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Fosse Healthcare Virtual Care

EVALUATION REPORT

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Executive summary

Key background

This evaluation examines the implementation of virtual care service by Fosse Healthcare (Fosse Healthcare virtual care – **FHVC**) for the recipients of social care services. Fosse Healthcare provide home care and housing with care across the East Midlands and South Yorkshire, and over the past two years have begun to implement virtual care appointments through the installation of the **KOMP** telecare system in service users homes. KOMP is a bespoke telecare system developed by the Norwegian start-up No-Isolation. In order to keep the machine as simple as possible it only allows incoming calls and has only one visible control to adjust volume. This allows care providers, as well as friends and family to place a video call in to the user, without the need for the service user to touch any controls or buttons to accept the call. The system also allows one-way messaging and reminders to be set, as well as displaying visual content, such as family photographs and weather reports. **FHVC involves both the installation of KOMP in service users' home, and the use of this technology for remote care appointments.**

The trial of remote care appointments sits within an international move to trial video-conferencing and telecare for care service recipients. This has rapidly expanded during and following restrictions on physical contact during the Covid 19 pandemic (Wong et al., 2021). Previous work on video-conferencing for groups including residents in aged residential homes have suggested that while users value the opportunity to see friends and family, mass-market consumer technology has been found to be overly complex, difficult to hear and handle, particularly for those with age related physical and cognitive difficulties (Moyle et al., 2020). KOMP may be expected to reduce these issues. Research by Oppedal, et al., (2019) on KOMP facilitated remote care for elderly people in Norway found that most users are satisfied with the device as they experienced increased social contact and felt more involved in the lives of their relatives. The research also suggested that family members see KOMP as having a positive impact on reducing the user's sense of loneliness and social isolation.

In addition to improving social connectivity for care recipients, telecare has been regularly considered for its potential to reduce costs associated with travel for in-person health and care visits and improve independence and quality of life. While there are no consistent findings on these issues from large scale studies, a common theme of existing research is that benefits depend greatly on the way in which new telecare systems are introduced and used, as much as the technology itself.



Approach and data

This evaluation was structured around a theory of change approach. This involved developing a programme theory following initial discussions with project sponsors and stakeholders around the way in which FHVC was expected to lead to particular outcomes. Following this, the evaluation focused on the acceptability of the technology to service users and staff, as well as the processes, barriers and facilitators to implementation.

Semi-structured qualitative interviews were conducted with staff, service users and family/informal carers. Interviews were undertaken with: 7 service users; 3 family members/informal carers; and 10 staff members. A number of meetings were held with key project sponsors.

The Theoretical Framework of Acceptability (TFA) was used as a framework to structure interviews and analyse the data (Sekhon et al., 2017). Staff were also asked about the process of implementing FHVC, including around barriers and facilitators.

Key findings

- Overall, the KOMP technology was seen by staff and service users as straightforward to use, with relatively few technical difficulties in most instances (although there was one important exception, noted below).
- Staff involved with FHVC were highly positive about the service, and could see benefits in terms of increasing independence, better use of resources and the ability to match service user need to the level of care.
- In some instances, service users were very enthusiastic about FHVC, preferred remote care to in-person visits or telephone calls for aspects of their care. In one instance, FHVC was described as leading to an improvement in their quality of life.
- Service users were particularly positive about FHVC where they used the KOMP for speaking to family and friends as well as their carers, and where the service users valued the reliability of timing, and convenience of remote appointments, and valued their personal space.
- Some service users were more neutral about FHVC, and one was more negative. This could be associated with not identifying a purpose for FHVC above in-person care visits, and not using the KOMP to speak to family or friends, and in some instances having ethical problems with the extended use of technology.



- Although technical problems were limited, in one instance ongoing technical difficulties led to the screen needing to be removed from a service user's residence. In another instance reported by staff, the presence of the KOMP was seen as leading to distress and was also removed from a service user's residence.
- Implementing virtual care requires ongoing assessment and tailoring to individual needs. The way the technology was used by both staff and service users varies considerably between individuals and also changes over time and its needs to be considered as part of an ongoing and wider package of care.
- Video conference technology could be seen as providing opportunities for additional 'gradients' in care packages, allowing new types of care activity other than those that can be provided in 15 minute in-person appointments, tailored to the individual's needs and circumstances
- A longer term study would be needed to understand if FHVC can maintain or improve independence above physical care visits at the overall level.

SUMMARY OF FINDINGS

Staff involved in FHVC were universally positive about its potential and the KOMP technology was seen as easy to use. In some instances, FHVC was seen by service users as reducing the burden of receiving care, increasing the reliability and timing of appointments, allowing improved communication with family and friends and virtual visits were preferred for part of the care package.

A key point of ongoing development is identifying people who are most likely to benefit from FHVC. Particular criteria may help to identify those most likely to benefit, including those who find home visits burdensome and are likely to use the technology to communicate with family and friends. Nevertheless, identifying and continuing to assess suitability for virtual care requires ongoing joint working between the care provider, local authority and social workers in order to consider individuals changing needs and circumstances.



Introduction and background

Motivation for virtual care appointments – the wider picture

The context for this evaluation is twofold. The first important element of context is the widely recognised ‘workforce crisis’ in social care. While there are workforce challenges across the health and social care system, adult social care is in a particularly difficult position. Skills for Care identify that the number of vacancies in adult social care in England continues to rise, and at 165,000 vacant posts in 2021/2022 (Skills for Care, 2022), which was the highest it has been since recording started in 2012/13. They further estimate a further 480,000 people are required in social care by 2035 to keep pace with demand. At the same time, the number of people choosing to work in the sector is decreasing, and turnover remains high; it is estimated 400,000 people left their jobs in 2021/2022, 29% of the total adult social care workforce of around 1.6 million. Many care agencies have sought to address this by improving financial incentives, including pay, benefits and training opportunities. Others have sought to improve the nature of employment contracts to make social care work both more flexible and secure. It is also widely suggested that the process and organisation of work in social care need to change to make up for the shortfall in personnel. Increasing use of technology is often identified as one part of such change.

