Health Innovation Kent Surrey Sussex

Office for Life Sciences

NHS

Commissioning integrated digital health solutions for older adults: Insights from Kent and Sussex

Health Innovation
Kent Surrey Sussex

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Introduction

> "Digital health and care has the potential to empower people to manage their health and care better, and also improve clinical outcomes, effectiveness and efficiency across the health and social care system. Yet despite its potential benefits, the introduction of digital health and care solutions risks excluding the most vulnerable and highest need population(s) and perpetuating or exacerbating health inequalities, because it is not accessible to, or useable by these populations"[i].

In 2024, Health Innovation Kent Surrey Sussex engaged with cross-system partners to understand the requirements for comprehensive, accessible, useable digital health and care that would meet the needs of an older population with increasing health and care needs, to help demonstrate potential benefits of integrated commissioning of digital innovation based on population needs.

We also commissioned a cross-system Budget Impact Model from partners at Unity Insights, to understand if and how an integrated digital solution, based on these insights, may reap resource (time and cost benefits) across a system.

This report summarises our approach and key findings.

- **Katherine Sykes - Ageing Well Lead: Health Innovation Kent Surrey Sussex**

Executive summary

Context

Digital health and care technologies have the potential to empower older adults with increasing health needs to live independently while improving clinical outcomes and system efficiency. However, digital exclusion (including due to complex digital solutions) remains a significant barrier for vulnerable populations, necessitating accessible, integrated solutions that accommodate changing health statuses and diverse user needs.

Aim

Health Innovation Kent Surrey Sussex undertook system wide engagement, with cross-sector health and care partners in Sussex and Kent to understand what a typical older adult with increasing health requirements needs from digital health and care, what health and care interventions the health and care workforce need digital to help facilitate, and what specification requirements are needed for digital technologies to be accessible and useable for older adults with increasing health and care needs, as well as for their families and the cross-sector health and care services they use. To demonstrate potential economic impact of integrated commissioning we worked with Unity Insights, an evaluation partner, to develop a Budget Impact Model.

Methods

To achieve our aim, we:

1. Developed a persona of a typical older adult, becoming house bound with increasing care needs
2. Identified what types of health and care services a person meeting these characteristics is likely to need to access
3. Identified what technology functions would be needed to enable effective digital care for relevant health and social care interventions
4. Identified accessibility and usability criteria for technology meeting the need of this population
5. Evaluated if accessible, useable technology has the potential to reduce costs to health and care services, including by releasing travel time

We engaged with cross-sector health and care staff: community nurses, virtual ward nurses, a geriatrician, a social prescriber, and dementia support workers either in workshops or in individual interviews.

We commissioned Unity Insights to develop a Budget Impact Model for integrated care system application following the workshops and interviews. This was used to identify travel costs (time and cost in GBP) for certain core interventions and compared these for an average 1-mile journey (round trip) and an 8-mile journey (round trip).

Insights

Digital inclusion challenges: Older adults and those with cognitive or physical disabilities often lack foundational digital skills or access, risking exclusion from digital health services and exacerbating health inequalities.

Benefits of digital transformation: Remote consultations, monitoring, and out-of-hospital services reduce hospital risks and improve convenience, while digital tools support social connection and medication compliance for patients and caregivers.

Need for integrated commissioning: Current procurement is often fragmented by service or provider, leading to duplication, increased costs, and complexity for users managing multiple digital platforms. Integrated commissioning across care systems can better serve population needs.

Health and care delivery requirements: Workshops identified that an ideal digital solution should offer an older adult with increasing health and care needs: a simple, familiar single access point for appointments, virtual consultations, remote monitoring, reminders, assessments, and family involvement with appropriate consents.

Key technology features: Solutions must be easy to use, intuitive, and adaptable to physical, cognitive, and sensory needs; interoperable with family devices and health systems; and enable seamless data sharing across services.

Existing technologies and gaps: While some integrated Internet of Things and home monitoring devices exist, they are commissioned separately by providers, lacking system-level integration tailored to population needs.

Cost-saving potential: Integrated, accessible and useable digital solutions could save the health and care system approximately £460 to £4360 per patient annually by reducing travel time and costs alone, while enabling virtual care, with additional benefits due to health and care professional time saved and greater benefits realised in rural areas and through hospital admission avoidance.

