



## SCSP Innovation Fund Case Study

# Smplicare

### Summary

Falls among older adults represent a major public health challenge, leading to substantial healthcare costs and declines in independence. In response, this project aims to validate Smplicare's AgeWell Coaching Platform, particularly the Smplicare Fall Risk Algorithm (SFRa), in real-world settings, helping older adults reduce their risk of falls and better self-manage their health. By advancing the SFRa from Technology Readiness Level (TRL) 4 to TRL 6 and evaluating the feasibility, acceptability, and potential efficacy of the AgeWell Coaching App, the team seeks to develop a sustainable adoption pathway for broader implementation across the Glasgow City Region and beyond.

Over a four-month pilot study, 35 participants, each provided with a Fitbit device, engaged with the AgeWell Coaching App. Their daily step counts, sleep metrics, and other biometric data was collected through Fitbit's API into a secure backend system, where the SFRa generated real-time fall-risk assessments in the system for validation. User feedback, gathered through co-design sessions, interviews, and periodic surveys, guided iterative improvements to the app, such as adding a Goal Setting feature and expanding the library of fall-prevention exercises.

Early results indicate strong user engagement, with an average Fitbit data collection compliance of 78.2%, and 64% of participants accessing the app at least three times per week. Notably, the SFRa's predictive value was demonstrated in one documented fall event that coincided with a "high-risk" classification and achieved a TRL of 6. Collaboration with local partners, including Later Life Training and fall prevention teams across North & South Lanarkshire, was critical in recruiting participants and exploring how Smplicare's solution could complement established fall prevention intervention pathways.

Overall, the project has demonstrated that the AgeWell Coaching Platform offers a viable and scalable way to enhance falls prevention services. By bridging the gap between in-person falls programmes and digital health technologies, the platform can benefit older adults, healthcare systems, and public health more widely. These findings underscore the importance of continued research, stakeholder collaboration, and real-world validation.

[Watch the Smplicare case study video.](#)

### Introduction

#### Context and Rationale

Falls among older adults remain a pressing public health concern, not only causing physical harm but also leading to emotional distress and a loss of independence. In the United Kingdom, it is estimated that 30% of adults over 65 experiences at least one falls each year, with around 5% of these incidents resulting in fractures or hospital admissions. The fiscal impact is likewise significant: falls cost the NHS approximately £4.4 billion per year, while fragility fractures alone are estimated to cost £1.1 billion annually and account for nearly 1.8 million hospital bed days<sup>1</sup>.

---

<sup>1</sup> Department of Health and Social Care (2021). Falls: applying All Our Health. Available at: <https://www.gov.uk/government/publications/falls-applying-all-our-health/falls-applying-all-our-health>

In Scotland, the whole-system cost of falls in 2013 was estimated at £470 million 60% of which related to social care, and projections for 2023/24 suggest this figure could exceed £800 million, driven in part by an increase in hip fractures (3,370 more since 2013)<sup>2</sup>. Community falls also have relatively high mortality rates, with 7% of older adults dying when admitted following a fall and 12% within a year of the incident. Current Public Health Scotland data has highlighted significant rises in Falls crude mortality data across Glasgow City Region<sup>3</sup>.

While in-person strength and balance classes (FaME and Otago) have proven effective at reducing falls, they often face scalability challenges due to limited staffing, facility constraints, and reduced accessibility for older adults who cannot travel easily<sup>4</sup>. In response, this project focuses on validating Smplicare's AgeWell Coaching Platform in real-world settings. By providing older adults with a digital tool that integrates wearable devices, health insights, and evidence-based exercise content, Smplicare seeks to offer a cost-effective and scalable way to help mitigate falls events and improve overall wellbeing.

---

2 Craig J, Murray A, Mitchell S, Clark S, Saunders L, Burleigh L. The high cost to health and social care of managing falls in older adults living in the community in Scotland. *Scottish Medical Journal*. 2013;58(4):198-203. doi:[10.1177/0036933013507848](https://doi.org/10.1177/0036933013507848)

3 Public Health Scotland (2024). Unintentional Injuries: Hospital admissions year ending 31 March 2024, deaths year ending 31 December 2023. Available at: <https://publichealthscotland.scot/publications/unintentional-injuries/unintentional-injuries-hospital-admissions-year-ending-31-march-2024-deaths-year-ending-31-december-2023/>

4 Public Health England, February 2018, A Return on Investment Tool. or the Assessment of Falls Prevention Programmes for Older People Living in the Community. Available at: [https://assets.publishing.service.gov.uk/media/5a7aedafe5274a319e77bb5d/A\\_return\\_on\\_investment\\_tool\\_for\\_falls\\_prevention\\_programmes.pdf](https://assets.publishing.service.gov.uk/media/5a7aedafe5274a319e77bb5d/A_return_on_investment_tool_for_falls_prevention_programmes.pdf)

## Glasgow City Region Context

The Glasgow City Region has experienced a notable rise in fall-related hospital admissions and associated mortality. According to recent Public Health Scotland data, falls crude mortality (rate per 1,000) has increased by 18.3% since 2018, with the region accounting for 69% of Scotland's total increase in unintentional injury (UI) falls bed days. Emergency Department Admissions (EDAs) rose by 5.1% while Scotland collectively reduced by 1.3%. Moreover, femur fractures (ICD10 S72) highlighted as a key focus in the Unintentional Injury 2023/24 report have risen by 15.5% in Glasgow City Region compared to 5.7% across the rest of Scotland<sup>5</sup>.

