RAND EUROPE

UNIVERSITY OF OXFORD

POLICY BRIEF

Home sensor technology in social care reform

Moving from potential to practice at scale in tech-enabled care

Why this matters now

Adult social care is under intense pressure due to the rising complexity of needs, workforce shortages, financial constraints and public expectations for better-integrated preventative care. Government efforts to reform social care are placing renewed focus on the potential of tech-enabled care (e.g. the Adult Social Care Technology Fund [ASCTF] and the Casey Commission on Adult Social Care).

There is growing interest in the use of home sensor technologies for proactive care (prevention or early intervention in health or care needs). These technologies have the potential to support independent living and improved quality of life. They could also help prevent avoidable hospital admissions and unnecessary demand on health services through early detection of deterioration, as well as potentially supporting social care productivity and efficiency. However, evidence about how home sensor-enabled social care pathways work on the ground, their impacts on people and services and their success criteria, is scarce. Without understanding the determinants of successful design, implementation, sustainability and scale, it is difficult to establish effective policies and programmes.

There is an urgent need to improve the evidence base relating to how technology such as home sensors and their associated data infrastructure can help improve adult social care, enhance integrated health and social care, and support independent living, prevention and community-based care.

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The National Institute for Health and Care Research (NIHR)-commissioned **rapid evaluation of home sensor–enabled proactive care pathways**, delivered by the **DECIDE** centre (a partnership between the University of Oxford and RAND Europe), provides uniquely in-depth and robust evidence and analysis of the realities of home sensor-enabled social care pathways,

looking at how tech can help, how pathways operate, and their impacts and influences on effective implementation and adoption at scale.

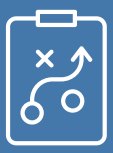
What the evidence shows

Drawing on an evidence review, deep dives in three local authorities, over 70 interviews, workshops, and an economic feasibility analysis, we found:

- **Home sensor pathways have real but uneven benefits, with privacy concerns discouraging some people.** Home sensors can help identify early signs of health deterioration (e.g. night-time waking, reduced movement, hydration/nutritional changes). They can also enable more objective and holistic care assessments, support care planning and help reduce unnecessary domiciliary visits, help prevent prolonged 'long lies' after falls and provide reassurance to families. Sensor-enabled remote monitoring pathways in social care can also aid communication between social workers and families when agreeing on care plans. However, some participants in the evaluation voiced concerns about privacy and shared examples of the sensors exacerbating anxiety and paranoia in people with diagnosed mental health conditions. Sensors can also have limited effectiveness for people without supportive networks around them to respond to alerts. Thus, home sensor-enabled remote monitoring pathways are not suitable for everyone.
- **Sustained adoption at scale is hindered by challenges related to funding, workforce capabilities and capacity, demands on informal carers, silos between health and social care, and digital connectivity and equipment maintenance demands.** Home sensor-enabled social care pathways reshape, rather than replace, the work done by social care professionals. To achieve intended benefits, frontline social care practitioners need to have the skills and confidence to interpret sensor data for decision making. Informal carers also play a key role in acting on sensor data, requiring their engagement and time. Challenges to the timeliness of sensor pathway initiation for reablement purposes after discharge from hospital persist, largely related to insufficient staff working at the intersection of NHS healthcare and local authority social care. Home sensors also require digital connectivity and ongoing maintenance, with implications for service resourcing, digital infrastructure and planning. Senior-level buy-in, clear distribution of roles and responsibilities for monitoring and acting on alerts, dedicated tech-enabled care (TEC) leads in local authorities and installation/maintenance teams, social care practitioners embedded into NHS discharge services, and close working relationships between tech suppliers and local authorities are also key to success.
- **There is currently insufficient system-level data to evidence cost effectiveness, which is needed for long-term investment.** Data fragmentation (e.g. between health and social care or between local authorities), inconsistent data governance requirements (e.g. data-sharing agreements) and data infrastructure limitations all block meaningful economic evaluation of cost effectiveness. The quantitative data currently available are limited, which constrains the ability to assess impacts on the prevention of deterioration and hospital admissions, care packages, and delays in admissions to residential care. Local authorities often lack capacity and capabilities for effective evaluations and cannot demonstrate full value without integrated health and social care datasets. Improving data access, sharing and use infrastructure is fundamental in enabling better-informed decision making about funding these pathways sustainably and at scale.