Conclusion

This was a theoretical evaluation; no single technology we are aware of exists that can currently meet all the functions identified as optimal by our health and care workforce and also meets the accessibility and usability criteria required by this population.

This review has highlighted what a cross-sector, clinical workforce delivering care in the community needs from technology to optimise delivery of care at home. We have not evaluated the wider impact on health and wellbeing, potential for improved social connection, and impact of potential admission avoidance.

This review has demonstrated that integrated technology, commissioned across a combined service for all health and care stakeholders to access and deliver care, has the potential to become more cost effective and save money from travel costs and time alone. This is more significant the further health and care staff need travel geographically to deliver care to rural and coastal communities.

Context

The changing health care landscape

Health and care services have seen a widespread digital transformation and the rapid introduction of digitally enabled access, services and pathways since COVID-19, such as remote consultations and assessments[ii], remote monitoring[iii], and out of hospital services like urgent community response[iv] and virtual wards[v]. These new technologies provide our population and our health and care service many benefits including reducing the risk of complications like deconditioning and infections acquired in hospital, providing more convenience due to less travel time and cost, and less disruption to the delivery of other services such as community care.

Families and social care services can benefit from using appropriate digital solutions to undertake safety checks, and support medication reminders and compliance[vi]. Technology can also help geographically dispersed families to stay connected and provide access to wider social opportunities, reaping the benefits that social connection brings to health and wellbeing, especially in people who may have physical or mental health conditions that can make meeting in person more difficult[vii]. However, while more people are online and using digital technologies, some populations remain more likely to be digitally excluded.

The digital exclusion picture

While in 2024 in the UK it was estimated that only 3% of the adult population were completely offline, this increases to 13% in the over 60s[7]. A third of the UK population have low or very low digital skills, and of the 23% of people with very low digital skills 90% of them are aged over 50 [viii]. Foundational digital skills include being able to turn on a device, connect to the internet, and access and open different applications - not advanced digital skills that may be needed to safely and effectively engage in digital health and care. Accessing digital health and care can be complex, and it is increasingly recognised that in addition to having the right digital access and skills, user experience is also key to tackling digital exclusion in health and care[ix].

A key challenge for optimising digital transformation in health and care is that those people less likely to have the basic level access and skills needed for digital engagement include older adults, and people living with cognitive or physical disabilities - the very people who become more reliant on our health and care services as they age. Digital inclusion is also not a static state - a person's circumstances can change, as an example because of dementia or a stroke, or changing financial, living, or support status, which can leave people suddenly unable to access and engage with digital services in ways they may have been able to previously.

The health and care system's role in reducing inequalities

The NHS and the public sector have a statutory duty to consider how to reduce inequalities, which includes inequalities due to digital exclusion[x]. We need to mitigate barriers to digital inclusion to ensure everyone can reap the benefits of digital health and care and not face inequalities due to inaccessible or poorly designed technologies, services or systems.

Health and care technologies are often procured at service or system level, and despite complying with current accessibility and useability standards[xi], these technologies are not always designed for the wide range of people who will need to be able to use them, nor are they always designed for implementation in the context of a complex integrated system. For an individual accessing and engaging with different parts of the health and care system, including someone with more than one health condition, it can quickly become overwhelming navigating, upskilling, accessing and using multiple different digital solutions in order to receive care digitally.

We have recently seen the introduction of integrated care systems[xii], the government's 10 Year Health Plan - and it's three shifts which include analogue to digital and hospital to community[xiii] - and integrated care teams[xiv]. These changes enable digital transformation and procurement to become more integrated, focused on population and cross-sector workforce need and delivering care in people's homes, rather than traditional siloed condition, provider or service-led technologies which can lead to complexity for the end user.

Aim

Health Innovation Kent Surrey Sussex undertook system wide engagement, with cross-sector health and care partners in Sussex and Kent to understand:

- What a typical older adult with increasing health requirements needs from digital health and care
- What health and care interventions the health and care workforce need digital to help facilitate
- What specification requirements are needed for digital technologies to be accessible and useable for older adults with increasing health and care needs, as well as for their families and the cross-sector health and care services they use.

To demonstrate potential economic impact of integrated commissioning we worked with Unity Insights, an evaluation partner, to develop a Budget Impact Model. This report summarises our approach and key findings. It has limitations and does not, and cannot, review all potential benefits of commissioning integrated cross-system technology which has been designed for specific patient needs, rather than service deployment - such as increased digital health and care, and potential benefits related to hospital avoidance.