---

5 Public Health Scotland (2024). Unintentional Injuries: Hospital admissions year ending 31 March 2024, deaths year ending 31 December 2023. Available at: <https://publichealthscotland.scot/publications/unintentional-injuries/unintentional-injuries-hospital-admissions-year-ending-31-march-2024-deaths-year-ending-31-december-2023/>

These statistics reflect both the high demand for effective falls prevention measures and the pressing need for scalable, flexible solutions that can complement existing health and social care services. By aligning with the region's strategic goals for healthy ageing, the AgeWell Coaching Platform aims to supplement in-person programmes while broadening access to preventive care for vulnerable populations.

## Project Objectives / Milestones

- ▶ **Advance the Fall Risk Algorithm from TRL4 to TRL6:** Validate the algorithm's reliability, stability, and ability to identify high-risk individuals in a real-world environment, refining data collection and predictive accuracy.
- ▶ **Evaluate the Feasibility, Acceptability, and Potential Efficacy of the AgeWell Coaching App:** Assess user engagement, feedback and satisfaction with digital exercise content to determine whether the mobile application platform can feasibly support or supplement existing fall prevention efforts.
- ▶ **Develop a Sustainable Adoption Pathway for Broader Implementation:** Collaborate with local authorities, Health and Social Care Partnerships, and national stakeholders to establish a viable model for scaling the AgeWell Coaching Platform across the Glasgow City Region and potentially beyond.
- ▶ **Develop use case for technology use in Health utilising 5G/wifi:** Identify any barriers to adoption including but not limited to connectivity and accessibility challenges to reduce falls. Evaluate common modes of accessing the Smplicare app (i.e. Phone vs Tablet) and the use of 5G and other wireless technology and how this enhances the project.

## Approach

### Collaborative Design

From the outset, the project adopted a collaborative model, engaging stakeholders to ensure that the study design, technology, and exercises aligned with real-world needs. Participants provided ongoing feedback about the app's usability and comfort with wearables. Later Life Training (LLT) contributed evidence-based exercise content, while Dr Chenfei Ma and the data science team refined the Smplicare Fall Risk Algorithm (SFRa) using incoming Fitbit data. Local practitioners from South Lanarkshire Leisure and Culture and North Lanarkshire Council supported participant recruitment, while stakeholders from South Lanarkshire and East Renfrewshire provided insights into how the digital approach could complement existing fall prevention classes and referral pathways.

## Implementation

This was a four-month prospective feasibility pilot study. Our aim was to recruit 30–50 participants through community strength and balance classes, each provided with a Fitbit Inspire 3 (validation of device in prior study). They were onboarded through a combination of remote and in-person sessions and during enrolment, individuals learned how to synchronise their Fitbit and navigate the AgeWell Coaching App, where they recorded daily activity and could access digital exercise videos and supportive content. The project team monitored data quality and participant engagement daily, responding promptly to technical issues or user queries.

- ▶ **Study Requirements:** Participants were asked to wear their Fitbit device continuously, removing it only for bathing or charging, and to synchronise it regularly via the Fitbit app to enable consistent data collection. They were also required to complete all baseline assessments in the Smplicare app, including functional fitness and wellness questionnaires. While all features of the app were demonstrated during onboarding, participants were not instructed to complete specific exercises or use the app at set times. This approach allowed the research team to observe natural patterns of engagement and identify which features participants gravitated toward without prompting.
- ▶ **Design Considerations:** The app interface prioritised accessibility aligning with WCAG 2.0. End-users were regularly consulted prior to and throughout the grant period, informing the development of exercise and functional fitness features. Rigorous internal and user testing helped address technical or usability challenges. An earlier UKRI observational study confirmed the acceptability and usability of Fitbit Inspire 3 devices among older adults<sup>6</sup>.
- ▶ **Resource Allocation:** The full seven-person Smplicare team was allocated to the project (including a UX designer, developers, and a project manager), the project leveraged GCR's 5G Smart and Connected Social Places (SCSP) Innovation Fund grant (75%) and private funding (25%) to cover project costs. Subcontractors ORCHA, Acorn Compliance, Trust Care, Dr. Chenfei Ma and the STAC Accelerator provided critical expertise to drive project success.
- ▶ **Technology & Methodologies:** Built using React Native, the AgeWell Coaching App integrates with Fitbit's API. Data was uploaded using Wifi, 4G and 5G connectivity and stored securely on AWS, with real-time analytics performed on step counts, sleep, and heart rate logs to generate and test SFRA risk

scores. Scrum and Agile principles guided the project management and development process, supported by Jira and Miro software.

