 2017)
- personalise information (National Information Board, 2014)
- support self-management strategies, which is a health care priority (Fryer et al., 2016)

Service-users, carers and healthcare staff, researchers and software designers have co-produced VERA.

Designed for mobile devices, the first VERA prototype will be housed on an iPad. VERA provides service users with opportunities to interact with a range of **personalised** digital resources tailored to their own rehabilitation goals.



Fig 1. Images of VERA

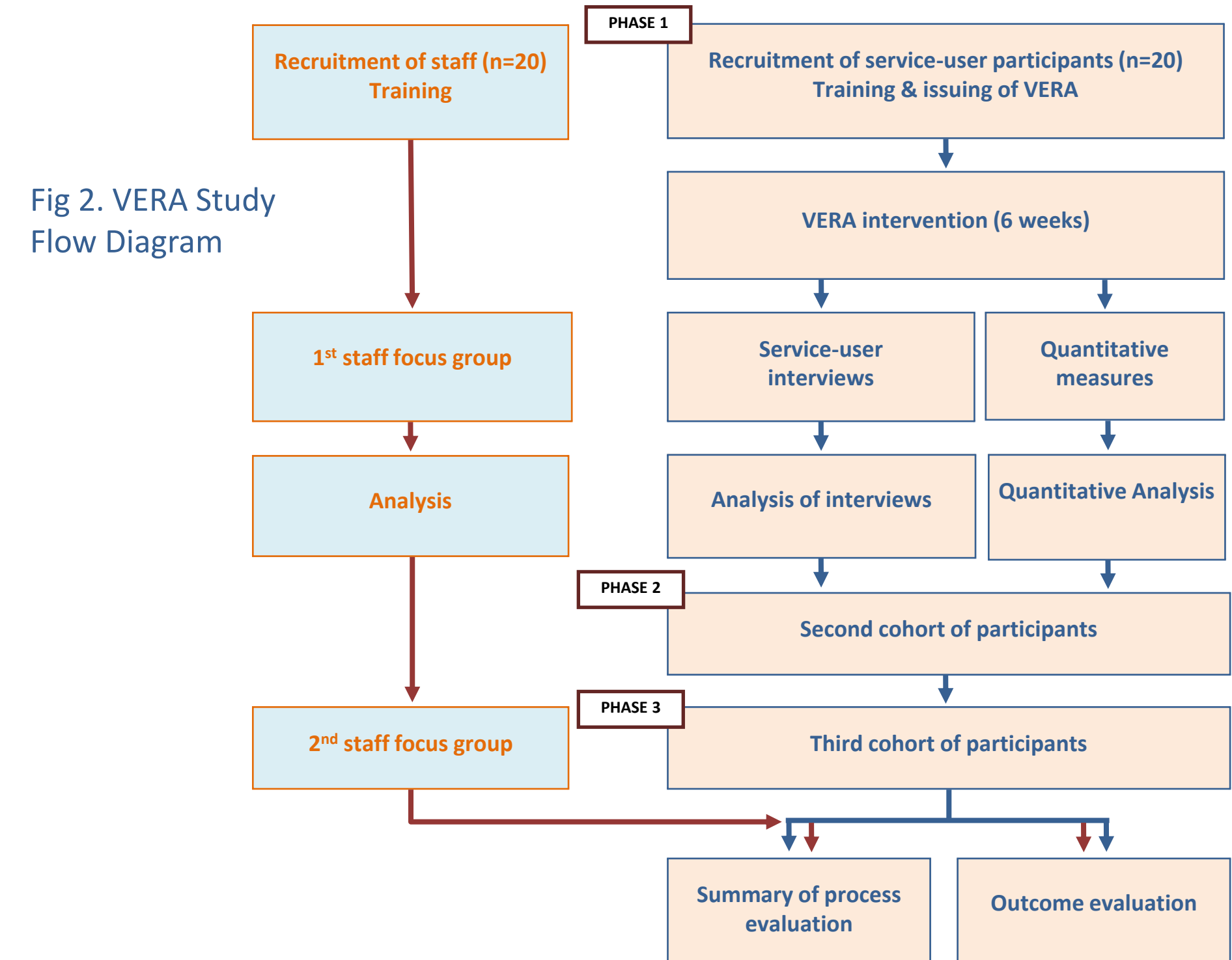
VERA aims to:

- increase activity
- increase self-management
- improve outcomes

The Study

Study Aims

To evaluate the implementation process and outcomes of placing VERA in a complex neurological rehabilitation setting.
To explore the adoption of the technology.



Work so far...

- Intellectual property agreement signed off by all three partners
- Data Protection Impact Assessment signed off by The Walton Centre
- First prototype developed...but always more to do!
- Navigation of Medical Device regulations
- Service-user and staff training package designed
- Health Research Authority (HRA) approval gained
- Conversations started with Community Team to consider implementation in other environments-potential benefits identified

Implementation

The VERA project has been underpinned by the **N**on-adoption, **A**bandonment, and challenges to the **S**cale-up, **S**pread and **S**ustainability (**NASSS**) framework (Greenhalgh et al, 2017). This evidence-based, theoretical framework identifies areas that may impact adoption and implementation.