The second important element of context is the growing adoption of remote video consultation across health and social care. The technology to allow video communication between health and care service providers and service users is not new and has been available for at least ten years (McClellan et al., 2011). Since 2019/2020, remote consultations have been very widely trialled and adopted in a variety of settings, including General Practice (Parker, 2021), mental health and counselling (Olwil, 2021), post-surgery outpatient appointments (Jones et al., 2021; Oates et al., 2021), aged care (Woolham et al., 2021) and in some instances social care (Moyle et al., 2020). It is widely expected that remote consultations will play a key role in health and social care services in the future.

What is already known

A wide range of studies and reviews have investigated remote technology, and these contain a number of findings that are relevant for the introduction of FHVC, in particular:

- Communication through video conferencing can reduce feelings of isolation and improve social connection, including for older people and people with dementia (Van der Ploeg et al., 2016; Thatch et al., 2021; Hung et al., 2021; Zamir et al., 2018).
- Video conferencing for social care users has advantages over telephone calls in allowing richer forms of communication (Svanstedt et al., 2003; Thatch, 2021).



- In some instances, people find remote consultation for healthcare appointments favourable to face-to-face appointments, particularly where this increases convenience and does not reduce quality.
- Remote consultation can in some instances lead to cost savings, particularly associated with travel, although this varies considerably depending on the context of use.
- There can be additional costs in using video conferencing technology for the equipment, training, service redesign and implementation (Thatch et al., 2021)
- Technological difficulties in standard consumer hardware and software can hinder communication, particularly for people who find standard technology use difficult (Thatch, 2021).
- Whether users find remote consulting (as well as other telecare technology) acceptable and useful varies considerably, and can depend on the preferences of individuals involved, their individual and family circumstances, the type of service, the way it is installed, explained and used (Hung et al., 2021)
- Large-scale national trials have not been able to provide evidence telecare 'works' to improve outcomes or save money. Wider work around these studies suggest it is how telecare is used that matters, rather than the technology alone. The process of implementation, including how people's suitability is assessed and how they are supported in using telecare matters a great deal in terms of the outcomes (Woolham et al., 2021).

Page 7 highlights five studies which give some indication of prior research in this area. This provides a strong motivation for both trialling and evaluation the implementation of KOMP. However, it should be noted there are some limitations in the relevance of previous research for FHVC. In particular,

- Much of the existing evidence is from the health sector, rather than social care.
- Much evidence on remote consulting is based on different forms of technology that the one trialled by FHVC (e.g., mass market videoconferencing or remote monitoring).
- Although it has been suggested that people receiving social care may benefit from video-conferencing programmes for aspects of their care, mass-market hardware and software have been found to be problematic for aged populations or those for whom using technology is difficult.
- There are a number of difficulties identifying a link between the adoption of new video consulting or telehealth technology and overall cost reductions. Very large national studies have not been able to show an overall link.



iPads for long-term care users

Moyle et al. (2020) studied the potential use of iPads for six long-term care users in Australia. **They identified that videoconferencing was viewed positively for its potential for communicating with family and friends, but noted challenges with using the consumer technology reduced the suitability of ongoing use.** For example, osteoarthritis of the hands made the iPads difficult to handle and age related cognitive decline made use too complicated.

Reviewing 17 previous studies of the use of tablet computers for communication by people with dementia, Hung et al (2021) conclude that there is positive evidence "to show **that touch screen tablets can be used as an effective way of increasing social engagement, reducing responsive behaviours and improving overall quality of life.**" (Hung et al., 2021: 1138).

Large National Studies of telecare

The UK has invested in high-cost, multi-year trials and evaluations of assistive care technology. Overall evaluations have not been able to consistently show positive outcomes such as a reduction on mortality (Steventon et al., 2012), service use (Gathercole et al., 2021); wellbeing (Cartwright, et al., 2013; Hirani et al., 2014) and the interventions were not found to be cost effective (Henderson et al., 2013; Howard et al., 2021). However, **this may be because of the variety of ways technology has been introduced and used;** qualitative work highlighted the barriers to uptake and reasons for withdrawal (Rixon et al., 2013; Sanders et al., 2012).

Evaluating the ATTILA project, Howard et al., (2021) state that the difficulty in proving the effectiveness of telecare "may be because ... more extensive ATT systems are inadequately supported by providers, or inadequately tailored to the needs of people with dementia and their caregiver" (884).

Potential for benefits

Thach et al., (2021) reviewed 14 studies examining the use of videoconferencing amongst people in residential aged care. **Overall, they found users reported benefits for social connectedness. They also found that the way videoconferencing was introduced and organised made a difference to its usefulness and cost.**

Importance of assessment

Woolham et al., (2021) examine how people are assessed for telecare, and how staff are trained. They identify that it is not just the technology, but the process of assessment could be crucial **'it may be the way the in which telecare is used, rather than the telecare itself, that shapes outcomes for people who use it'** (163). The point to the importance of careful and ongoing collaboration between service users, providers, and social workers to get the most out of telecare



The overall approach of this evaluation involved developing a programme theory, and then identifying which elements could be addressed within the current work. The programme theory was composed following initial meetings with key project sponsors within Fosse Healthcare, in which the potential benefits of FHVC were considered, along with the way in which it was expected that these benefits would be brought about. This was then followed by consideration of relevant literature which may inform the relationship between the adoption of KOMP and the assumed benefits. The programme theory developed is presented below:

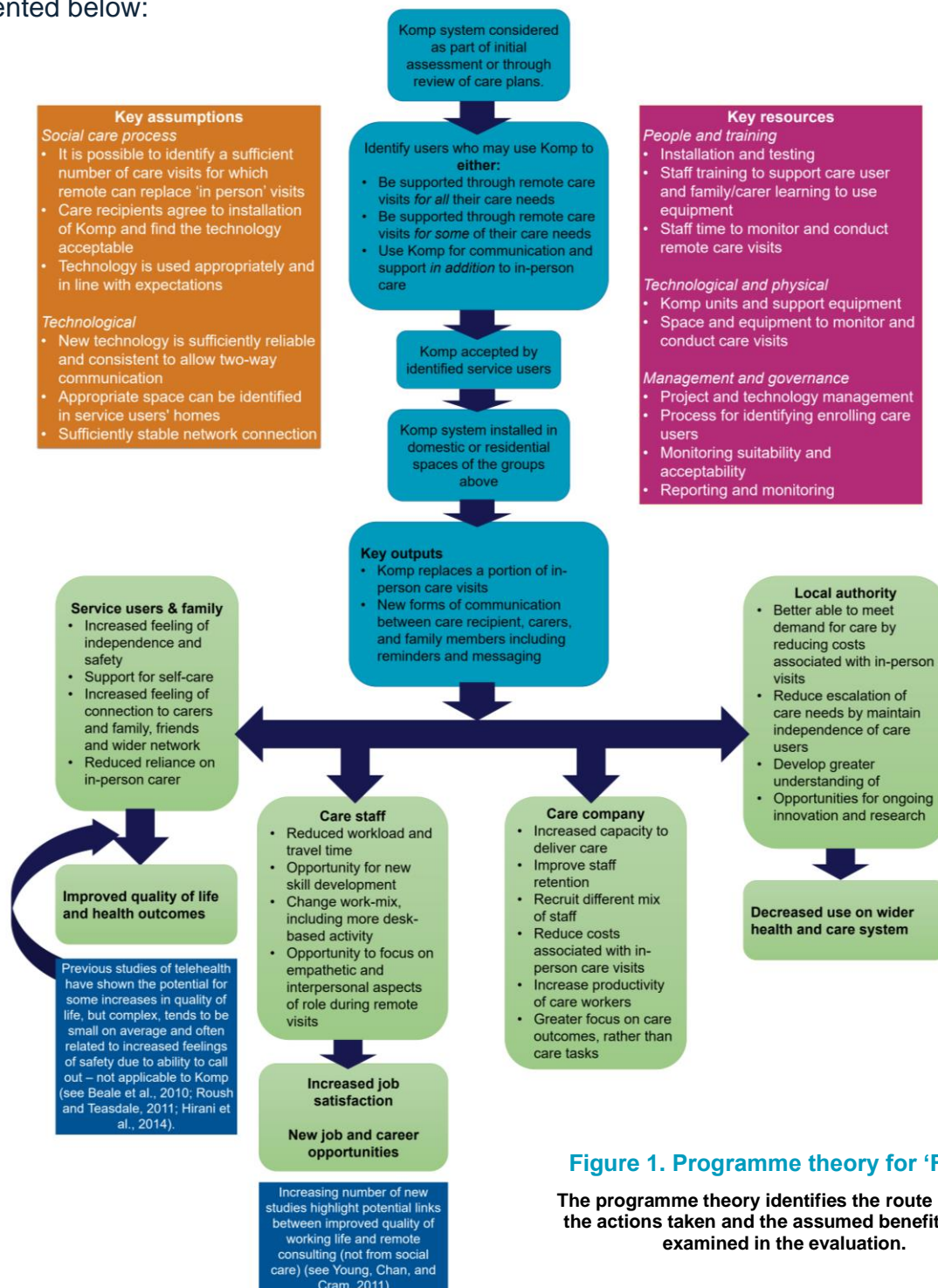


Figure 1. Programme theory for 'FHVC'

The programme theory identifies the route between the actions taken and the assumed benefits, to be examined in the evaluation.



For this evaluation, we focused on the acceptability of the technology to service users and staff, as well as the barriers and facilitators to implementation. Several large scale and multi-year UK government funded studies, in particular the Whole Systems Demonstrator and the ATTILA trials have not been able to consistently demonstrate cost savings or health and wellbeing outcomes, and it is noted that the local context, service specific factors and the process of implementation is of crucial importance. Therefore, the evaluation focused on these elements of acceptability and implementation.

To investigate the acceptability and implementation of FHVC, semi-structured qualitative interviews were conducted with staff, service users and family/informal carers. Prior to undertaking interviews, ethical approval was received from the Nottingham University Business School Research Ethics Committee. Managers at Fosse made the initial approach to staff involved in FHVC, and service users receiving FHVC (and who were identified as having capacity to give their informed consent) to ask if their contact details could be passed to the evaluation team at University of Nottingham. University researchers then provided participants with information about the evaluation and asked if they were willing to take part. Each participant gave their informed consent. Interviews were undertaken with:

- 7 service users
- 3 family members/informal carers
- 10 staff members

Table 1. Research participants

Participants	Role(s)
[01]	Quality and compliance officer
[02]	Deputy care manager
[03]	Care manager
[04]	Care worker
[05]	Quality and compliance officer
[06]	Service user
[07]	Service user
[08]	Family member
[09]	Service user
[10]	Service user
[11]	Service user
[12]	Service user
[13]	Care worker
[14]	Service user
[15]	Friend/ Informal carer
[16]	Service user
[17]	Care manager



[18]	Senior manager
[19]	Care manager
[20]	Care worker

While this is a relatively small number of service users, this includes approximately half of the people who currently have KOMP installed and in use. It also compares with other published studies of feasibility and acceptability of telecare (Moyles et al., 2020).

Two members of the Local Authority were invited for interview but did not respond to this request.

Interview questions with service users and staff were informed by the Theoretical Framework of Acceptability, while also exploring the processes of implementation, including barriers and facilitators. Previous research on telecare has identified that the extent to which service users find the intervention is acceptable is the most important factor in whether they decide to continue or withdraw (Rixon et al., 2013). The theoretical framework of acceptability revolves around understanding the dimensions that contribute to the acceptance or rejection of a particular health and care technology or intervention. These factors include perceived usefulness, ease of use, compatibility with existing beliefs or practices, social norms, ethical considerations, emotional responses, and individual preferences. The aim of the framework is to provide insights into the dynamics underlying acceptance and design interventions to enhance acceptability (Sekhon, et al., 2017). This was also used to code the interview transcripts. Interviews with staff also probed the process of implementation.



The implementation of FHVC

Over the course of the last two years, considerable efforts have been made to facilitate the installation and effective use of KOMP for remote care visits and improve communication. As has been recognised in studies of implementation of other new care technologies, implementing virtual care involves more than the direct replacement of in-person care with remote-care. Rather, a number of considerations need to be taken into account to fit the technology with the context of care to allow virtual care to work in practice. Specific points of learning have been developed within Fosse on the way the technology can best be used, the potential barriers to implementation and how these can be overcome.