## Evaluation Framework

Data was captured through a mixed-methods approach, combining quantitative and qualitative metrics to provide a well-rounded view of feasibility and impact:

- ▶ **Quantitative metrics** included Fitbit synchronising compliance, exercise engagement rates, and SFRA classification outputs. Alongside these, participants completed functional fitness tests at baseline and, where possible, during follow-up.
- ▶ **Qualitative insights** were gathered via in-person co-design sessions, remote interviews, and online surveys to capture user perspectives on usability and perceived benefits.

The SFRA model processes a 15-day sliding window of user data (covering up to nine metrics like steps, sleep patterns, and heart rate range) to provide daily binary risk assessments ("fall risk" or "no fall risk"). Secondary endpoint analysis was performed on a time-series optimised relational database, allowing large-scale analytics across the entire cohort as well as personalised insights for each user.

For more detailed methods and data collection procedures, please refer to the full pilot study protocol<sup>7</sup>.

---

7 Full Pilot Study Protocol: <https://drive.google.com/file/d/1CfRcWX8CHCbWVlWUTJnyqVq97IkQldf8/view?usp=sharing>

## Findings

### The Participant Cohort

This section presents an overview of the study cohort at enrolment and highlights key participant engagement insights.

#### Demographics and Living Situation

- ▶ Total Participants: 35
- ▶ Gender Distribution: 24 women (69%), 11 men (31%)
- ▶ Average Age: 73 years
- ▶ Ethnicity: All participants identified as White/Caucasian
- ▶ Primary Residence: 21 (60%) in Lanarkshire, 14 (40%) in Greater Glasgow
- ▶ Recruitment Sources: 18 via South Lanarkshire Fall Prevention Services (51%), 16 via North Lanarkshire Fall Prevention Services (46%), and 1 via social media (3%)
- ▶ Independent Living and History of Falls: All participants lived in their own homes (owned or rented) and had a recent history of falls (<6 months)

---

6 Smplicare. (2025). Beyond Stereotypes: Advancing Fall Prediction and Self-Managed Health through Wearable Technology. <https://drive.google.com/file/d/1I-twQlIMtsge5w59CAhFOl1Y7ADvDMYc/view?usp=sharing>

- ▶ Mobility Difficulties:
  - ◁ 83% reported slight to moderate walking difficulties.
  - ◁ 72% expressed concern about walking up or down a slope.
  - ◁ 61% had difficulty with stairs or bathing.

### Use of Technology and Interest in Digital Health

- ▶ 63% used Android, 37% iOS
- ▶ 43% felt “somewhat comfortable” with digital tools, while only 9% considered themselves “very comfortable”

### Frailty and Support Needs

Based on self-reported data aligned with the Rockwood Frailty Scale<sup>8</sup>, the majority of participants (40%) fell into frailty level 4 (pre-frail), followed by 16.7% in category 5 (mild frailty), 13.3% in category 6 (moderate frailty), and the remaining 10% across categories 2, 3, and 7 (well, managing well, severe frailty). Although many participants remained active, a significant portion required assistance:

- ▶ 88.4% needed visual support, such as prescription glasses.
- ▶ Only 4 participants reported full independence, with most relying on family and friends (47.8%) for support.

8 NHS England (2022) Rockwood Frailty Scale. Available at: [https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2022/02/rockwood-frailty-scale\\_.pdf](https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2022/02/rockwood-frailty-scale_.pdf) (Accessed 6 March 2025)

## SFRa Predictive Potential

The first key objective of the study was to advance the SFRa from TRL 4 to TRL 6 by validating the algorithm’s reliability and stability in a real-world setting and refining data collection procedures.

### Usability and Compliance of Fitbit Wearable

Participants readily integrated the Fitbit into their daily routines, with 78.2% consistently wearing and synchronising the device. Moreover, 86.3% found the watch comfortable to wear, and 95.4% reported that it fit well into their daily habits, supporting the feasibility of using a third-party wearable for continuous data capture.

### Reliability of Outputs

As of 20 February 2025, the overall reliability of the SFRa, defined as the percentage of instances in which it could generate a valid risk inference, was 44.3%. This relatively low figure stems from the requirement for 15 consecutive days of “perfect data” (i.e., consistent activity, sleep, and heart rate metrics) to produce a risk classification. Many participants did not consistently meet this threshold early on, limiting the total number of risk inferences.

