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Use of a digital application to enhance communication and triage between care homes and community NHS services in the UK: A qualitative evaluation

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Health care in care homes: A need for improvement

Residents in care homes (with & without nursing) have complex health and social care needs:

- High & increasing levels of multimorbidity, disability, frailty, impaired cognitive and behavioural functioning[1,2]

- Emergency hospital attendances & admissions 40-50% higher than the general population ≥75 years[3] and researchers have suggested ~50% are avoidable[4]

Places strain on care homes & the community NHS services that support them.

Improving health care provision in care homes is a priority for the NHS and adult social care

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Trend towards digital interventions

Digital technologies could improve health care in care homes[5]

COVID-19 led to increased use of, and support for, digital interventions in care homes[5-8]

The UK Government has pledged to have all care homes digitised by March 2024

Interventions using smart devices and apps. to transfer data on vital signs observations and Early Warning Scores have become common[8-12]

These interventions have met with some success[8, 10, 12, 13]
However, the complexity of the care home setting can present challenges[11]

The HealthCall Digital Care Homes Application

HealthCall

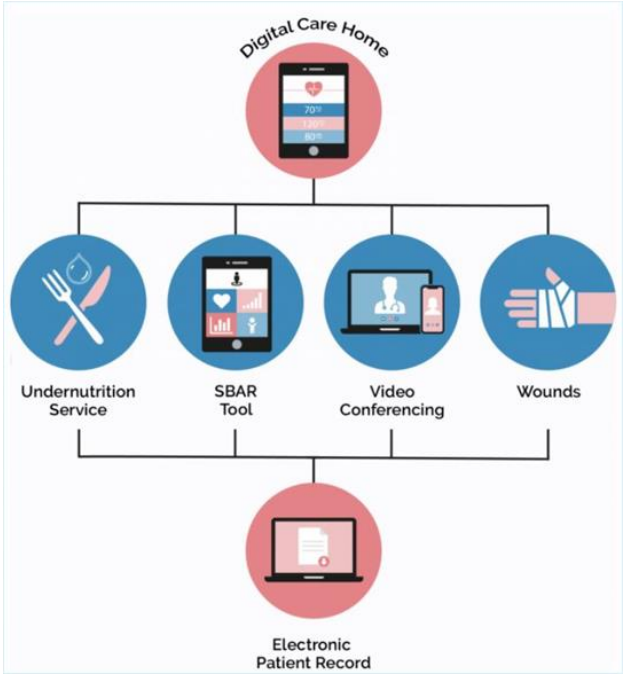
https://www.nhshealthcall.co.uk/product/digital-care-home/

HealthCall:

- A collaboration of seven NHS Foundation Trusts
- Focuses on producing digital solutions to health care challenges

Digital Care Homes application aims to:

- Enhance reporting of non-urgent referrals
- Shorten referral times
- Support the transfer of relevant health information



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The HealthCall Digital Care Homes Application

Through the app on a digital device, home staff can record:

- Vital signs observations to calculate a National Early Warning Score (NEWS)[14]
- Contextual information including "soft" signs of deterioration

The reporting uses the SBAR tool

- Situation, Background, Assessment, Recommendation[15]
- Supports organised communication of necessary, contextual information

Referral is reviewed by a clinician at a Single Point of Access (SPA):

- Access to SystemOne (electronic healthcare records)
- Request further information
- Triage to an appropriate service
- The care home is notified when action has been taken

The Evaluation

Quantitative component*:
- Examine changes in referral patterns and decisions
- Rates and nature of hospital admission and discharge
  - *including with respect to COVID-19*
- Usefulness of NEWS2

Qualitative component
- Usability and acceptability of the app
- Impact on referral practices and resident care
- Indicators of implementation success
- Influence and impact of COVID-19
- *Experiences of COVID-19 beyond the intervention*

Synthesis of findings → Dissemination: Papers and reports

*Prof Jo Knight, Lancaster University

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Patient and Public Involvement

Patients and the public were involved in the project generation stage

- Improving care for residents in care homes was considered a research priority.

The PPI panel discussed the research questions, study design, documentation, findings and dissemination strategies

- Online meetings through the course of the evaluation.

