Digital Care Hub

Run by social care providers
for social care providers.

Smarter care: Evidence & experience with smart light technology

14th May 2026

Digital Care Hub

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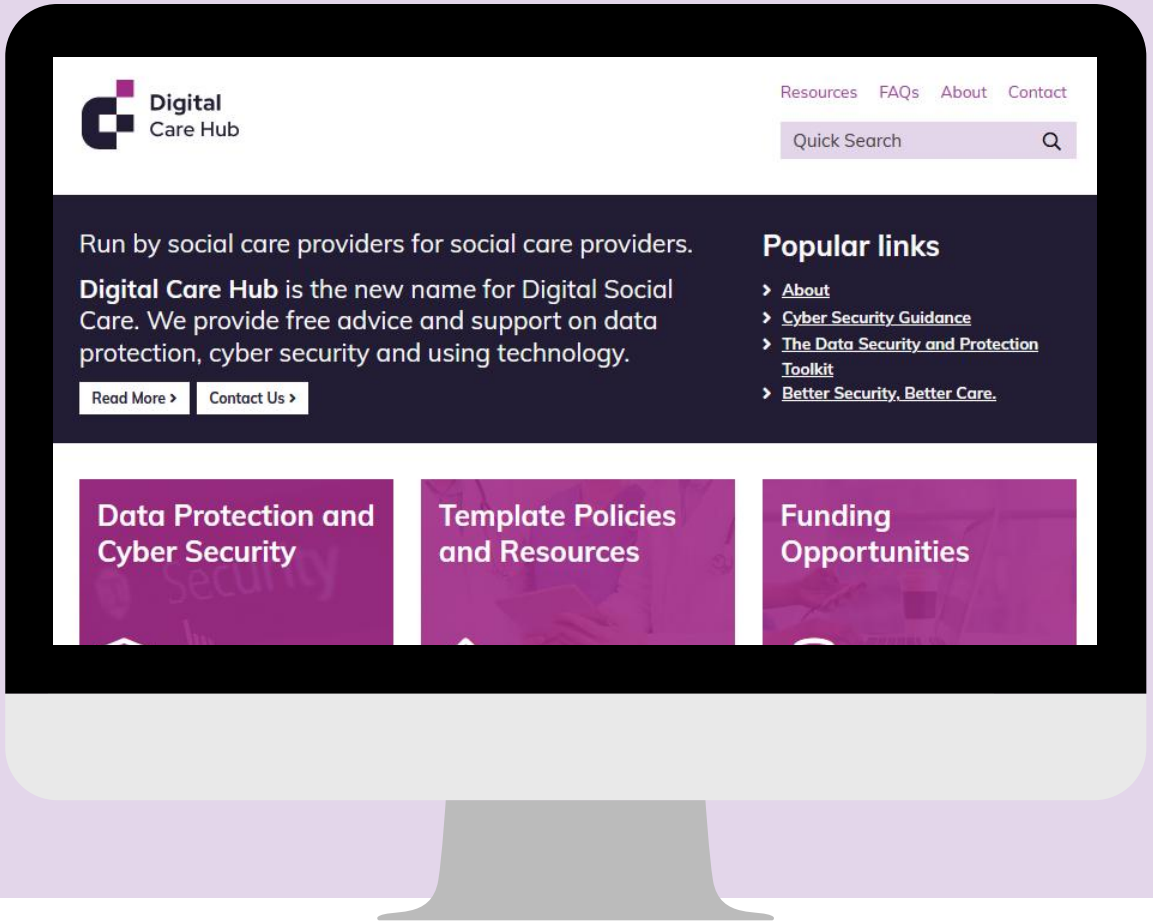
Digital Care Hub – who are we?

Digital Care Hub is a **not-for-profit organisation**.

We help care organisations use **digital technology confidently and safely** through **practical guidance, resources, and tools on data protection, cybersecurity, and digital transformation**.

Our work supports over 20,000 care providers across England to adopt digital tools securely, improve quality of care, and build digital confidence across the sector.



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Agenda

Time	Presenter	Topic
2:05 – 2:20	Mazz Akhtar, Lancashire & South Cumbria ICB	Scene setting and programme experiences
2:20 – 3:00	Rohan Mathew, Banksfield Dawn Murphy, Albert House Care Mark Radcliff, Blueblee House	Provider insights & experiences
3:00 – 3:20	Carol Holland, Lancaster University	Academic evaluation insights
3:20 – 3:30	Q&A	

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Smarter Care: Evidence and Experience with Smart Light Technology

Nobi AI Smart Lamps Roll Out

15 May 2026

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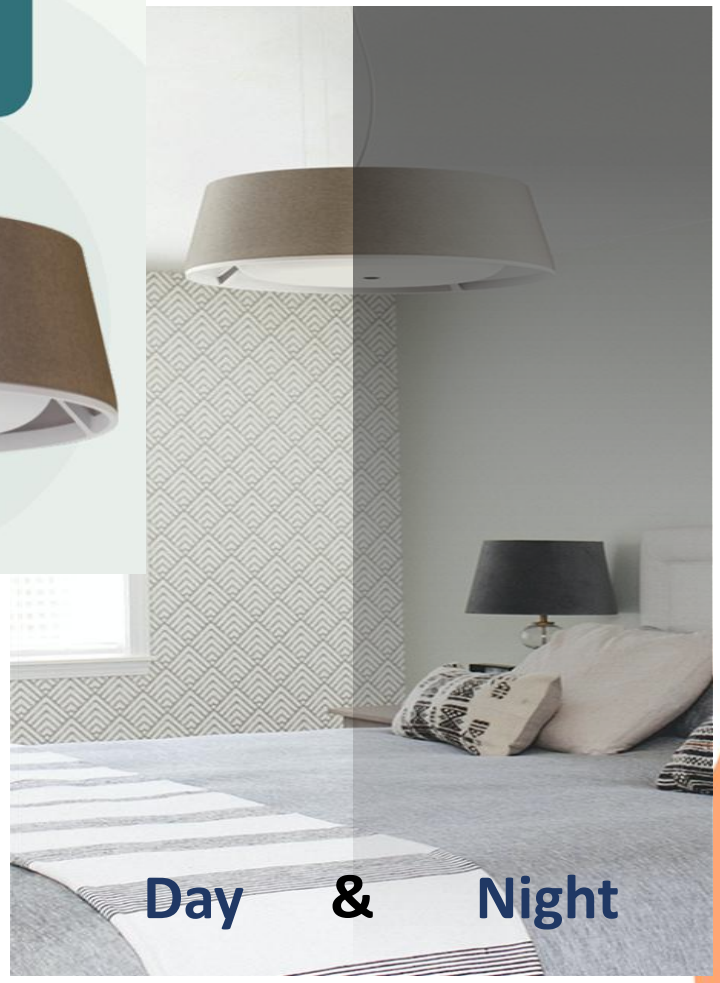
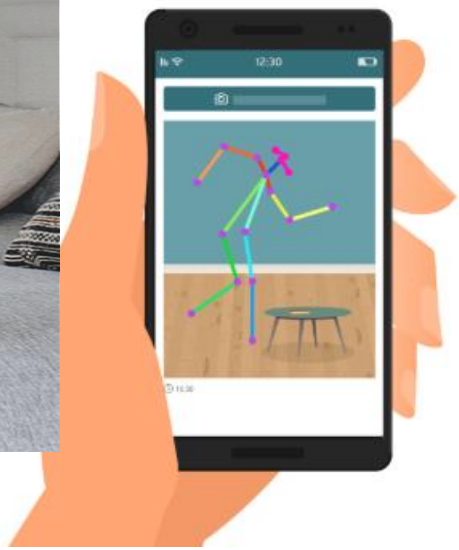
Overview





Introduction

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During 2024-25 falls were the leading cause of hospital admissions from care homes in Lancashire and South Cumbria.