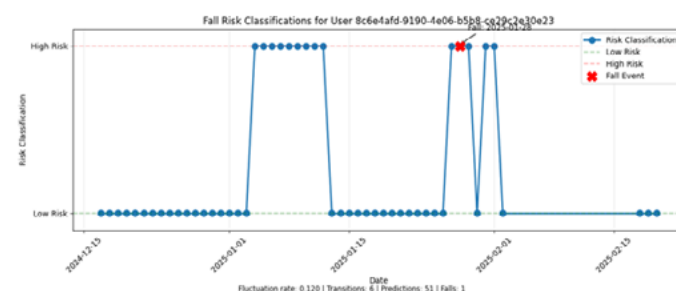
## 15-Day vs. 7-Day Model

To address data gaps, a seven-day version of the SFRa was developed, currently testing at 77% accuracy on training data (8% decrease from the 15-day model accuracy of 85%). While the original 15-day approach generated 795 inferences across all participants, the seven-day model produced 1,020 inferences—a 28% increase. In one participant’s case, the seven-day model yielded a 91% rise in total inferences, demonstrating the potential to capture more frequent risk assessments without imposing strict data quality demands or losing accuracy. Although not yet fully implemented, these findings support continued development of both models.

## Predicting Falls

Four falls were reported among the 35-participant cohort. Two occurred too early in the study period to build a sufficient data window, and one fell short of the required 15-day dataset. However, the fourth was accurately predicted: the SFRa classified the participant as “high risk” on 27, 28, and 29 January, and the fall occurred on 28 January. Notably, the participant’s risk status began shifting from low to high approximately two weeks prior to the incident, suggesting that timely intervention could potentially have mitigated or prevented the fall.

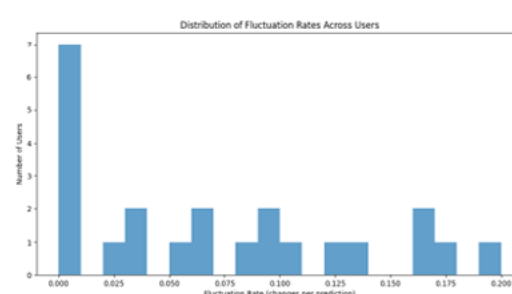
Figure 2: SFRa Fall Risk Classification for a Participant who experienced a fall during the study period



## Classification Stability

Beyond reliability, the SFRa demonstrated strong day-to-day stability, with an average fluctuation rate of 7%, meaning the model’s risk classifications remained consistent 93% of the time once sufficient data were available. The stability of the algorithm’s outputs indicates that it is capturing genuine patterns in the data, rather than reacting to normal day-to-day variations or minor gaps in wearable metrics.

Figure 4: Fluctuations of the SFRa in our cohort





After a comprehensive evaluation of the SFRA's reliability and validity, the algorithm achieved a TRL of 6—indicating it is now functional and tested in a relevant real-world environment. These results suggest a falls-risk model that can provide meaningful insights, particularly when data gaps are minimised and when early warnings lead to timely preventative measures.

## Acceptability and Feasibility of the Smplicare App

The second key objective of this study was to assess the acceptability and feasibility of the Smplicare app. The team examined user engagement, feedback, and satisfaction with digital exercise content, seeking to determine whether a mobile-based platform could meaningfully support or supplement existing fall prevention interventions.

### Participant Readiness for Digital Exercise

Despite facing various health challenges, participants were keen to explore digital tools. Prior to enrolling, 78% of participants regularly took part in strength and balance exercises. This established interest in exercise likely contributed to high acceptability of Smplicare's digital intervention.

### Consistent App Engagement

We did not observe any material connectivity challenges which prohibited participants from accessing Smplicare when and how they wanted to whether via Wi-Fi, 5G or 4G connectivity and therefore conclude that the connectivity available meets the requirements for scale adoption of Smplicare.

Overall, participants demonstrated strong commitment to using the Smplicare app.

- ▶ 53% reported using the app at least once per day.
- ▶ 73% reported using the Daily Reflection feature regularly. By the end of the study, all participants had completed at least one seven-day Daily Reflection streak, with some achieving streaks as long as 59 days.
- ▶ 40% said they regularly used the Exercise Hub for structured workouts.
- ▶ 103 educational articles were read in-app by study participants.

Despite it not being an explicit study requirement, such regular app usage suggests that participants found the Smplicare app interface approachable and worthwhile.

**"I have exercised a bit more than I normally would this year due to the app."**

**Respondent 30 Feedback**

## Confidence in Home-based Exercises

Participants reported high levels of comfort completing app-based exercises at home. This demonstrates that older adult participants successfully accessed digital video content via mobile or tablet devices to complete exercises at home.

- ▶ 73% felt confident exercising independently
- ▶ 71% found the video instructions straightforward
- ▶ 80% rated the video quality (audio, visuals, lighting) as excellent.

**"The exercises are already helping me get my confidence back. This weekend, I went to the football without my stick for the first time in a long while."**

**Respondent 17 Feedback**

## Perceived Impact on Independence and Health

Participants reported strong improvements in both their understanding of exercise and their motivation to stay active.

- ▶ 95.4% said they better understood the role of exercise in maintaining independence.
- ▶ 86.3% reported learning more about the different components of fitness required for long-term wellbeing.
- ▶ 77.3% felt more motivated to stay active.