This first investigation of VERA will focus on 4 key areas identified in **NASSS**

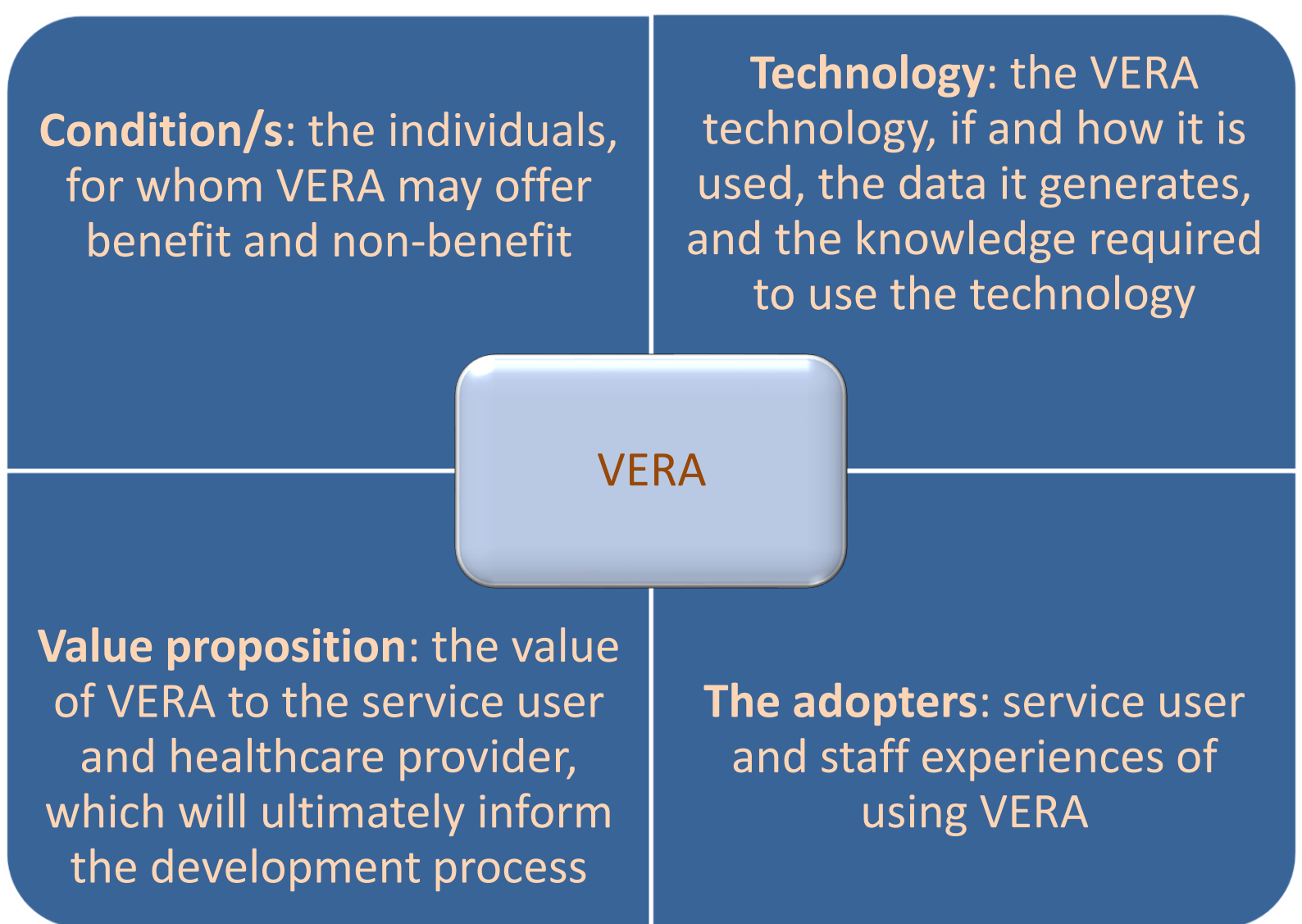


Fig 3. NASSS key areas that will be addressed in VERA Study

Challenges...

- Challenges collecting service-user views during COVID
- Digital technology takes time to develop
- Data protection is complex - devices and cloud-based storage
- Service-user and staff ideas moderated by Citrus Suite to ensure feasibility
- Aligning working timescales and pathways of multiple organisations including public and private sector

With thanks to our funders and all service-users, carers and staff who have contributed to the development of VERA

Contact details

Kathryn Jarvis: ☎ +44 01772 892782 ✉ KJarvis1@uclan.ac.uk
@jarviskathryn1

References

Greenhalgh, T., Wherton, J., Papoutsi, C., Lynch, J., Hughes, G., A'Court, C., ... Shaw, S. (2017). Beyond Adoption: A New Framework for Theorizing and Evaluating Nonadoption, Abandonment, and Challenges to the Scale-Up, Spread, and Sustainability of Health and Care Technologies. *Journal of medical Internet research*, 19(11), e367.
Fryer, C. E., Luker, J. A., McDonnell, M. N., & Hillier, S. L. (2016). Self management programmes for quality of life in people with stroke. *The Cochrane database of systematic reviews*(8), CD010442. doi:10.1002/14651858.CD010442.pub2
National Information Board. (2014). Personalised health and care 2020: a framework for action. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/384650/NIB_Report.pdf
Trinh, T., Shiner, C. T., Thompson-Butel, A. G., & McNulty, P. A. (2017). Targeted upper-limb Wii-based Movement Therapy also improves lower-limb muscle activation and functional movement in chronic stroke. *Disability & Rehabilitation*, 39(18), 1939-1949.

¹University of Central Lancashire, School of Sport and Health Sciences, Preston

²The Walton Centre NHS Foundation Trust, Complex Rehabilitation Unit, Liverpool

³University of Central Lancashire, Research Facilitation & Delivery Unit, Preston

⁴The Walton Centre NHS Foundation Trust, Hyper Acute Rehabilitation Unit, Liverpool

⁵University of Central Lancashire, Stroke Research Team, Preston

⁶The Walton Centre NHS Foundation Trust, Commercial Engagement, Liverpool