Technology Enabled Care (TEC) Discovery

Telecare

May 2024

This report details **Telecare** specific insights from the TEC discovery research.

For overall findings and other exploration specific reports please visit the DHCNI website.

- Overall Findings
- Hypertension
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Exploration Approach

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Telecare Focus

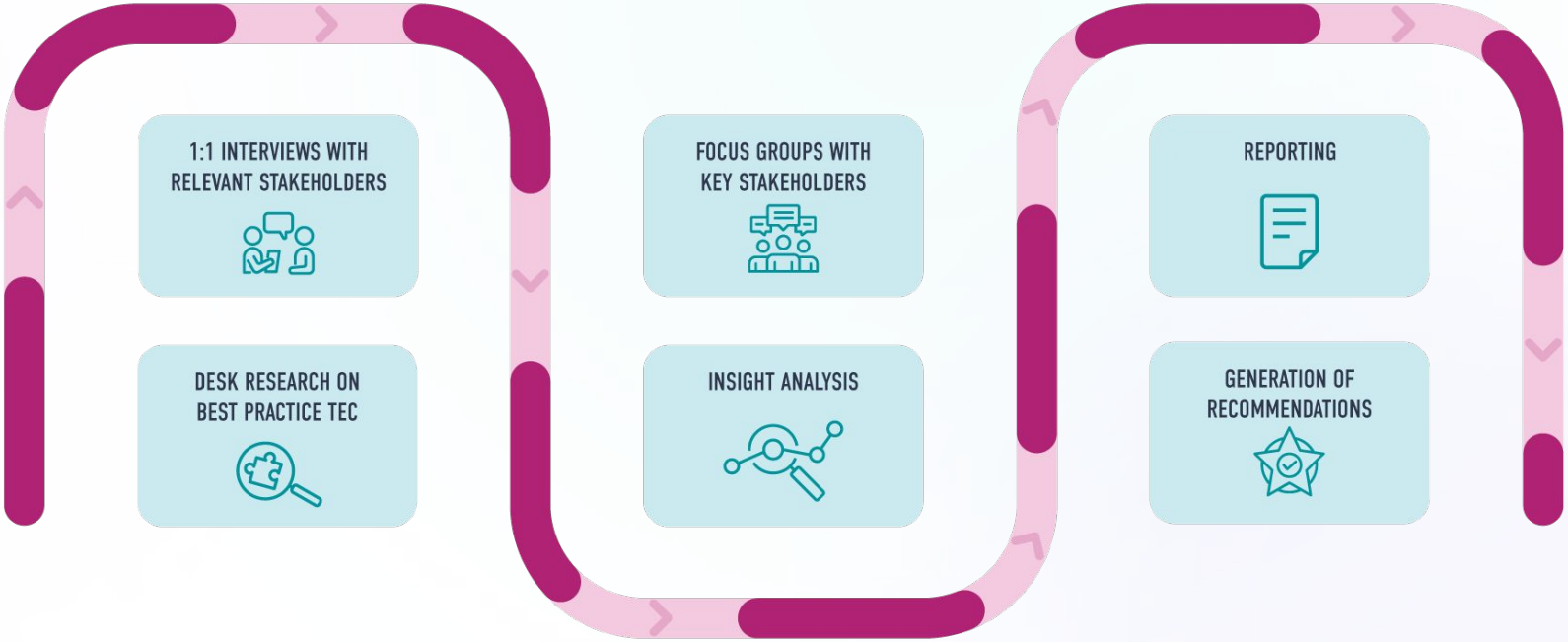
For each exploration, DHCNI proposed a specific application of TEC.

This was used to stimulate conversation during research and determine TEC opportunities and potential challenges with implementation.

*Enable the **monitoring of trends in activities** of daily living to assist with the **provision of reablement services and assessment of frailty.***

Exploration Process

The process of exploring Telecare followed agile principles, including iterative development, flexibility to adapt to new information, and continuous collaboration with stakeholders to ensure alignment and relevance of the deliverables.