**"I have learnt more about my personal physical and mental health and how much it affects my life daily."**

**Respondent 21 Feedback**

Many also noticed physical improvements:

- ▶ 63.6% reported feeling stronger
- ▶ 50% said they exercised more each week.
- ▶ 50% noticed greater flexibility and improved independence when walking.

At the start of the study, 71.4% of participants said they were worried about falling, and all had experienced at least one fall in the past year. By the end of their four-month participation, 27% reported feeling less worried about falling, a promising shift given the group's high baseline concerns and falls history.

## Early Findings from Functional Fitness Tests

At onboarding, 54% of participants completed a 20-minute functional fitness assessment at home. This measured balance, mobility, endurance, lower body strength, and flexibility. Results were mapped to a Red-Amber-Green (RAG) scale, benchmarked by age.

**Baseline Results:**

- ▶ **Balance:** 100% were already in the green range.
- ▶ **Mobility & Endurance:** 89.5% were in the red zone, indicating high potential for improvement.
- ▶ **Lower Body Strength:** 42% scored in the red range.
- ▶ **Flexibility:** No red scores.

**Follow-Up Results:**

- ▶ **Endurance:** Improved by an average of 25 steps.
- ▶ **Lower Body Strength:** Improved by 4.6 additional sit-to-stand repetitions.
- ▶ **Balance:** Though all scored green at baseline, follow-up scores still improved by 11.5 seconds.
- ▶ **Mobility & Flexibility:** No significant changes observed.

These early gains suggest the potential for measurable improvements in physical function within a short period. However, the small sample size and concurrent participation in in-person classes mean we can’t attribute all improvements solely to the Smplicare exercises.

**Participation & Engagement:**

While the functional fitness tests were well-received, 80% of those who completed them found the score interpretations easy to understand engagement varied. 19 participants completed the baseline tests, 14 went on to complete them a second time, while 16 participants did not complete the assessments at all. Of those who did, 26% completed them only once. This highlights the need for additional in-app prompts and support to improve completion rates (see page 13, “feedback implementation” for details on how this has been addressed).

Overall, these findings support the app’s feasibility and acceptability, showing early signs of increased physical activity, improvements in aspects of functional fitness, and greater confidence and routine-building among participants.

“The Smplicare app changed my view on how to exercise. It motivated me to go out and make sure I did not just sit about.”

Respondent 18 Feedback

“The exercise videos stress the importance and benefit of doing exercise slowly to get more benefit, which was good for my understanding.”

Respondent 2 Feedback

**Co-Designing Additional App Features**

Engagement activities, including two in-person sessions (with a total of seven participants) and eight one-to-one interviews, provided insights into how the team could refine the app. Feedback centred on users’ personal goals, the variety and intensity of exercises, and the user interface and experience of the app. Survey completion rates of 51% (onboarding), 50% (mid-study), and 62.8% (offboarding) also highlighted participants’ willingness to share ongoing feedback.

**Overview of Participant Feedback Themes**

Below is a table summarising the constructive feedback received regarding participant’s experiences with the app and exploration of areas for improvement.

Theme	Summary of Feedback
Exercise Improvements	23% requested faster-paced or more challenging routines, along with clearer instructions and more diverse demonstration videos. “I feel that my fitness level is beyond the video demonstrations.” Respondent 14
Goal Setting	72.7% of participants had a physical activity goal they were working towards. Users wanted a simple way to set personal targets and receive relevant exercises. “I want to retain mobility to enjoy life with my family.” Respondent 15
Technical Ease	Participants suggested more intuitive navigation, ensuring exercise and functional fitness content was easy to find and access. “I am not sure how to find the exercise videos.” Respondent 6
Motivation & Confidence	Daily reflection streaks helped establish routines; participants wanted a more action-oriented home screen to support their goals. “I joined this study to feel motivated to do exercise and be more active.” Respondent 13

## **Feedback Implementation**

In response, the team will introduce a Goal Setting feature and expand the exercise library to include more diverse routines aligned with user goals. The home page of the app will also be redesigned to display a daily action plan, including exercise, aligned with each user's personal goals, along with daily health tips and reflection prompts to reinforce routines. The navigation pane will be restructured to provide distinct sections for exercise content and educational resources, as well as an enhanced "Insights" tab for deeper health and engagement support.

To address lower completion rates of fitness tests, these assessments will become a standard part of onboarding and will be integrated into the daily action plan at key intervals, helping users track their progress and stay motivated.

The team is currently implementing this feedback in the app, known as the "Fall Fit" version of the app, ready for release in Q2 2025.

## **Stakeholder Perspectives**

The project's third objective was to establish a sustainable adoption pathway for the AgeWell Coaching Platform. Through discussions with local authorities, Health and Social Care Partnerships (HSCPs), and national stakeholders, the team explored scaling the platform throughout the Glasgow City Region and beyond.