Methods

Key stakeholders identified: Care home staff, NHS community staff, local HealthCall team/implementers, Commissioners, residents, relatives

Sampling: Purposive > Convenience > Snowball

Recruitment supported by local HealthCall team and via online forums/networks (latter for relatives)

Ethical approvals/PPI input > Patient information sheets > informed consent

Semi-structured interviews including one-on-one, dyadic, and small group

Data collected remotely: Video conferencing or telephone between November 2020 and July 2021

Methods

Analysis in two phases

Phase 1: Inductive analysis driven by the data and the researcher's sense-making collaboration: Reflexive Thematic Analysis[16-17]

Phase 2: Framework to evaluate implementation success: Findings considered against Normalization Process Theory (NPT) constructs[18]

Ensured that the voices of participants were accounted for, and analysis was not driven solely by an existing framework

Similar approaches have been undertaken elsewhere[11,19,20]

Normalization Process Theory (NPT)

NPT Core Constructs	Sub-constructs
Coherence: the process of sense-making and understanding that individuals and organisations have to go through in order to promote or inhibit the routine embedding of a practice to its users. These processes are energized by investments of meaning made by participants.	Differentiation Individual specification Communal specification Internalisation
Cognitive participation: the process that individuals and organisations have to go through in order to enrol individuals to engage with the new practice. These processes are energized by investments of commitment made by participants.	Enrolment Initiation Activation Legitimation
Collective action: the work that individuals and organisations have to do to enact the new practice. These processes are energized by investments of effort made by participants.	Interactional workability Skill set workability Relational integration Contextual integration
Reflexive monitoring: the informal and formal appraisal of a new practice once it is in use, in order to assess its advantages and disadvantages and which develops users' comprehension of the effects of a practice. These processes are energized by investments in appraisal made by participants.	Systemisation Individual appraisal Communal appraisal Reconfiguration

Findings

Participants

Category	Participant	Totals
Local HealthCall Team	Organisational x 2 Clinical Trainer x 2	4
Local Authority	Commissioner	1
NHS/Clinical Staff	Community Nurse	6
Care Home Staff	Manager x 4 Deputy Manager x 3 Senior Carer x 8 Junior Carer 1	16
Care Home Residents	Resident	3
Relatives of Residents	Relative (not related to residents interviewed)	5
		Total 35

Findings from the Thematic Analysis

Theme 1: "It's a bit like anything new": Anticipated, unexpected and implicit challenges of implementation

Digital skills and confidence

[Senior Carer's] a technical wizard … She keeps me right. I'm the technophobe […] I let [HealthCall Trainer] show [Senior Carer] and then [Senior Carer] showed me because I'm very slow with technology […] But no, I'm getting there.
Deputy manager

… the main issue we've found is the lack of IT skills in care homes […] I think we probably are still quite astounded by how poor they are
HealthCall

Practices, Habits and Cultures

There's a lot of information you have to input that seems a bit much when you're just trying to get someone out to have a look at someone […]
Care home manager

P1: […] They manipulate…
P2: Yeah they'll make an excuse as to why they haven't done [observations] then tell you all sorts of other things that will make you turn up […] which could be at times fabricated.
Community nurses

Technology and Operations

[…] if they were in a certain area of the home then they can't access the internet anyway. Quite a lot of homes operate so that the care staff do not use the office space, so they don't have access to the desktop […] it's the convenience of using it. […]
HealthCall trainer

There's a gentleman who comes and he tried to fix [the tablet] […] that's probably the only technical issue we've had.
Care home manager

Findings from the Thematic Analysis

Theme 2: Communication and Training

Relationships and support

Any concerns that we've got they're very quick at responding and fixing the problem.
Senior Carer

…we ask them why they haven't used the [app] […] we let the [HealthCall] team know if there's any problems with training or passwords and they pick that up directly with the care homes...
Community Nurse

Appropriacy of training

Initially [Trainer] came quite a bit but it was like maybe trying to catch people on different shifts as well and ensuring that we all were singing from the same song sheet […] [Trainer] was very patient. No question was silly […]
Deputy Manager

[…] when it was first launched we were involved in the training of the staff members […] so [care homes] had sort of a friendly face...
Community Nurse

