

Worn To Protect - Empowering Frail Lives with Wearable Tech

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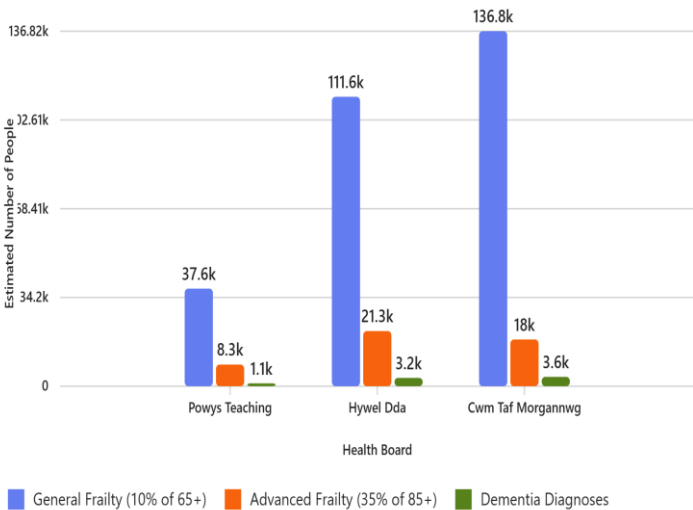
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Background:

As frailty and dementia rise among older adults (See graph), staying safe at home becomes more challenging. Traditional care can't always provide real-time support—potentially leading to increased risks and reduced quality of life.

Personal alarm watches can offer a smart solution:

- ✓ Continuous monitoring
- ✓ Instant emergency alerts
- ✓ Peace of mind for users and caregivers



Aims and Objectives:

Enhance safety, promote independence, and improve quality of life for vulnerable populations—particularly people living with dementia in Wales—through wearable technology.

Objectives

- Assess Acceptability:** Understand how the watches are received by participants, caregivers, and professionals.
- Evaluate Usability:** Assess ease, reliability, and practicality in daily life.
- Measure Impact:** Measure effects on safety, independence, and overall quality of life.
- Establish Viability:** Provide evidence to support integration into health and care systems.

“I normally worry about mum when I’m in work but don’t want to be calling and texting her all the time, found with this I could check the app to see where she was which would give reassurance. (We liked) the piece of mind for the carer.”

Approach:

Project design

- This 12-month project co-evaluated **personal alarm watches** for individuals living with **physical frailty and dementia**.
- It focused on understanding the **acceptability** and **usability** of wearable technology across diverse settings.
- It included participants from **urban and rural communities**.
- It engaged a wide range of stakeholders: **patients, carers, and healthcare professionals**.

Project Delivery

The project was delivered through a partnership of **Hywel Dda, Cwm Taf Morgannwg UHB, and Powys THB**. Brought together via the **All-Wales Innovation Leads**, each Health Board offered a unique perspective on implementation and evaluation—**strengthening future adoption potential**.

The collaboration was led by **experienced clinicians**, ensuring practical, patient-focused delivery across diverse settings.

The project dealt with several challenges:

- Technical issues such as **signal loss in rural areas**, SIM card problems, and complex setup.
- Battery life and non-standard chargers posed barriers, especially for those with cognitive decline.
- Patients often needed prompting or support to wear and charge the device.
- Volume limitations made it hard for those with hearing impairments.
- Some watches were returned due to anxiety or relocation to assisted living.
- Families sometimes underutilized features due to lack of training or time.
- Cognitive status influenced acceptance and consistent use.

Evaluation Approach

Mixed Methods: Combining data and lived experience to assess impact.

Quantitative

Short questionnaires from participants and caregivers measured safety, independence, and usability. CORE-10 PROM

Qualitative

Interviews and case studies captured real-world feedback.

Impact:

- Enhanced Safety & Independence:** Real-time location tracking allowed patients to continue daily routines safely, reducing the risk of wandering and accidents. The devices helped preserve autonomy and independence while offering reassurance to caregivers.
- Improved Family Experience:** Relatives, especially those working full-time or living far away, experienced greater peace of mind.
- SOS contact setup was intuitive. Fall detection triggered alerts and calls to emergency contacts. Geo-fencing and Wi-Fi boundaries helped monitor movement. Pedometer and reminders added functional value.

Positive Outcomes	Challenges
Improved safety	Signal loss
Greater independence	Battery issues
Carer reassurance	Complex setup
	Usability limitations

- Clinical Outcomes:** The CORE-10 assessment for the CTM UHB cohort showed a decrease in clinical score from 8 to 6 over 8 days, indicating a positive shift in mental health status, with reduced anxiety and distress, though sleep difficulties and suicidal ideation remained concerns.

Key Conclusions:

- Involving patients, carers, and community representatives throughout ensured the solution addressed real needs and preferences.
- Technology acceptance varied, influenced by cognitive ability, anxiety, and support systems—highlighting the need for tailored education and setup support.
- Reliable connectivity and simple device setup are essential, especially in rural areas and for users with cognitive challenges.
- Ongoing involvement from carers and clinicians underpins successful adoption and sustained use.