### **Local Co-Design & Pathway Exploration**

Smplicare conducted a co-design session involving key stakeholders from East Renfrewshire and South Lanarkshire. Outcomes from this session highlighted the potential of Smplicare to enhance existing fall prevention services. These services typically involve in-person strength and balance classes that require practitioner referrals and often come with months-long waiting lists due to limited capacity.

### **Feedback from Practitioners**

Practitioners saw considerable scope for a digital solution like Smplicare to mitigate referral bottlenecks and provide earlier intervention for those who cannot immediately attend in-person sessions:

"We often have a bottleneck of referrals, causing waiting lists. Something like this for our organisation could open this up to those who are on waiting lists or are unable to travel to our in-person sessions."

Practitioner 1 Feedback

"We offer one class a week, which if I'm honest, isn't enough ... with [Smplicare], people have access to more exercise and motivation to do a wee bit more that will make a big difference in the long run."

Practitioner 2 Feedback

### **Data Collection & Sustainability**

In many council areas, strength and balance classes undergo annual funding reviews, making robust reporting of uptake and impact essential to sustaining programmes. Practitioners noted that Smplicare could not only complement these services but also support data collection to demonstrate cost-effectiveness:

"What's really interesting is that [with Smplicare] we can track how often it's being used, monitoring uptake and giving people a wider range of options can really provide a benefit."

Practitioner 3 Feedback

"A solution like this can provide the evidence that doing physical activity will save money to the NHS, demonstrating our impact and allowing us to continue investing in our programmes."

Practitioner 1 Feedback

### **Opportunities Beyond Classes**

Stakeholders also saw potential for using Smplicare in older adult housing or sheltered accommodation:

"This would be an activity coordinator's dream. They'd love something like this to facilitate activities."

Practitioner 4 Feedback

## **Next Steps & Ongoing Engagement**

Falls prevention and supported self-management of health remain key objectives and cost drivers for both the NHS and Health and Social Care Partnerships (HSCPs). Smplicare aligns with these priorities by delivering a scalable digital intervention that offers whole-system benefits, from Social Care to NHS to housing. By reducing falls and associated healthcare use, Smplicare has the potential to lower hospital admissions and bed days, alleviate waiting lists, and bolster data-driven reporting, demonstrating tangible returns on investment to local authorities and other stakeholders.

Based on ongoing discussions, the project team continues to engage with decision-makers and key partners to formalise commercial and operational pathways, both within the Glasgow City Region and beyond. Organisations or authorities interested in exploring a digital exercise intervention to strengthen their fall prevention services are encouraged to contact Smplicare for more information. This approach will provide further opportunities to validate the platform's

impact, supporting broader adoption across healthcare and social care landscapes.

There has already been significant interest in the solution across the GCR and beyond, particularly following the Innovation Showcase Event. As a result, Smplicare has scheduled follow-up meetings with five HSCPs to explore scaled deployment of the platform as a proactive, preventative solution to falls and support active ageing within their communities.

## Key Considerations

### Facilitators

There were several factors that proved instrumental in advancing the project. First, strong partnerships with fall prevention programmes in North & South Lanarkshire, and expert guidance from Later Life Training helped refine in-app exercise content and streamline participant recruitment.

A dedicated helpline provided real-time support, bolstering participants' confidence in troubleshooting any technical or usability hurdles. Additionally, leveraging existing tech infrastructure, notably pre-existing integrations with Fitbit and secure AWS cloud services, accelerated data collection, storage, and analysis, ensuring the pilot could progress efficiently without building critical infrastructure from scratch.

### Barriers

Despite these advantages, the project faced key challenges.

**Onboarding Support:** Many older adults needed extensive onboarding and continuous encouragement to synchronise wearables and explore all app features, reflecting the inherent learning curve of digital tools for some in this demographic.

**Data Completeness:** Data completeness for the SFRA was a hurdle; the original 15-day requirement for the SFRA often fell short when participants missed sleep or heart rate readings. This required the team to pursue a seven-day model that could provide more reliable outputs.

**Recruitment Constraints:** Recruitment was concentrated in two Fall Prevention Programmes, leading to a lack of ethnic, geographic, and socio-economic diversity in the cohort, reducing the generalisability of the findings. In addition, this impacted our ability to hit the 50-person recruitment target, resulting in 35 individuals participating in the study.

**Participant Engagement:** Health setbacks, personal losses, and new diagnoses impacted retention, resulting in 5 withdrawals (14%).

**Limited Engagement with Exercises:** The observational design of the study did not require regular use of the

exercise features, which reduced exercise content engagement relative to higher Fitbit compliance (an explicit requirement).

**Connectivity:** In general, connectivity was sufficient for participants enrolling individually at home, where most had reliable WiFi access. This held true across a range of locations, including more rural areas. However, during a group enrolment session in South Lanarkshire at Larkhall Leisure Centre, there was no WiFi available and only limited 4G/5G coverage inside the building. To overcome this, the Smplicare team had to step outside to establish a mobile connection and complete enrolment, a workaround that proved uncomfortable and inefficient during winter months. This highlights a broader barrier for this demographic: limited access to reliable mobile connectivity in some community settings may affect digital health programme delivery and engagement.