Evolution and the feedback loop

… they came to the home and did sessions with all our seniors and managers and stuff and then me and [colleague] went to a meeting with the head of the nurses, the ones who were – what are they called? [SPA] […] people from like different care homes were there and it was really interesting. It was just a bit of a catch up of how everyone's finding it. Was there any concerns?
Senior Carer

Findings from the Thematic Analysis

Theme 3. Efficiency and Legitimacy

Enhancing care and efficiency

Oh yes. I got a wonderful examination [...] on the computer, yes [...] I got peace of mind in a very short time.
Resident

I: *[...] would you want to go back to life without it?*
P: *No [...] you could be in a queue [on the phone] you've got other things to be doing [...] That patient could be getting progressively worse whereas if you've got the app you can just put the observations straight on it and it'll go directly*
Senior carer

Accountability and legitimacy

[SPA is] where the kind of safety net is [...] they'll get all the relevant information that comes through from the app [...] SystemOne [digital health record] [...] once that referral comes through we've then got clinical responsibility for that patient in terms of the [SPA]...
HealthCall Trainer

[...] "they're just not right" is a clinical sign for elderly [...] [NEWS] is too prescriptive [...] we only use it as a guide to how ill the person could be and take the other things into consideration.
HealthCall Trainer

Upskilling

the app itself has developed people's technological [...]. Everyone in here was a little bit scared about using it to start off with but it's really straight forward [...] staff are learning [...] when they read someone's blood pressure they're going, 'Oh no that's a bit high,' or 'That's a bit low,' so they are starting to understand that.
Care home manager

[...] descriptive language is vastly improved. [...] They put things like, 'Has just finished antibiotics. Still got a chest infection' [...]
Community Nurse

Findings against NPT Core Constructs: Coherence

Process of sense-making and understanding that individuals and organisations go through in order to promote or inhibit the routine embedding of a practice to its users. These processes are energized by investments of meaning made by participants.

Differentiation: *Do stakeholders see this as a new way working?*	• Acknowledged across stakeholders, particularly for care home staff: Referral via app not phone, specific contextual information requested, increased digital and clinical knowledge required. • Community nurses discussed how the app altered practice such as approach to prioritising visits.
Individual specification: *Do individuals understand what tasks the intervention requires of them?*	• Stakeholder understanding of the intervention and their role was clear. • Problems with digital skills in, and preparedness of, care homes a potential barrier to engaging coherently with the intervention. • Disparaging comments about care home staff (two community nurses) suggests the potential for sociocultural barriers to Individual Specification.
Communal specification: *Do all those involved agree about the purpose of the intervention?*	• Stakeholder's all commented on the core aims of the intervention: reducing referral time, improving communication and quality of information, enhancing resident care and reducing avoidable hospital admissions. • Care home staff defaulting to the phone to refer and the disparaging comments of two community nurses suggest some undermining of Communal Specification
Internalisation: *Do all the stakeholders grasp the potential benefits and value of the intervention?*	• Achieved across stakeholder groups • Stakeholders discussed the upskilling of care home staff, improvements to efficiency and communication, quality of data for triage and prioritising visits, and improvements to resident care • The remote link between care homes and community NHS staff enhanced by COVID-19.

Findings against NPT Core Constructs: Cognitive Participation

Process that individuals and organisations have to go through in order to enrol individuals to engage with the new practice. These processes are energized by investments of commitment made by participants.

Enrolment: *Do the stakeholders believe they are the correct people to drive forward the implementation?*	• The local HealthCall team appeared confident in their roles within the implementation • The Community Nurses participated in activities to support and sustain the implementation, providing training to care home staff and encouraging engagement • Care home managers and seniors were supportive of the app
Initiation: *Are they willing and able to engage others in the implementation?*	• The local HealthCall Team and Community nurses were concerned with encouraging and supporting other stakeholders to engage with the intervention, monitoring use and engagement and managing relationships • Care home managers and Senior carers were involved in supporting use and engagement within care homes
Activation: Can *stakeholders identify what tasks and activities are required to sustain the intervention?*	• HealthCall identified ways to improve and adapt the implementation over time, ensuring the app and implementation were appropriate. • Community nurses supported care home staff and alerted HealthCall to training needs in care homes • Habits and issues of convenience could undermine activation. Care homes increasingly utilised the app in daily practice and alerted HealthCall where further support was required
Legitimation: *Do they believe it is appropriate for them to be involved in the intervention?*	• Care home managers and seniors, and community nurses were supportive of the app and their engagement with it appeared to be viewed as a valid part of both care and health care. • Onus of responsibility for high level clinical decisions was not placed on care home staff • Local HealthCall team enthusiastic about their and had the right experience and skills to drive implementation.