The goal of the programme is to reduce the number of falls, unwitnessed falls, and improve the safety and well-being of residents.

- Reduce fall rates
- Early identification of falls
- Improve circumstances of falls
- Reduce injuries from falls
- Prevent falls
- Enhance care quality
- Measure Return on Investment (RoI)

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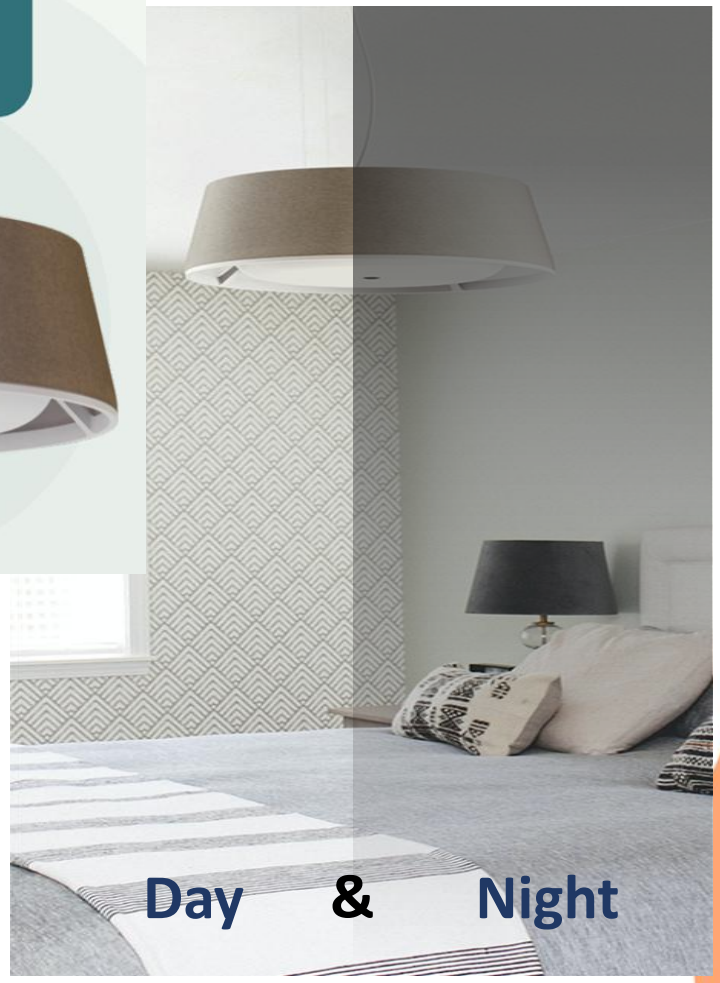
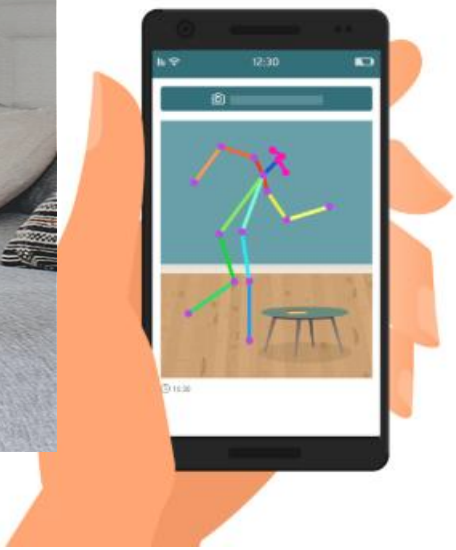
Implementation





Adult Social Care Digital Transformation Fund

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1. Adult Social Care Digital Transformation Fund (DTF) provided by NHS England Digitising Adult Social Care team
2. Enabled the provision of 800 Nobi Smart Lamps
3. To be installed in selected nursing and residential homes in Lancashire and South Cumbria
4. Used phased model prioritising high falls risk homes
5. Ensured oversight, quality assurance, and consistency across ICB area

Funding Breakdown

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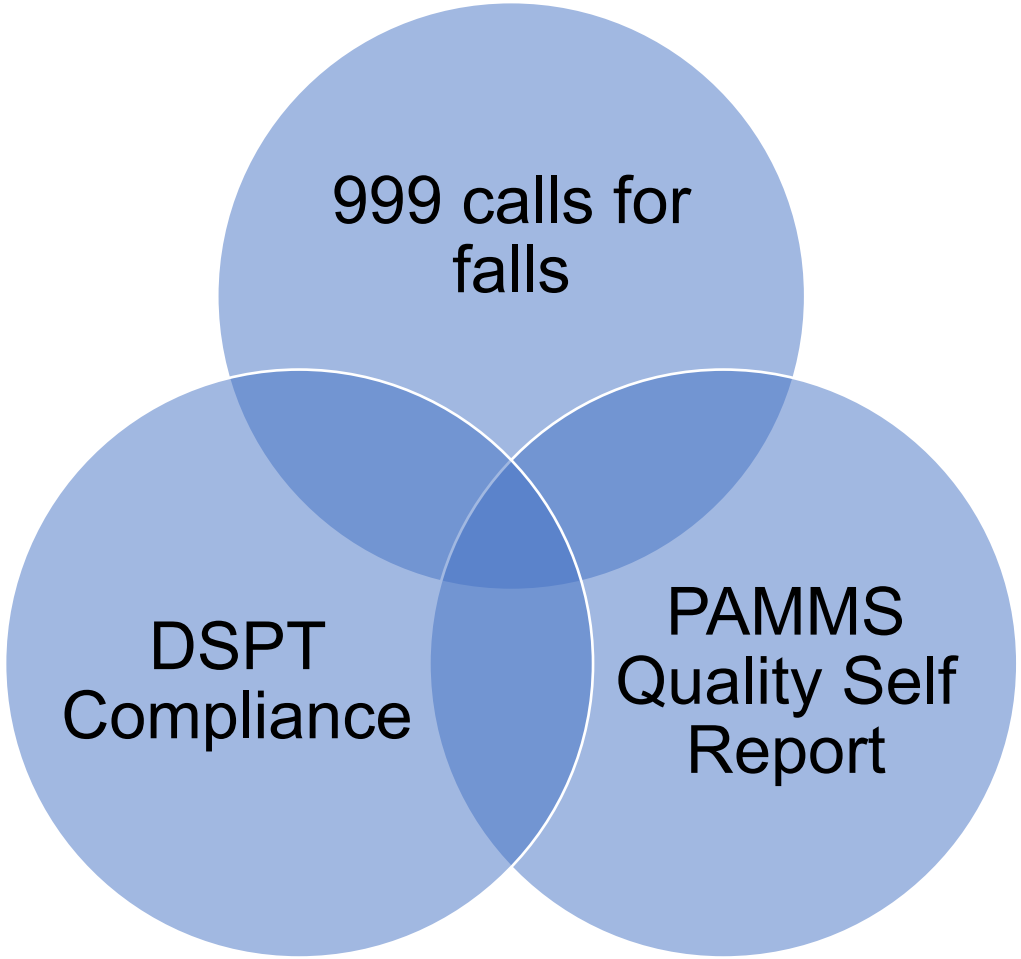
- Understand new tech needs time to become embedded into business as usual
- Integrated Care Board utilised Digital Social Care Fund to fully fund the tech for 3 years from the installation date.
- Funding included – lamps Nobi & Nobita, installation, training, and hardware support for the Nobi system for full 3 years of the contract.
- Care home has assurance that they are supported beyond just the programme.

