



WEARABLE SENSOR TECHNOLOGIES

SENDoc

18 MONTH SUMMARY

The Smart sENsor Devices fOR rehabilitation and Connected health (SENDoc) project will introduce the use of wearable sensor systems in ageing communities in northern remote areas.



To assess sensor technical, clinical and social acceptability and their impact on patients, on health and care delivery, and on rural communities.

SUMMARY

In the first 18 months of operation, SENDOC have produced a Knowledge Collection report, from which a review paper was created and published in “Trends in telemedicine & E-Health” – an open journal. Knowledge collection forms the base of several other deliverables, such as the “*Handbook of Technologies Supporting Home Rehabilitation Services*”; “*Lessons Learned from piloting and development of wearable home technologies*”. These deliverables were due at the end of this period, but good progress is being made and they will be completed in the third period. SENDOC are also producing a definition of available sensor systems but have decided this will be more informative at the end of the project.

Team synergy was improved through physical and online partner meetings (technical meeting in Cork, Ireland, the second partner meeting in Joensuu, Finland and the third partner meeting in Umeå, Sweden, Zoom and Skype meetings). SENDOC are working together towards achieving project progress. Effort was invested in disseminating the project in the form of publications, posters, attending conferences/events and social media posts (twitter, WordPress Blog and mini-NPA website). Desk and hands-on research has been carried out to select suitable wireless wearable systems in all SENDoc partners sites.

Tyndall-UCC lead the progress on the definition of technology and the protocol for the transnational demonstration, and Ulster contributed to it. Currently, ethics is being sought, devices will be delivered and the protocol is agreed.

SENDOC have moved forward towards defining and executing demonstrations that will run in specific partners sites. For example, Tyndall-UCC completed an off-the-shelf sensors study (worn by elders 24-hrs); Karelia-UAS started demonstrations with staff for home-rehabilitation using G-walk/Movesole; Ulster validated reliability and repeatability of ViMove IMU sensors to measure the range of movement of spondylitis patients and started X-sens trial with post-stroke and frail patients; Umeå-VLL started BioSensics demonstration with the elderly.



ORGANISED & ATTENDED EVENTS

- NPA Lead Partner Seminar in Stornoway , Scotland – April, 2017
- Kick-off Event Held in Coleraine, Northern Ireland (NI) – September, 2017
- Technical Meeting in Cork, Ireland – March, 2018
- SENDoc 2nd project partner meeting and Learning Sessions in Joensuu, Finland – April 2018
- Smart Health at W5, Belfast, NI– May, 2018
- Welfare Event of the North Karelia Region in Finland – May, 2018
- European Congress of Rheumatology (EULAR) in Amsterdam, Netherlands - June 2018
- Support Active Engagement (SAE) project (iPad) graduation by AdviceNI in Belfast, NI – June 2018
- Annual Transnational Medicine Conference (TMED9) in Derry/Londonderry, NI– September, 2018
- Annual NPA Conference “The People of the North” in Inverness, Scotland – September, 2018
- Irish Gerontological Society Conference (IGS 2018) in Cavan, Ireland – September, 2018

- EULAR in Brussels, Belgium - October, 2018
- A Conference on Digitalization – Fysisk Aktivitet & Hälsa and 3rd SENDoc partner meeting in Umeå, Sweden – November, 2018
- “Unlocking Innovations in Digital Health” NI Health Care Ecosystems (ECHAlliance) in Belfast, NI – November, 2018
- “The 3rd Joint Northern Ireland Connected Health & E-Health Ireland Ecosystems Gathering” in Newry, NI – January, 2019

POSTERS & PUBLICATIONS

- Muñoz Esquivel, K., Kelly, D., Condell, J. Todd, S. Davies, R. J., Heaney, D., Barton, J., Tedesco, S., Nordström, A., Åkerlund Larsson, M., Nilsson, D., Alamäki, A., Nevala, E. (2018) *Investigating the usability of off-the-shelf sensors and using patient data to diagnose frailty*, *TMED 2018*, p. 22-23.
- Muñoz Esquivel, K., Nevala, E., Alamäki, A., Condell, J., Kelly, D., Davies, R. J., Heaney, D., Nordström, A., Åkerlund Larsson, M., Nilsson, D., Barton, J., Tedesco, S. (2018) *Remote Rehabilitation: A solution to Overloaded & Scarce Health Care Systems, Trends in Telemedicine & E-health*, 1(1), p. 1-19.

- Nevala, E., Alamäki, A., Jalovaara, J., Muñoz Esquivel, K., Condell, J., Heaney, D., Barton, J., Tedesco, S., Kelly, D., Davies, R. J., Nordström, A., Åkerlund Larsson, M. (2018) *SENDoc - to implement wearable sensors in rehabilitation practice for the elderly*, *Age Now! Online Journal of Ageing*, October(2).

WEB PRESENCE & RESOURCES

WEBSITE:

<http://www.sendocnpa.com/>

SENDoc project official video:

<https://youtu.be/pCQwA628094>

SENDoc project video – partners

demonstrating technologies at Umeå-VLL:

<http://sendoc.interreg-npa.eu/resources/>