1. Identifying suitable service users. A key task in the implementation of FHVC has been the development of effective processes to identify service users who would benefit most from installing a KOMP device and using it for virtual care appointments. Broadly, two approaches have been adopted; the first involves reviewing existing social care service recipients to identify those who meet suitability criteria, and the second is considering virtual care during the initial care assessment process to 'trial' the use of KOMP as part of an initial care package.

The first of these involves reviewing a potentially large number of care plans, with an understanding that a smaller proportion of total care users may be identified as suitable. For example, in the first stage of FHVC implementation within the East Midlands of England, service users already receiving packages of care were considered for the implementation of FHVC. For example, approximately 510 service users' records were reviewed to identify 34 whose care needs and personal circumstances appeared to make them particularly suitable to respond to FHVC. This approach currently requires considerable additional time and resource and is a labour-intensive process. As the programme has developed to include a wider pool of service users, including those receiving care from other agencies across wider geographic areas, there is now an opportunity to develop an understanding of how factors and criteria may come together to make people particularly likely to benefit from FHVC. **As the number of users grows, analysis could identify whether particular criteria - or groups of criteria - are associated with the successful adoption of FHVC. Identifying criteria which appear to predict which service users are most likely to benefit would help to scale-up deployment** by developing approaches to 'sifting' service users and the identification of those likely to benefit from FHVC. Considering the findings reported under 'acceptability' below, a combination of family circumstances, motivation to remain independent, and



dissatisfaction with existing care arrangements could reasonably be considered as important factors to examine.

The second approach to identifying people suitable for FHVC is during the initial assessment period. As noted further in point 2 below, an advantage of this approach is the assessment period provides time to nuance the types of care provided virtually and identify 'bottom up' uses for KOMP around the needs of individuals and unique circumstances. This approach is limited in number by the number of individuals who come through Fosse for their initial assessment.

Crucial to both of these approaches, and widely recognised within Fosse, is close working with the local authority and social workers to identify service users which meet formal criteria of care tasks and personal circumstances and are also likely to be willing to engage with remote care.

2. Developing the 'fit' between FHVC and individual's care. A second key task in implementation has been identifying the way FHVC will work for individual service users. This has been ongoing work over the past two years, and considerable knowledge is being developed by individuals and teams about how to get the most out of the technology. This involves considering the technological capabilities of KOMP in relation to the particular care needs, personal circumstances, living arrangements and their wider networks of support of individual care recipients. It was also noted how the wider care system factors also shaped the way KOMP was appropriately used, for example which Local Authority area they were in and the types of support and accommodation available. In various ways, all staff noted that the uses of KOMP varied based on unique circumstances as well as the individuals 'trajectory of care' (Strauss, 1988) which alter the types of care which can be provided virtually over time. **For some people, FHVC can represent a 'step up' in the level of care and oversight that allows more frequent surveillance for example when people are at risk of falls. For others, FHVC can facilitate a 'step down' in levels of care and allow fewer in-person care visits,** particularly when activities such as medication reminders or wellbeing checks could be undertaken in less than 15 minutes, the usual minimum in person visit.

"We always said that every case is unique. Yes, we outline the task that we can do via virtual... the majority of our services that comes through and it's more on a broader scale of unique circumstances as to why they've had virtual home care." (Fosse employee)



“Obviously people's needs fluctuate so much. So having the KOMP in place it could you know support us for though when those times are you know people's times are tough and they're struggling with their care needs.” (Fosse employee)

In some cases, it was noted that some aspects of care were not possible over KOMP, pointing to the importance of ongoing review and feedback. In one instance, the installation of KOMP was seen to lead to some service user distress, leading to the screen being removed.

“There is that criteria for it and there is some people it's not worked for. You know we've tried it and it's not, it's not worked, so maybe those prompts those verbal prompts, especially those that have got dementia. You can prompt them and prompt them, prompt them. Sometimes you actually have to physically get something out the fridge, for example, put it in front of them to get them to do it.” (Fosse employee)

An important present consideration is how this understanding is captured and shared. Currently, staff are learning how to nuance remote care visits and the use of the technology to individual needs and circumstances. In the early implementation of FHVC, Fosse has generated important understanding of how the technology 'works' in particular circumstances.

3. Realising benefits. Leading on from point 2, staff also pointed to a number of ways they were seeking to realise the benefits from the implementation of FHVC. As noted below staff interviewed were positive about the possibilities of the technology and identified ways it could help to improve care. While these were facilitated the functions of KOMP, they also required wider efforts to realise. Important benefits noted by staff included:

- **Benefiting from time saved** virtual appointments allowed certain care activities to be undertaken more quickly, without the need for a 15 minute in-person appointment. The potential benefit of this is that care staff could spend more time on other in-person appointments where needed, and staff discussed ways they have formally and informally made small adjustments to schedules to allow this to happen. One possibility that was not discussed was the potential for this to allow more 'slack' in carers schedules and improve reliability of in-person visit times. While this may be happening through the use of virtual appointments, it was not raised during staff interviews. Reliability of timing is regularly raised as a challenge within domiciliary



care, and changing the mix of care tasks undertaken in person provides an opportunity to improve this aspect of care.

- **Improving communication with service users.** As noted by staff and by some of the service users included in the evaluation, the KOMP opens up the opportunity for new forms of communication between care staff and service users, and between service users and family friends. Existing research has suggested that video conferencing can allow good interpersonal rapport for in-depth communication (Archibald et al., 2019). In two cases, service users noted that the conversations over KOMP could be more meaningful, as the focus was on the conversation, rather than on attending to tasks such as making hot drinks. **For the staff involved with FHVC, providing remote welfare calls required them to develop new communication skills.** This included finding appropriate ways to open conversations and engage people differently, for example establishing ‘common ground’ when not physically co-present. It also involved finding new conversation topics without shared visual cues. The use of KOMP for communication between service users and family/friends was noted as a key benefit for two service users. This involved some effort to train family members on use of the app and providing codes.