Identifying the care settings

Lancashire and South Cumbria Integrated Care Board

- Used 2 validated data sets
- Selected the top 80 care settings with the most recorded incidents of falls
- Divided the annualised number of falls by the total number of beds
- Ensured proportionate representation across the 4 local authority areas
- Proposed provider verified by commissioners who agreed with approach/ suggested alternatives



Overview care home programme process

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Stage 1

1. Care provider commits to programme
2. Whole home site survey completed
3. Care provider confirm room selection

Stage 2

1. Wi-Fi strengths & rooms confirmed suitable for Nobi - ICB approve site survey report
2. Care provider sign and return Financial Agreement
3. ICB process NHS funding payment

Stage 3

1. Care provider pays Porters Care invoice
2. Porters Care schedule device installation date
3. Nobi arrange Nobi training sessions

Stage 4

1. Installed lamps monitored to ensure consistent Wi-Fi & fully operational
2. ICB approve care provider Go Live
3. Care provider go live & Lights On!

Stage 5

1. Care provider participate in Nobi's independent economic evaluation
2. Care provider sends regular feedback to Nobi and Porters Care to track impact to residents, relatives and care staff

What is Nobi?

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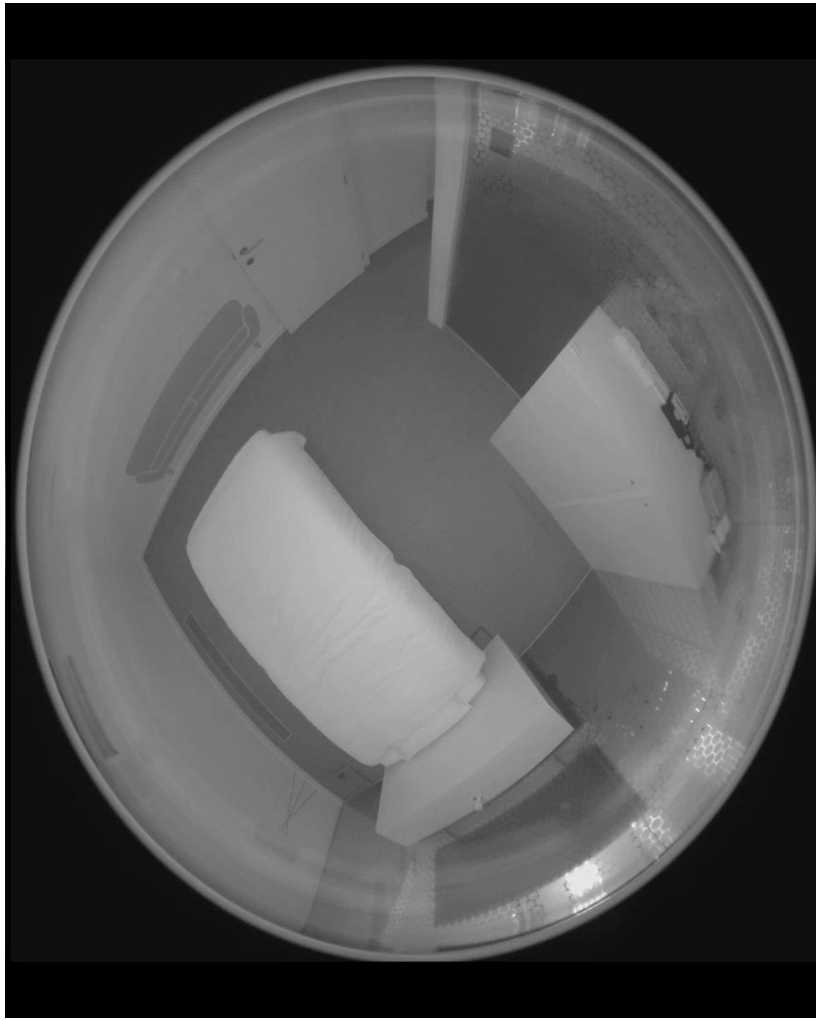

- Smart lamps with optical sensor: image taken every second, stored in lamp's processor
- Powerful Nvidia processor: 1 billion calculations per second
- AI recognises people and objects in different positions (kneeling, sitting, lying)
- 15-second video
- Processor guarantees 100% privacy with local data analysis
- Resident decides: full image, stick figure, or no image
- Consequences linked to observations
- If fall detected, Nobi issues fall alert (min 12 seconds after incident)
- Unlike wearable tech, falling speed doesn't matter – Nobi detects slow falls