Research Engagement for Telecare

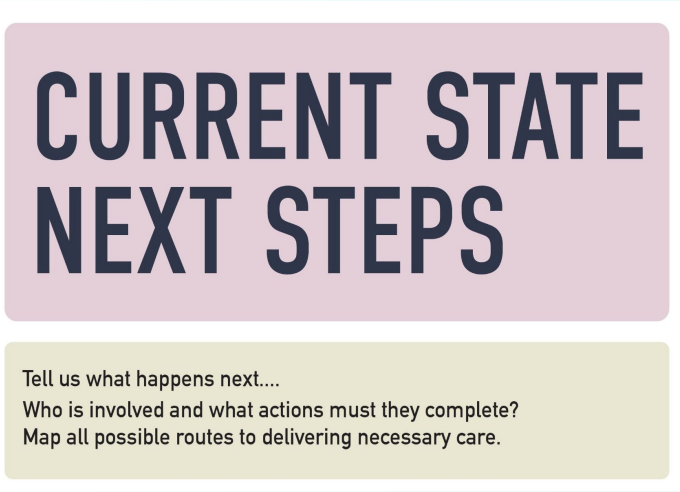
55	27%	15	7	8
Participants contacted	Response rate	Total engaged	1:1 interviews	Participants at focus groups

- Service Users
- Health & Social Care Professionals
- Policy Makers
- Housing Association Officers
- Care Home Managers
- Carers
- Charity & Voluntary sector

Storyboards

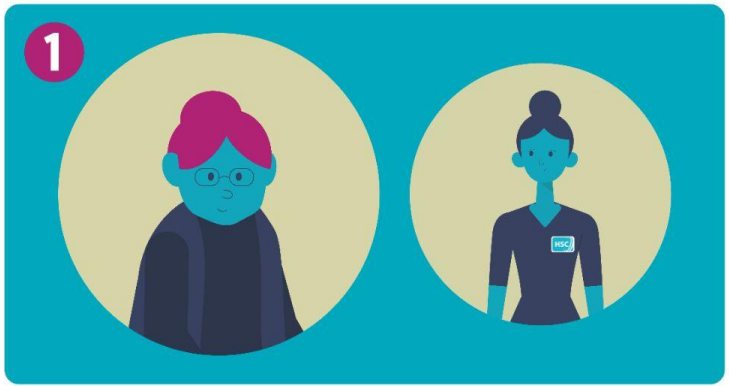
To facilitate TEC focused conversations, storyboards were created describing current and future state scenarios.

These were used in focus groups to facilitate reflection and debate, and to gain insights into the role of TEC in health services.

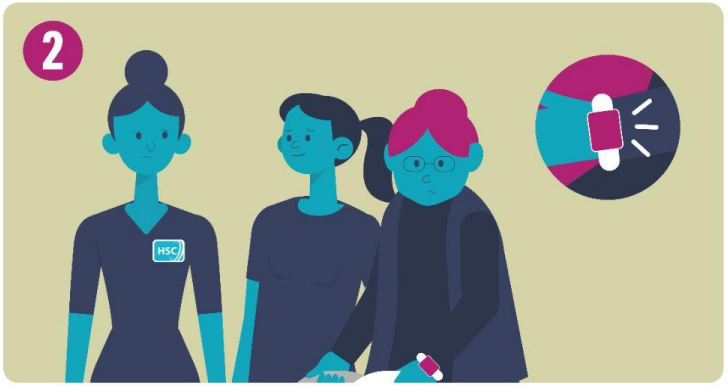


Current State Storyboard

The Current State storyboard shows the initial stages of a potential Telecare referral. This was used in the Telecare workshop to understand the range of Telecare referral pathways that currently exist.



Mary is under the care of WHSCT social care team and also has a key worker in the memory team.

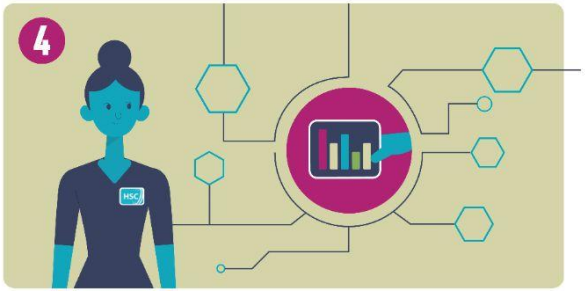


At a recent assessment, the social work team spoke with Mary and her daughter Úna as they were concerned that Mary wasn't coping so well at home on her own.

Future State Storyboard

The Future State storyboard shows a potential Telecare referral scenario in which TEC is available. This was used in the Telecare workshop to facilitate discussion about the potential impact of TEC.