What this means for national policy and action

This evidence has clear implications for the Department of Health and Social Care and for wider government reforms. While our primary focus was on the use of home sensors in social care, reflections from study participants suggest that many of our recommended actions are applicable to broader decision making regarding the use of assistive technology in social care.

SUGGESTION	ACTION
 **Strengthen national guidance and standards for proactive care technology**	• National policymakers (with the help of research institutions) should synthesise and consolidate emerging resources and evidence from key evaluations into improved guidance about workflow design, data use, safeguarding of service users and evaluation for sensor-enabled care pathways. This should be synthesised into a single national TEC implementation framework for commissioners and providers (e.g. resources from the Tech Services Association [TSA], Digitising Social Care Records, 'what good looks like' for care technology). In doing so, consider the use of frameworks for 'complexity aware' decision making in its development. • National guidance should reflect the perspectives of different stakeholders for sustainable adoption at scale (service users and informal carers, social care workforce, system leaders, commissioners, technology suppliers).
 **Prioritise national data infrastructure and governance barriers**	• Provider organisations need practical help. National guidance co-produced with regional/local system leads (e.g. LAs and ICBs) should provide immediately useful tools rather than abstract guidance (e.g. model data-sharing agreements for ICB–LA partnerships). • National policymakers should establish a minimum dataset for proactive care to enable evaluation (e.g. care needs, outcomes, hospital use, quality of life), co-produced with regional/local system leads. • National policymakers should work with the research community to ensure sufficiently standardised and feasible evaluation approaches for Adult Social Care Technology Fund-type programmes to enable comparability in a learning health and social care system. • National and regional system leads should establish and fund regional data-integration pilots to assess proactive care outcomes and inform spread and scale.
 **Make proactive tech-enabled care part of the long-term workforce strategy, enable support and training to reinforce it**	• National policy should embed TEC competencies in Skills for Care frameworks, continuing professional development (CPD) pathways and apprenticeships to improve digital competencies in the social care workforce. • LAs and ICBs should invest in digital practice leads, 'super-users' and local TEC champions. • A TEC competency module for frontline practitioners should be commissioned, potentially with the involvement of Skills for Care.
 **Support sustainable business models**	• DHSC could create co-funded, multi-year commissioning models with ICBs and technology suppliers, as local authorities cannot absorb the up-front operational and maintenance costs in short-term budgets. • Convene a taskforce including the Department of Health and Social Care, the Ministry of Housing, Communities and Local Government, the NHS and industry to align regulatory, commissioning and funding models for proactive care technologies.

Find out more about the project

The full report of this evaluation of home sensor technologies in social care settings is available at **https://openresearch.nihr.ac.uk/articles/5-71**.

For more information or a follow-up discussion please contact Dr Stephanie Stockwell (**sstockw@randeurope.org**) and Dr Sonja Marjanovic (**smarjano@randeurope.org**).

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About DECIDE

DECIDE (Digitally Enabled Care in Diverse Environments) is a programme for the rapid evaluation of technology-enabled remote monitoring in health and care. Funded by the NIHR's Health and Social Care Delivery Research programme, DECIDE is a partnership between the University of Oxford and RAND Europe. The overall programme director at the University of Oxford is Professor Sara Shaw and the RAND Europe director is Dr Sonja Marjanovic.

This brief describes work done by RAND Europe and the University of Oxford documented in *Adopting and Embedding Home Sensors in Social Care: Findings from a Mixed Methods, Rapid Evaluation* by Joseph Wherton, Stephanie Stockwell, Nikki Newhouse, Stuart Redding, Anna Louise Todsen, Caroline Potter, Stavros Petrou, Sonja Marjanovic, Sara E. Shaw, EP-71108, 2025 (available at https://www.rand.org/pubs/external_publications/EP71108.html). To view this summary online, visit www.rand.org/t/RBA5001-1. RAND Europe is a not-for-profit research organisation that helps to improve policy and decision making through research and analysis. RAND Europe's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

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