In some instances, video communication involved some small adjustments to the way the technology was set up, including adjusting volume and screen positions, for example to account for hearing or sight difficulties.

- **Promoting independence.** Several staff stated that a key benefit of KOMP was in allowing service users greater independence. In order to realise this benefit, it was widely noted that the specific individual requirements of care recipients needed to be taken into account. Responding to how service users were engaging with KOMP and adjusting its use was seen as crucially important. Rather than a blanket replacement for in-person care visits, FHVC was seen as part of a care package which could be more finely attuned to individuals, to allow them to maintain independent.

“I feel it definitely promotes independence, and it makes them feel like they’ve got that little bit of help, but they are still within their own home, no one’s coming in, because sometimes that can be scary, if you haven’t met them before” (Fosse Employee)

4. Importance of engaging stakeholders. A final aspect of implementation that has evolved over the past two years is how stakeholders are engaged. Although the relevant Local Authorities have been involved in FHVC, implementing virtual care requires significant involvement of the social workers responsible for service users’

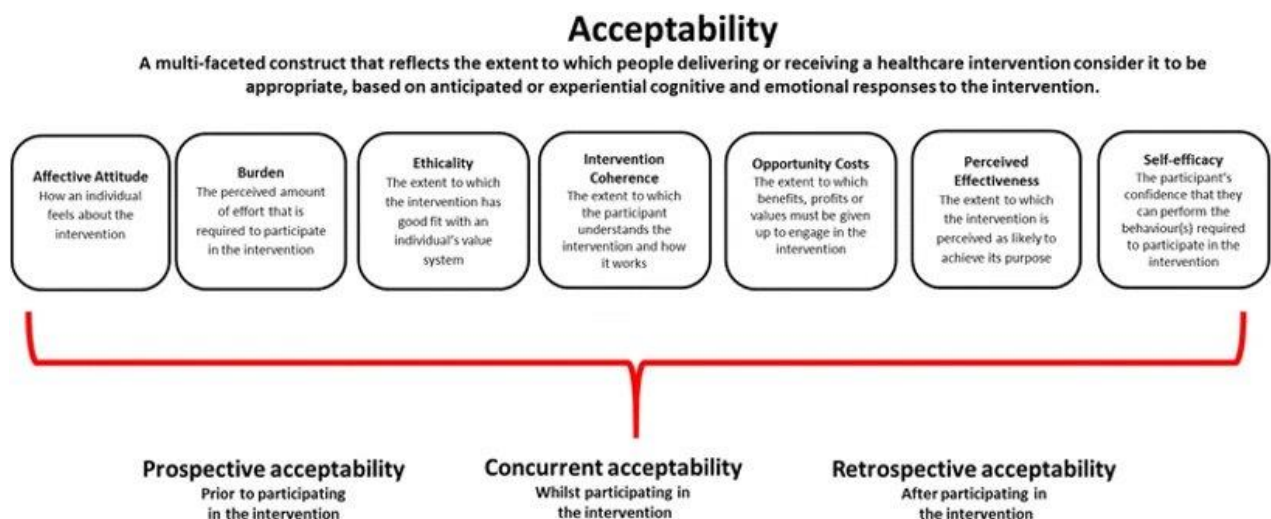


care, as well as social services managers involved in decision making and disseminating information. Considerable efforts have been made to extend knowledge of FHVC to social workers and engage them in identifying service users who could potentially benefit. A central aspect of this is creating a balance of ‘push’ and ‘pull’ factors for the implementation of virtual care, and this has been considered within Fosse. Although little directly relevant research exists on social workers’ attitudes towards remote care visits, previous research suggests key concerns amongst social workers on the introduction of telecare systems and remote care visits may be about the possibility of increasing social isolation, risks associated with missing physical cues of concern, issues of privacy, legal issues, technological problems and reducing the quality of communication (Cook and Zschomler, 2020; Connolly et al., 2020). Identifying and addressing these concerns could therefore increase engagement.

The theoretical framework of acceptability

This section focuses on the acceptability of FHVC to staff and service users. FHVC involves both the installation of KOMP in service users home, and the use of this technology for virtual care appointments. Previous research, including that focused on telecare, have identified acceptability as an important factor in whether new technologies and interventions and technologies are taken up in practice (Clarke et al., 2011; Guikay et al., 2018). To consider acceptability we used the Theoretical Framework of Acceptability (Sekhon, et al., 2017) to inform semi-structured interview questions as well as a framework for analysis.

Figure 2: Constructs of the Theoretical Framework of Acceptability (TFA) (Sekhon et al., 2017)



Summary of acceptability

The findings below present details of responses to qualitative interviews in relation to each construct of the TFA framework. Overall, it is noted that **all staff conveyed positive attitudes to FHVC and felt it could benefit people receiving care by increasing their independence, and also felt that it allowed them to plan and conduct work more effectively.** Staff found it of low burden and reduced opportunity costs compared to in person care visits for some activities (in particular, welfare checks, medication reminders and reminders for eating and drinking). Staff stated KOMP was intuitive to use and there were few technical difficulties. In some instances, they identified ethical issues for people who did not wish to use KOMP, the importance of service user choice and identified the importance of tailoring its use to individuals needs and wishes on an ongoing basis.



Service users interviewed for the study varied more in their responses to FHVC. Affective attitudes ranged from those who were positive about FHVC (3 users), to those who were more neutral (3 users), and one who was more negative (1 user). Key reasons for positive attitudes were the reduced burden and opportunity costs in comparison with in-person care visits; FHVC was seen as more convenient and reliable in terms of timing. It was also seen as more coherent and better suited the level of their need; they did not see a point in someone travelling to their house for shorter visits, which was seen as a waste of time and money (which mattered to them even regardless of who was the payer). Two people also suggested it was more effective, in that it allowed them more meaningful conversations than during in-person visits and allowed them to communicate more with family and friends.

More neutral and negative attitudes could be seen as stemming from issues of intervention coherence; these service users did not see the FHVC as enhancing their care and they did not use the KOMP to speak to people other than the care worker. Across all of the service users, KOMP was seen as low burden, having low opportunity costs and as intuitive to use. Very few technical problems were noted. One service user noted ethical concerns around the impact of care workers jobs. However, this service user also stated they preferred the KOMP to in-person visits for certain aspects of care.