Úna and Mary agree that they would have a range of smart sensors in the home to build a picture of Mary's activities of living such as patterns of sleep and frequency of bathroom visits as part of her ongoing assessment.



Using the data collected from the devices and sensors the social work and dementia teams can generate important and actionable insights to enable the development of a personal care plan by the teams looking after Mary.

Una is able to check the family app every morning to see what sort of night Mary has had and to make sure that she is up and about and getting on with her daily routine.

Insights & Opportunities

Through analysing research findings and trends, key insights have been identified.

A Design Insight is a clear and comprehensive understanding of a complicated problem or situation.

Opportunities detail how insights may be actioned / addressed to move towards TEC adoption and achieve positive outcomes for stakeholders.

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Research Questions

Research Questions

Research questions were composed to define the scope of each exploration and inform the creation of discussion guides.

The same research questions were used across all five explorations, allowing for the comparative capture of insights.

1. *What are the experiences, attitudes and perspectives of individuals working with Telecare regarding TEC?*

2. *How might individuals better be supported or encouraged to engage in TEC innovation?*

3. *What opportunities are available for TEC innovation in Telecare?*

Research Questions

1

What are the experiences, attitudes and perspectives of individuals working with Telecare regarding TEC?

Our research participants demonstrated a wide range of past experience with TEC Telecare. These participants were positive about the benefits demonstrated so far, and were enthusiastic about the future potential impact across other areas of Telecare.

Despite this positivity, participants described several challenges including a lack of standardisation, a belief that current Telecare data was not being used effectively, and a desire for further understanding of available Telecare options.

Research Questions

2

How might individuals better be supported or encouraged to engage in TEC innovation?

Our research identified several key activities that may support and encourage individuals to engage with TEC.

These included integration with Encompass where possible, and the creation and maintenance of an up-to-date information source for Telecare.

Further details about these opportunities are provided within this report.

Research Questions

3

What opportunities are available for TEC innovation in Telecare?

Our participants highlighted several key areas for TEC innovation in Telecare, which may have application and impact across many healthcare domains.

Participants highlighted opportunities to fully exploit all data generated by existing TEC solutions and harness a wider range Telecare products to provide additional support for patients and their carers.

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Insights & Challenges

INSIGHT 1

Although there is enthusiasm for TEC within Telecare, there is a lack of understanding and standardisation within the current process.

Research participants understood the benefits of TEC within Telecare but described a lack of understanding of the current Telecare model.

There is a disconnect among the stakeholders involved in a person's care. Research participants suggested that this may be improved by the creation of a centralised hub for Telecare monitoring and management.

INSIGHT 1

Although there is enthusiasm for TEC within Telecare, there is a lack of understanding and standardisation of the current process

> *There is lots of mistrust in our process - our biggest challenge.*

> *Lack of standardisation and crossover between systems.*

> *We need a united vision and trust [in] the process.*

INSIGHT 2

The current Telecare approach does not fully utilise the data generated by TEC.

Patient self-reporting and family reports often inform care plans, but research participants expressed that these can be inaccurate. There is currently no agreed strategy for monitoring and acting upon Telecare data.

Research participants believe there is potential to achieve a more informed assessment of needs by better monitoring and analysing Telecare data.

INSIGHT 2

The current Telecare approach does not fully utilise the data generated by TEC

[Telecare technology] could give better insight about dementia progression.

In current Telecare there is no monitoring, it is just reaction to a pendant button.

Better telecare data could be used for stepping up/ down care, but it's not recorded anywhere.

INSIGHT 3

Potential users and providers are unclear about available Telecare technologies and how to use them.

Research participants expressed that access to information about Telecare solutions/ interventions may not be accessible for service providers, services users, or their families.

There are various information sources across the Trusts for Telecare solutions/ interventions but they can be inconsistent or not kept up to date.

INSIGHT 3

Potential users and providers are unclear about available equipment and how to use them

> *[There are] challenges with equipment knowledge.*

> *Develop suite of tech available.*

> *Families don’t even recieve the right equipment.*

INSIGHT 4

There is apprehension regarding privacy, security, and risk of over monitoring with Telecare TEC.

Research participants expressed concerns regarding ethical considerations including consent, monitoring, and data use.

While participants praised numerous potential benefits of Telecare monitoring, they highlighted the need for robust security measures to safeguard sensitive data and ensure user privacy.

