Digital innovation in domiciliary care

Findings from the Care City Wave Two Test Bed project

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Key findings (1)

- **Upskilling** narrative overwhelmingly well received among all stakeholders and was well-evidenced in **frontline workers** but also in **agency staff** who made use of project management skills.
    - Supporting **middle management roles** to own the implementation process in their agencies was key to success.
    - Barriers to upskilling included lack of clarity around escalation protocols, conflict with service user preferences, and issues with the technology.
    - **Implications for pay and progression** where staff were required to take on additional responsibilities without remuneration - potential for a dedicated ‘expert carer’ role.

- Implementation worked best where care agencies demonstrated strong **organisational leadership** and adapted to the specificity of their own setting – ‘there is **no one-size-fits-all** in domiciliary care’. Implementation leads used creative solutions to increase recruitment and facilitate implementation, e.g. packaging as ‘Health and Wellbeing’ checks, family members present, WhatsApp groups between carers.

- **Service users overall were satisfied** with the checks and felt *“well looked after by the care company”.* Having more knowledge about their health, especially due to difficulties in contacting health professionals, was listed as a key reason for accepting the intervention.

Key findings (2)

- The **nature of domiciliary care** affected implementation and scalability:
  - The mobility of carers was a concern, as some of technologies were found to be bulky and with some implications for safeguarding.
  - ‘Time and task’ model in domiciliary care means limited flexibility to deliver the service.
  - High staff turnover in domiciliary care means significant resources were used to re-train staff and ensure continuity of the project.

- Significant resource was spent financially and in terms of time at the onset to **ensure successful set up and running** of the innovation. This was greater than anticipated.

- **Communication with the healthcare sector** was highlighted as a key factor in whether or not implementation was successful. Contacting relevant health professionals, especially GPs, proved difficult and created stressful situations for the carers where possible escalation was necessary.

- **Collecting service user data** and creating a baseline was challenging due to limited access to service user health records. There was significant variation according to the type of service user (CCG-, NHS-, or self-funded) and this impacted opportunities for quantitative analysis.

Care City and the Test Bed

- The NHS Test Beds programme was designed to bring together NHS organisations and commercial providers of digital technologies. These partnerships tested new ways of delivering care with the potential of improving patient experience and outcomes.
- Care City is a Community Interest Company based in Barking and a Test Bed site for Wave 2 of the programme.
- Nuffield Trust were invited as evaluation partners.

Aims of the Test Bed

- The real-world testing of innovations, sometimes in combination.
- The upskilling of care support staff.
- Evaluation of the test bed to provide learning about the extent to which the interventions:
  - engaged service users
  - improved their outcomes and
  - alleviated some of the capacity challenges of the wider health and care systems.

Evaluation methodology

Project set up	• Reviewing evidence • Choosing metrics
Feasibility and piloting	• Collaborative development of logic models • Understanding how each innovation can be successful
Process evaluation	• Staged interviews with users, staff and non-adopters • Monitoring process metrics including uptake • Successful scaling up
Outcomes evaluation	• Staff and patient experience • Clinical outcomes • Cost

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Domiciliary care cluster

Background:

- Social care under significant pressure, especially around recruitment and retainment of the workforce
- Challenges of domiciliary care sector, e.g. travel times
- Barking and Dagenham have been working with Care City on the recommissioning of domiciliary care & development of new ‘expert carer’ roles

Aims of the Test Bed project:

- Support service users to manage conditions and detect early deterioration through regular ‘Health and Wellbeing checks’ through the use of two innovations, Whzan and dip.io (now Minuteful 10)
- Upskill frontline domiciliary care workers through the development of an ‘expert carer’ role, leading to increased confidence and job satisfaction