Constructs of the TFA

1) Affective Attitude

The first construct of the TFA is that of 'Affective Attitude'. This is defined as how and individual feels about the intervention. The service users in the study had quite different attitudes towards KOMP, with some reporting a highly positive view, others more neutral and two more negative views. Those with positive views cited its convenience in comparison to face to face visits, as well as ability to communicate with family. Staff members were highly positive about KOMP and saw it as reducing workload.

In the study, service users who had positive views of KOMP were highly enthusiastic about their experiences. They highlighted the convenience offered by the technology, which allowed them to communicate with their families:

"Like I was trying to say, I do actually prefer that because in one way it's a lot easier and it's a lot better." [16]

"She comes on and she'll talk to me. The lady that's shows herself and asks me what I've had for me dinner, if I've had a dinner, How I'm feeling. I've I've got anything to talk to her about. Do I need anything, any help or anything? She's very good. There're two different ones [carers] and I find it very useful. I won't do without it now. I love it." [09]

KOMP was also compared favourably to the telephone:



"I prefer it on the screen, right? Excuse me, I prefer it on the screen. I could say it because I don't want to give up. You do actually feel like you're talking to somebody, not just talking to a little black thing" [16]

"I prefer that better because he can see me and I can see him, right. Yeah. So that is a benefit. Yeah. It's a more personal contact, isn't it?" [08]

Some family members were equally positive about FHVC and saw it as opening up new forms of communication and also providing reassurance in a way that would otherwise not be possible with mass market technology.

"I mean, we can do it through WhatsApp. You can do it that way. You can FaceTime people. But Mum can't do that" [09]

In one case in particular, the FHVC was seen as dramatically improving the service users' quality of life, allowing them to communicate more freely with family members, including allowing them to participate more fully in wider family life.

"If I've got somebody coming to ours, one of our family she'll say hello to everybody its lovely, she can say hello to her grandkids and everything" [09]

Some service users in the study reported more neutral experiences with the FHVC. While they responded to incoming calls and engaged with the technology, when necessary, their usage was not extended beyond these basic functionalities. These individuals did not actively explore or utilize the wider range of features and capabilities offered by KOMP. Their interactions with the device were limited to the immediate needs and communication with others, without further exploration or engagement:

"I don't use it [KOMP] a lot. I prefer persons. I think, again, it's because of my age." [10]

"She [niece] usually rings me at 8 o'clock most nights. What else does on it to that I don't know, really." [06]

In addition, a few service users expressed negative experiences with FHVC. They struggled to identify its purpose or the benefits it could offer, leading to a lack of engagement and understanding:

"We have had people where we've put it in there and it just didn't work. we had a lady that had dementia. She was getting very confused. It was causing her to get unsettled. She was unplugging it. And then we took that out." [04]

"It actually doesn't really achieve anything because I still have to have carers come to me to see me [...] that I've got to have someone to empty my bottle, so, I say to them 'there's no need for it' but they are still keep doing it and I'm quite willing to sit there and talk to a woman for 10 minutes." [07]

From care staff's perspective, KOMP is a useful tool which can reduce their workloads. Staff members involved in the study had a highly positive perception of FHVC:

"I think KOMP is an app. I like it and I think it's a fantastic idea. I really do." [01]

"I think the KOMP will be good just to be in everyone's properties, really keep an eye on them, and I think it's reassurance for the family's as well." [02]



2) Burden

The burden can be described as the perceived level of effort necessary for engagement in the intervention. Overall, care staff have found KOMP to be easy to set up and use, with minimal burden. In fact, they have occasionally found KOMP to be even less burdensome than face-to-face visits:

“It's been really easy to set up, to be honest. It's not, that's not really been a challenge.” [04]

“Before this [KOMP] was installed, someone came to knock on your door to ask if you're taking your meds, and if you've had lunch, and all that kind of stuff. But now you don't have to come so many times.” [13]

Three of the respondents reported that answering the door and inviting care users into the house was a significant burden, which was reduced through the use of KOMP. A particular advantage in this regard was the reliable timing of KOMP calls. Whereas a number of service users reported that they were often unsure when care workers would arrive at their house, which had previously been a cause of significant concern. In one instance, a service user had previously had to leave their door unlocked for the carer late into the evening which made them feel unsafe. This has meant KOMP has significantly reduced the burden and risk of receiving care.

Very few of the staff or service users reported difficulty in using the technology. This included service users who found technology in general very challenging.

“So, and I've got we mean arthritis. I can't be doing pressing buttons and what have you.” [09]

However, certain service users have voiced concerns regarding technological issues leading to confusion, as well as the need to make minor additional efforts to be available when someone calls on the KOMP:

“I can hear it, the music starts ringing, you go back, you have about 10 seconds. If you're in the kitchen, for example, you have to go quickly. [...] It was a bit strange at first, but you know what kind of time they are going to ring, so you can make sure that you're sort of around when they're going to call.” [12]

Although there are occasional concerns about the functionality and reliability of the technology, as some service users and staff members acknowledged that KOMP doesn't always work as expected, there are no major concerns raised in this regard. In some instances, service users commented on the greatly reduced burden of responding to KOMP calls in comparison to in-person care visits.

3) Ethicality

Ethicality is defined as the extent to which the intervention has good fit with an individual's value system. One positive point of ethical comparison was made by both staff and service users was around the more suitable use of resources. This could be seen as an ethical



issue, as in number of cases this was not related to their own costs, but rather a general concern over resources being wasted in in-person visits when they were not necessary.