Additionally, the need for clear guidelines and regulations were highlighted - to prevent any potential misuse of the technology and mitigate the risk of over-monitoring.

INSIGHT 4

There is apprehension regarding the privacy, security, and risk of over monitoring with Telecare TEC

> *I can see family concerns about privacy and access to data.*

> *How long is data kept? Retained? Disposed of?*

> *Sensors may reduce anxiety for family, or they might increase it - there is a risk of over monitoring.*

> *The security, and who has access to the data and who will be analysing the data - that's a concern. Will that be used against people? Will the technology be used to argue against further care?*

Challenges

Participants also described the following challenges for the implementation of TEC in Telecare:

Process Challenges:

- The nature of the current Telecare offering in NI means the understanding of the opportunities it offers is lacking.
- Limited regional policies and procedures for implementing Telecare TEC.
- Lack of funding.
- Staff capacity and understanding.

Technology Challenges:

- Lack of consistent and reliable connectivity throughout NI (i.e. Wi-Fi and mobile data infrastructure, particularly along the border).
- Concern about the security and privacy of Telecare technology.
- Lack of technological understanding among population.

People Challenges:

- Concern around consent, data capture, use and storage.
- Fear about TEC creating more work for overstretched services.
- Perception of more urgent need for funding elsewhere.

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Opportunities

OPPORTUNITY 1

Identify areas for improvement and standardisation to create a new model for Telecare.

- ➔ Mapping the current service and identifying improvements has the potential to produce better patient outcomes by enhancing available monitoring capabilities.
- ➔ Currently, Telecare is often used in a reactive way. Mapping could identify more appropriate points of use to provide a more holistic view of how the service user is living.
- ➔ The model should take account of new TEC equipment and product development, which will improve adoption [1].

[1] Cook, E.J., Randhawa, G., Sharp, C., Ali, N., Guppy, A., Barton, G., Bateman, A. and Crawford-White, J, “Exploring the factors that influence the decision to adopt and engage with an integrated assistive telehealth and telecare service in Cambridgeshire, UK: a nested qualitative study of patient ‘users’ and ‘non-users,” vol. 16 no. 137 pp.1-20, Apr. 2016. Accessed: Mar, 11, 2024, doi 10.1186/s12913-016-1379-5 [Online] Available https://pubmed.ncbi.nlm.nih.gov/27095102/

OPPORTUNITY 2

Explore the opportunity to establish a TEC hub for Telecare.

- Participants in the Telecare focus group mapped a potential future state of Telecare through establishing a TEC hub. This could improve management, maintenance and data sharing of Telecare, which could ensure wider standardisation.
- The centralised hub could be responsible for the continuous improvement of the Telecare service through analysis of data.

OPPORTUNITY 3

Explore how Telecare data can more proactively inform care.

- ➔ There is an opportunity to utilise Telecare data to better inform care as a proactive, rather than reactive approach.
- ➔ By exploring the potential of Telecare data across scenarios for monitoring (or periods of more intense monitoring) needs, earlier care interventions are possible. This could lead to better patient outcomes, by understanding indicators of health decline.

> *Mild-moderate-severe frailty. Reach people before they're severe, to do preventative work.*
>
> – Social Care Lead

OPPORTUNITY 4

Scope how Telecare solutions will integrate with Encompass.

- There is an opportunity to enable appropriate data collection, monitoring and access of Telecare data through Encompass.
- Efficient data sharing through Encompass has the potential to provide a more holistic and complete understanding of the service user, which would help to inform better patient care.

> *Encompass could be the start of this [integration].*
>
> – Social Work Officer

OPPORTUNITY 5

Create an up-to-date information source for Telecare. This should include referral processes, available equipment and funding options.

- ➔ User and provider buy-in, education and support could be enhanced by a dedicated Telecare information source.
- ➔ All other information sources should be reviewed/ removed if not up-to-date.

Centre for Connected Health and Social Care

The Centre for Connected Health and Social Care has been established to promote improvements in patient care through the use of technology, and to fast track new products and innovation in the Health and Social Care system in Northern Ireland.

The primary purpose of the CCHSC is to improve the patient and client experience, and to provide better quality and more effective care. By supporting the more efficient delivery of services, it will also enable the healthcare system to respond better to the future needs of the population.