**Seasonal Impact:** Winter weather and holiday periods lowered motivation, underscoring the need for persistent engagement strategies to counter cyclical drops in participation.

**Project Costs:** Throughout the project, reductions in participant onboarding (only 35 of the intended 50 participants were enrolled) and reduced costs of Fitbits necessitated adjustments to the budget. Additionally, as the team progressed toward commercialisation, it became clear that procurement compliance posed a challenge when engaging with NHS and HSCP authorities. To address this, a portion of the budget needed to be allocated toward achieving certifications and compliance measures required for public procurement, ensuring that Smplicare could meet market entry standards.

### Learnings

From these experiences, several insights emerged:

**In person orientation:** An in-person orientation can enhance older adults' adoption of digital health tools. Older adults value 1:1 interactions and hands-on experience that build initial confidence.

**Seven-Day Model:** Reducing data requirements helped accommodate real-world user behaviours, allowing valid risk assessments even when perfect daily syncing may be unattainable for all.

**Continuous engagement and motivation:** Features such as daily reflections, goal setting, and timely notifications were identified as potentially being effective in maintaining participant commitment.

**Recruitment Strategies:** Over-recruiting and additional time spent in early study development to solidify recruitment channels will support improved diversity representation and offset withdrawals.

**Connectivity:** There is a need for targeted investment in community buildings to improve indoor 4G/5G



connectivity across the Greater Glasgow Region. Reliable mobile data access is essential for the successful delivery of digital health interventions in community settings, particularly for older adults who may rely on public spaces for onboarding, support, or group-based activities.

**Workflow:** The project's success was driven by strong stakeholder and participant engagement, along with parallel workstreams that enabled efficient delivery.

**Resource Allocation & Project Costs:** The ability to submit three Project Change Requests (PCRs) enabled Smplicare to reallocate funds effectively, adapting to shifting project priorities without disrupting core objectives. An additional £30,100 in funding provided the opportunity to pursue Digital Technology Assessment Criteria (DTAC) certification, penetration testing, and engagement with a Clinical Safety Officer, all critical steps in ensuring regulatory compliance for NHS and HSCP adoption. The structured reporting frequency and open communication with SCSP administrators facilitated these adjustments, demonstrating the value of flexible financial planning in innovation-driven projects.

## Conclusion

The pilot results confirm that Smplicare's AgeWell Coaching Platform successfully advanced its Fall Risk Algorithm (SFRa) to TRL 6, demonstrating real-world reliability and stability in identifying individuals at higher risk of falling. Alongside this milestone, the study highlighted the broader Smplicare app as a feasible, accessible, and user-friendly digital exercise intervention for older adults.

A "Fall Fit" version of the Smplicare app, incorporating all core app functionality but excluding the SFRa does not require a wearable device and is ready for market launch, reducing both costs and barriers for adoption. The SFRa component, meanwhile, requires further refinement and validation to progress from TRL 6 to TRL 10, ensuring it is fully integrated into a structured intervention model. Moving forward, the team will focus on building a robust end-to-end product experience, exploring risk notifications, user support features, and structured intervention pathways in collaboration with stakeholders.

These findings, combined with positive feedback from local practitioners and decision-makers, reinforce the potential for Smplicare to be integrated into existing community health and social programmes. By offering a scalable digital intervention, the platform could reduce waiting times for fall prevention support, support self-management of health, and alleviate health and social care resource pressures.

While immediate next steps focus on commercial pilots and stakeholder engagement to validate the platform's real-world impact and cost-effectiveness, Smplicare has the potential to evolve into a comprehensive self-

management tool, addressing a wider range of system-level needs including frailty management, the World Falls Guidelines, and the Comprehensive Geriatric Assessment. By expanding its capabilities, the platform can deliver whole-system benefits across Social Care, the NHS, and housing, ensuring a sustainable and scalable solution for healthy ageing.

Smplicare plans to create two additional full-time equivalent roles to accelerate product development, alongside dedicated account manager positions to support onboarding and ensure successful rollout at scale. The ability to deliver Smplicare cost-effectively enables wide-scale distribution of evidence-based exercise interventions. This not only supports early intervention but also has the potential to generate significant savings for the NHS and Social Care system delivering a clear return on investment. As digital connectivity increases and older adults become more digitally literate, the opportunity to scale preventative, self-management solutions like Smplicare grows aligning with the Government's ambition to deliver more proactive and preventative care.

These study results provide a solid foundation for continued development, strategic partnerships, and future pilots aimed at achieving long-term health and cost benefits improving independence, health, and confidence among older adults across the Glasgow City Region and beyond.

## Next Steps

These next steps position Smplicare for sustainable expansion, ensuring that market-ready solutions ("Fall Fit") can drive impact today, while paving the way for a more advanced, AI-powered fall prevention service through SFRa development. As engagement deepens, Smplicare will leverage technology, research, and partnerships to support broader healthy ageing strategic objectives delivering measurable whole-system health, social, and economic benefits.