Whzan

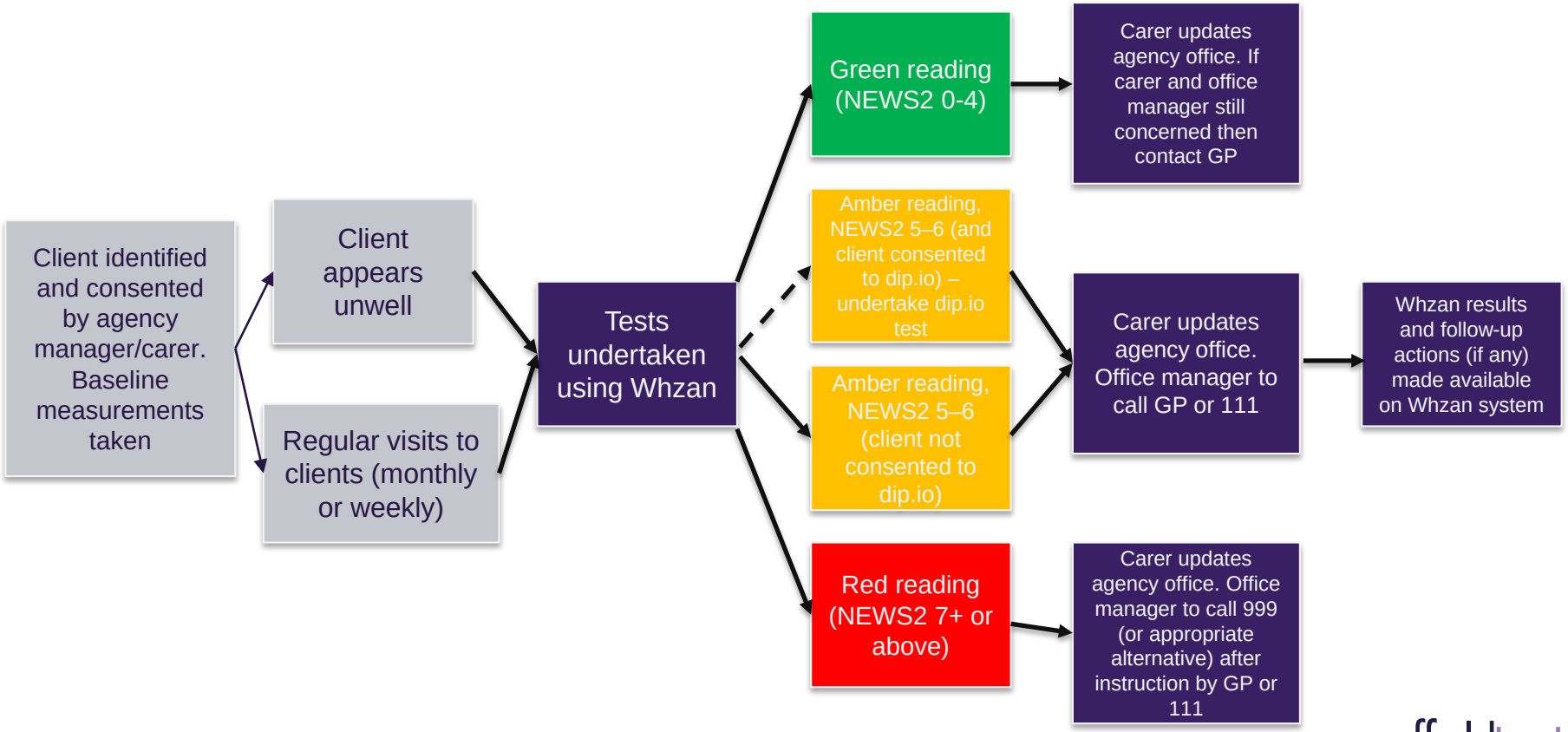
Measurement of a person's vital signs	
Aims and benefits	• Early detection of health problems • Improve communication with other health and care professionals • Avoid home visits from community health professionals • Provide service users & families with more confidence about their health • System benefits at scale
Features of the technology	• Uses instruments connected via Bluetooth to calculate a National Early Warning Score (NEWS2) • A traffic light rating of the NEWS2 (0-3 green, 4-5 amber, 6-7 red) to facilitate interpretation and convey urgency to clinical services
Prior use	• Some small-scale studies have demonstrated the effectiveness of Whzan in care homes on hospital use • There is limited evidence to date on use in domiciliary care settings.