"[FHVC] is so much better and better than the clear travelling 15 minutes in the car, coming here, sitting here 10 minutes, then travelling for 15 minutes." [08]

In contrast to this, two service users (respondents 14 and 15) said that FHVC was a waste of money and discussed at length the impact on people's jobs and role of technology in care:

"When I though he lost his job in the evening. I felt a bit different." [14]

The majority of the care staff highlighted the importance of conducting thorough assessments and understanding the specific care needs of individuals before introducing KOMP, as well as effective communication and clear explanation. These approaches ensure that KOMP meet the service user's requirements and avoids potential ethical issues that may arise:

"I've assessed them [service users] very thoroughly before the KOMP's gone into place. [...] You don't get the full picture of somebody's care needs until you actually are providing care for them sometimes, and something crops up, so it would be a worry in that sense of having to put the KOMP directly in place without really doing a thorough assessment and knowing if that's gonna work." [03]

It was also apparent that some service users had expressed some concerns regarding intrusiveness and privacy. It is particularly this was identified by staff as occurring in an instance of a service user with dementia, who experienced confusion about the purpose and functioning of the device:

"They [service users] thought that it [KOMP]'s gonna be spying on them. And even then, we could not convince them that's not what it's for. They still didn't want something that somebody could just type into and phone them." [01]

"She [service user] used to think people could see her and she used to get worried that maybe she was getting changed and people were watching her." [04]

4) Intervention Coherence

Intervention coherence can be defined as the extent to which the participant understands the intervention and how it works. In this case, all staff members and some service users interviewed in the research are well-informed and possesses a clear understanding of how KOMP operates.

The KOMP device is primarily used by support workers for welfare visits, and reminders for medication, food, and drink. It was also seen as offering an opportunity to regularly check in with service users outside of planned calls, in case of any concerns. The device is accessed through laptops in the office, and families may use their phones for communication. The logistics of using the device are considered manageable and not seen as particularly difficult. Overall, FHVC intuitively 'made sense' to staff members.



Care staff show understanding of FHVC purpose and benefits as a means to provide interaction and communication for service user, and that the device is not meant to replace carers but to supplement care and enhance social connection.

“If I identify anybody that maybe is just needing that little bit more support, but isn’t needing a full visit, it’s really good that I could then put them forward for that KOMP and have that virtual visit instead.” [03]

The service users were more varied in the extent to which they felt FHVC made sense. Some identified a general fit with wider moves toward video-calling and saw KOMP as allowing them to participate in this. A few service users have expressed their lack of knowledge regarding how the KOMP technology works, and they have also mentioned experiencing intermittent connectivity issues, which have led to confusion:

“She [niece] just put it [KOMP] on, and she were just talking to it and then it went, that the picture was there, and her face was there, but nothing else was and it went off for a long while, [...] it was off for a while but later on in the night she said it come back on again. But what was the cause of it? I don’t know because it’s usually alright. It’s usually I don’t have a problem.” [06]

There were few mentions of the messaging feature in the KOMP device, but its usefulness has been questioned when the recipient cannot send a message back. This suggests a limitation or confusion regarding the functionality of certain features:

“I tried to use it once and you can actually send a message, but I don’t know what the point of that is because if he can’t send a message back anyway.” [15]

Also, for some service users, it was the in-person care visits which lacked coherence, given their level of care needs.

“I was gonna ditch him completely. Yeah. Don’t need anybody. Don’t need anybody. No, but they come round in the morning. The woman from the council wanted them to come round in the morning and the evening, but I don’t want them as there is no need.” [16]

5) Opportunity cost

Opportunity cost is defined as the extent to which benefits, profits, or values must be given up when engaging in the intervention. Overall, staff members found remote care visits saved them time and allowed them focus on service users with higher care needs and allocate their time more effectively. Remote visits also reduced the time they felt they spent on welfare checks and allows caregivers to concentrate on more critical tasks or activities.

“Rather than us actually going into the property, and I think sometimes we have got like quite high needs here so we can concentrate on them more rather than people that we go in to, and it is just sort of like a welfare check. And, you know, the ones with high needs, so we can concentrate on them more without pushing the other ones aside.” [02]



“It [KOMP] does save time and it's giving them more time to maybe go and bath people and do social activities. It's freeing up their time to do other things as well.” [04]

Some service users expressed that KOMP helps them by providing information about the carers' scheduled visits, enabling them to plan their days more effectively:

“He [service user] knows that they're [carers] going to be coming on at that exact time instead of the carers being, say, an hour late. [...] Previously, he had four calls a day, but he can do his own dinner and everything. It's the least restrictive thing for him to have the screen [KOMP]. Umm, cause he likes to go out a lot.” [13]

6) Perceived Effectiveness

Perceived effectiveness is defined as the extent to which the intervention is perceived as likely to achieve its purpose. In general, all staff members suggest that KOMP can make positive improvements in care. These improvements include (1) the use of reminders and prompts to help service users with dementia remember to perform certain tasks (taking medication, drinking, eating, attending meals, and attending activities), (2) promote independence and allows service users to feel that they can do things themselves, (3) provide additional checks on the well-being of the service users, ensuring they are okay and providing assurance, and (4) connect individuals and their family members as KOMP allows video calls and virtual interactions, reducing feelings of isolation.

However, from the interviews, we found that the effectiveness of the KOMP may vary for different individuals and the suitability of the device depends on personal needs and preferences. For example, some may benefit greatly from its features, while others may prefer or require physical visits. A service user expressed that KOMP did not actually achieve anything for him as he still has to have carers come to see him:

“It actually doesn't really achieve anything because I still have to have carers come to me to see me [...] that I've got to have someone to empty my bottle, so, I say to them ‘there's no need for it’ but they are still keep doing it.” [07]

Some carers highlighted that KOMP may not always be able to meet with all care needs due to the fluctuating nature of care requirements:

“Welfare check is where we go, we have a chat, and we see if they [service users] have had the medication. Their eating and drinking, we look for evidence of that. I think over a screen we can't see all of that.” [01]

“Technology is not foolproof. [...] If you're prompting medication, a lot of the time through the KOMP, you know they [service users] have to be able to understand what they're taking medication [...] But then there's been occasions when we [carers] may have gone back in to check and they [service users] actually haven't taken the meds even though they said they have, or you thought that you've seen them take them. And so, it goes with risks I suppose.” [03]



7) Self-efficacy

Self-efficacy can be defined as the participant's confidence that they can perform the behaviour(s) required to engage in the intervention. From the data, we found that all staff members had no issues with using the KOMP and they found it reasonably easy to use:

"It's really fast to use. As soon as you open up the KOMP with the list of service users, you just have to click on their name and start video calling. It is really easy to use." [04]