### 1 Launch "Fall Fit" App Pilots

- ▶ Initiate live pilots with local authorities, Health and Social Care Partnerships, housing associations, and insurance providers to test and validate the core Smplicare app without the SFRa.
- ▶ Gather stakeholder feedback on functionality, cost-effectiveness, and potential integration within existing fall prevention services.
- ▶ Use findings to refine implementation models for scalable adoption across health and social care systems.

## 2 Advance the SFRa from TRL 6 to TRL 10

- ▶ Develop the full product flow—from data input, algorithm assessment, and real-time risk classification to user notifications and intervention pathways.
- ▶ Pilot the SFRa's intervention features (e.g., high-risk alerts, personalised coaching, and structured prevention strategies) to validate its effectiveness in real-world settings.
- ▶ Collaborate with health and social care partners to ensure clinical and operational alignment with falls services.

## 3 Meet Public Procurement Compliance Requirements

- ▶ Work with ORCHA and Acorn Compliance to achieve DTAC compliance and align with the DSPT (Data Security and Protection Toolkit) framework.
- ▶ Ensure regulatory and procurement alignment to facilitate wider NHS and HSCP adoption.

## 4 Investigate Wearable Device Models

- ▶ Collaborate with existing and potential partners to assess the financial and logistical aspects of providing wearables e.g. more than wrist devices.

## 5 Broaden Research & Impact Evaluation

- ▶ Conduct further “tests of change” and larger-scale trials to assess long-term benefits, including reductions in fall rates, hospital admissions, and social care needs.
- ▶ Undertake health economic analyses to quantify cost savings and strengthen the business case for adoption across public-sector and commercial partners.
- ▶ Explore additional intervention areas (e.g., frailty management, World Falls Guidelines, Comprehensive Geriatric Assessment) to extend Smplicare's system-wide impact.

## 6 Refine User Experience & Engagement

- ▶ Continue iterating the app's features, particularly goal setting, personalised health insights, exercise, and educational content features, based on live pilot data and user feedback.
- ▶ Support consistent user motivation via tailored reminders, notifications, and prompts to help older adults sustain daily engagement.

## Sustainability Plan

Participants keep their wearable devices and can continue to use the AgeWell Coaching App under a discounted subscription. The team will continue pursuing user feedback loops, co-design sessions, and iterative development cycles to adapt the app to evolving needs.

Smplicare will launch pilots within and beyond the Glasgow City Region, working with local authorities, HSCPs, and housing associations. These initiatives will extend the “Fall Fit” version of the app to more older adults as a cost-effective, scalable digital falls prevention tool, while simultaneously refining the SFRa intervention in real-world settings to advance it from TRL 6 to TRL 10.

With increasing falls-related hospital admissions, prolonged bed stays, and rising fracture rates, the Glasgow City Region faces growing pressure on healthcare and social care resources, resulting in an estimated £6.2 million increase in costs in Greater Glasgow alone<sup>9</sup>. Current fall prevention pathways struggle with long waiting lists and limited capacity, leaving many older adults without timely intervention.

Digital solutions like Smplicare can bridge this gap, providing early, accessible support that can reduce hospital admissions, decrease total hospital bed days, and limit falls-related fractures, lowering healthcare costs, and promoting long-term independence.

By embedding digital interventions into existing fall prevention strategies, social care pathways, and sheltered housing services, local authorities and HSCPs can expand capacity without additional staffing strain, improving outcomes while delivering measurable cost savings.

A combination of subscription fees, licensing arrangements, and potential reimbursements through health and social care pathways will help fund ongoing development, user support, and system maintenance. By pursuing the “next steps” outlined above, Smplicare is in a strong position to achieve this sustainability plan.

---

9 Craig, J., Murray, A., Mitchell, S., Clark, S., Saunders, L., & Burleigh, L. (2013). The high cost to health and social care of managing falls in older adults living in the community in Scotland. *Scottish Medical Journal*, 58(4), 198–203. <https://doi.org/10.1177/0036933013507848>

## Acknowledgements

Smplicare gratefully acknowledges the Glasgow City Region (SCSP Innovation Fund) and DSIT for providing the grant funding that made this project possible.

We also thank Later Life Training, Dr Chenfei Ma, STAC Accelerator, ORCHA and Acorn Compliance for their technical, clinical, and compliance support.

Most importantly, we extend our heartfelt appreciation to the participants and Fall Prevention Stakeholders in North & South Lanarkshire and East Renfrewshire, whose

insights, feedback, and dedication have been central to the success of this pilot.

## Disclaimer

This report reflects the implementation, findings, and perspectives of the Smplicare project team as part of the SCSP-funded pilot study. All interpretations, conclusions, and recommendations are those of the authors and do not necessarily represent the views of the funding body.

The funding body is not responsible for any use that may be made of the information contained in this document.

[Find out more about the project on the Glasgow City Region website.](#)