Findings against NPT Core Constructs: Collective Action

The work that individuals and organisations have to do to enact the new practice. These processes are energized by investments of effort made by participants.

Interactional *workability: Does the intervention make it easier or harder to complete tasks?*	• Improvements to efficiency were often commented upon across stakeholder groups • For care home staff the ease and quick referral process was key • Community nurses appreciated the steady improvement in information they received. The felt more prepared for visits and could prioritise their visits • Poor digital literacy among care home staff had the potential to undermine this
Skill set workability: *Do those implementing the intervention have the correct skills and training for the job?*	• The HealthCall Team had the appropriate skill set and experience for their roles with care home staff commenting positively on their approach to training and approachability • Buy-in and support from community nurses and care home managers meant that their skills as implementation allies bolstered the work done by the HealthCall team.
Relational integration: *Do those involved in the implementation have confidence in the new way of working?*	• While the implementation experienced some challenges, views toward the intervention were broadly positive and HealthCall were proactive in dealing with issues that arose • The negative views concerning motivations of care home staff in using the app, exposed by two of the Community Nurses, suggest that there may be sociocultural barriers
Contextual integration: *Do local and national resources and policies support the implementation?*	• Current drive to improve health care delivery within care homes, at both local and national level • Clinical Commissioning Groups, NHS Trusts and Local Authorities across the UK have sought to implement and evaluate similar digital innovations • Government pledge to digitised adult social care by March 2024 • HealthCall raises a warning that care homes should not be “bombarded” with technology

Findings against NPT Core Constructs: Reflexive Monitoring

Informal and formal appraisal of a new practice once it is in use, in order to assess its advantages and disadvantages and which develops users' comprehension of the effects of a practice. These processes are energized by investments in appraisal made by participants.

Systemisation: *Will stakeholders be able to judge the effectiveness of the intervention?*	• Monitoring of app use by HealthCall • Evaluation: Quantitative component examining changes in referral patterns and decisions, rates and nature of hospital admission and discharge. Qualitative component exploring usability and acceptability, impact on referral practices and resident care, indicators of implementation success
Individual appraisal: *How will individuals judge the effectiveness of the intervention?*	• No formal indicators or measures for how individuals appraised the intervention beyond their own personal interactions with the app and other stakeholders • This evaluation offered stakeholders the opportunity to express their views
Communal appraisal: *How will stakeholders collectively judge the effectiveness of the intervention?*	• Steps taken to judge effectiveness were typically "informal" by HealthCall. They maintained a dialog with care homes, community nurses and other stakeholders such as the Local Authority Commissioner, creating a feedback loop • Stakeholders had discussed the intervention within their own teams highlighting successes and problems
Reconfiguration: *Will stakeholders be able to modify the intervention based on evaluation and experience?*	• The feedback loop created by the relationships between the local HealthCall team and other stake holders allowed for both the intervention and the implementation to be adapted and to evolve in response to feedback from end users • The involvement of key stakeholders has been ongoing since the development stage • HealthCall also creatively adapted approach to training in response to COVID-19

Conclusions

The HealthCall Digital Care Homes app appears to be a feasible, appropriate and legitimate intervention to support improved referral, triage and health care support for non-urgent health care needs of care home residents.

The comprehensive implementation process that welcomed feedback to support improvements to the intervention and implementation is the core of this intervention's success.

For this and similar interventions to achieve success nationally, implementations require rapport building and a willingness among those driving the implementation to listen to the views of end users.

Ensuring that care homes are digitally enabled with a digitally literate workforce will require structural and economic support from national and local policy makers and care home providers.

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Thank you for listening.

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