In addition to this, the CCHSC wishes to contribute to the advancement of the wider European e-health agenda and work with partners to secure economic gains for Northern Ireland through the development of the region

Figure 1. Information on Telecare, Centre for Connected Health and Social Care, Public Health Agency [Online] Available: www.publichealth.hscni.net/directorates/nursing-and-allied-health-professions/centre-connected-health-and-social-care

OPPORTUNITY 6

Clarify and communicate Telecare data security and privacy standards.

- As more technology is woven into Telecare, users need to be informed about what data will be collected, how it will be used and who it will be shared with.
- There is an opportunity to provide support and guidance to users with concerns in data sharing highlighted during research, in addition to other concerns such as a perception of a lack of information and usability of devices.
- Digital Health and Care Scotland is currently exploring this opportunity through its Telecare Data Programme [2].

[2] TEC Scotland. (2024) Telecare Data Programme [Online] Available: https://tec.scot/programme-areas/telecare/telecare-data-programme

OPPORTUNITY 7

Using advanced technology within Telecare could allow HCPs to spot changing needs earlier, allowing proactive care and allowing patients to maintain independence for longer.

- ➔ There is a wide and varied range of technology available within Telecare.
- ➔ There's an opportunity to identify devices which could help patients live independently for longer, with obvious benefits to them and the health service.
- ➔ There is evidence that users respond positively to a proactive approach in Telecare, with an appreciation for the connectivity it offers [3].

> *[In future] proactivity should focus on wellbeing.*
>
> – Research participant

[3] Fothergill, L., Holland, C., Latham, Y., & Hayes, N. (2023 Apr) "Understanding the Value of a Proactive Telecare System in Supporting Older Adults' Independence at Home: Qualitative Interview Study Among Key Interest Groups." Journal of Medical Internet Research [Online]. Vol. 25. Available: https://www.jmir.org/2023/1/e47997

OPPORTUNITY 8

Lay the foundations for more advanced technology within Telecare.

- ➔ Being ready for new technology could allow quicker adoption of new technologies.
- ➔ Openness to new technology and devices could drive understand and acceptance among users and their families.

> ***Usually younger people want to use tech to get about their lives. They will be the future tech literate elderly population.***
>
> – Research participant

Further Opportunities

Participants also described the following opportunities for TEC (and other health tech) in Telecare:

- ➔ Work with public sector to match rollout with improvements in digital infrastructure.
- ➔ Drive a better understanding of the savings which could be unlocked by better technology within Telecare.
- ➔ Drive public understanding of Telecare within TEC through publicity and education campaigns.
- ➔ Ensure influencers within the sector understand the potential of TEC within Telecare.

Moving Forward

This discovery has provided a better understanding of TEC appetite, challenges, implementation requirements and opportunities for adoption.

In the next steps of this work, DHCNI are seeking to address key challenges raised across this discovery through implementing the recommendations detailed in the ‘Overall Findings’ report.

If you are interested in keeping up to date with ongoing work, please visit the DHCNI website.

If you would like more information about this work please contact: Linda.McRandle@hscni.net or DHCNIContact@hscni.net

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Appendix

Appendix A

DESK RESEARCH

- Desk research was conducted to understand the use of TEC in Telecare, surfacing case studies and models of TEC.
- Examples of Telecare TEC were identified. Three were selected and used to create lightning posters to stimulate conversation in interviews and focus groups.
- Full research findings can be accessed by contacting DHCNI.

DESK RESEARCH

TEC Technology Examples

Technology-enabled Telecare refers to using digital devices and communication tools to remotely monitor and support individuals' health and safety, improving accessibility and independence. We identified these examples to use within the sprint.

1. **Andi [4]**
   A device agnostic, connected alarm system that functions on an open platform, presenting the opportunity for future devices to be used with it. Monitoring information is relayed to a central online dashboard. Andi manages poor connectivity by offering more than one route to the internet. It also stores alerts and sends them once a connection is reestablished.

2. **Sensio365 [5]**
   An *Internet of Things* health platform, connecting institutions and healthcare staff with welfare tech solutions through their digital interface. It provides user-friendly digital work surfaces on screens - both for healthcare personnel, relatives, administrators, and residents. Sensio365 aims to create more time for care by plotting data clearly and helping identify changes in behaviour early.