Additional Features

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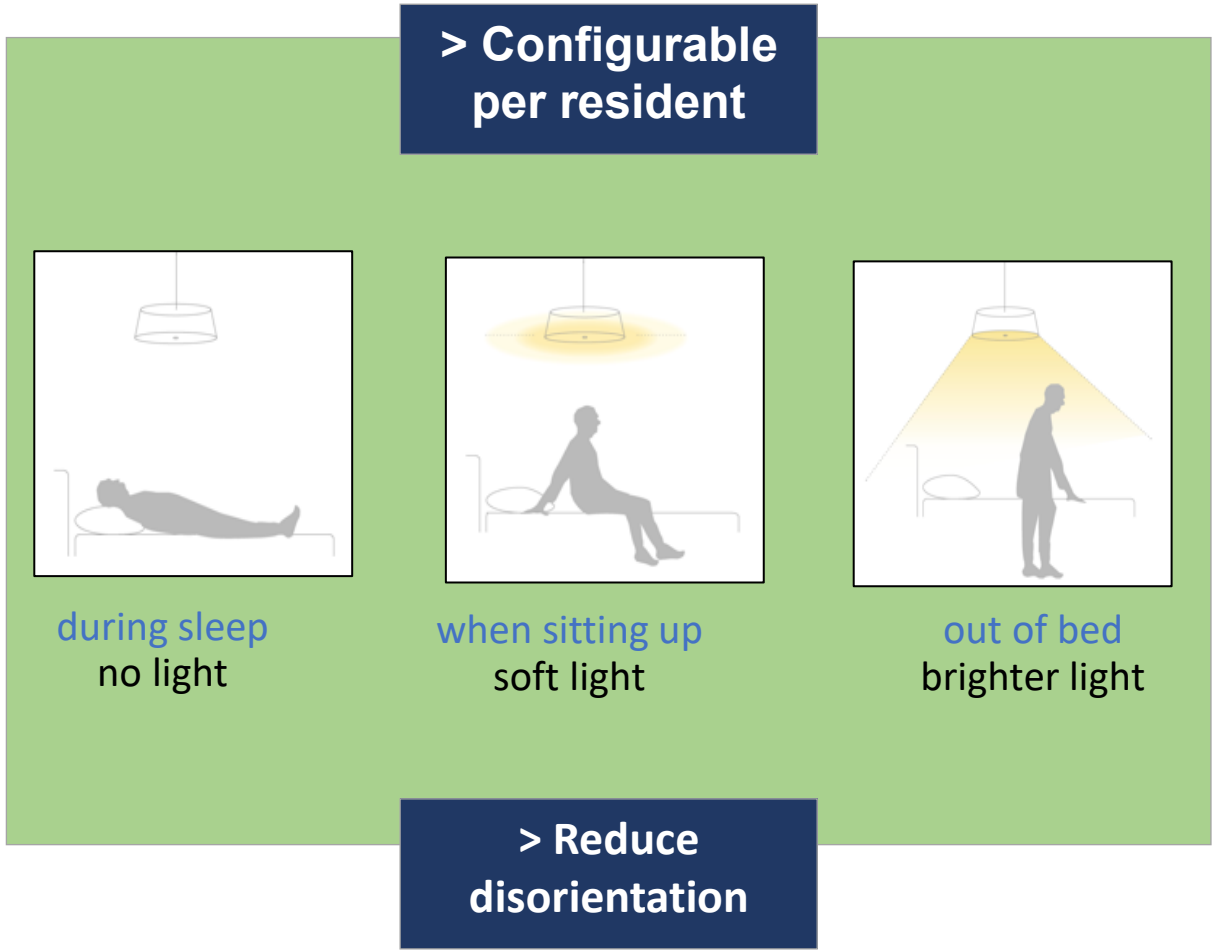
Falls prevention

- Out-of-bed detection notifies care staff
- Softly lights up the room when the person wakes up and gets out of bed

Fall prediction

- Sends alerts when the resident is moving unusually, so that care staff can act and provide help before the fall occurs



Next Steps: Supporting care differently

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- Taken learning from care homes using the Nobi lamps to support 1:1 care
- Set aside c80 lamps to really test out how AI tech can support care in a less restrictive way
- Aim to develop a long-term pathway that can support residenst, care homes and the wider system

Key data points available via Nobi to support 1:1 care in a different way

- Review Nobi dashboard for the individual being reviewed
- Review resident's night reports
- Review falls escalations if applicable
- Review the monitoring events data for the resident
- Review any additional data collected if the home has enabled any additional features

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Provider Insights from:

Rohan Mathew, Banksfield

&

Dawn Murphy, Albert House Care

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Lancaster University

Independent Evaluation of the Nobi lamp pilot in Lancashire and South Cumbria

Evaluation Team, Departments of Health Research and Organisational Wellbeing and Technology, Lancaster University.
Lancashire and South Cumbria team

Links to full report

- The full report that this presentation summarises can be found here:
- https://www.lancaster.ac.uk/c4ar/nobi/

An independent evaluation

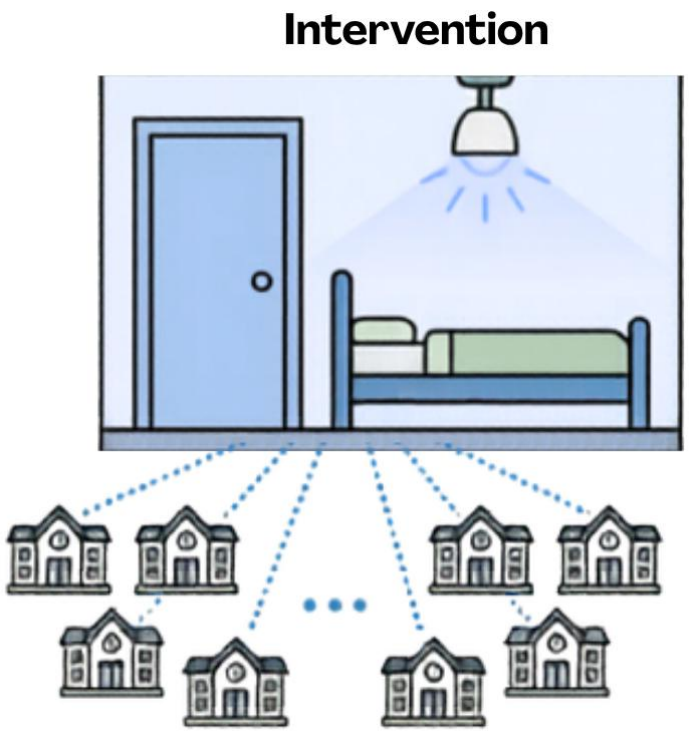
- funded directly by the ICB, with funding from NHSE, with no financial input from Nobi.
- Data collected by the ICB, by Nobi technology and by the North West Ambulance Service, and shared with us as anonymised secondary data.
- Although the Lancaster University team had a lot of interaction with the ICB team throughout the evaluation, decisions on what types of analyses to use and the writing of the findings were done independently. The ICB team wrote portions of the report to do with the background and structure of the pilot they delivered
- The ICB, Local authority and NWAS contributed to or confirmed the recommendations
- We had some limited interaction with Nobi but they did not influence our analyses or findings.

What is The SMART Lamp Technology?

- Digital technology is rapidly reshaping adult social care. AI enabled, sensor-based technology shift practice from *reactive* monitoring to *preventative* care.
- The lamps function as both a ceiling light and an intelligent monitoring device.
- They analyse resident movement enabling real time fall detection with reported 100% accuracy.
- They detect falls and the alert to staff helps eliminate long liesand associated harm
- Nobi lights activate when a resident gets out of bed, reducing disorientation and nighttime falls.