Dip.io (now Minuteful 10)

Healthy.io

Urinalysis kit via smartphone application	
Aims and benefits	• Timely access to diagnostic testing and reducing the need for in-clinic visits • Adapted for use in conjunction with Whzan to provide a fuller picture of a service user's vital signs
Features of the technology	• Includes a urine pot, 10-parameter dipstick test, and colour board • Adapted for use in the Test Bed for multiple uses from one same smartphone
Prior use	• UK research focuses on acceptability and experiences of patients, e.g. hypertensive patients • No previous evidence in domiciliary care

Implementation pathway (1)



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Implementation Pathway (2)

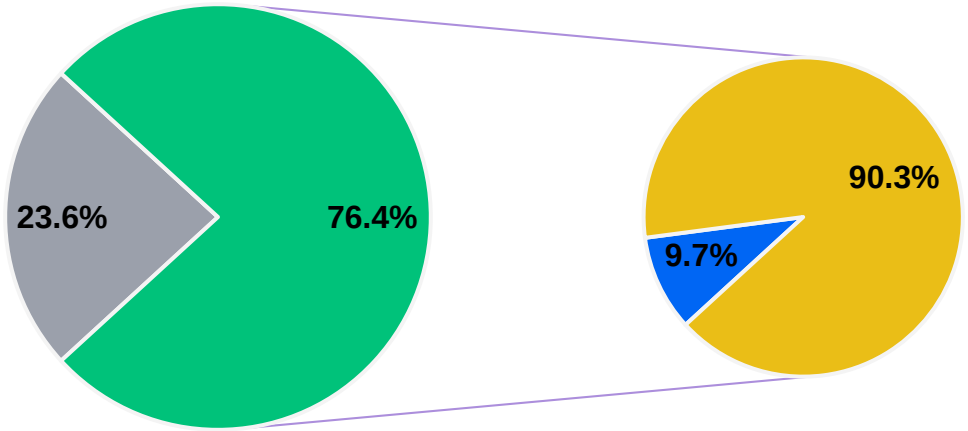
- Proposed as an additional package to usual care, at no additional cost to the service user or funder
- 5 agencies planned for testing, of which 4 were able to proceed
- ‘Expert carers’ were responsible for using the kits following training. Agency staff and office staff had a role in onboarding and managing escalation.
- Variation across agencies in implementation, around:
    - Types of service users offered the service (e.g. local authority-funded, self-funded);
    - Pathway: service offered as part of routine care or as a supplement, frequency of service, use of community resources e.g. Rapid Response Teams;
    - Dip.io offered as part of service;
    - Number of carers trained.
- There was low uptake of Dip.io alongside Whzan for a number of reasons (e.g. it was introduced later than Whzan, clinical appropriateness). There were low numbers of Amber NEWS2 readings which led to very small numbers for Dip.io. As a result the Evaluation team are unable to report any quantitative information for Dip.io.

Impact of COVID-19 on the pathway

Challenges	Opportunities
• Sustainability of providers/stalling of operations • Anxiety from staff in use of technology • Anxiety from service users around service delivery	• Changing attitudes to technology use in domiciliary care • Improved relationships between domiciliary care and primary care • Technology use to help with COVID-19 detection and monitoring

Distribution of NEWS2 in home care service users

Out of a total of 377 readings across 72 clients, 288 (76.4%) produced a valid NEWS2 reading – of which 28 (9.7%) resulted in scores ≥5 (which was the threshold for escalating any concerns to health services)