Methods

We engaged with cross-sector health and care staff: community nurses, virtual ward nurses, a geriatrician, a social prescriber, and dementia support workers either in workshops or in individual interviews. This was done to develop a persona to help provide context to the type of characteristics of older people needing increasing health and care provision, and the type of technology needed to support this population to live well at home and receive optimal digital health and care.

Persona

Fred is a recently bereaved 80-year-old man. Fred is mostly house bound, he finds leaving home difficult, and he lives on his own at home with social services providing once daily personal care and additional evening medication visits. Fred has increased support from community NHS services due to a recent stroke, and his GP practice monitors his blood pressure regularly. Fred also has daily support from his daughter who lives an hour away, and a son who lives overseas. Fred uses a phone to keep in contact with his daughter and son.

Fred wants to continue to live independently for as long as possible. Fred and his family think digital could be part of the solution, so long as it is accessible and useable for Fred and enable the family to provide oversight and support for him.

In addition, due to Freds increasing health care needs he is more likely to require urgent community response or virtual ward services, and having familiar technology Fred is comfortable using could help make any urgent community/out of hospital care more acceptable too.

We asked stakeholders what services Fred, or someone like Fred, is likely to need now and as their care needs change as they age. Questions included what functions one, integrated, digital solution would need to deliver to support not only Fred, but also to support his family and his health and care workers to meet all his needs. We emphasised considering his future care needs, as these are likely to change due to Fred's age and health status, and identify where the right digital solution could provide an appropriate and sustainable alternative to in person care.

We commissioned Unity Insights to develop a Budget Impact Model for integrated care system application based on the outputs from the workshops and interviews. For this report it has been used to identify travel costs (time and cost in GBP) for certain core interventions and compared these for an average 1-mile journey (round trip) and an 8-mile journey (round trip) to demonstrate impact of digitalising care in different geographical areas (urban and rural).

Insights

Requirements for older adults

The discussions highlighted that health and care services older adults are likely to increasingly require include, but are not limited to: primary, community, and secondary (hospital) care, out of hospital services, voluntary sector and support services, and (social) home care services as well as family/ informal care giver support.

The health and care interventions an optimised digital solution would need to provide for older adults across all aspects of health and care include a simple, familiar, single point of access for the individual that is easy to use and interoperates with existing devices/IT systems to enable:

- booking of appointments
- checking and ordering prescriptions
- virtual consultations (multiprofessional)
- remote monitoring (e.g. vital signs, pain, hydration, food intake)
- home monitoring (e.g. safety, movement)
- reminders (e.g. medication reminders/logs)
- assessments (physical, mental health, cognitive, home and geriatric)
- videos, photos, screen shots (large screen)
- multidisciplinary team meetings including with family members
- individual and group sessions (e.g. reablement classes and voluntary sector).

In addition, families and informal care givers would also benefit from the ability to provide oversight and reassurance by having access to personal, environmental, wellbeing and safety data, and using these same systems to provide meaningful social connection. It was felt families and informal carers should be involved and be able to access information, where appropriate consents and safeguards are in place.

Analysis of the workshops and interviews identified key functions to ensure the technology does not exclude older adults, even as their health status changes, including:

Individual needs	Easy to use and handle, familiar and intuitive, unintrusive, passive engagement, single access point for all needs. Considering dexterity, sensory impairment, cognitive status and personalisation.
Family needs	Easy to interact with their loved one from whatever devices they already use/have access to (i.e. interoperable).
Health and care system needs	Interoperates with other devises including remote monitoring equipment and provider IT systems, and enables (relevant) seamless data transfer into existing health and care IT systems.

Existing technologies and commissioning

There are some technologies that already go some way to provide these services in an accessible and integrated way. These types of technologies are usually commissioned by individual providers including either the NHS, local authorities, or individuals themselves, but rarely at an integrated system level based on specific population needs, regardless of the service they need.

Instead, services often commission their own (different) technologies, leading to duplication and increased costs overall for the system. As an example, one technology such as a blood pressure monitoring machine could be commissioned by primary care and another for the local virtual ward service.