- When a fall does happen, Nobi provides a short sequence of anonymised images to support root cause analysis, enabling homes to identify patterns such as poor footwear, clutter, nighttime wandering or medication effects.
- **This data driven learning supports better care planning and targeted risk reduction interventions**.

The Nobi Lamp Pilot Intervention



800 Smart Nobi lamps were installed in around 20% of the bedrooms in 80 Nursing and Residential care homes in the Lancashire and South Cumbria region. 68 homes were in a position to provide Nobi data for this study and we were able to analyse ambulance call outs for 57. Lamps were installed in the bedrooms of residents with high fall risks.

The aims were

- Reducing unwitnessed and hidden falls;
- Shortening long lie durations through immediate alerts;
- Lowering ambulance call-outs and conveyance;
- Generating actionable insights to inform care plans (e.g., nighttime mobility, post meal patterns).

What do we already know? What don't we know?

Before we started analysis of the data, we did a review of previous work on a range of fall detection devices, including this one. We found that:

- Most previous studies found a reduction in long lies, ambulance call-outs and hospitalisations.
- Most studies did not find a significant reduction in fall rates and injurious falls
- Few studies had proper control groups
- Those studies that reported a reduction in fall rates and injurious falls tended to be qualitative studies, pilot studies without control groups, case studies or unpublished reports with mainly anecdotal data that did not clearly describe a statistical methodology
- **No studies conducted analyses that would tell us about reduced risk of falls, or evidenced prevention.**

Objectives of the Evaluation

1. To determine whether this technology has **reduced resident falls** and is likely to **prevent future falls**, **reduced staff response time** after a resident has fallen and before help comes, and **reduced ambulance call-outs**, distinguishing those leading to hospital conveyance from those where no conveyance occurred.

2. To determine whether it has changed how Nursing and Residential care homes deliver care for the residents they support.

3. To determine what impact it has had on residents' quality of life.

4. To investigate in what kind of circumstances Nobi lamps can support care in a different way to a 1-1 package of care and be the least restrictive practice?

5. To determine whether this approach offers value for money, using the NWAS data on ambulance call-outs to infer costs avoided driven by the falls prevention capacities of Nobi.

6. To consider how this intervention can be scaled and sustained

What did we do? Methods summary

- **Quantitative data (Numbers)** from the Nobi smart lamps, from the North West Ambulance service and from a questionnaire (the CHSMQ) sent to managers and staff
- **Qualitative data (people's comments)** from feedback on benefits or challenges from care home managers, from open text boxes in the questionnaire, and from an interview as part of a deep dive case study

Quantitative data answer the question of **whether or not** the lamps improve outcomes and by how much, and what might that save in terms of costs.

Qualitative data answers the questions of **how** that is happening – what are the changes perceived and experienced by staff that result in the changes in the number outcomes.

That is, the two types of data support each other.

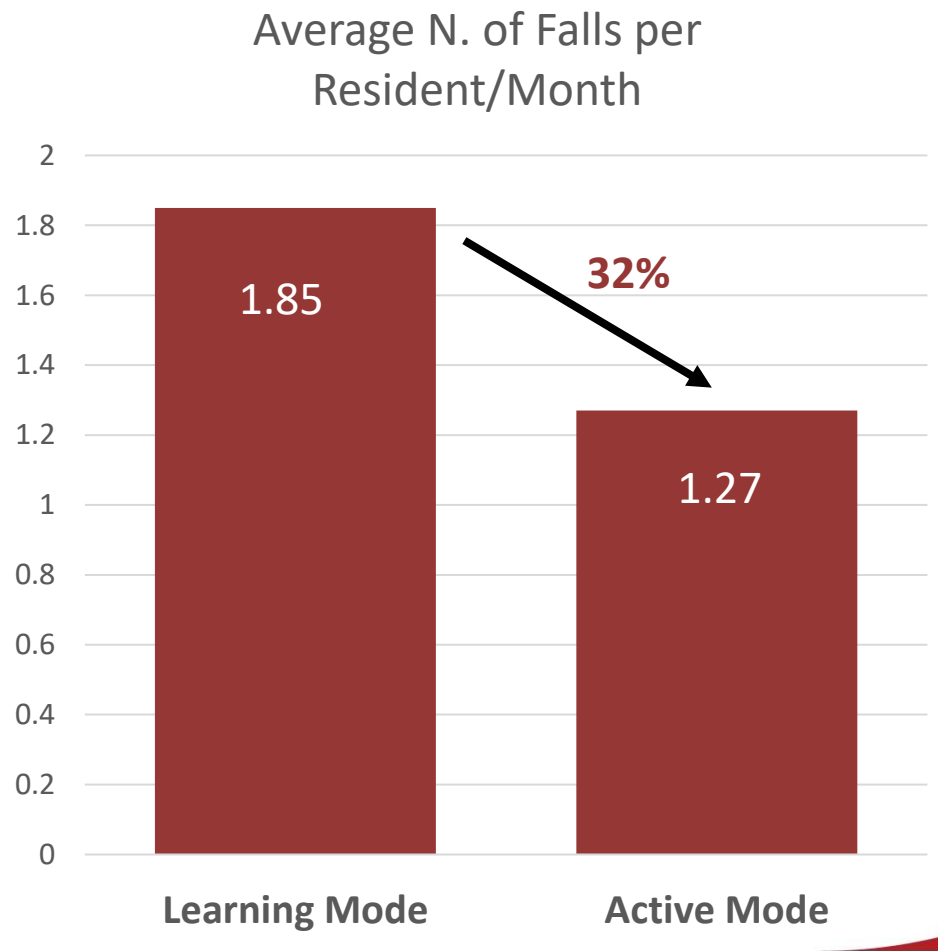
- Importantly, this ensures the staff voice is heard.

Results – Frequency of Falls

- 840 residents were monitored using the technology.
- Of these, 628 residents (75%) were observed across both Learning and Active Modes

•Controlling for **Time** & **Resident** variability, our analytic model shows a significant reduction in the average number of falls per resident by about 32%

•Sensitivity analysis showed no variation /similar impact across all age groups or both genders.



Results – Prevention of Falls

- People differ in ways we often can't fully measure, such as Frailty, Underlying health, Mobility, Cognitive status. Even within the same diagnosis, the severity of symptoms can vary. In our models, we controlled for Time & Resident variability – in other words, we compared each resident to themselves over time, accounting for *changes that affect everyone at the same time*. This gives more certainty (reliability) to our findings because we have adjusted for these factors that may be different in a different context.

- Controlling for **Time** & **Resident** variability, our analytic model shows a significant decrease in the odds 'probability' of falling in a day ≈ Residents experienced relatively ***more*** Zero-Fall days in Active Mode compared to Learning Mode by about **33**%.