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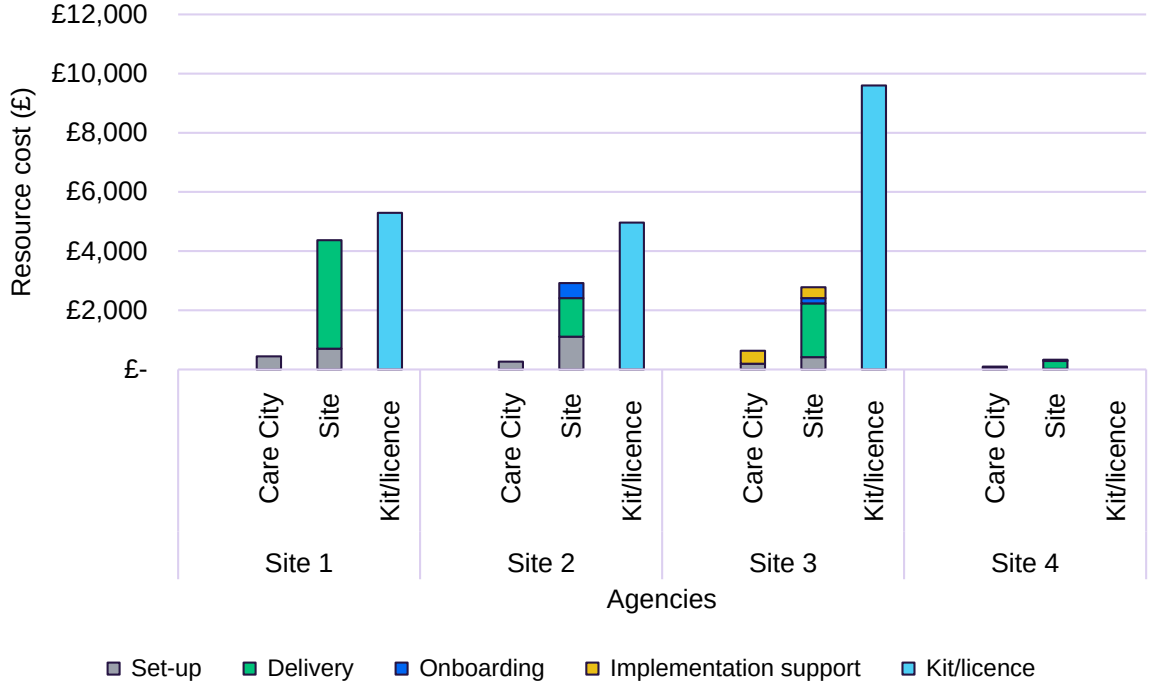
Whzan costs

Whzan resource cost across agencies



Innovation	Whzan
Implementation cost range across agencies	£431 - £4,816
Factors affecting cost variability	• Difference processes for testing and delivery across agencies • Number of kits used and how many expert carers delivered the service • Staff level overseeing implementation

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Cost to scale up Whzan

	Estimate	Notes
Eligible clients	People receiving domiciliary care	Clients using Whzan varied between care agencies. In some care agencies Whzan was used only offered to the most frail patients. Uptake was 25% in the agency which offered Whzan to all patients.
Unit cost of innovation per client receiving Whzan test	£529	Unit costs include implementation costs and cost of Whzan equipment and license (from test bed).
Estimate of eligible clients per 1,000 population	10.3/1000 population	Number of domiciliary care users in England estimated to be 576,600, ie 10.3/1000 population.
Estimate of cost to implement across population of 1,000	£ 1,362	Estimate assumes uptake is 25% among home care users.
Estimate of cost to implement across population of 50,000	£ 68,102	
Estimate of cost to implement across population of 300,000	£ 408,612	

Factors affecting the costs of scale up:

- Characteristics of the client group
- The escalation pathway
- The organisation of carer's work

How does the innovation impact the overall care pathway in term of cost?