These technologies may also be commissioned alongside a service, with external health and care providers monitoring, reviewing, and referring into services when needed. Another example is the integrated Internet of Things (IoT), which can include products such as consultation devices accessed through televisions, and integrated equipment such as home sensors and health monitoring equipment.

One digital system

Stakeholders concluded that one digital system, that can adapt to meet the needs of an individual as their health and circumstances change, and has the functionality needed for all health and care services and trusted family, friends and individuals to access, has the potential to increase digital access to services that people may otherwise be excluded from. This could also save the system time, resources, and money.

High level budget analysis through the Budget Impact Model (see appendix) suggests that commissioning one integrated product for specific population groups could save the health and care system money on providing routine care needs on the basis of staff travel costs and time alone:

- £460 per patient when healthcare professionals have an average travel requirement of 1-mile each visit per annum
- £4360 per patient when healthcare professionals have an average travel requirement of 8-miles each visit per annum

These monetised benefits save the equivalent of 43 hours of health and care professional time for shorter journeys (1-mile round trip) and save 129 hours of health and care professional time longer journeys (8-mile round trip) over a year. Longer journeys reap bigger benefits suggesting most benefits may be felt by services delivering health and care in rural and coastal communities.

Please note that these values are illustrative of potential benefits as the exact interventions digitalised and the number of them may vary between individuals. Potentially more benefits could be realised in time saved travelling, releasing

capacity for health and care professionals, and in improved sustainability. Should the technology be shown to result in improved access to health care, admission avoidance and better access to virtual wards/services, the benefits for individuals and health and care system would increase substantially still.

These costs do not reflect the savings from reduced support time needed to upskill on new systems, and by using familiar technology across services this increases the chances virtual services will be acceptable and useable to service users. This analysis also does not compare the costs savings of multiple systems across different providers, moving to one integrated system.

By avoiding hospital admission and freeing up beds for urgent and elective care the rewards are significantly greater, and this also reduces risks of an individual deconditioning, or acquiring infections in hospital, or interrupting community services had a person been admitted. In addition, there are potential social benefits like improved connection and sustainability for family members.

Conclusion

This was a theoretical evaluation; no single technology we are aware of exists that can currently meet all the functions identified as optimal by our health and care workforce and meets the accessibility and usability criteria required by this population.

This review has highlighted what a cross-sector, clinical workforce delivering care in the community needs from technology to optimise delivery of care at home. We have not evaluated the wider impact on health and wellbeing, potential for improved social connection, and impact of potential admission avoidance.

This review has demonstrated that integrated technology, commissioned across a combined service for all health and care stakeholders to access and deliver care, has the potential to become more cost effective and save money from travel costs and time alone. This is more significant the further health and care staff need travel to deliver care in person, such as in rural and coastal communities.

The full individual benefits would need to be further evaluated with real-world data, but the potential access and cost benefits make commissioning for population rather than individual service need worthy of consideration.

Since we started this work integrated neighbourhood teams have been introduced and provide an opportunity for population based digital health and care transformation, including focusing on our older frailer populations with increasing health and care needs. Adopting single integrated digital systems, usable and accessible for individuals receiving care, and enabling the cross-sector workforce delivering care have the potential to increase access to health and care and reduce costs.

With thanks to colleagues from Sussex Community Foundation Trust, University Hospitals Sussex, and other professionals for helping to define population profile and technology requirements.

Appendix

Budget Impact Model:

Routine (digitalised only visits) over 1st year		Hourly cost[xvxvi]	Overall cost for 1-mile journey*	Overall cost for 8-mile journey*
GP home	4	£133.00	£44.33	£177.33
Community nurse	12	£47	£47.00	£188.00
Domiciliary care	365	£39.00	£1,186.25	£4,745.00
Occupational therapy	1	£44.00	£3.67	£14.67
Physiotherapy	1	£44.00	£3.67	£14.67
VCSE	4	£12.21	£4.07	£16.28
Comprehensive geriatric assessment	1	£133.00	£11.08	£44.33
Travel cost saved (routine)			£1,300.07	£5,200.28
Cost of intervention at £70 per month per annum			£840	£840
Total cost saved			£460.07	£4360.28
Total travel time saved (no. digitalised visits X travel time)			43.5 hours	129 hours

(*) The figures above assume a duration of 5 and 20 minutes for respectively 1-mile and 8-mile round trips

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