- **That is, the likelihood of falling has reduced by 33%**

In Summary

Our Analysis shows the Technology:

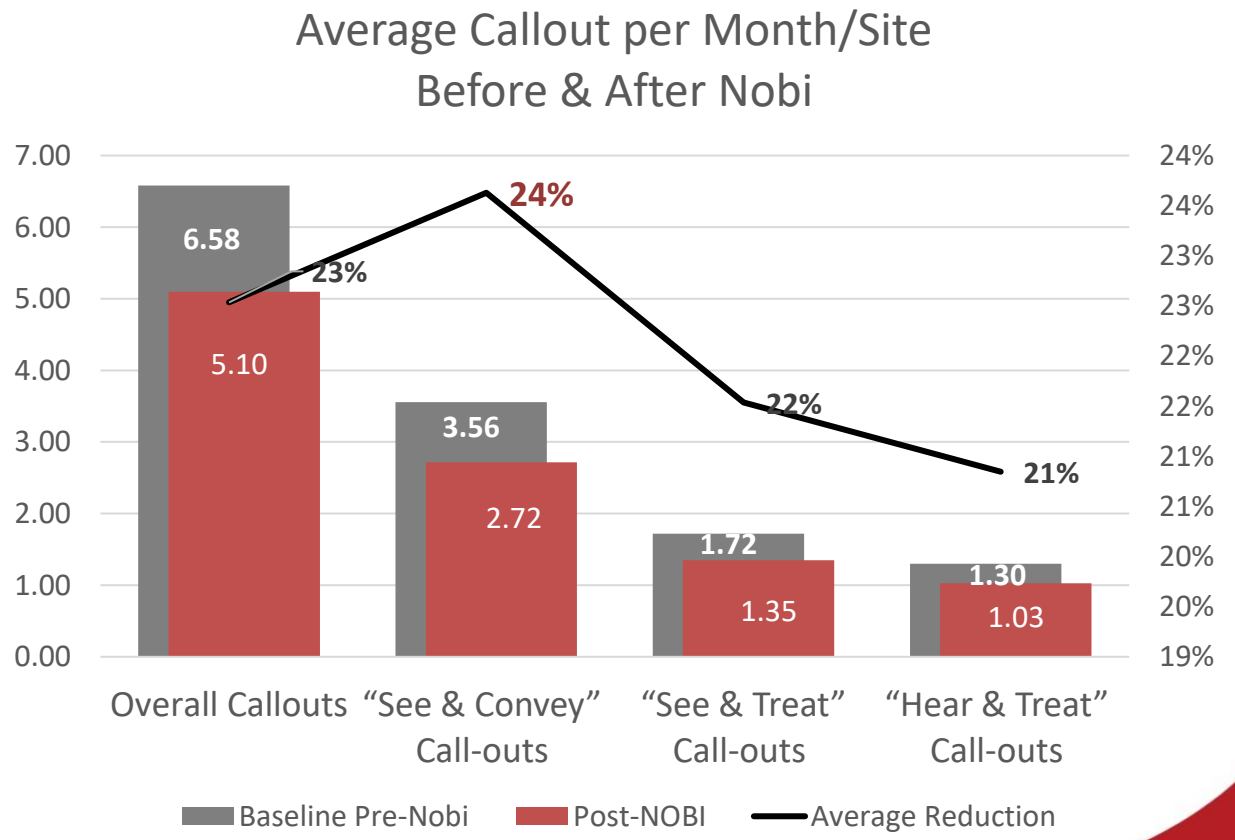
- Reduced the Frequency of Falls by 32%
- Prevented Falls by 33%
- Decreased the Staff Response Time by 9 Minutes

Does having Nobi Lamps reduce ambulance call-outs compared to in homes without it?

Lancaster University

Our analysis included 428 nursing and residential care homes with reported ambulance callouts in the period from April 2024 to March 2026; 57 of these had Nobi in an average of 22% of their rooms

- Overall callouts in care homes selected for NOBI installation were reduced by 23% from about 6.58 callouts per site per month.
- Callouts with hospital conveyance have a **statistically significant** decrease of about 24%
- Compared to Nursing Homes, Residential homes had a weaker & statistically non-significant reduction in callouts.



Does this save on NHS costs? Scenarios used to estimate costs

Lancaster University

Scenario (1) the most conservative: There is **no admission from all callouts transferred to the hospital,** with all transferred residents being released after A & E evaluation.

Scenario (2): out of callouts conveyed to the hospital, there is **40% chance of being admitted for a short stay**, and the rest (60%) have no admission and are being released after A & E evaluation.

Scenario (3): out of callouts conveyed to the hospital, there is **40% chance of being admitted for a long stay (12 days)**, and the rest (60%) are not admitted and are being released after A & E evaluation.

Scenario (4): out of the callouts conveyed to the hospital, there is a **40% chance of admission for a long stay for serious injury that requires extensive rehabilitation post-discharge,** and the rest (60%) are not admitted and released after A & E evaluation.

Service	Costs
Ambulance Costs	
Hear & Treat	£66
See & treat	£327
See & Convey	£459
+ Carer chaperons @19/hr	[+ £95]
A&E Evaluation and Care	£563
Inpatient short stay	£792
Inpatient long stay	£5,134
Severe injury that requires rehabilitation	£21,120

Sources: The unit costs of health and social care, NHS: Key Facts And Figures | The King's Fund