- Whzan could increase GP contacts and escalations by care agencies to other services, including 111, ambulance services, and hospital A&E attendances.
- The longer-term implications are unclear - for example, whether earlier identification and management of clients prevents more serious illness.

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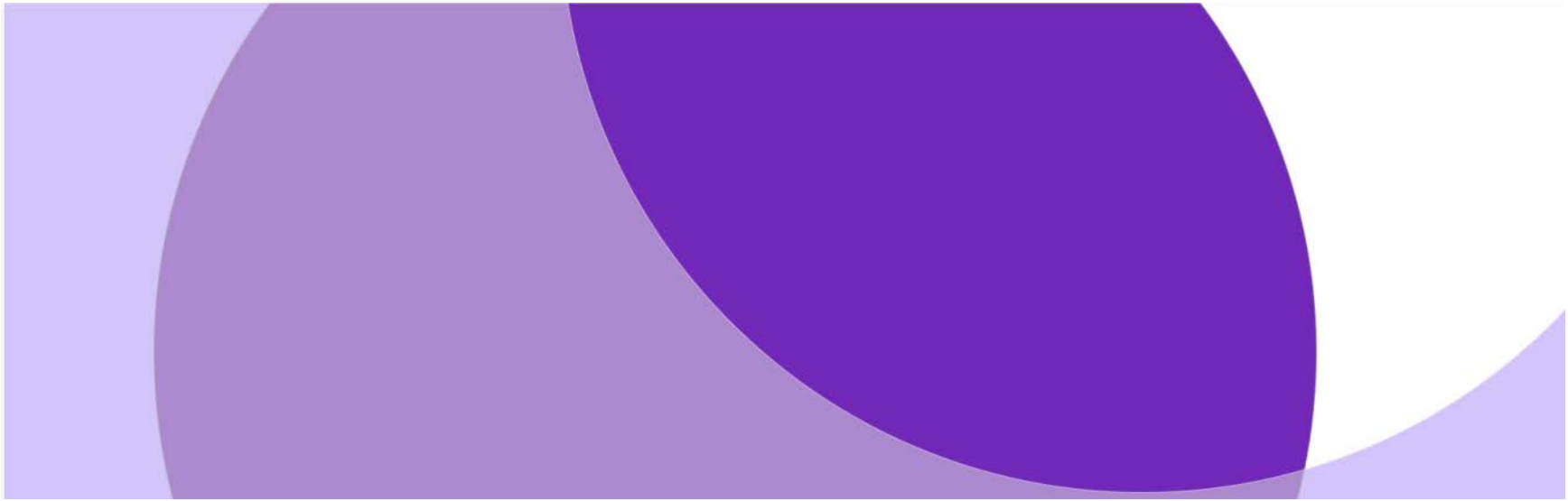
Implementing team: upskilling

Skill development	Description/quote
Increased digital capability and ability to use healthcare tools	*Well I must admit I never thought I'd be able to use a blood pressure machine […] I never got it but now it's built my confidence just a little bit more* – Staff
Increased proficiency to understand and interpret health information	*I think it's given them all a very good […] understanding on some of these tests and readings and even some underlying conditions which we know from the GPs that may be a reason why some of the readings are slightly higher than normal. I think it has been a good education piece for us as well.* – Lead Implementer
Increased confidence in communicating information to other health and care professionals	*GPs do feel like I don't know anything, I shouldn't be contacting them, but when I actually show them the readings I've got and the previous knowledge I've got with the client they do feel like I'm actually calling for a reason, whereas before I was given no background knowledge about the client they […], when you've got the background knowledge you feel like you've got more of a reason to call*. – Staff
Increased status of carers among service users and their families	*I believe it might give the clients a little bit more confidence in us. I know some of them don't understand what we are doing but [for] the ones that do it gives them a little bit more confidence that we actually know what we are doing.* – Staff



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