3. **Anthropos [6]**
   Home sensors track a user's daily routine, environment, wellbeing, safety, and security. Data analysis allows alerts of sudden changes, with insights displayed via dashboards, reports, and apps. This technology offers a clear picture of home activities and detects hidden routine changes for proactive intervention. The suite includes a monitor hub, door and fridge sensors, motion sensors, and smart plugs for devices like kettles and microwaves.

[4] 2ic Care. (2024) Solve analogue to digital and future-proof care [Online]. Available: https://www.2ic-care.com/
[5] Sensio365 (2024) Smart social care [Online] Available https://www.sensio.io/products/sensio-365
[6] Anthropos (2024) Connected care for independent older living [Online]. Available: https://anthropos.io/anthropos-pro

DESK RESEARCH

TEC Impact Summary

The development of technology enabled Telecare appears to be developing with a focus on wider monitoring and collection of data. At the centre of this is a reliance on good internet connectivity, allowing collection of data to build up a good understanding of user behaviour.

- **Andi:** Recently been trialed in an English council district and is about to be implemented across Cornwall [7]. Portrayed as a useful tool in avoiding hospital admission through identification of health deteriorations. Councils chose to implement Andi for its money-saving potential and device agnostic system [8].
- **Sensio365:** The company highlights a cost saving opportunity due to saving staff from attending false alarms. One of their devices, RoomMate, has helped reduce falls in several care homes in the UK. The same device allows anonymised night checks - helping residents get undisturbed sleep [9].
- **Anthropos:** The system identifies times when people need help and immediately and sends alerts through SMS, email and notifications to the dashboard, allowing swift identification of concern. They also offer an app for family members to access collected health information. Anthropos is currently being implemented in some parts of the UK [10].

[7] Digital Health. (2023). Cornwall first to deploy transformative digital care service. [Online] Available: https://www.digitalhealth.net/2023/11/cornwall-first-to-deploy-transformative-digital-care-service/
[8] 2ic-care. (2024). Andi prevents Health & Adult Social care crisis for Wirral. [online] Available at: https://www.2ic-care.com/news/blog/view/articleid/320/andi-prevents-health-and-adult-social-care-emergency-for-wirral-council
[9] Shepherd, J. (2023). Leading Nordics care tech provider joins Innovation Pop-Up to launch in UK market. [online] Available at: https://www.leedsth.nhs.uk/news/leading-nordics-care-tech-provider-joins-innovation-pop-up-to-launch-in-uk-market
[10] Anthropos. (2024) How fall detection technology saves Essex County Council £1 million per month in avoidable costs. [online] Available: https://anthropos.io/tec-essex-county-council

DESK RESEARCH

TEC Models Summary

TEC within Telecare is varied. The products and services identified have had some rollout among care providers, but also exist on the market for users to independently acquire.

Telecare provision:

- Often falling under the remit of social care (provided by local councils in England), telecare (e.g. fall detectors) can form part of care plans. If deemed necessary, potential users are means tested to assess funding need. An example of this is found in Hampshire [11], where they have partnered with a Telecare provider. Users can pay the provider directly if they do not qualify for the funded service. This approach is common across England.

- Advanced telecare technologies (e.g. digital hubs linking smart devices), some councils are in the early stages of trials and rollouts - with a view to preventative care. The example from Cornwall is covered earlier in this report, elsewhere in the UK Wirral Council ran a trial which is credited with a reduction in hospital stays [12], something we found evidence of in desk research [13] and [14].

[11] Adult Social Care. (2023). Care technology - personal alarms and sensors. [Online] Available: https://www.hants.gov.uk/socialcareandhealth/adultsocialcare/caretechnology
[12] Digital Health and Care Show. (2023). Andi prevents Health and Adult Social care emergency for Wirral Council). [Online] https://www.digitalhealthcareshow.com/press-releases/andi-prevents-health-adult-social-care-emergency-wirral-council.
[13] Bowes, A. and McColgan, G. (2012, 01). "Telecare for Older People: Promoting Independence, Participation, and Identity." Research on Aging [Online]. vol 35, issue 1. Available: https://journals.sagepub.com/doi/abs/10.1177/0164027511427546
[14] Jerant, A.F., Azari, R. and Nesbitt, T.S. (2001, 11). "Reducing the cost of frequent hospital admissions for congestive heart failure: a randomized trial of a home telecare intervention. Medical care." Medical Care [Online]. vol. 39, issue 11. Available: https://journals.lww.com/lww-medicalcare/toc/2001/11000