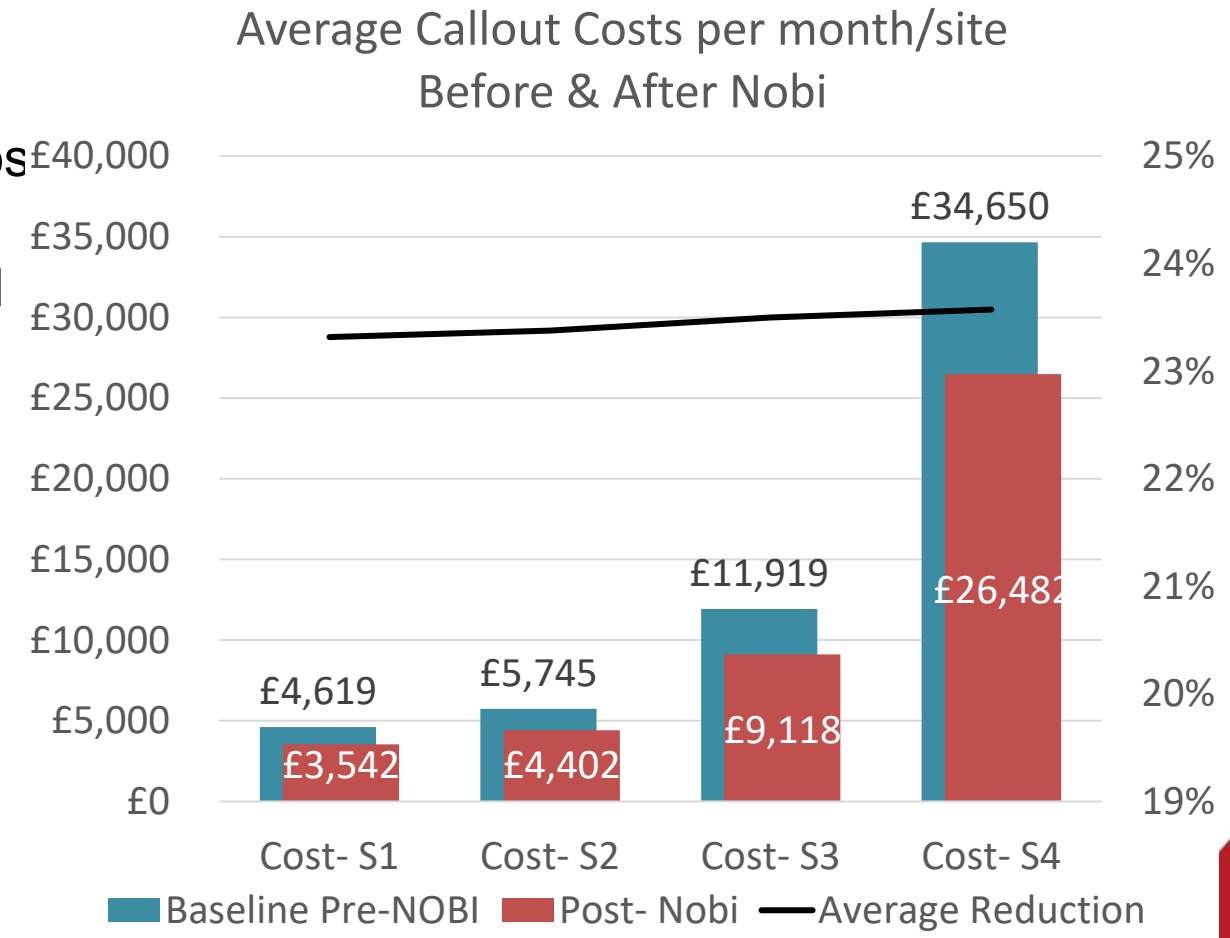
Changes in Cost Estimates

•Intervention care homes showed a **significant** reduction in costs of approximately **23–24%** across all scenarios following NOBI installation, with an average monthly saving of **£1,343** per site for S2 and **£2,801** per site in S3.

Estimated NHS savings (annualised) due to reduced ambulance call outs resulting in hospital transfer and long hospital stays

From £8,601 and £26,096 per home and £490,237 and £1,487,480 across all homes

There is potential for higher annual cost savings after using the device for 3 years

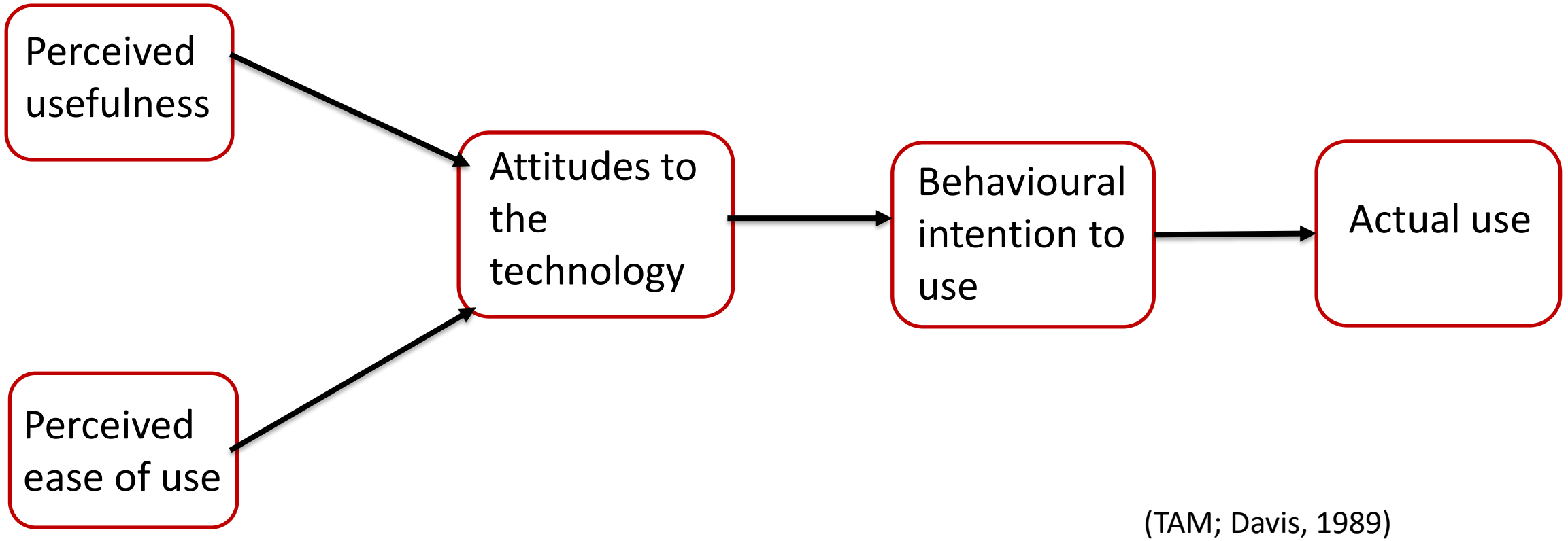


What staff said:
How the analysis of feedback and questionnaires from staff supported the numbers.

Data sources

- Care Home Staff & Managers Questionnaire (CHSMQ): the staff and managers' attitudes towards the technology and the extent to which they find it helpful.
- Benefits reporting data: feedback about Nobi from care homes in emails and meetings.
- Deep dive case study in Kendal care home: Semi-structured interview with manager & CHSMQ data of the staff of Kendal care home.

We used a theory called the Technology acceptance Model as a basis for our thematic analysis



(TAM; Davis, 1989)

Does the technology help in preventing falls and long lies?

Perceived usefulness

Preventing falls

"Very effective smart lamp preventing falls to a major extent as it helps residents with night light." ID 48 (CHMSQ lead returns)

Reduction in long lies

"To have a response time of one minute and 33 seconds is phenomenal. And without the data, without the technology, that that wouldn't happen. We had a lie of nearly two hours in those bedrooms. That will never happen again" Deep dive case study Kendal care home

What is the impact of the use of the technology on ambulance call outs and hospitalisations?

Playback feature of the device can help paramedics to assess the extent of injuries and need for hospitalisations.