"The calls that we have here are usually around teatime, and it's like their last call visit as we call it. They'll do it in the office, use the laptop, and then log on, obviously you can use it on the phones, but we've not been shown that before, it's just always on the laptop. I think the families use the phones and but yeah, it's never been difficult to do." [02]

However, the level of comfort and familiarity with the technology varies among the service users:

"She [niece] used to have it on at night after work, I think. Well, she usually rings me at 8 o'clock most nights. What else it does on top of that I don't know, really." [06]

Some service users experience confusion or encounter difficulties in using KOMP. This includes instances of turning the device off unintentionally, unplugging it, or facing technological issues with the device's functionality:

"We had to remove that one because for some reasons, it kept going off on its own. [...] It was really strange how it happened." [02]

"We have got one lady [service user] that's got a KOMP in place, but she has got dementia and she has unplugged it. So, if you unplug it, it turns off, so you can't do the virtual visit." [03]

"A lot of the time she [service user] used to unplug it [KOMP] from the wall quite a lot and at one point, she actually took the fuse out of the plug. So that was when we removed it from the flat because she was getting confused, and it was becoming a bit unsafe." [04]

"We've noticed the last few times she's [service user] been a bit blurred [on the screen]. It was not very clear. I can see her, but she's a little bit blurred." [08]



Review of findings

A first key finding is that predominantly the technology itself was seen as simple and intuitive to use. Service users had little problem answering calls, hearing, or seeing the speaker. This included service users for whom other consumer technology was seen as prohibitively difficult or inconvenient. Most of the service users in the evaluation did not use video-conferencing software other than KOMP and reported little familiarity with digital technology. Nevertheless, they reported very few challenges in using KOMP. There were some issues reported by family and friends using the app to call into KOMP. Others reported relatively minor issues of connectivity and sound and audio quality. Neither of these were seen as major issues. This contrasts with previous research which has examined the use of mass-market consumer video-conferencing technology for aged care and people with dementia, in which challenges of technology were a major barrier (Moyle et al., 2020). It should be noted that in one case, an ongoing technical difficulty led to the need to remove KOMP from a service user's residence, as an alarm sounded repeatedly. This, along with the potential for minor connectivity and other technical glitches, does point to the need for strong channels of communication between service users and the provider, as well as a record of technical issues.

A second key finding was the positive attitudes of staff towards the technology and its potential to reduce workload, improve independence and offer different levels of care activity other than in-person calls of set times. This mirrors a number of previous trials of video conferencing across health and care staff often report positive attitudes to the technology (Hung et al., 2020). However, in wider studies of the adoption video-conferencing in practice, use has also found to be discontinued where it is not seen to offer additional benefits to staff above other potential means of communication such as the telephone or in-person visits (Greenhalgh et al., 2022). **Therefore, it would appear important that the staff involved in providing FHVC services are able to identify and share in the benefit themselves, for example, with more predictable and stable work routines.**

A third key finding is the different ways service users responded to FHVC. Service users reported quite different levels of acceptability of the technology, from highly positive through more neutral and in some cases negative responses. In the most positive instances FHVC was seen as leading to an improvement in the user's quality of life. In this case, the KOMP was utilised by the wider family and was seen as improving social connectivity. It was also seen as reducing the burden of dealing with in-person care visits, was seen as easy to use versus other technology and seen as reducing wasted resources. This would suggest that FHVC is particularly suitable for those who are having difficulty with in-person care visits and who would also seek to use it to communicate with family or friends. More

neutral and negative experiences could be seen to stem from not identifying a purpose to the technology. Individual differences in the benefit of remote consulting in particular and telecare in general have been widely found in previous research. Given this, and based on wider cost-effectiveness and outcome studies, it may prove difficult to demonstrate a link between the implementing FHVC and quantitative outcomes such as extending independent living or reduced health service use at present.

Perhaps the clearest implication of the above is the need for ongoing assessment and service user engagement to consider the suitability and use of FHVC visits for individual service users. This is most strongly illustrated in the case of the service user with dementia who was distressed by the installation of KOMP. It also points to the need for ongoing adjustment in how KOMP is used. This has also been a common finding of other evaluations and research. Based on previous research, Woolham et al., (2021) argue that the benefits of telecare come from how it is used, rather than the technology itself, and emphasise the need for training across different stakeholders, including social workers, care managers and care workers. In the case of Fosse, staff involved in working with KOMP have begun to develop new understanding about its capabilities and how it can be used to benefit particular service users. Clear channels of communication for service users, family members and carers to provide ongoing feedback would appear to be of central importance.

Given the range of individual factors which may play into acceptability, and the relatively small number of users, there is currently no blanket way of identifying who would be suitable or benefit. Ongoing analysis which seeks to relate individual characteristics and circumstances to the successful use of KOMP, either qualitatively or quantitatively, may allow increasing precision in identifying those who may benefit most clearly.



Recommendations and points of development

1) A key issue is how to build on current experience in developing virtual care services and embed this to ensure safe and effective use and maximise the potential benefit of the technology. At present, Fosse **staff are developing new knowledge and skills around several issues** including:

- Who is suitable for the FHVC?
- Which aspects of care can be delivered successfully?
- How can this fit around existing workload and increase capacity?
- Appropriate ways of communicating with service users via video call?
- What are appropriate ways to engage stakeholders?
- How to resolve technical bugs and issues?
- Appropriate forms of review and assessment?

Consideration could be given to how this emerging knowledge can be captured and disseminated. This could be in the form of opportunities for staff using KOMP across various settings to share knowledge, and in the form of training and development of new staff involved in the use of KOMP.

2) Ongoing attention should be given to identify service users most likely to benefit from FHVC. From the relatively small number of service users included in this evaluation, it would appear that those who find in-person care burdensome, inconvenient, or intrusive, and would use the KOMP to communicate with family and friends may be particularly likely to benefit. As more users receive FHVC, ongoing analysis may be able to specify criteria which will identify those most likely to benefit from existing service user information.

3) Particularly attention should be paid to the processes by which service users, family members and carers are able to give feedback on FHVC, and on how ongoing suitability for FHVC is assessed. A formal and dedicated approach to this would appear to be particularly important as deployment is scaled-up.



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