Reduced ambulance calls and hospitalisations

"Nobi has helped reduce hospital admissions and ambulance call outs, as they helped detect if people have banged their head or not, requiring a hospital visit or not." ID 24 (Benefits reporting data)

What is the impact of the use of the device on care provision, work patterns and staff response to falls?

Lancaster University

Perceived ease of use

Personalising monitoring routines to better support residents. Residents at higher risk of falls were checked more often but one-on-one care for some residents who did not need it could be reduced.

Improved staff efficiency in responding to falls and reduction in response times.

Changes in night-time monitoring routines to better support residents

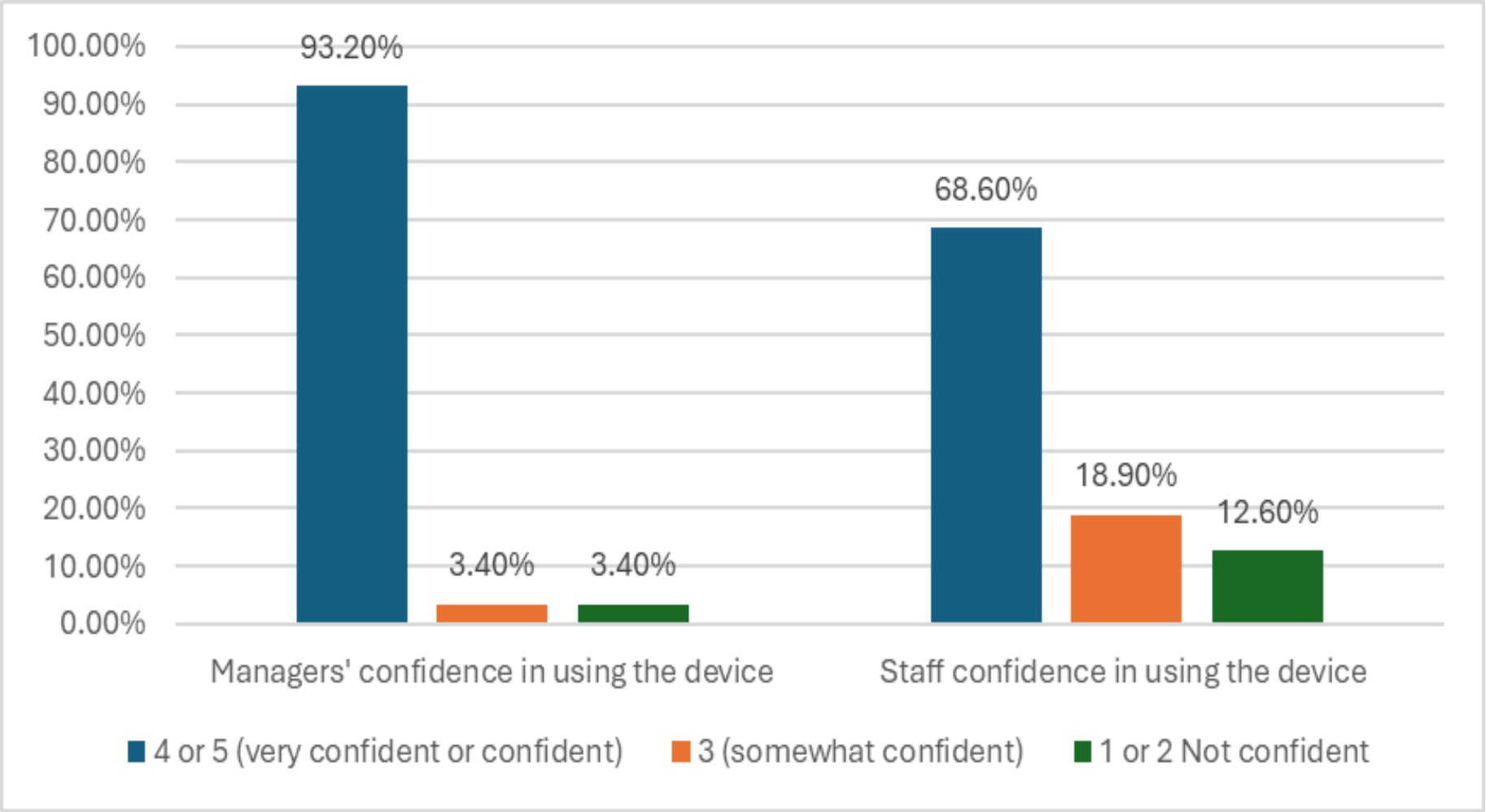
"With close monitoring of the resident at night (using sleep reports and monitoring alerts), ….care reviewers agreed the Nobi can support her care at night and reduced the 1:1 support at night." ID 52 (Benefits reporting data)

Improved staff efficiency in responding to falls

"Since the installation of Nobi lights in high-risk fall rooms, staff response times to incidents have improved significantly." ID 11 (DLQ)

"Some routine checks of residents have been more frequent due to recorded bed exits etc" ID 17 (CHSMQ lead returns)

Perceived ease of use and confidence in using the technology



Ease of use and adequate support and training to use the technology

"Staff have found the interface straightforward and the support from the Nobi team helpful whenever we've had questions." ID 27 (Benefits reporting data)

The technology helps to shape other fall prevention strategies!

Perceived usefulness:

- Supporting improvement in sleep quality.
- Informing medication reviews
- Better assessment of potential reasons for falls and informing environmental changes to prevent falls.

Better detection of changes in sleep patterns

"Sleep and night-time activity reports have enabled staff to tailor evening routines, reduce distress, and implement more effective settling strategies." ID 56 (CHSMQ lead returns)

Better assessment of potential reasons for falls

"You can make environmental changes to people's bedrooms because you can see what's happening" Deep dive case study.

Informing medication review

" After closely reviewing the data provided by Nobi, they were able to ascertain that A was suffering a fit which was causing the fall. Care staff now had strong evidence to take to their primary care weekly ward round to demonstrate resident A required a medication review. GP reviewed the data and amended medication regime, in particular medications taken at night. So far this has resulted in few falls at night and improved sleep reports." Care home ID 2 (benefits reporting data)

Recommendations (selected)

- To consider the use of such technology within falls prevention programmes in Nursing and Residential care homes and other environments where help is at close hand (e.g. sheltered and Extra Care establishments). Ensure reliable Wifi before installing Nobi.
- To use the broader utilities of the device, such as alerting to a resident being unsettled and moving around at night, in supporting older adults living with frailty
- To ensure use of playback in calls to emergency services.
- To employ the device to inform environmental modifications to support informing individualised care planning and preventing falls (e.g. furniture layout)
- To consider which residents can be safely moved to less restrictive supervision once Nobi lamps are in place in a resident's room
- Highlight the opportunity to use Nobi insights within statutory care reviews and reassessments, for example following falls, hospital discharge, medication changes or reablement, where objective evidence has historically been difficult to access.
- Constant interaction between care homes, Nobi and ICB AACC teams is recommended

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Q&A

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